

WIND ENGINEERING STUDY OF  
RENAISSANCE CENTER, DETROIT

by

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for

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September 1974

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CER74-75JAP-JEC5



U18401 0073782

## ACKNOWLEDGMENTS

The support of John Portman and Associates in carrying out this study is gratefully acknowledged. Construction of the building model was accomplished by personnel of the Engineering Research Center Machine Shop. Mr. James A. Garrison supervised construction of the surrounding city model and made the motion pictures of flow visualization. Mr. Robert E. Akins supervised pressure data acquisition and reduction. Mr. L. Marsh was responsible for velocity measurements.

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## LIST OF SYMBOLS

<u>Symbol</u>	<u>Definition</u>
U	Local mean velocity
D	Characteristic dimension (building height, width, etc.)
$\nu$	Kinematic viscosity of approach flow
$\frac{UD}{\nu}$	Reynolds number
E	Mean voltage
A	Constant
B	Constant
n	Constant
$U_{rms}$	Root-mean-square of fluctuating velocity
$E_{rms}$	Root-mean-square of fluctuating voltage
$U_{\infty}$	Reference mean velocity outside the boundary layer
Y	Height above surface
$\delta$	Height of boundary layer
$T_u$	Turbulence intensity $U_{rms}/U_{\infty}$
$C_{p_{mean}}$	Mean pressure coefficient, $\frac{(p-p_{\infty})_{mean}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{p_{rms}}$	Root-mean-square pressure coefficient, $\frac{((p-p_{\infty}) - (p-p_{\infty})_{mean})_{rms}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{p_{max}}$	Peak maximum pressure coefficient, $\frac{(p-p_{\infty})_{max}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{p_{min}}$	Peak minimum pressure coefficient, $\frac{(p-p_{\infty})_{min}}{\frac{1}{2} \rho U_{\infty}^2}$
$\rho$	Density of approach flow
( ) <sub>min</sub>	Minimum value during data record

LIST OF SYMBOLS (Cont.)

<u>Symbol</u>	<u>Definition</u>
$( )_{\max}$	Maximum value during data record
$p$	Fluctuating pressure at a pressure tap on the structure
$p_{\infty}$	Static pressure in the wind tunnel above the model

## 1. INTRODUCTION

### 1.1 General

A significant characteristic of modern tall building design is lighter cladding and more flexible frames. These features combine to produce an increased vulnerability of glass lights and cladding to wind damage. In addition, increased use of pedestrian plazas has brought about a need to consider wind and gustiness in the design of these areas. Techniques have been developed during the past decade for wind-tunnel modeling of proposed structures which allow the prediction of wind pressures on cladding and wind environment about the building. Knowledge of pressures on the structure permits adequate but economical selection of window strength to meet selected maximum design winds while information on sidewalk level gustiness allows plaza areas to be protected by design changes before the structure is constructed.

Modeling the aerodynamic loading on a structure requires special consideration of flow conditions in order to guarantee similitude between model and prototype. A detailed discussion of the similarity requirements and their wind-tunnel implementation can be found in References [1], [2], and [3]. In general, the requirements are that the model and prototype be scaled in geometry, that the approach mean velocity at the building site have a vertical profile shape similar to the full-scale flow, that the turbulence characteristics of the flows be similar, and that the Reynolds number for the model and prototype be equal.

These criteria are satisfied by constructing a scale model of the structure and its surroundings and performing the wind tests in a wind tunnel specifically designed to model atmospheric boundary layer



flows. Reynolds number similarity requires that the quantity  $UD/\nu$  be similar for model and prototype. Since  $\nu$ , the kinematic viscosity of air, is identical for both, Reynolds numbers cannot be made precisely equal with reasonable wind velocities. Wind velocity in the wind tunnel would have to be the model scale factor times the prototype wind. However, for sufficiently high Reynolds number ( $>10^5$ ) a pressure coefficient at any location on the structure will be essentially constant with Reynolds number. Typical values encountered are  $10^8$  for the full scale and  $10^6$  for the wind tunnel model. Thus acceptable flow similarity is achieved without precise Reynolds number equality.

## 1.2 The Renaissance Center Complex

A wind study was performed for the proposed Renaissance Center Complex in Detroit, Michigan. The 694 ft high complex was modeled (Frontispiece) at a 1:240 scale. The objectives of the wind study were to obtain mean and fluctuating pressures on the buildings as well as wind velocity and gustiness in the plaza adjacent to the structure. In addition, a flow visualization study was performed to define overall flow patterns and regions where local flow features might cause difficulties in panel loading or pedestrian discomfort.

The Renaissance Center will be located on the bank of the Detroit River southeast of the downtown Detroit area. The area surrounding the complex is relatively flat. Except for the wind approaching over the downtown area, the upwind areas in all directions consists of low structures or water. The Renaissance Center itself consists of a circular central circular hotel 694 ft high surrounded by 4 octagonal office buildings each 482 ft high. The structures each have distinctive exposed circular elevator shafts. A number of lower buildings of shape

similar to the office buildings are located adjacent to the main building complex.

## 2. EXPERIMENTAL CONFIGURATION

### 2.1 Wind Tunnel

The wind study was performed in the Industrial Aerodynamics Wind Tunnel located in the Fluid Dynamics and Diffusion Laboratory at Colorado State University, Figure 1. The tunnel is a closed circuit facility driven by a 75 h.p. variable-pitch propeller. The test section is nominally 6 feet square and 62 feet long fed through a 4-to-1 contraction ratio. The roof is adjustable to maintain a zero pressure gradient along the test section. The mean velocity can be adjusted continuously from 1 to 65 fps.

### 2.2 Model

In order to obtain an accurate assessment of local pressures using piezometer taps, the model was constructed to the largest scale that would not produce serious blockage in the wind tunnel. A 1:240 scale model of the center tower and one office tower was constructed from 3/4 in. 'Lucite' plastic. Recent studies indicate that the mullion scale in the direction perpendicular to the building should be larger than that of the structure to correctly include the local pressure effects caused by the mullions [5]. A scale of 1:133 was selected for the office building mullions resulting in a model mullion depth of 0.090 inches compared to a depth of 0.050 inches that would have resulted from a 1:240 scale. Mullions were made from 0.125 x 0.030 in. spring steel pressed into 0.035 in. deep slots milled into the surface. The 3 in. mullions on the cylindrical hotel tower were modeled to approximately the same enlarged scale by raising the mullion surface with a cutting tool. The remaining buildings in the complex were

modeled from styrofoam: only those buildings to be instrumented with pressure taps were made from plastic.

Piezometer taps (1/16 in. dia.) were drilled normal to the exterior surface at 72 locations on the circular hotel structure and at 204 locations on the office building. The location of the taps on the structures is shown in Figures 2a to 2q. Because of the symmetrical placement of the four office structures about the central hotel tower and the generally homogeneous nature of the surrounding roughness characteristics, it was felt that wind loads on three of the outer structures could be obtained by reflection of data obtained on the one instrumented tower. For the wind directions with the city upwind, exact mirror imaging was not possible due to the elevator shaft on the center tower. However, this effect was judged to be a minor one, particularly since the loads for that wind direction were expected to be lower than for the open approach. Thus, the wind loads for the office structure with the city upwind were obtained by rotating the instrumented building (Tower 4, Figure 6) into the place of the other towers.

Two approach conditions were selected to be representative of all possible approach wind directions. An array of 1 in. cubes was selected to represent the upwind roughness characteristics of the relatively open approaches over low structures and water. A second approach condition was selected representing flow across the city center upwind. A model of the city for 8900 ft upstream on an approach wind azimuth of 286 degrees was constructed to scale and placed upstream of the model for winds approaching across the city.

The Renaissance Center model was mounted on a 63 in. dia. turntable centered 55 ft from the test section entrance. The turntable indicated azimuthal orientation to  $\pm 0.1$  degree.

The region upstream from the modeled area was covered with a randomized roughness constructed from 1 in. cubes. Spires at the test section entrance provided a thicker boundary layer than would otherwise be available. The distribution of 1 in. roughness was designed to provide a boundary layer thickness of approximately 4 ft, a velocity profile power law exponent similar to that for the Detroit area, and a logarithmic velocity profile with a realistic roughness length. A photograph of the complete model in-place in the wind tunnel is shown in Figure 3. The wind tunnel ceiling was adjusted after placement of the model to obtain a zero pressure gradient along the test section.

### 3. INSTRUMENTATION AND DATA ACQUISITION

#### 3.1 Flow Visualization

Visualization of the flow in the vicinity of the model is helpful in understanding and interpreting mean and fluctuating pressures, in defining zones of separated flow and reattachment where pressure coefficients may be expected to be high, and in indicating areas where pedestrian discomfort may be a problem. Titanium tetrachloride smoke was released from sources on and near the model and motion pictures records made. Conclusions obtained from these smoke studies are discussed in section 4.1.

#### 3.2 Pressures

Mean and fluctuating pressures were obtained at each of the 72 pressure ports on the center hotel tower and at the 204 locations on the instrumented office tower. A 12 in. length of 1/16 I.D. plastic tubing connected 68 pressure ports at a time to one of two 72 tap pressure switch mounted inside the model--one switch in each building. The switches (Model 1 in the office building and Model 2 in the hotel tower) were designed and fabricated in the Fluid Dynamics and Diffusion Laboratory to minimize the attenuation of pressure fluctuations across the switch. Each of the 68 measurement ports was directed in turn by the switch to one of the 4 pressure transducers mounted close to the switch. The switch was operated manually by means of a shaft projecting through the floor of the wind tunnel. A mechanical indexing feature locked the switch into each of the 18 required positions while a potentiometer provided an indication of the switch position on a digital voltmeter. The 4 pressure switch input taps not used for transmitting

building pressures were connected to a common tube leading outside the wind tunnel and provided a means of performing in-place calibration of the transducers. A photograph of the pressure switch in place is shown in Figure 4.

The pressure transducers used were "statham" differential strain-gage transducers (Model PM283TC) with a 0.15 psid range. They were selected for the stability and linearity in the working range required. The resonant frequency of the transducers was approximately 2000 Hz so that resonance effects could be ignored. A reference pressure was obtained by connecting the reference side of the transducer with plastic tubing to the static side of a pitot tube mounted in the wind tunnel free stream above the model building. In this way the transducer measured the instantaneous difference between the local surface pressure and the static pressure in the free stream above the model.

Each pressure transducer bridge was monitored by a Honeywell Accudata 118 Gage Control/Amplifier unit which provided excitation to the bridge and amplified the bridge output. These instruments are characterized by a very stable excitation voltage and amplifier gain. Output from the Honeywell signal conditioners was fed to an on-line 8 channel System Development, Inc., analog-to-digital conversion unit. The data was processed onto digital tape for later data analysis by computer. Resolution of conversion was  $\pm 0.0016$  in pressure coefficient. All 4 transducers were recorded simultaneously for 16 seconds at a 250 sample per second rate. The results of an experiment to determine the length of record required to obtain stable mean and rms pressures and to determine overall accuracy of the pressure data acquisition system is shown in Figure 5. A typical pressure port record was integrated

for a number of time periods to obtain the data shown. Examination of a large number of pressure taps showed that the overall accuracy for a 16 second average are, in pressure coefficient form, 0.03 for mean pressures, 0.1 for peak pressures and 0.01 for rms pressures. Pressure coefficients are defined in section 4.3.

Reduction of the raw data to usable form was performed on the Colorado State University CDC 6400 computer as described in section 4.3.

### 3.3 Velocity

Velocity and turbulence intensity profiles were made a short distance upstream of the building location for both the open approach flow conditions and for the city located upwind. In addition, mean velocity and turbulence intensity measurements were made 0.3 in. (6 ft prototype) above the surface at 9 locations near the building for 24 wind directions, Figure 6. The surface measurements were intended to indicate the environment to which a pedestrian in the plaza area would be subjected.

Measurements were made with a single hot-wire anemometer mounted with its axis vertical. The instrumentation used was a DISA constant temperature anemometer (Model 55D05) with a 0.001 in. dia. platinum film sensing element 0.020 in. long. Output was read from a Hewlett-Packard integrating digital voltmeter (Model 2401C) for mean voltage and a DISA RMS meter (Model 55D35) for rms voltage.

Calibration was performed by placing the anemometer in the free stream near the pitot tube used to record wind tunnel velocity and recording the output for several velocities. The calibration data was fit to a variable exponent King's Law relationship

$$E^2 = A + BU^n$$



where  $E$  is the hot-wire output voltage,  $U$  the approach velocity and  $A$ ,  $B$  and  $n$  are coefficients selected to fit the data. A typical calibration showing the linear relationship between  $E^2$  and  $U^n$  is plotted in Figure 7. The above relationship was used to recover the mean velocity at measurement points from the measured mean voltage. The fluctuating velocity in the form  $U_{\text{rms}}$  (root-mean-square velocity) was obtained from

$$U_{\text{rms}} = \frac{2 E E_{\text{rms}}}{B n U^{n-1}}$$

where  $E_{\text{rms}}$  is the root-mean-square voltage output from the anemometer. All turbulence measurements were divided by either local mean velocity  $U$  or mean velocity outside the boundary layer  $U_{\infty}$ . Division by  $U$  gives an indication of the relative unsteadiness at the location while division by  $U_{\infty}$  permits easy determination of the actual magnitude of rms velocity fluctuations at a point for various approach velocities.

## 4. RESULTS

### 4.1 Flow Visualization

A 900 ft film is included as part of this report showing the characteristics of flow about the structure with smoke. A listing of the contents of the film is shown in Table 1. Several features can be noted from the visualization. As with all large structures or structure complexes, wind approaching the Renaissance Center was deflected down to the plaza level, up over the structures and around the sides. In addition a strong jet of air was directed between two office towers (with wind approaching normal to a line through their centers) and around the hotel tower. The separation region near the separation point on the hotel tower associated with this jet (scene 8) was relatively thin and oscillatory indicating possible high pressure fluctuations at that region. Separation points on the office tower tended to be clean with little indication of pressure fluctuation problems. High velocity flow around the elevator shafts of the office towers indicated possible high pressures on the outermost portions. Wind in the plaza area appeared to be moderate with no indications of areas of severe pedestrian discomfort. The largest velocities were obtained on the podium near the corners.

### 4.2 Velocity

Approach velocity profiles for both approach configurations are shown in Figure 8a and b. The profiles were taken upstream from the model and are characteristic of the two boundary layers approaching the model. The boundary layer thickness,  $\delta$ , was 44 in. for the open approach and 48 in. for the city approach corresponding to prototype

values of 880 ft and 960 ft respectively. These are reasonable values for the Detroit area. In the form

$$\frac{U}{U_{\infty}} = \left[ \frac{Y}{\delta} \right]^n$$

the velocity profile has an exponent  $n$  of 0.24 for the open approach which is an acceptable value for city environments such as Detroit with moderate building heights. The profile with the city upwind shows a large reduction in velocity due to the built-up area. The profile plotted in Figure 9b is shown in semilogarithmic form. The effective roughness height  $Y_0$  indicated by the zero velocity intercept of the best fit line is 5.6 ft which is reasonable for the site modeled.

Profiles of longitudinal turbulence intensity are shown in Figure 9 for both upstream approach conditions. Modifications to the profiles due to structures located upwind are evident. For the purpose of this report, turbulence intensity is defined as the root-mean-square of the longitudinal velocity fluctuations divided by the reference mean velocity  $U_{\infty}$  at the outer edge of the boundary layer,

$$Tu_1 = \frac{U_{rms}}{U_{\infty}},$$

or as the rms velocity divided by the local mean velocity,

$$Tu_2 = \frac{U_{rms}}{U}.$$

Mean velocity and turbulence intensity at plaza locations 1-9 shown in Figure 6 for 24 wind directions are listed in Table 2 and some are plotted in Figures 10-16. Measurements were taken 0.3 in. (6 ft prototype) above the surface. A site map is superimposed on the polar plots to aid in visualization of the effects of structures and topography on the results. The largest mean velocities were recorded at point 2

for wind azimuths near zero and 180 degrees and at point 7 for winds near 120 and 300 degrees. Velocities greater than  $U_\infty$  were recorded under those circumstances. The largest values of fluctuating velocity were recorded at point 9 for 240 and 255 degrees wind azimuth. The rms velocity at that point was  $0.33 U_\infty$ . A number of other locations showed values in the range  $0.27$  to  $0.29 U_\infty$ . The highest "gustiness" values ( $U_{\text{rms}}/U$ ) were slightly over  $0.5 U$  at a number of sites. Large values of gustiness must be interpreted in terms of the magnitude of mean velocity since a low local wind velocity can lead to large values as effectively as large rms velocities.

#### 4.3 Pressures

For each of the pressure ports examined (13,200 total), the data record was analysed to obtain 4 separate pressure coefficients. The first was the mean pressure coefficient

$$C_{p_{\text{mean}}} = \frac{(p - p_\infty)_{\text{mean}}}{\frac{1}{2} \rho U_\infty^2}$$

where the symbols are as defined in the List of Symbols. It represents the mean of the instantaneous pressure difference between building pressure port and static pressure in the wind tunnel outside the boundary layer non-dimensionalized by the dynamic pressure  $\frac{1}{2} \rho U_\infty^2$  outside the boundary layer. The magnitude of the fluctuating pressure was obtained by the rms pressure coefficient

$$C_{p_{\text{rms}}} = \frac{[(p - p_\infty) - (p - p_\infty)_{\text{mean}}]_{\text{rms}}}{\frac{1}{2} \rho U_\infty^2}$$

in which the numerator is the root-mean-square of the instantaneous pressure difference about the mean.

If the pressure fluctuations followed a Gaussian probability distribution, no additional data would be required to predict the frequency with which any given pressure level would be observed. However, the pressure fluctuations do not follow a Gaussian probability distribution so that additional information is required to show the extreme values of pressure expected. The peak maximum and peak minimum pressure coefficients are used to determine these values:

$$C_{P_{\max}} = \frac{(p - p_{\infty})_{\max}}{\frac{1}{2} \rho U_{\infty}^2}$$

$$C_{P_{\min}} = \frac{(p - p_{\infty})_{\min}}{\frac{1}{2} \rho U_{\infty}^2}$$

The values of  $p - p_{\infty}$  which were digitized at 250 samples-per-second for 16 seconds were examined individually by the computer to obtain the most positive and most negative values during the 16 second period. These were converted to  $C_{P_{\max}}$  and  $C_{P_{\min}}$  by non-dimensionalizing with the free stream dynamic pressure.

The four pressure coefficients were calculated by the CSU CDC 6400 computer and tabulated on microfilm. The list of coefficients for both structures is included as Appendix A. The tap code number in the Appendix is given in Figure 2. In addition the Appendix includes the approach wind azimuth in degrees from true north. Placement of the city upwind for wind directions other than azimuth 286 degrees permits evaluation of pressures on all the office towers from the single instrumented tower (T4), using the symmetry described in Section 2.2.

In order to determine the largest loads acting at any point on the structure, the data for all wind directions was searched to obtain, at each pressure tap, the largest positive and negative mean values and

the largest positive and negative peak values. These values are tabulated, with their associated peak and rms or mean and rms values, in Tables 3-6. Table 3 provides pressure coefficients for the largest positive means. Table 4 provides pressure coefficient for the largest positive peaks. Table 5 provides pressure coefficients for the largest negative means. Table 6 provides pressure coefficients for the largest negative peaks. A number of values are missing in Table 6. In order to obtain pressure coefficients which could be used at these tap locations, it would be appropriate to use the peak minimum values for the same tap number from Table 5. The largest positive values on the hotel structure were between 1.1 and 1.2 and distributed over the upper portions of the structure. Seven locations were identified which had a minimum  $C_{p_{peak}}$  larger in magnitude than -2.8. These points were concentrated primarily on the upper half of the tower opposite to the elevator tower. Numerous other points had peak coefficients larger than -2.0. These negative pressures represent some of the largest pressures obtained in our wind tunnel tests on structures and indicate a strong adverse interaction of the flow with the adjacent office towers. The largest peak positive values on the office towers were in the range 1.2 to 1.3 located near the top of the structure. The largest negative peaks were between -2.3 and -2.4 and were confined to the region near the top of the structure.

The pressure coefficients of Tables 3-6 can be converted to full scale loads by multiplication by a suitable reference pressure selected for the field site. One method of arriving at a reference interval was obtained for Detroit from the proposed American National Standards Institute code A58.1 [6]. The magnitude was 90 mph for a

fastest mile wind at 30 ft elevation. A factor of 1.28 [7] was used to reduce this velocity to a one hour mean velocity--equivalent to the wind tunnel mean velocity. The resulting 70.9 mph was then translated to a prototype elevation equivalent to the height of the reference wind-tunnel measurement (880 ft) by means of a power law velocity profile with a 0.16 exponent. This exponent corresponds to the typical values near airports where the 50 yr recurrence winds in the ANSI standard are appropriate. The velocity of 880 ft was calculated as 121.7 mph. The appropriate reference pressure based on this velocity is given by  $0.00256 U^2$  from the ANSI standard. For Detroit, the reference pressure becomes 30 psf. A larger reference pressure would result if a larger recurrence interval were used. Tables 7-10 give psf loadings on the full scale structure which result from multiplication of the 30 psf reference pressure by the peak coefficients of Tables 3-6.

Recent research [8] indicates that the period of application of the peak pressures reported herein is about 4-5 seconds. If a glass design is based on these peak values, then a glass strength associated with this duration load is indicated. If the glass design is based on some alternate load duration--say 1 minute--then some reduction in peak loads should be made. An estimate of a load reduction factor can be obtained from an empirical relation of glass strength as a function of load duration. A relationship for annealed glass from Shand [9] indicates that a load reduction factor of 0.8 would correspond to a load duration change from 4-5 seconds to 60 seconds.

In order to determine the effect of the small towers located off of the podium on the pressure distribution on the outer office building, a series of tests were conducted with these towers located upstream of

the instrumented office tower (T4-Fig. 6). These tests showed a decrease in the absolute value of the pressure coefficients for the wind directions investigated. This result shows that the pressure coefficients reported may be slightly conservative for some of the lower taps on the outer office building. However, this difference was less than 10 percent.

#### 4.4 Forces and Moments

The forces and moments acting on the outer office tower were computed for six wind directions. These results are listed in Table 11. These forces were obtained using the mean pressure coefficients and integrating over the entire structure. This provided a force coefficient which was transformed into a load using the 50 year recurrence load of 30 psf (see section 4.3). The forces and moments listed are the total horizontal shear and the total overturning moment about the base of the building (podium level).



## 5. CONCLUSIONS

A simulated atmospheric boundary layer flow over the Renaissance Center model was established whose characteristics compared favorably with the expected flow over the Detroit area. Flow visualization showed fluctuating separation features at certain locations on the center hotel structure and on the elevator towers of office buildings suggesting high values of pressure coefficient in those regions. Smoke observation of the flow in the plaza area did not show any areas where severe pedestrian discomfort would be expected.

Measurements of fluctuating velocity in the plaza area indicated the largest value of fluctuating velocities occurred at plaza point 9 for 240 and 255 degree wind azimuths with an rms velocity 33 percent of the reference velocity above the boundary layer. These correspond to a local turbulence intensity of 41 percent of the local mean velocity. A number of other locations experienced rms velocities in the range of 27 to 29 percent of  $U_{\infty}$ . A number of points experienced relatively high local turbulence intensity (more than 50 percent of local mean). These points all experienced values of local mean velocity less than one-half the reference velocity. The largest values of mean velocity in the plaza were in excess of  $1.0 U_{\infty}$  at points 2 and 7.

Pressure measurements on the structures supported the flow visualization conclusion that the region on the circular tower near the flow separation point would have large negative pressures. The negative pressures on the hotel tower were more extreme (near -3.0) than is generally expected on a structure. The investigators felt that the presence of the office structures contributed significantly to the large pressures. Pressures on the office towers were more moderate

with most peak negative pressures below 2.0 in magnitude. Positive pressures reached values between 1.2 and 1.3--not an unusual occurrence.

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Table 1. MOTION PICTURE SCENE GUIDE

Scene	Wind Azimuth	Smoke Source	
1	286	Center Building	Level Two
2	286	Center Building	Level Four
3	286	Outer Building	Level One
4	286	Outer Building	Level Three
5	286	Plaza	Location Two
6	286	Plaza	Location Five
7	060	Center Building	Level Two
8	060	Center Building	Level Four
9	060	Outer Building	Level One
10	060	Outer Building	Level Three
11	060	Plaza	Location Five
12	060	Plaza	Location Seven
13	060	Outer Building	Level Two
14	070	Outer Building	Level Two
15	080	Outer Building	Level Two
16	090	Outer Building	Level Two
17	100	Outer Building	Level Two
18	110	Outer Building	Level Two
19	120	Outer Building	Level Two
20	300	Ground Level	Flow over Berm

Levels Correspond to Tap Locations, Fig. 2

Length ~ 900'

Time ~ 25 min

TABLE 2. MEAN AND FLUCTUATING VELOCITIES ON THE PLAZA (CONTINUED)

Wind Azimuth	Location 6			Location 7			Location 8			Location 9		
	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$
000	0.363	0.195	.537	0.296	0.138	.466	0.139	0.060	.431	0.285	0.132	.463
015	0.418	0.224	.536	0.219	0.104	.475	0.174	0.076	.437	0.278	0.121	.435
030	0.342	0.173	.506	0.250	0.122	.488	0.155	0.067	.432	0.287	0.131	.456
045	0.275	0.130	.473	0.240	0.106	.442	0.128	0.055	.430	0.426	0.179	.420
060	0.367	0.173	.474	0.264	0.128	.485	0.194	0.088	.454	0.500	0.218	.436
075	0.210	0.098	.466	0.617	0.263	.426	0.301	0.155	.515			
090	0.377	0.188	.499	1.041	0.291	.280	0.599	0.263	.439			
105	0.486	0.252	.519	1.159	0.192	.165	0.770	0.285	.370			
120	0.618	0.288	.466	1.190	0.143	.120	0.663	0.272	.410			
135	0.929	0.181	.195	1.005	0.137	.136	0.523	0.185	.354			
150	0.987	0.139	.141	0.797	0.134	.168	0.531	0.138	.260			
165	0.870	0.146	.168	0.589	0.148	.251	0.549	0.132	.240			
180	0.723	0.154	.213	0.517	0.230	.445	0.489	0.177	.362			
195	---	---		---	---		---	---				
210	0.422	0.156	.370	0.463	0.251	.542	0.377	0.150	.398			
225	0.272	0.125	.460	0.448	0.181	.404	0.457	0.133	.291			
240	0.301	0.151	.502	0.490	0.165	.337	0.527	0.131	.249	0.803	0.327	.407
255	0.460	0.214	.465	0.693	0.176	.254	0.724	0.195	.269	0.687	0.325	.405
270	0.611	0.221	.362	0.883	0.181	.205	0.941	0.241	.256	0.471	0.245	.520
285	0.747	0.197	.264	0.809	0.176	.217	0.668	0.259	.388	0.323	0.166	.514
300	0.835	0.175	.210	1.088	0.159	.146	0.873	0.290	.332	0.331	0.155	.468
315	0.893	0.169	.189	1.035	0.165	.159	0.573	0.220	.384	0.288	0.128	.444
330	0.983	0.182	.185	0.940	0.191	.203	0.282	0.150	.532	0.274	0.128	.467
345	0.800	0.265	.331	0.737	0.242	.328	0.164	0.079	.482	0.249	0.121	.486

TABLE 2. MEAN AND FLUCTUATING VELOCITIES ON THE PLAZA

Wind Azimuth	Location 1			Location 2			Location 3			Location 4			Location 5		
	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$	$U/U_\infty$	$U_{rms}/U_\infty$	$U_{rms}/U$
000	0.477	0.192	.403	1.190	0.143	.120	0.663	0.272	.410	0.618	0.288	.466	0.384	0.178	.464
015	0.414	0.179	.432	1.159	0.192	.166	0.770	0.285	.370	0.486	0.252	.519	0.468	0.212	.453
030	0.334	0.146	.437	1.041	0.291	.280	0.599	0.263	.439	0.377	0.188	.499	0.416	0.183	.440
045	0.266	0.124	.466	0.617	0.263	.426	0.301	0.155	.514	0.210	0.098	.467	0.344	0.147	.427
060	0.192	0.079	.411	0.249	0.124	.498	0.158	0.075	.475	0.202	0.091	.450	0.465	0.197	.424
075				0.240	0.106	.442	0.128	0.055	.429	0.275	0.130	.473	0.344	0.147	.427
090				0.250	0.122	.488	0.155	0.067	.432	0.342	0.173	.506	0.416	0.183	.440
105				0.219	0.104	.475	0.174	0.076	.437	0.418	0.224	.536	0.468	0.212	.453
120				0.296	0.138	.466	0.139	0.060	.432	0.363	0.195	.537	0.384	0.178	.463
135				0.737	0.242	.328	0.164	0.079	.482	0.800	0.265	.331	0.351	0.166	.473
150				0.940	0.191	.203	0.282	0.150	.532	0.983	0.182	.194	0.397	0.189	.476
165				1.035	0.165	.159	0.573	0.220	.384	0.893	0.169	.189	0.605	0.249	.412
180				1.088	0.159	.146	0.873	0.290	.332	0.835	0.175	.210	0.661	0.176	.266
195				---	---		---	---		---	---		---	---	
210				0.833	0.181	.205	0.941	0.241	.256	0.611	0.221	.362	0.741	0.207	.279
225				0.693	0.176	.254	0.724	0.195	.269	0.460	0.214	.465	0.688	0.206	.299
240	0.939	0.171	.182	0.657	0.181	.275	0.588	0.154	.262	0.309	0.154	.498	0.684	0.209	.306
255	0.855	0.184	.215	0.448	0.181	.404	0.457	0.133	.291	0.272	0.125	.460	0.688	0.206	.299
270	0.694	0.212	.305	0.463	0.251	.542	0.377	0.150	.398	0.422	0.156	.370	0.741	0.207	.279
285	0.587	0.196	.334	0.618	0.291	.471	0.335	0.153	.457	0.465	0.176	.378	0.500	0.165	.330
300	0.370	0.184	.497	0.517	0.230	.445	0.489	0.177	.362	0.723	0.154	.213	0.661	0.176	.266
315	0.230	0.109	.474	0.589	0.148	.251	0.549	0.132	.240	0.870	0.146	.168	0.605	0.249	.412
330	0.248	0.113	.456	0.797	0.134	.168	0.531	0.138	.260	0.987	0.139	.141	0.397	0.189	.476
345	0.345	0.147	.426	1.005	0.137	.136	0.523	0.185	.354	0.929	0.181	.195	0.351	0.166	.473

TABLE 3

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	296	-0.000	-0.000	-0.000	-0.000
2	306	-0.000	-0.000	-0.000	-0.000
3	306	-0.000	-0.000	-0.000	-0.000
4	306	-0.000	-0.000	-0.000	-0.000
5	286	.649	.140	1.083	-.048
6	306	-0.000	-0.000	-0.000	-0.000
7	330	.749	.102	1.068	.215
8	300	.769	.102	1.122	.371
9	280	.704	.095	1.012	.270
10	250	.736	.094	.985	.320
11	220	.729	.101	.977	.304
12	190	.781	.095	1.034	.424
13	190	.747	.107	1.018	.282
14	200	.771	.102	1.084	.449
15	180	.729	.101	.995	.299
16	160	.748	.108	1.073	.317
17	330	.677	.125	.983	.216
18	300	.633	.128	.977	.128
19	280	.704	.119	1.058	.263
20	250	.718	.108	1.054	.285
21	210	.684	.109	1.005	.321
22	180	.647	.100	.981	.294
23	180	.735	.102	.989	.358
24	180	.731	.101	.986	.364
25	180	.731	.109	1.014	.374
26	160	.692	.114	1.033	.210
27	320	.665	.127	1.062	.216
28	310	.127	.085	.446	-.201
29	270	.169	.091	.520	-.268
30	240	.633	.122	1.012	.258
31	220	.200	.074	.438	-.059
32	180	.318	.081	.587	.011
33	180	.547	.095	.696	.221
34	260	.592	.116	.950	.178
35	180	.540	.099	.863	-.098
36	160	.646	.124	1.031	.225

TABLE 3 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
37	330	.583	.128	1.043	.167
38	310	.081	.089	.483	-.235
39	270	.073	.143	.577	-.364
40	240	.583	.128	1.098	.181
41	230	.030	.127	.484	-.409
42	180	.251	.077	.542	-.007
43	180	.429	.096	.745	.129
44	180	.430	.095	.729	.157
45	180	.411	.099	.694	.097
46	170	.590	.125	.970	.125
47	320	.544	.119	.904	.226
48	300	.078	.106	.405	-.585
49	286	-0.000	-0.000	-0.000	-0.000
50	250	.529	.127	.932	.145
51	300	.488	.129	.899	.082
52	180	.190	.081	.520	-.066
53	180	.346	.092	.688	.048
54	180	.352	.090	.725	.077
55	180	.336	.093	.728	-.037
56	180	.499	.125	.922	.056
57	340	.347	.109	.764	.052
58	300	.143	.094	.545	-.239
59	286	-0.000	-0.000	-0.000	-0.000
60	240	.444	.128	.883	-.224
61	200	-.121	.075	.280	-.434
62	126	.136	.055	.342	-.027
63	180	.264	.096	.615	.013
64	180	.245	.084	.537	-.058
65	180	.221	.091	.601	-.039
66	170	.353	.063	.654	.188
67	306	-0.000	-0.000	-0.000	-0.000
68	110	.006	.081	.350	-.401
69	96	.096	.110	.474	-.202
70	10	.069	.091	.437	-.243
71	306	.012	.068	.314	-.194
72	340	.280	.110	.783	-.065



TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	70	-0.000	-0.000	-0.000	-0.000
2	70	-0.000	-0.000	-0.000	-0.000
3	220	.278	.278	1.119	-.704
4	70	-0.000	-0.000	-0.000	-0.000
5	216	.052	.085	.382	-.343
6	230	.011	.202	1.291	-.793
7	150	-0.000	-0.000	-0.000	-0.000
8	126	.095	.086	.410	-.509
9	96	.193	.137	.703	-.289
10	230	.255	.215	.921	-.539
11	330	.148	.151	.665	-.374
12	126	.186	.118	.553	-.196
13	190	.609	.116	.907	.191
14	170	.650	.141	.982	-.016
15	140	.658	.114	.985	.198
16	126	.620	.152	1.017	.057
17	116	.615	.148	1.090	.084
18	116	.612	.143	1.048	.134
19	116	.619	.147	1.092	.124
20	106	.577	.160	1.039	.001
21	96	.651	.155	1.110	.139
22	96	.588	.157	1.106	.135
23					
24	80	.545	.113	.889	.164
25	70	.604	.115	.938	.131
26	60	.556	.119	.886	.054
27	50	.535	.109	.898	.147
28	36	.550	.168	1.157	.007
29	36	.623	.156	1.063	.114
30	26	.586	.168	1.031	.043
31	26	.578	.167	1.082	.096
32	16	.515	.159	1.003	-.039
33	0	.517	.166	1.070	-.257
34	6	.187	.160	.903	-.495

TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
35	320	.486	.213	1.140	-.442
36	300	.495	.230	1.094	-.914
37	306	.356	.204	.908	-.575
38	306	.362	.209	.925	-.571
39	330	.005	.153	.643	-.611
40	106	-.048	.097	.260	-.493
41	106	-.076	.097	.186	-.661
42	230	.685	.153	1.279	-.036
43	230	.666	.162	1.159	-.309
44	216	.438	.259	1.254	-.613
45	206	.415	.195	1.215	-.285
46	206	.616	.182	1.259	-.003
47	206	.556	.166	1.056	.012
48	216	.551	.209	1.217	-.248
49	200	.515	.113	.811	.123
50	196	.561	.178	1.111	.020
51	190	.478	.113	.955	.079
52	180	.658	.109	.998	.299
53	160	.574	.119	.945	.112
54	140	.626	.119	1.008	.243
55	80	.891	.019	1.144	.627
56	110	.625	.113	.976	.260
57	110	.626	.117	.960	.261
58	110	.606	.116	.937	.256
59	100	.664	.102	1.030	.406
60	90	.624	.114	1.000	.237
61	90	.619	.116	.967	.245
62	80	.605	.126	.950	.265
63	70	.656	.123	.995	.274
64	60	.597	.114	.976	.269
65	50	.597	.126	.949	.214
66	40	.570	.122	.961	.133
67	40	.645	.115	.974	.305
68	20	.616	.125	.963	.113

TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	20	.621	.127	.974	.140
70	0	.599	.125	1.061	.164
71	0	.622	.134	1.311	.111
72	300	.553	.205	1.117	-.790
73	320	.406	.154	.925	-.307
74	306	.411	.158	.952	-.272
75	96	.046	.087	.502	-.239
76	96	.054	.096	.560	-.320
77	96	.002	.096	.555	-.318
78	230	.157	.282	.995	-1.009
79	240	.181	.290	1.065	-.911
80	216	.035	.149	.960	-.587
81	196	.167	.171	.827	-.449
82	196	.461	.151	1.056	.005
83	200	.564	.123	.979	.192
84	190	.629	.121	1.045	.169
85	190	.617	.121	1.044	.198
86	180	.636	.120	1.029	.262
87	180	.573	.122	.919	.222
88	160	.540	.118	.932	.157
89	140	.527	.132	.902	.034
90	130	.527	.108	.830	.230
91	110	.507	.120	.881	.095
92	110	.572	.113	.968	.254
93	110	.563	.117	.950	.228
94	110	.544	.116	.934	.222
95	100	.600	.110	.968	.220
96	90	.576	.109	.922	.280
97	90	.574	.110	.901	.264
98	80	.529	.126	.958	.069
99	70	.586	.121	.943	.264
100	60	.545	.118	.922	.198
101	60	.534	.117	.895	.244
102	50	.493	.120	.851	.117

TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
103	40	.575	.117	.930	.293
104	30	.526	.125	.943	.163
105	20	.539	.124	.947	.219
106	10	.540	.125	.903	.196
107	10	.630	.124	1.029	.312
108	10	.567	.118	.982	.249
109	10	.546	.129	.966	.180
110	10	.565	.134	1.041	.129
111	6	.099	.170	.639	-.757
112	300	.263	.147	.758	-.447
113	310	.421	.121	.801	-.112
114	310	.430	.104	.815	.031
115	310	.407	.127	.908	-.041
116	310	.483	.145	.953	-.116
117	320	.335	.116	.710	-.097
118	306	.313	.122	.787	-.089
119	106	.059	.091	.398	-.343
120	106	.039	.095	.415	-.460
121	106	.007	.095	.345	-.551
122	116	.055	.058	.217	-.176
123	106	.022	.075	.265	-.299
124	106	-.014	.087	.256	-.369
125	200	.131	.127	.691	-.215
126	200	.404	.127	1.000	-.019
127	200	.533	.111	.851	.208
128	210	.569	.140	1.130	-.023
129	210	.565	.131	.985	.027
130	210	.573	.129	1.040	.088
131	200	.577	.122	.978	.140
132	190	.488	.128	.872	.018
133	160	.419	.124	.884	.036
134	140	.489	.113	.931	.188
135	120	.294	.118	.660	-.099
136	110	.472	.103	.804	.104

TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	100	.479	.102	.854	.218
138	100	.461	.102	.820	.195
139	100	.531	.102	.897	.259
140	90	.466	.111	.847	.180
141	80	.465	.112	.845	.199
142	80	.449	.117	.879	.088
143	80	.507	.108	.962	.204
144	70	.475	.110	.875	.214
145	60	.448	.117	.870	.139
146	50	.425	.119	.831	.090
147	50	.500	.109	.871	.226
148	306	.994	.024	1.066	.916
149	306	1.004	.022	1.081	.932
150	306	.987	.023	1.057	.910
151	306	1.032	.022	1.103	.954
152	10	.494	.106	.800	.190
153	10	.487	.121	.821	.024
154	6	.085	.138	.614	-.533
155	300	.280	.122	.698	-.324
156	310	.390	.102	.773	.107
157	310	.392	.101	.793	.040
158	320	.380	.118	.848	.048
159	310	.268	.102	.707	-.053
160	306	.210	.077	.520	-.001
161	106	.098	.057	.320	-.122
162	106	.086	.059	.335	-.170
163	106	.054	.060	.328	-.310
164	106	.113	.062	.302	-.420
165	106	.074	.066	.317	-.311
166	106	.049	.067	.274	-.211
167	200	.116	.125	.617	-.229
168	200	.345	.126	.861	-.115
169	210	.451	.123	.890	.030
170	210	.483	.119	.885	-.019

TABLE 3 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
171	210	.474	.113	.840	-.056
172	210	.477	.114	.915	.009
173	150	.323	.081	.628	.079
174	150	.366	.099	.745	-.078
175	140	.373	.098	.813	.138
176	130	.264	.101	.622	.013
177	120	.239	.101	.621	.020
178	110	.395	.088	.724	.184
179	90	.386	.092	.755	.175
180	60	.357	.084	.688	.123
181	10	.434	.100	.845	.191
182	10	.439	.101	.784	.173
183	10	.396	.114	.781	.049
184	16	.104	.108	.484	-.353
185	320	.255	.114	.669	-.123
186	310	.300	.081	.602	.071
187	310	.283	.081	.593	.058
188	320	.255	.088	.709	.018
189	106	.148	.062	.379	-.148
190	320	.175	.096	.627	-.099
191	106	.190	.053	.391	-.029
192	106	.136	.051	.335	-.065
193	106	.136	.055	.482	-.030
194	106	.108	.051	.295	-.069
195	106	.130	.056	.327	-.145
196	106	.165	.051	.407	-.023
197	186	.109	.088	.424	-.167
198	186	.202	.092	.632	-.046
199	200	.231	.106	.596	-.026
200	200	.381	.107	.838	.138
201	200	.447	.103	.899	.203
202	200	.383	.110	.763	.110
203	200	.402	.097	.753	.183
204	200	.408	.102	.786	.180

TABLE 4

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	296	-0.000	-0.000	-0.000	-0.000
2	306	-0.000	-0.000	-0.000	-0.000
3	106	-.158	.074	.084	-.438
4	306	-0.000	-0.000	-0.000	-0.000
5	286	.649	.140	1.083	-.048
6	306	-0.000	-0.000	-0.000	-0.000
7	330	.749	.102	1.068	.218
8	300	.769	.102	1.122	.371
9	280	.704	.095	1.012	.279
10	250	.736	.094	.985	.330
11	210	.723	.098	1.057	.367
12	200	.730	.105	1.052	.280
13	180	.747	.097	1.045	.343
14	210	.691	.114	1.112	.259
15	286	.674	.170	1.148	.009
16	160	.748	.108	1.073	.317
17	320	.658	.111	1.026	.229
18	300	.633	.128	.977	.128
19	280	.704	.119	1.058	.263
20	240	.681	.123	1.142	.226
21	210	.684	.109	1.005	.321
22	180	.647	.100	.981	.294
23	170	.667	.112	1.014	.281
24	190	.607	.124	.995	-.095
25	190	.565	.165	1.057	-.379
26	160	.692	.114	1.033	.210
27	296	.553	.173	1.169	-.160
28	310	.127	.085	.446	-.201
29	270	.169	.091	.520	-.208
30	200	.292	.271	1.178	-.690
31	290	.174	.268	1.148	-.572
32	96	-.333	.294	.598	-1.500
33	286	.022	.252	1.056	-.820
34	260	.592	.116	.950	.178
35	180	.540	.099	.863	-.098
36	190	.420	.245	1.128	-.487

TABLE 4 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
37	300	.546	.138	1.072	-.031
38	260	-.060	.192	.779	-.623
39	280	-.013	.158	.607	-.595
40	240	.583	.128	1.098	.181
41	230	.030	.127	.484	-.409
42	100	-.258	.225	.671	-1.166
43	90	-.545	.293	.833	-1.576
44	310	-.142	.222	.856	-.853
45	170	.354	.104	.704	.029
46	190	.425	.250	1.025	-.695
47	300	.491	.130	1.001	.075
48	10	-.502	.161	.708	-.964
49	290	-.210	.155	.207	-.869
50	240	.525	.137	1.055	-.321
51	300	.488	.129	.899	.082
52	180	.190	.081	.520	-.066
53	180	.346	.092	.688	.048
54	180	.352	.090	.725	.077
55	180	.336	.093	.728	-.037
56	190	.401	.206	.964	-.401
57	320	.340	.118	.843	.017
58	300	.143	.094	.545	-.239
59	290	-.116	.108	.374	-.636
60	260	.400	.126	1.055	-.209
61	200	-.121	.075	.280	-.434
62	106	.059	.072	.497	-.168
63	200	.037	.122	.709	-.487
64	180	.245	.084	.537	-.058
65	180	.221	.091	.601	-.039
66	170	.353	.063	.654	.188
67	306	-0.000	-0.000	-0.000	-0.000
68	70	-.081	.121	.384	-.482
69	96	.096	.110	.474	-.202
70	20	.012	.095	.463	-.373
71	296	-.023	.076	.361	-.556
72	290	.171	.158	.798	-.330



TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	230	-.237	.152	.418	-1.148
2	296	-.171	.209	.693	-.834
3	230	-.032	.389	1.255	-1.390
4	230	-.219	.167	.527	-1.006
5	230	-.430	.205	.599	-1.337
6	230	.011	.202	1.291	-.793
7	230	-.110	.187	1.211	-1.119
8	216	-.011	.252	.654	-.817
9	106	.134	.157	.750	-.543
10	230	.255	.215	.921	-.539
11	6	-.095	.161	.667	-.717
12	116	.128	.145	.656	-.486
13	220	.097	.367	1.271	-1.321
14	220	-.077	.418	1.109	-1.514
15	126	.555	.165	1.013	-.082
16	116	.602	.177	1.277	-.078
17	116	.615	.148	1.090	.084
18	120	.555	.108	1.161	.162
19					
20					
21	116	.634	.142	1.127	.176
22	96	.588	.157	1.106	.135
23					
24	96	.489	.157	1.036	-.079
25	70	.604	.115	.938	.131
26	60	.556	.119	.886	.054
27	36	.401	.196	1.014	-.317
28	36	.550	.168	1.157	.007
29	26	.577	.167	1.121	.080
30	16	.548	.163	1.078	-.011
31	26	.578	.167	1.082	.096
32	0	.479	.147	1.187	-.286
33	0	.517	.166	1.070	-.257
34	6	.187	.160	.903	-.495

TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
35	290	.236	.291	1.247	-.786
36	290	.300	.282	1.275	-.661
37	270	-.230	.265	.934	-1.277
38	330	.138	.181	.983	-.615
39	296	-.158	.243	.934	-.865
40	276	-.134	.301	1.038	-1.538
41	240	-.317	.268	1.084	-1.501
42	250	.470	.270	1.389	-.580
43	230	.666	.162	1.159	-.309
44	216	.438	.259	1.254	-.613
45	206	.415	.195	1.215	-.285
46	210	.393	.205	1.268	-.638
47	220	.111	.289	1.084	-.710
48	216	.551	.209	1.217	-.248
49	220	.206	.335	1.085	-1.124
50	220	.271	.335	1.266	-.843
51	220	.323	.302	1.273	-.813
52	210	.495	.259	1.353	-.677
53	180	.473	.145	.996	-.013
54	140	.626	.119	1.008	.243
55	80	.891	.019	1.144	.627
56	106	.529	.145	1.012	.126
57	126	.491	.137	1.057	.113
58	106	.475	.132	1.002	.047
59	106	.544	.130	1.060	.122
60	96	.475	.133	1.035	.122
61	96	.440	.135	1.064	.054
62	96	.345	.145	.956	-.230
63	80	.598	.123	1.021	-.003
64	60	.597	.114	.976	.269
65	50	.597	.126	.949	.214
66	36	.409	.157	1.032	-.104
67	30	.640	.125	1.060	.243
68	26	.490	.151	1.053	.081

TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	26	.480	.147	1.036	.005
70	6	.479	.151	1.166	.031
71	0	.622	.134	1.311	.111
72	280	.045	.257	1.291	-.807
73	290	.225	.227	1.118	-.476
74	330	.119	.188	.976	-.535
75	320	.016	.171	.816	-.608
76	216	-.305	.261	.744	-1.225
77	210	-.952	.430	1.046	-2.370
78	240	.044	.308	1.124	-.930
79	210	-.149	.302	1.156	-1.043
80	216	.035	.149	.960	-.587
81	216	.044	.124	.853	-.491
82	210	.337	.189	1.091	-.308
83	210	.501	.179	1.304	-.193
84	210	.565	.171	1.251	-.029
85	210	.580	.157	1.194	-.072
86	210	.596	.154	1.238	-.062
87	210	.476	.186	1.052	-.431
88	160	.540	.118	.932	.157
89	140	.527	.132	.902	.034
90	120	.494	.125	.864	.048
91	110	.507	.120	.881	.095
92	110	.572	.113	.968	.254
93	110	.563	.117	.950	.228
94	110	.544	.116	.934	.222
95	110	.596	.115	.994	.291
96	90	.576	.109	.922	.280
97	80	.547	.123	.959	.211
98	80	.529	.126	.958	.069
99	70	.586	.121	.943	.264
100	60	.545	.118	.922	.198
101	60	.534	.117	.895	.244
102	40	.469	.130	.879	.093

TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
103	40	.575	.117	.930	.293
104	26	.367	.124	.994	.081
105	26	.383	.125	1.021	.081
106	0	.532	.125	1.042	.115
107	0	.624	.125	1.091	.233
108	6	.424	.134	1.029	.048
109	50	.511	.151	1.116	.104
110	10	.565	.134	1.041	.129
111	10	.011	.173	.719	-.686
112	280	-.012	.302	.973	-1.008
113	320	.334	.171	.875	-.462
114	320	.371	.137	.872	-.294
115	290	.299	.192	1.039	-.350
116	10	-.168	.407	1.190	-1.395
117	330	.207	.170	.872	-.529
118	330	.136	.152	.958	-.481
119	340	-.185	.169	.716	-.782
120	216	-.147	.204	.649	-.736
121	206	-.423	.253	.587	-1.315
122	196	-.349	.161	.784	-.890
123	250	-.228	.214	.767	-.787
124	270	-.451	.149	.622	-.826
125	196	.130	.158	.816	-.458
126	200	.404	.127	1.000	-.019
127	210	.527	.134	.964	-.020
128	210	.569	.140	1.130	-.023
129	220	.200	.264	1.058	-.654
130	210	.573	.129	1.040	.088
131	220	.297	.259	1.197	-.563
132	210	.472	.154	.941	-.279
133	280	.004	.298	.897	-1.095
134	140	.489	.113	.931	.188
135	140	.284	.139	.717	-.212
136	110	.472	.103	.804	.104

TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	110	.468	.116	.897	.198
138	110	.452	.115	.872	.173
139	100	.531	.102	.897	.259
140	100	.457	.105	.862	-.077
141	80	.465	.112	.845	.199
142	80	.449	.117	.879	.088
143	80	.507	.108	.962	.204
144	70	.475	.110	.875	.214
145	50	.395	.138	.892	-.015
146	50	.425	.119	.831	.090
147	50	.500	.109	.871	.226
148					
149					
150					
151					
152	40	.487	.106	.912	.212
153	0	.195	.248	.915	-.721
154	26	-.133	.213	.648	-.903
155	280	.099	.233	.834	-.739
156	310	.390	.102	.773	.107
157	330	.235	.151	.863	-.466
158	350	.084	.233	.977	-.545
159	340	.136	.159	.893	-.485
160	340	.048	.135	.763	-.499
161	340	-.048	.105	.448	-.479
162	106	.086	.059	.335	-.170
163	106	.054	.060	.328	-.310
164	240	-.300	.140	.469	-.652
165	240	-.236	.147	.507	-.597
166	196	-.069	.122	.576	-.484
167	200	.116	.125	.617	-.229
168	190	.298	.117	.876	-.028
169	210	.451	.123	.890	.030
170	210	.483	.119	.885	-.019

TABLE 4 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
171	200	.451	.111	.860	.143
172	210	.477	.114	.915	.009
173	210	.285	.130	.751	-.220
174	160	.328	.135	.809	-.154
175	140	.373	.098	.813	.138
176	110	.147	.148	.671	-.342
177	100	.199	.103	.642	-.092
178	100	.385	.084	.756	.193
179	90	.386	.092	.755	.175
180	40	.299	.087	.724	.061
181	30	.429	.092	.859	.213
182	50	.404	.092	.844	.169
183	350	.250	.200	.846	-.369
184	16	.104	.108	.484	-.353
185	290	.122	.176	.874	-.632
186	320	.298	.088	.781	.042
187	320	.282	.087	.724	.042
188	320	.255	.088	.709	.018
189	280	-.020	.233	.678	-.953
190	320	.175	.096	.627	-.099
191	280	-.047	.130	.454	-.533
192	280	-.022	.121	.388	-.539
193	106	.136	.055	.482	-.030
194	280	-.068	.123	.538	-.452
195	230	-.193	.101	.401	-.542
196	230	-.135	.108	.497	-.432
197	186	.109	.088	.424	-.167
198	200	.144	.118	.667	-.181
199	190	.200	.096	.708	-.161
200	200	.381	.107	.838	.138
201	200	.447	.103	.899	.203
202	190	.366	.108	.820	.093
203	210	.373	.122	.807	-.043
204	210	.383	.122	.844	-.054

TABLE 5

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	100	-.822	.108	-.487	-1.304
2	306	-0.000	-0.000	-0.000	-0.000
3	350	-1.532	.115	-.943	-1.879
4	50	-1.269	.121	-.583	-1.606
5	40	-1.338	.133	-.592	-1.743
6	110	-1.410	.150	-.800	-1.981
7	250	-1.909	.351	-.658	-2.692
8	230	-1.499	.262	-.577	-2.206
9	350	-1.216	.205	-.514	-1.737
10	320	-1.419	.259	-.552	-2.099
11	306	-1.571	.201	-.550	-2.131
12	110	-1.098	.165	-.232	-1.576
13	110	-1.120	.116	-.678	-1.522
14	286	-1.466	.173	-.952	-2.110
15	110	-1.127	.126	-.714	-1.655
16	110	-1.201	.221	-.752	-2.399
17	250	-2.265	.324	-1.059	-2.803
18	230	-1.802	.254	-.608	-2.622
19	180	-1.324	.239	-.524	-2.122
20	320	-1.654	.228	-.911	-2.343
21	306	-1.571	.265	-.645	-2.404
22	90	-.904	.243	.263	-1.953
23	100	-1.024	.259	.040	-2.137
24	100	-.997	.217	-.291	-1.988
25	110	-1.149	.425	-.276	-2.496
26	210	-1.702	.487	.139	-2.848
27	240	-2.143	.321	-.915	-2.794
28	240	-1.904	.207	-1.310	-2.749
29	330	-1.434	.228	-.407	-2.094
30	160	-1.540	.248	-.646	-2.334
31	150	-1.308	.154	-.672	-1.745
32	90	-.857	.313	.357	-1.979
33	90	-.868	.232	.266	-1.881
34	286	-2.099	.156	-1.482	-2.827
35	90	-.901	.243	-.047	-2.283
36	210	-1.323	.435	.432	-2.848

TABLE 5 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
37	230	-1.691	.363	-.404	-2.813
38	230	-1.612	.254	-.652	-2.586
39	330	-1.308	.225	-.479	-2.058
40	160	-1.344	.364	-.108	-2.455
41	150	-1.199	.192	-.302	-1.853
42	80	-.706	.232	.253	-1.646
43	80	-.812	.199	.391	-1.592
44	80	-.797	.175	-.099	-1.511
45	80	-.944	.277	.103	-2.480
46	220	-1.382	.440	.094	-2.830
47	240	-1.431	.299	-.467	-2.546
48	240	-1.616	.268	-.749	-2.568
49	330	-1.287	.179	-.688	-1.954
50	320	-1.274	.237	-.455	-1.983
51	150	-1.122	.151	-.744	-1.578
52	70	-.521	.123	-.191	-1.172
53	300	-.535	.168	-.016	-1.126
54	300	-.648	.193	.031	-1.247
55	300	-.696	.118	-.216	-1.134
56	80	-.583	.247	.293	-1.612
57	240	-1.101	.327	-.284	-2.351
58	240	-1.515	.277	-.557	-2.448
59	330	-1.061	.163	-.476	-1.615
60	320	-.939	.212	-.308	-1.828
61	160	-.915	.147	-.413	-1.407
62	306	-0.000	-0.000	-0.000	-0.000
63	80	-.386	.145	.214	-.996
64	80	-.394	.122	-.001	-.879
65	286	-.572	.076	-.436	-2.964
66	80	-.163	.121	.214	-.710
67	286	-1.407	.139	-.729	-2.296
68	150	-.674	.108	-.362	-1.127
69	286	-.333	.109	.003	-.805
70	70	-.615	.188	-.016	-1.163
71	286	-.905	.169	-.362	-1.526
72	250	-.768	.155	.011	-1.385



TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	170	-.843	.094	-.451	-1.254
2	180	-.787	.134	-.261	-1.387
3	180	-.825	.096	-.489	-1.251
4	170	-.844	.087	-.486	-1.130
5	50	-.781	.077	-.488	-1.044
6	50	-.706	.069	-.482	-.925
7	170	-.916	.084	-.643	-1.287
8	170	-.800	.087	-.518	-1.271
9	270	-.719	.154	-.232	-1.453
10	50	-.673	.067	-.418	-.898
11	170	-.836	.084	-.541	-1.172
12	180	-.724	.086	-.448	-1.187
13	50	-.639	.049	-.479	-.837
14	240	-.844	.344	.183	-2.365
15	180	-.992	.131	-.507	-1.422
16	30	-.937	.174	-.444	-1.662
17	180	-.934	.111	-.522	-1.455
18	180	-.880	.116	-.418	-1.381
19	180	-.900	.128	-.430	-1.495
20	180	-.746	.134	.183	-1.238
21	20	-.651	.155	-.127	-1.377
22	20	-.710	.110	-.308	-1.100
23	20	-.780	.099	-.490	-1.202
24	20	-.842	.109	-.488	-1.341
25	130	-.616	.105	-.256	-.960
26	180	-.537	.097	-.275	-.917
27	330	-.773	.192	-.116	-1.517
28	310	-.634	.117	-.212	-1.108
29	200	-.440	.076	-.199	-.892
30	270	-.531	.085	-.220	-.969
31	270	-.530	.098	-.234	-.999
32	270	-.789	.155	-.357	-1.475
33	270	-.899	.236	-.182	-1.773
34	50	-.725	.129	-.281	-1.149

TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
35	220	-.659	.200	-.020	-1.717
36	20	-1.046	.151	-.539	-1.862
37	20	-.912	.128	-.289	-1.441
38	20	-.829	.147	-.152	-1.294
39	200	-.743	.169	-.190	-1.650
40	210	-.861	.221	.225	-1.511
41	196	-1.075	.173	-.524	-1.688
42	300	-.782	.320	.491	-2.316
43	10	-.643	.182	-.204	-1.589
44	160	-.949	.141	-.464	-1.382
45	250	-.745	.154	-.109	-1.257
46	300	-.571	.158	-.136	-1.343
47	10	-.499	.076	-.266	-.812
48	10	-.490	.067	-.278	-.774
49	40	-.509	.049	-.340	-.711
50	40	-.529	.050	-.355	-.746
51	40	-.512	.067	-.330	-1.000
52	50	-.491	.056	-.295	-.723
53	250	-.827	.170	-.332	-1.655
54	180	-.905	.126	-.548	-1.585
55	50	-.939	.168	-.491	-1.620
56	180	-.764	.102	-.459	-1.885
57	180	-.766	.109	-.309	-1.441
58	180	-.740	.127	-.205	-1.405
59	180	-.645	.152	.075	-1.281
60	20	-.671	.116	-.245	-1.150
61	20	-.714	.101	-.379	-1.127
62	20	-.762	.102	-.436	-1.193
63	130	-.581	.124	-.197	-.932
64	190	-.473	.120	-.063	-1.035
65	0	-.755	.144	-.361	-1.401
66	300	-.622	.222	.313	-1.622
67	300	-.766	.202	-.073	-1.519
68	270	-.459	.060	-.220	-.689

TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	290	-.521	.217	.043	-1.384
70	310	-.774	.258	.025	-1.691
71	310	-.749	.226	.106	-1.557
72	20	-1.063	.205	-.226	-1.948
73	20	-.852	.239	.166	-1.658
74	200	-.741	.229	-.065	-1.826
75	200	-.720	.214	.065	-1.636
76	200	-.779	.230	.203	-1.839
77	210	-.952	.430	1.046	-2.370
78	300	-.829	.320	.347	-2.053
79	150	-.635	.133	-.249	-1.175
80	160	-.953	.126	-.294	-1.375
81	280	-.765	.170	-.286	-1.581
82	300	-.606	.173	-.066	-1.345
83	300	-.486	.171	.009	-1.383
84	290	-.445	.136	.093	-1.238
85	40	-.444	.048	-.272	-.630
86	40	-.455	.047	-.296	-.641
87	50	-.450	.051	-.249	-.628
88	250	-.622	.144	-.029	-1.241
89	180	-.947	.167	-.564	-1.938
90	180	-.805	.134	-.492	-1.592
91	180	-.784	.108	-.474	-1.406
92	180	-.741	.114	-.388	-1.226
93	180	-.791	.129	-.245	-1.493
94	180	-.757	.149	.084	-1.365
95	180	-.650	.179	.143	-1.261
96	20	-.634	.108	-.231	-1.085
97	20	-.676	.103	-.394	-1.187
98	20	-.715	.110	-.428	-1.355
99	20	-.535	.088	-.255	-.917
100	190	-.464	.122	-.089	-1.083
101	0	-.730	.146	-.335	-1.261
102	270	-.541	.053	-.311	-.807

TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
103	270	-.363	.049	-.165	-.629
104	300	-.494	.181	.166	-1.218
105	270	-.422	.058	-.212	-.670
106	310	-.549	.225	.104	-1.606
107	200	-.363	.067	-.176	-.732
108	310	-.605	.230	.238	-1.506
109	280	-.747	.217	-.197	-1.744
110	280	-.991	.248	-.434	-2.230
111	280	-1.040	.352	-.016	-2.460
112	30	-.920	.219	-.447	-1.812
113	30	-.831	.154	-.450	-1.552
114	280	-.997	.272	-.422	-2.742
115	40	-.786	.116	-.485	-1.320
116	40	-.730	.151	.004	-1.445
117	40	-.708	.135	-.222	-1.404
118	200	-.704	.212	-.043	-1.709
119	200	-.750	.211	.095	-1.680
120	200	-.818	.203	-.196	-1.793
121	200	-.866	.212	-.385	-2.021
122	300	-.850	.266	.016	-1.958
123	300	-.655	.289	.238	-1.742
124	160	-.898	.143	-.443	-1.402
125	280	-.683	.152	-.318	-1.445
126	280	-.600	.126	-.231	-1.296
127	280	-.499	.084	-.213	-.960
128	280	-.475	.110	-.033	-.925
129	280	-.433	.105	-.015	-.931
130	20	-.401	.052	-.204	-.662
131	30	-.414	.044	-.273	-.596
132	280	-1.045	.365	-.085	-2.485
133	250	-.524	.095	-.171	-.992
134	200	-.945	.182	-.328	-1.635
135	180	-.903	.155	-.484	-1.633
136	180	-.741	.108	-.420	-1.121

TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	180	-.792	.150	.051	-2.618
138	180	-.735	.170	.111	-2.127
139	190	-.584	.128	-.030	-1.150
140	20	-.606	.123	-.228	-1.128
141	20	-.653	.117	-.334	-1.369
142	20	-.693	.126	-.354	-1.680
143	20	-.529	.098	-.169	-.982
144	190	-.429	.104	-.077	-.940
145	0	-.699	.153	-.319	-1.328
146	270	-.549	.059	-.319	-.787
147	300	-.428	.123	-.020	-1.006
148	270	-.417	.056	-.105	-.703
149	310	-.441	.142	.243	-1.068
150	310	-.660	.143	.130	-1.407
151	310	-.477	.132	.040	-1.095
152	280	-.693	.152	-.252	-1.463
153	280	-.794	.180	-.371	-1.595
154	280	-1.197	.278	-.336	-2.264
155	30	-.841	.240	-.403	-1.972
156	30	-.728	.152	-.353	-1.757
157	30	-.679	.112	-.313	-1.223
158	30	-.774	.147	-.014	-1.416
159	30	-.744	.158	.244	-1.361
160	40	-.696	.130	-.172	-1.312
161	200	-.700	.165	-.025	-1.489
162	200	-.782	.147	-.353	-1.471
163	200	-.842	.157	-.379	-1.608
164	290	-.784	.172	-.294	-1.628
165	290	-.667	.184	-.069	-1.610
166	160	-.853	.168	-.396	-1.430
167	280	-.550	.112	-.160	-1.114
168	280	-.530	.120	-.138	-1.131
169	280	-.476	.113	-.103	-1.108
170	280	-.466	.095	-.106	-.855

TABLE 5 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
171	280	-.434	.081	-.089	-.730
172	30	-.439	.037	-.325	-.594
173	50	-.505	.040	-.394	-.642
174	250	-.420	.067	-.175	-.781
175	200	-.827	.189	-.224	-1.587
176	180	-.763	.127	-.434	-1.325
177	180	-.707	.118	-.344	-1.149
178	180	-.678	.127	-.213	-1.152
179	20	-.627	.121	-.295	-1.070
180	270	-.527	.044	-.366	-.676
181	200	-.487	-0.000	-0.000	-0.000
182	280	-.646	.145	-.160	-1.504
183	280	-.834	.196	-.422	-1.735
184	180	-.578	-0.000	-0.000	-0.000
185	30	-1.220	.263	-.577	-2.345
186	30	-.930	.223	-.426	-1.901
187	280	-.851	.201	-.422	-1.923
188	30	-.790	.161	.073	-1.442
189	80	-.431	.087	-.187	-.839
190	60	-.506	.161	.114	-1.133
191	160	-.389	.111	-.093	-.731
192	160	-.589	.110	-.270	-.974
193	160	-.719	.112	-.369	-1.181
194	170	-.795	.116	-.413	-1.326
195	160	-.625	.080	-.388	-.990
196	280	-.564	.134	-.103	-1.283
197	280	-.576	.102	-.152	-1.164
198	280	-.631	.109	-.329	-1.205
199	280	-.548	.108	-.224	-1.044
200	280	-.623	.098	-.302	-1.195
201	280	-.461	.096	-.188	-1.003
202	280	-.437	.073	-.221	-.990
203	280	-.465	.079	-.207	-.875
204	50	-.430	.040	-.325	-.569

TABLE 6

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	306	-.553	.070	-.427	-2.964
2	306	-0.000	-0.000	-0.000	-0.000
3	296	-1.508	.139	-.749	-1.954
4	210	-.949	.188	-.270	-1.795
5	50	-1.278	.125	-.755	-1.875
6	110	-1.410	.150	-.800	-1.981
7	250	-1.909	.351	-.658	-2.692
8	50	-1.164	.352	-.367	-2.320
9	40	-.718	.212	-.212	-2.484
10	30	-.615	.164	-.175	-2.220
11	306	-1.571	.201	-.550	-2.131
12	306	-.758	.278	-.098	-3.003
13	296	-.587	.187	-.002	-2.964
14	286	-1.466	.173	-.952	-2.110
15	110	-1.127	.126	-.714	-1.655
16	106	-.884	.334	-.168	-2.638
17	50	-2.109	.269	-1.245	-2.913
18	40	-1.710	.289	-.565	-2.841
19	30	-1.203	.296	-.087	-2.221
20	30	-.847	.303	-.068	-2.632
21	306	-1.571	.265	-.645	-2.404
22	90	-.904	.243	.263	-1.953
23	100	-1.024	.259	.040	-2.137
24	110	-.784	.346	-.109	-2.241
25	110	-1.149	.425	-.276	-2.496
26	100	-1.551	.449	-.149	-2.962
27	70	-1.911	.382	-.425	-2.912
28	240	-1.904	.207	-1.310	-2.749
29	120	-.989	.282	-.279	-2.191
30	290	-.623	.264	.034	-2.735
31	120	-.441	.216	.177	-2.139
32	306	-.279	.124	.105	-2.408
33	90	-.868	.232	.266	-1.881
34	286	-2.099	.156	-1.482	-2.827
35	90	-.901	.243	-.047	-2.283
36	210	-1.323	.435	.432	-2.848

TABLE 6 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
37	70	-1.629	.392	-.303	-2.912
38	230	-1.612	.254	-.652	-2.586
39	170	-1.016	.318	.010	-2.239
40	150	-1.294	.263	-.019	-2.521
41	286	-.327	.143	.052	-2.964
42	80	-.706	.232	.253	-1.646
43	80	-.812	.199	.391	-1.592
44	80	-.797	.175	-.099	-1.511
45	80	-.944	.277	.103	-2.480
46	220	-1.382	.440	.098	-2.830
47	240	-1.431	.299	-.467	-2.546
48	240	-1.616	.268	-.749	-2.568
49	296	-.321	.147	.059	-2.026
50	160	-1.177	.230	-.332	-2.181
51	160	-1.098	.194	-.438	-1.842
52	350	-.275	.104	.072	-1.211
53	300	-.535	.168	-.016	-1.126
54	300	-.648	.193	.031	-1.247
55	80	-.563	.190	-.009	-1.553
56	230	-.502	.161	-.147	-1.898
57	230	-.757	.325	-.227	-2.499
58	230	-1.406	.273	-.375	-2.492
59	320	-.994	.205	-.413	-1.820
60	320	-.939	.212	-.308	-1.828
61	150	-.906	.132	-.538	-1.495
62	96	.070	.068	.365	-.302
63	80	-.386	.145	.214	-.996
64	80	-.394	.122	-.001	-.879
65	286	-.572	.076	-.436	-2.964
66	220	-.125	.154	.213	-.846
67	286	-1.407	.139	-.729	-2.296
68	150	-.674	.108	-.362	-1.127
69	306	-.300	.080	-.096	-2.964
70	250	-.445	.137	.219	-1.340
71	286	-.905	.169	-.362	-1.526
72	240	-.717	.175	-.226	-1.499



TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1					
2	180	-.787	.134	-.261	-1.387
3	250	-.715	.148	-.025	-1.477
4					
5	280	-.707	.222	.147	-1.661
6	0	-.613	.113	-.157	-1.269
7	260	-.452	.200	.123	-1.336
8	250	-.715	.135	-.159	-1.473
9	280	-.712	.214	.047	-1.706
10	296	.003	.186	.767	-1.284
11	250	-.509	.240	.367	-1.380
12	220	-.578	.177	-.065	-1.546
13					
14					
15	186	-.863	.251	.022	-1.970
16					
17					
18	330	-.317	.103	.645	-1.593
19	180	-.900	.128	-.430	-1.495
20					
21					
22	190	-.582	.124	.021	-1.210
23	20	-.780	.099	-.490	-1.202
24	20	-.842	.109	-.488	-1.341
25	180	-.579	.113	-.259	-1.162
26	190	-.459	.110	-.083	-.992
27	330	-.773	.192	-.116	-1.517
28	310	-.634	.117	-.212	-1.108
29	270	-.418	.081	-.159	-.938
30	290	-.405	.136	-.030	-1.371
31	290	-.493	.168	-.012	-1.342
32	310	-.762	.202	-.088	-1.707
33	300	-.856	.208	-.186	-1.801
34	290	-.490	.179	.148	-1.256

TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
35	220	-.659	.200	-.020	-1.717
36	20	-1.046	.151	-.539	-1.862
37	10	-.742	.265	.247	-1.575
38	200	-.722	.155	-.175	-1.724
39	286	-.107	.245	.822	-1.744
40	286	-.133	.280	.929	-1.960
41					
42	300	-.782	.320	.491	-2.316
43	290	-.443	.322	.609	-1.884
44	280	-.377	.273	.836	-1.646
45					
46	296	-.506	.177	.092	-1.447
47	300	-.437	.146	-.020	-1.349
48	300	-.379	.124	.077	-1.183
49	320	-.305	.108	.065	-1.210
50	100	-.314	.073	-.125	-.882
51	40	-.512	.067	-.330	-1.000
52	80	-.318	.076	-.058	-1.239
53	230	-.795	.302	.159	-2.380
54	210	-.703	.255	-.133	-1.957
55					
56					
57	196	-.419	.166	-.004	-1.679
58					
59	190	-.588	.148	.086	-1.404
60	190	-.606	.157	.141	-1.346
61	190	-.613	.161	.043	-1.378
62	190	-.591	.180	.036	-1.378
63	190	-.485	.150	.045	-1.054
64	310	-.420	.161	.128	-1.248
65	300	-.495	.236	.241	-1.500
66	300	-.622	.222	.313	-1.622
67	300	-.766	.202	-.073	-1.519
68	290	-.414	.173	.048	-1.181

TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	290	-.521	.217	.043	-1.384
70	310	-.774	.258	.025	-1.691
71	310	-.749	.226	.106	-1.557
72	20	-1.063	.205	-.226	-1.948
73					
74	200	-.741	.229	-.065	-1.826
75	210	-.570	.255	.419	-1.668
76	210	-.708	.338	.261	-2.016
77	210	-.952	.430	1.046	-2.370
78	310	-.766	.313	.381	-2.373
79	320	-.606	.337	.688	-2.028
80	310	-.535	.205	.320	-1.657
81					
82	290	-.585	.159	-.093	-1.509
83	300	-.486	.171	.009	-1.383
84					
85	300	-.376	.136	.102	-1.053
86	100	-.272	.104	.048	-1.176
87	116	-.187	.158	.173	-1.169
88	220	-.291	.339	.817	-1.681
89	210	-.634	.254	-.156	-2.052
90	180	-.805	.134	-.492	-1.592
91	216	-.317	.175	.047	-1.790
92	180	-.741	.114	-.388	-1.226
93					
94	20	-.565	.161	-.035	-1.492
95	190	-.594	.152	-.088	-1.349
96	190	-.605	.160	.019	-1.273
97	190	-.596	.164	-.009	-1.388
98	190	-.559	.175	-.021	-1.482
99	190	-.456	.147	-.025	-1.114
100	190	-.464	.122	-.089	-1.083
101	190	-.506	.137	-.125	-1.429
102	300	-.390	.215	.368	-1.287

TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
103	310	-.281	.116	.286	-.826
104	80	.238	.079	.502	-1.506
105	310	-.369	.175	.128	-1.079
106	310	-.549	.225	.104	-1.606
107	200	-.363	.067	-.176	-.732
108					
109	290	-.626	.253	-.044	-1.823
110					
111					
112	40	-.915	.215	-.507	-2.138
113					
114	280	-.997	.272	-.422	-2.742
115	20	-.636	.255	.698	-1.655
116	200	-.575	.246	.186	-1.921
117					
118	200	-.704	.212	-.043	-1.709
119	200	-.750	.211	.095	-1.680
120	200	-.818	.203	-.196	-1.793
121	200	-.866	.212	-.385	-2.021
122	310	-.802	.261	.003	-1.970
123	300	-.655	.289	.238	-1.742
124	310	-.542	.204	.072	-1.491
125					
126	310	-.522	.175	.016	-1.366
127	300	-.476	.130	-.082	-1.019
128	310	-.412	.165	.060	-1.316
129	310	-.375	.141	.066	-1.434
130	120	-.380	.156	.414	-1.024
131	110	-.316	.129	-.010	-1.117
132	280	-1.045	.365	-.085	-2.485
133	280	.004	.298	.897	-1.095
134	190	-.914	.214	-.296	-1.671
135	190	-.693	.151	-.268	-1.747
136	220	-.315	.083	.004	-1.517

TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137					
138					
139					
140	190	-.584	.138	.006	-1.208
141	20	-.653	.117	-.334	-1.369
142					
143	200	-.430	.126	-.050	-1.126
144					
145	10	-.664	.165	-.219	-1.446
146	300	-.439	.132	.170	-1.011
147	300	-.428	.123	-.020	-1.006
148	290	-.337	.140	.101	-1.179
149	290	-.394	.166	.101	-1.161
150	310	-.660	.143	.130	-1.407
151	290	-.440	.186	.168	-1.309
152	280	-.693	.152	-.252	-1.463
153	280	-.794	.180	-.371	-1.595
154					
155	30	-.841	.240	-.403	-1.972
156	50	-.720	.131	-.341	-1.785
157	200	-.369	.217	.622	-1.349
158	20	-.627	.196	.154	-1.447
159					
160	200	-.652	.193	-.052	-1.402
161	200	-.700	.165	-.025	-1.489
162	210	-.692	.144	-.220	-1.475
163					
164	320	-.632	.221	-.105	-1.637
165	290	-.667	.184	-.069	-1.610
166	340	-.532	.150	-.019	-1.566
167	340	-.498	.136	-.097	-1.610
168	340	-.487	.145	-.082	-1.746
169	310	-.417	.159	.104	-1.162
170	320	-.379	.133	.001	-1.006

TABLE 6 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK PRESSURE COEFFICIENTS BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
171	310	-.373	.105	.006	-.956
172	110	-.331	.130	.016	-1.186
173	110	-.349	.148	-.065	-1.132
174	80	-.223	.095	.057	-.969
175	200	-.827	.189	-.224	-1.587
176	180	-.763	.127	-.434	-1.325
177	180	-.707	.118	-.344	-1.149
178	190	-.617	.125	-.341	-1.218
179	10	-.582	.121	-.311	-1.275
180	310	-.436	.073	-.186	-.805
181	280	-.305	.134	.152	-1.026
182	280	-.646	.145	-.160	-1.504
183	280	-.834	.196	-.422	-1.735
184	36	-.132	.178	.328	-.918
185	50	-1.097	.279	-.583	-2.395
186	50	-.827	.211	-.412	-2.194
187	280	-.851	.201	-.422	-1.923
188					
189	280	-.020	.233	.678	-.953
190	40	-.357	.206	.388	-1.202
191	140	-.296	.115	.144	-1.036
192	140	-.429	.121	.280	-1.362
193	210	-.708	.168	-.154	-1.513
194	200	-.789	.153	-.416	-1.407
195	160	-.625	.080	-.388	-.990
196	280	-.564	.134	-.103	-1.283
197	210	-.374	.141	.013	-1.202
198	280	-.631	.109	-.329	-1.205
199	290	-.542	.148	-.148	-1.399
200					
201	330	-.303	.114	-.011	-1.170
202	280	-.437	.073	-.221	-.990
203	280	-.465	.079	-.207	-.875
204	110	-.255	.132	.110	-.840

TABLE 7

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
CENTER BUILDING

MAXIMUM MEAN PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
1	296	0.000	0.000	0.000	0.000
2	306	0.000	0.000	0.000	0.000
3	306	0.000	0.000	0.000	0.000
4	306	0.000	0.000	0.000	0.000
5	286	19.470	4.200	32.490	-1.440
6	306	0.000	0.000	0.000	0.000
7	330	22.470	3.060	32.040	6.540
8	300	23.070	3.060	33.660	11.130
9	280	21.120	2.850	30.360	8.370
10	250	22.080	2.820	29.550	9.900
11	220	21.870	3.030	29.310	9.120
12	190	23.430	2.850	31.020	12.720
13	190	22.410	3.210	30.540	6.060
14	200	23.130	3.060	32.520	11.670
15	180	21.870	3.030	29.850	8.970
16	160	22.440	3.240	32.190	9.510
17	330	20.310	3.750	29.490	6.480
18	300	18.990	3.840	29.310	3.840
19	280	21.120	3.570	31.740	7.890
20	250	21.540	3.240	31.620	8.550
21	210	20.520	3.270	30.150	9.630
22	180	19.410	3.000	29.430	8.820
23	180	22.050	3.060	29.670	10.740
24	180	21.930	3.030	29.580	10.920
25	180	21.930	3.270	30.420	11.220
26	160	20.760	3.420	30.990	6.300
27	320	19.950	3.810	31.860	6.480
28	310	3.810	2.550	13.380	-6.030
29	270	5.070	2.730	15.600	-6.240
30	240	18.990	3.660	30.360	7.740
31	220	6.000	2.220	13.140	-1.770
32	180	9.540	2.430	17.610	.330
33	180	16.410	2.880	26.880	6.630
34	260	17.760	3.480	28.500	5.340
35	180	16.200	2.970	25.890	-2.940
36	160	19.380	3.720	30.930	6.750

TABLE 7 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM MEAN PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBRER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
37	330	17.490	3.840	31.290	5.010
38	310	2.430	2.670	14.490	-7.050
39	270	2.190	4.290	17.310	-10.920
40	240	17.490	3.840	32.940	5.430
41	230	.900	3.810	14.520	-12.270
42	180	7.530	2.310	16.260	-.210
43	180	12.870	2.880	22.350	3.870
44	180	12.900	2.850	21.870	4.710
45	180	12.330	2.970	20.820	2.910
46	170	17.700	3.750	29.100	3.750
47	320	16.320	3.570	27.120	6.780
48	300	2.340	3.180	12.150	-17.550
49	286	0.000	0.000	0.000	0.000
50	250	15.870	3.810	27.960	4.350
51	300	14.640	3.870	26.970	2.460
52	180	5.700	2.430	15.600	-1.980
53	180	10.380	2.760	20.640	1.440
54	180	10.560	2.700	21.750	2.310
55	180	10.080	2.790	21.840	-1.110
56	180	14.970	3.750	27.660	1.680
57	340	10.410	3.270	22.920	1.560
58	300	4.290	2.820	16.350	-7.170
59	286	0.000	0.000	0.000	0.000
60	240	13.320	3.840	26.490	-6.720
61	200	-3.630	2.250	8.400	-13.020
62	126	4.080	1.650	10.260	-.810
63	180	7.920	2.880	18.450	.390
64	180	7.350	2.520	16.110	-1.740
65	180	6.630	2.730	18.030	-1.170
66	170	10.590	1.890	19.620	5.640
67	306	0.000	0.000	0.000	0.000
68	110	.180	2.430	10.500	-12.030
69	96	2.880	3.300	14.220	-6.060
70	10	2.070	2.730	13.110	-7.290
71	306	.360	2.040	9.420	-5.820
72	340	8.400	3.300	23.490	-1.950



TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
1	70	0.000	0.000	0.000	0.000
2	70	0.000	0.000	0.000	0.000
3	220	8.340	8.340	33.570	-21.120
4	70	0.000	0.000	0.000	0.000
5	216	1.560	2.550	11.460	-10.290
6	230	.330	6.060	38.730	-23.790
7	150	0.000	0.000	0.000	0.000
8	126	2.850	2.580	12.300	-15.270
9	96	5.790	4.110	21.090	-8.670
10	230	7.650	6.450	27.630	-16.170
11	330	4.440	4.530	19.950	-11.220
12	126	5.580	3.540	16.590	-5.880
13	190	18.270	3.480	27.210	5.730
14	170	19.500	4.230	29.460	-.480
15	140	19.740	3.420	29.550	5.940
16	126	18.600	4.560	30.510	1.710
17	116	18.450	4.440	32.700	2.520
18	116	18.360	4.290	31.440	4.020
19	116	18.570	4.410	32.760	3.720
20	106	17.310	4.800	31.170	.030
21	96	19.530	4.650	33.300	4.170
22	96	17.640	4.710	33.180	4.050
23					
24	80	16.350	3.390	26.670	4.920
25	70	18.120	3.450	28.140	3.930
26	60	16.680	3.570	26.580	1.620
27	50	16.050	3.270	26.940	4.410
28	36	16.500	5.040	34.710	.210
29	36	18.690	4.680	31.890	3.420
30	26	17.580	5.040	30.930	1.290
31	26	17.340	5.010	32.460	2.880
32	16	15.450	4.770	30.090	-1.170
33	0	15.510	4.980	32.100	-7.710
34	6	5.610	4.800	27.090	-14.850

TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
35	320	14.580	6.390	34.200	-13.260
36	300	14.850	6.900	32.820	-27.420
37	306	10.680	6.120	27.240	-17.250
38	306	10.860	6.270	27.750	-17.130
39	330	.150	4.590	19.290	-18.330
40	106	-1.440	2.910	7.800	-14.790
41	106	-2.280	2.910	5.580	-19.830
42	230	20.550	4.590	38.370	-1.080
43	230	19.980	4.860	34.770	-9.270
44	216	13.140	7.770	37.620	-18.390
45	206	12.450	5.850	36.450	-8.550
46	206	18.480	5.460	37.770	-.090
47	206	16.680	4.980	31.680	.360
48	216	16.530	6.270	36.510	-7.440
49	200	15.450	3.390	24.330	3.690
50	196	16.830	5.340	33.330	.600
51	190	14.340	3.390	28.650	2.370
52	180	19.740	3.270	29.940	8.970
53	160	17.220	3.570	28.350	3.360
54	140	18.780	3.570	30.240	7.290
55	80	26.730	.570	34.320	18.810
56	110	18.750	3.390	29.280	7.800
57	110	18.780	3.510	28.800	7.830
58	110	18.180	3.480	28.110	7.680
59	100	19.920	3.060	30.900	12.180
60	90	18.720	3.420	30.000	7.110
61	90	18.570	3.480	29.010	7.350
62	80	18.150	3.780	28.500	7.950
63	70	19.680	3.690	29.850	8.220
64	60	17.910	3.420	29.280	8.070
65	50	17.910	3.780	28.470	6.420
66	40	17.100	3.660	28.830	3.990
67	40	19.350	3.450	29.220	9.150
68	20	18.480	3.750	28.890	3.390

TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
69	20	18.630	3.810	29.220	4.200
70	0	17.970	3.750	31.830	4.920
71	0	18.660	4.020	39.330	3.330
72	300	16.590	6.150	33.510	-23.700
73	320	12.180	4.620	27.750	-9.210
74	306	12.330	4.740	28.560	-8.160
75	96	1.380	2.610	15.060	-7.170
76	96	1.620	2.880	16.800	-9.600
77	96	.060	2.880	16.650	-9.540
78	230	4.710	8.460	29.850	-30.270
79	240	5.430	8.700	31.950	-27.330
80	216	1.050	4.470	28.800	-17.610
81	196	5.010	5.130	24.810	-13.470
82	196	13.830	4.530	31.680	.150
83	200	16.920	3.690	29.370	5.760
84	190	18.870	3.630	31.350	5.070
85	190	18.510	3.630	31.320	5.940
86	180	19.080	3.600	30.870	7.860
87	180	17.190	3.660	27.570	6.660
88	160	16.200	3.540	27.960	4.710
89	140	15.810	3.960	27.060	1.020
90	130	15.810	3.240	24.900	6.900
91	110	15.210	3.600	26.430	2.850
92	110	17.160	3.390	29.040	7.620
93	110	16.890	3.510	28.500	6.840
94	110	16.320	3.480	28.020	6.660
95	100	18.000	3.300	29.040	6.600
96	90	17.280	3.270	27.660	8.400
97	90	17.220	3.300	27.030	7.920
98	80	15.870	3.780	28.740	2.070
99	70	17.580	3.630	28.290	7.920
100	60	16.350	3.540	27.660	5.940
101	60	16.020	3.510	26.850	7.320
102	50	14.790	3.600	25.530	3.510

TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
103	40	17.250	3.510	27.900	8.790
104	30	15.780	3.750	28.290	4.890
105	20	16.170	3.720	28.410	6.570
106	10	16.200	3.750	27.090	5.880
107	10	18.900	3.720	30.870	9.360
108	10	17.010	3.540	29.460	7.470
109	10	16.380	3.870	28.980	5.400
110	10	16.950	4.020	31.230	3.870
111	6	2.970	5.100	19.170	-22.710
112	300	7.890	4.410	22.740	-13.410
113	310	12.630	3.630	24.030	-3.360
114	310	12.900	3.120	24.450	.930
115	310	12.210	3.810	27.240	-1.230
116	310	14.490	4.350	28.590	-3.480
117	320	10.050	3.480	21.300	-2.910
118	306	9.390	3.660	23.610	-2.670
119	106	1.770	2.730	11.940	-10.290
120	106	1.170	2.850	12.450	-13.800
121	106	.210	2.850	10.350	-16.530
122	116	1.650	1.740	6.510	-5.280
123	106	.660	2.250	7.950	-8.970
124	106	-.420	2.610	7.680	-11.070
125	200	3.930	3.810	20.730	-6.450
126	200	12.120	3.810	30.000	-.570
127	200	15.990	3.330	25.530	6.240
128	210	17.070	4.200	33.900	-.690
129	210	16.950	3.930	29.550	.810
130	210	17.190	3.870	31.200	2.640
131	200	17.310	3.660	29.340	4.200
132	190	14.640	3.840	26.160	.540
133	160	12.570	3.720	26.520	1.080
134	140	14.670	3.390	27.930	5.640
135	120	8.820	3.540	19.800	-2.970
136	110	14.160	3.090	24.120	3.120

TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
137	100	14.370	3.060	25.620	6.540
138	100	13.830	3.060	24.600	5.850
139	100	15.930	3.060	26.910	7.770
140	90	13.980	3.330	25.410	5.400
141	80	13.950	3.360	25.350	5.970
142	80	13.470	3.510	26.370	2.640
143	80	15.210	3.240	28.860	6.120
144	70	14.250	3.300	26.250	6.420
145	60	13.440	3.510	26.100	4.170
146	50	12.750	3.570	24.930	2.700
147	50	15.000	3.270	26.130	6.780
148					
149					
150					
151					
152	10	14.820	3.180	24.000	5.700
153	10	14.610	3.630	24.630	.720
154	6	2.550	4.140	18.420	-15.990
155	300	8.400	3.660	20.940	-9.720
156	310	11.700	3.060	23.190	3.210
157	310	11.760	3.030	23.790	1.200
158	320	11.400	3.540	25.440	1.440
159	310	8.040	3.060	21.210	-1.590
160	306	6.300	2.310	15.600	-.030
161	106	2.940	1.710	9.600	-3.660
162	106	2.580	1.770	10.050	-5.100
163	106	1.620	1.800	9.840	-9.300
164	106	3.390	1.860	9.060	-12.600
165	106	2.220	1.980	9.510	-9.330
166	106	1.470	2.010	8.220	-6.330
167	200	3.480	3.750	18.510	-6.870
168	200	10.350	3.780	25.830	-3.450
169	210	13.530	3.690	26.700	.900
170	210	14.490	3.570	26.550	-.570

TABLE 7 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
171	210	14.220	3.390	25.200	-1.680
172	210	14.310	3.420	27.450	.270
173	150	9.690	2.430	18.840	2.370
174	150	10.980	2.970	22.350	-2.340
175	140	11.190	2.940	24.390	4.140
176	130	7.920	3.030	18.660	.390
177	120	7.170	3.030	18.630	.600
178	110	11.850	2.640	21.720	5.520
179	90	11.580	2.760	22.650	5.250
180	60	10.710	2.520	20.640	3.690
181	10	13.020	3.000	25.350	5.730
182	10	13.170	3.030	23.520	5.190
183	10	11.880	3.420	23.430	1.470
184	16	3.120	3.240	14.520	-10.590
185	320	7.650	3.420	20.070	-3.690
186	310	9.000	2.430	18.060	2.130
187	310	8.490	2.430	17.790	1.740
188	320	7.650	2.640	21.270	.540
189	106	4.440	1.860	11.370	-4.440
190	320	5.250	2.880	18.810	-2.970
191	106	5.700	1.590	11.730	-.870
192	106	4.080	1.530	10.050	-1.950
193	106	4.080	1.650	14.460	-.900
194	106	3.240	1.530	8.850	-2.070
195	106	3.900	1.680	9.810	-4.350
196	106	4.950	1.530	12.210	-.690
197	186	3.270	2.640	12.720	-5.010
198	186	6.060	2.760	18.960	-1.380
199	200	6.930	3.180	17.880	-.780
200	200	11.430	3.210	25.140	4.140
201	200	13.410	3.090	26.970	6.090
202	200	11.490	3.300	22.890	3.300
203	200	12.060	2.910	22.590	5.490
204	200	12.240	3.060	23.580	5.400

TABLE 8

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM PEAK PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
1	296	0.000	0.000	0.000	0.000
2	306	0.000	0.000	0.000	0.000
3	106	-4.740	2.220	2.520	-13.140
4	306	0.000	0.000	0.000	0.000
5	286	19.470	4.200	32.490	-1.440
6	306	0.000	0.000	0.000	0.000
7	330	22.470	3.060	32.040	6.540
8	300	23.070	3.060	33.660	11.130
9	280	21.120	2.850	30.360	8.370
10	250	22.080	2.820	29.550	4.900
11	210	21.690	2.940	31.710	11.010
12	200	21.900	3.150	31.560	8.400
13	180	22.410	2.910	31.350	10.290
14	210	20.730	3.420	33.360	7.770
15	286	20.220	5.100	34.440	.270
16	160	22.440	3.240	32.190	9.510
17	320	19.740	3.330	30.780	6.870
18	300	18.990	3.840	29.310	3.840
19	280	21.120	3.570	31.740	7.890
20	240	20.430	3.690	34.260	6.780
21	210	20.520	3.270	30.150	9.630
22	180	19.410	3.000	29.430	8.820
23	170	20.010	3.360	30.420	8.430
24	190	18.210	3.720	29.850	-2.850
25	190	16.950	4.950	31.710	-11.370
26	160	20.760	3.420	30.990	6.300
27	296	16.590	5.190	35.070	-4.800
28	310	3.810	2.550	13.390	-6.030
29	270	5.070	2.730	15.600	-6.240
30	200	8.760	8.130	35.340	-20.700
31	290	5.220	8.040	34.440	-17.160
32	96	-9.990	8.820	17.940	-45.000
33	286	.660	7.560	31.680	-24.600
34	260	17.760	3.480	28.500	5.340
35	180	16.200	2.970	25.890	-2.940
36	190	12.600	7.350	33.840	-14.610

TABLE 8 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MAXIMUM PEAK PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
37	300	16.380	4.140	32.160	-.930
38	260	-1.800	5.760	23.370	-18.690
39	280	-.390	4.740	18.210	-17.850
40	240	17.490	3.840	32.940	5.430
41	230	.900	3.810	14.520	-12.270
42	100	-7.740	6.750	20.130	-34.980
43	90	-16.350	8.790	24.990	-47.280
44	310	-4.260	6.660	25.680	-25.590
45	170	10.620	3.120	21.120	.870
46	190	12.750	7.500	30.750	-20.850
47	300	14.730	3.900	30.030	2.250
48	10	-15.060	4.830	21.240	-28.920
49	290	-6.300	4.650	6.210	-26.070
50	240	15.750	4.110	31.650	-9.630
51	300	14.640	3.870	26.970	2.460
52	180	5.700	2.430	15.600	-1.980
53	180	10.380	2.760	20.640	1.440
54	180	10.560	2.700	21.750	2.310
55	180	10.080	2.790	21.840	-1.110
56	190	12.030	6.180	28.920	-12.030
57	320	10.200	3.540	25.290	.510
58	300	4.290	2.820	16.350	-7.170
59	290	-3.480	3.240	11.220	-19.080
60	260	12.000	3.780	31.650	-6.270
61	200	-3.630	2.250	8.400	-13.020
62	106	1.770	2.160	14.910	-5.040
63	200	1.110	3.660	21.270	-14.610
64	180	7.350	2.520	16.110	-1.740
65	180	6.630	2.730	18.030	-1.170
66	170	10.590	1.890	19.620	5.640
67	306	0.000	0.000	0.000	0.000
68	70	-2.430	3.630	11.520	-14.460
69	96	2.880	3.300	14.220	-6.060
70	20	.360	2.850	13.890	-11.190
71	296	-.690	2.280	10.830	-16.680
72	290	5.130	4.740	23.940	-9.900



TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS(PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
1	230	-7.110	4.560	12.540	-34.440
2	296	-5.130	6.270	20.790	-25.020
3	230	-.960	11.670	37.650	-41.700
4	230	-6.570	5.010	15.810	-30.180
5	230	-12.900	6.150	17.970	-40.110
6	230	.330	6.060	38.730	-23.790
7	230	-3.300	5.610	36.330	-33.570
8	216	-.330	7.560	19.620	-24.510
9	106	4.020	4.710	22.500	-16.290
10	230	7.650	6.450	27.630	-16.170
11	6	-2.850	4.830	20.010	-21.510
12	116	3.840	4.350	19.680	-14.580
13	220	2.910	11.010	38.130	-39.630
14	220	-2.310	12.540	33.270	-45.420
15	126	16.650	4.950	30.390	-2.460
16	116	18.060	5.310	38.310	-2.340
17	116	18.450	4.440	32.700	2.520
18	120	16.650	3.240	34.830	4.860
19					
20					
21	116	19.020	4.260	33.810	5.280
22	96	17.640	4.710	33.180	4.050
23					
24	96	14.670	4.710	31.080	-2.370
25	70	18.120	3.450	28.140	3.930
26	60	16.680	3.570	26.580	1.620
27	36	12.030	5.880	30.420	-9.510
28	36	16.500	5.040	34.710	.210
29	26	17.310	5.010	33.630	2.400
30	16	16.440	4.890	32.340	-.330
31	26	17.340	5.010	32.460	2.880
32	0	14.370	4.410	35.610	-8.580
33	0	15.510	4.980	32.100	-7.710
34	6	5.610	4.800	27.090	-14.850

TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
35	290	7.080	8.730	37.410	-23.580
36	290	9.000	8.460	38.250	-19.830
37	270	-6.900	7.950	28.020	-38.310
38	330	4.140	5.430	29.490	-18.450
39	296	-4.740	7.290	28.020	-25.950
40	276	-4.020	9.030	31.140	-46.140
41	240	-9.510	8.040	32.520	-45.030
42	250	14.100	8.100	41.670	-17.400
43	230	19.980	4.860	34.770	-9.270
44	216	13.140	7.770	37.620	-18.390
45	206	12.450	5.850	36.450	-8.550
46	210	11.790	6.150	38.040	-19.140
47	220	3.330	8.670	32.520	-21.300
48	216	16.530	6.270	36.510	-7.440
49	220	6.180	10.050	32.550	-33.720
50	220	8.130	10.050	37.980	-25.290
51	220	9.690	9.060	38.190	-24.390
52	210	14.850	7.770	40.590	-20.310
53	180	14.190	4.350	29.880	-.390
54	140	18.780	3.570	30.240	7.290
55	80	26.730	.570	34.320	18.810
56	106	15.870	4.350	30.360	3.780
57	126	14.730	4.110	31.710	3.390
58	106	14.250	3.960	30.060	1.410
59	106	16.320	3.900	31.800	3.660
60	96	14.250	3.990	31.050	3.660
61	96	13.200	4.050	31.920	1.620
62	96	10.350	4.350	28.680	-6.900
63	80	17.940	3.690	30.630	-.090
64	60	17.910	3.420	29.280	8.070
65	50	17.910	3.780	28.470	6.420
66	36	12.270	4.710	30.960	-3.120
67	30	19.200	3.750	31.800	7.290
68	26	14.700	4.530	31.590	2.430

TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
69	26	14.400	4.410	31.080	.150
70	6	14.370	4.530	34.980	.930
71	0	18.660	4.020	39.330	3.330
72	280	1.350	7.710	38.730	-24.210
73	290	6.750	6.810	33.540	-14.280
74	330	3.570	5.640	29.280	-16.050
75	320	.480	5.130	24.480	-18.240
76	216	-9.150	7.830	22.320	-36.750
77	210	-28.560	12.900	31.380	-71.100
78	240	1.320	9.240	33.720	-27.900
79	210	-4.470	9.060	34.680	-31.290
80	216	1.050	4.470	28.800	-17.610
81	216	1.320	3.720	25.590	-14.730
82	210	10.110	5.670	32.730	-9.240
83	210	15.030	5.370	39.120	-5.790
84	210	16.950	5.130	37.530	-.870
85	210	17.400	4.710	35.820	-2.160
86	210	17.880	4.620	37.140	-1.860
87	210	14.280	5.580	31.560	-12.930
88	160	16.200	3.540	27.960	4.710
89	140	15.810	3.960	27.060	1.020
90	120	14.820	3.750	25.920	1.440
91	110	15.210	3.600	26.430	2.850
92	110	17.160	3.390	29.040	7.620
93	110	16.890	3.510	28.500	6.840
94	110	16.320	3.480	28.020	6.660
95	110	17.880	3.450	29.820	8.730
96	90	17.280	3.270	27.660	8.400
97	80	16.410	3.690	28.770	6.330
98	80	15.870	3.780	28.740	2.070
99	70	17.580	3.630	28.290	7.920
100	60	16.350	3.540	27.660	5.940
101	60	16.020	3.510	26.850	7.320
102	40	14.070	3.900	26.370	2.790

TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
103	40	17.250	3.510	27.900	8.790
104	26	11.010	3.720	29.820	2.430
105	26	11.490	3.750	30.630	2.430
106	0	15.960	3.750	31.260	3.450
107	0	18.720	3.750	32.730	6.990
108	6	12.720	4.020	30.870	1.440
109	50	15.330	4.530	33.480	3.120
110	10	16.950	4.020	31.230	3.870
111	10	.330	5.190	21.570	-20.580
112	280	-.360	9.060	29.190	-30.240
113	320	10.020	5.130	26.250	-13.860
114	320	11.130	4.110	26.160	-8.820
115	290	8.970	5.760	31.170	-10.500
116	10	-5.040	12.210	35.700	-41.850
117	330	6.210	5.100	26.160	-15.870
118	330	4.080	4.560	28.740	-14.430
119	340	-5.550	5.070	21.480	-23.460
120	216	-4.410	6.120	19.470	-22.080
121	206	-12.690	7.590	17.610	-39.450
122	196	-10.470	4.830	23.520	-26.700
123	250	-6.840	6.420	23.010	-23.610
124	270	-13.530	4.470	18.660	-24.780
125	196	3.900	4.740	24.480	-13.740
126	200	12.120	3.810	30.000	-.570
127	210	15.810	4.020	28.920	-.600
128	210	17.070	4.200	33.900	-.690
129	220	6.000	7.920	31.740	-19.620
130	210	17.190	3.870	31.200	2.640
131	220	8.910	7.770	35.910	-16.890
132	210	14.160	4.620	28.230	-8.370
133	280	.120	8.940	26.910	-32.850
134	140	14.670	3.390	27.930	5.640
135	140	8.520	4.170	21.510	-6.360
136	110	14.160	3.090	24.120	3.120

TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
137	110	14.040	3.480	26.910	5.940
138	110	13.560	3.450	26.160	5.190
139	100	15.930	3.060	26.910	7.770
140	100	13.710	3.150	25.860	-2.310
141	80	13.950	3.360	25.350	5.970
142	80	13.470	3.510	26.370	2.640
143	80	15.210	3.240	28.860	6.120
144	70	14.250	3.300	26.250	6.420
145	50	11.850	4.140	26.760	-.450
146	50	12.750	3.570	24.930	2.700
147	50	15.000	3.270	26.130	6.780
148					
149					
150					
151					
152	40	14.610	3.180	27.360	6.360
153	0	5.850	7.440	27.450	-21.630
154	26	-3.990	6.390	19.440	-27.090
155	280	2.970	6.990	25.020	-22.170
156	310	11.700	3.060	23.190	3.210
157	330	7.050	4.530	25.890	-13.980
158	350	2.520	6.990	29.310	-16.350
159	340	4.080	4.770	26.790	-14.550
160	340	1.440	4.050	22.890	-14.970
161	340	-1.440	3.150	13.440	-14.370
162	106	2.580	1.770	10.050	-5.100
163	106	1.620	1.800	9.840	-9.300
164	240	-9.000	4.200	14.070	-19.560
165	240	-7.080	4.410	15.210	-17.910
166	196	-2.070	3.660	17.280	-14.520
167	200	3.480	3.750	18.510	-6.870
168	190	8.940	3.510	26.280	-.840
169	210	13.530	3.690	26.700	.900
170	210	14.490	3.570	26.550	-.570

TABLE 8 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MAXIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MAXIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
171	200	13.530	3.330	25.800	4.290
172	210	14.310	3.420	27.450	.270
173	210	8.550	3.900	22.530	-6.600
174	160	9.840	4.050	24.270	-4.620
175	140	11.190	2.940	24.390	4.140
176	110	4.410	4.440	20.130	-10.260
177	100	5.970	3.090	19.260	-2.760
178	100	11.550	2.520	22.680	5.790
179	90	11.580	2.760	22.650	5.250
180	40	8.970	2.610	21.720	1.830
181	30	12.870	2.760	25.770	6.390
182	50	12.120	2.760	25.320	5.070
183	350	7.500	6.000	25.380	-11.070
184	16	3.120	3.240	14.520	-10.590
185	290	3.660	5.280	26.220	-18.960
186	320	8.940	2.640	23.430	1.260
187	320	8.460	2.610	21.720	1.260
188	320	7.650	2.640	21.270	.540
189	280	-.600	6.990	20.340	-28.590
190	320	5.250	2.880	18.810	-2.970
191	280	-1.410	3.900	13.620	-15.990
192	280	-.660	3.630	11.640	-16.170
193	106	4.080	1.650	14.460	-.900
194	280	-2.040	3.690	16.140	-13.560
195	230	-5.790	3.030	12.030	-16.260
196	230	-4.050	3.240	14.910	-12.960
197	186	3.270	2.640	12.720	-5.010
198	200	4.320	3.540	20.010	-5.430
199	190	6.000	2.880	21.240	-4.830
200	200	11.430	3.210	25.140	4.140
201	200	13.410	3.090	26.970	6.090
202	190	10.980	3.240	24.600	2.790
203	210	11.190	3.660	24.210	-1.290
204	210	11.490	3.660	25.320	-1.620

TABLE 9

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM MEAN PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF (50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
1	100	-24.660	3.240	-14.610	-39.120
2	306	0.000	0.000	0.000	0.000
3	350	-45.960	3.450	-28.290	-56.370
4	50	-38.070	3.630	-17.490	-48.180
5	40	-40.140	3.990	-17.760	-52.290
6	110	-42.300	4.500	-24.000	-59.430
7	250	-57.270	10.530	-19.740	-80.760
8	230	-44.970	7.860	-17.310	-66.180
9	350	-36.480	6.150	-15.420	-52.110
10	320	-42.570	7.770	-16.560	-62.970
11	306	-47.130	6.030	-16.500	-63.930
12	110	-32.940	4.950	-6.960	-47.280
13	110	-33.600	3.480	-20.340	-45.660
14	286	-43.980	5.190	-28.560	-63.300
15	110	-33.810	3.780	-21.420	-49.650
16	110	-36.030	6.630	-22.560	-71.970
17	250	-67.950	9.720	-31.770	-84.090
18	230	-54.060	7.620	-18.240	-78.660
19	180	-39.720	7.170	-15.720	-63.660
20	320	-49.620	6.840	-27.330	-70.290
21	306	-47.130	7.950	-19.350	-72.120
22	90	-27.120	7.290	7.890	-58.590
23	100	-30.720	7.770	1.200	-64.110
24	100	-29.910	6.510	-8.730	-59.640
25	110	-34.470	12.750	-8.280	-74.880
26	210	-51.060	14.610	4.170	-85.440
27	240	-64.290	9.630	-27.450	-83.820
28	240	-57.120	6.210	-39.300	-82.470
29	330	-43.020	6.840	-12.210	-62.820
30	160	-46.200	7.440	-19.380	-70.020
31	150	-39.240	4.620	-20.160	-52.350
32	90	-25.710	9.390	10.710	-59.370
33	90	-26.040	6.960	7.980	-56.430
34	286	-62.970	4.680	-44.460	-84.810
35	90	-27.030	7.290	-1.410	-68.490
36	210	-39.690	13.050	12.960	-85.440

TABLE 9 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
CENTER BUILDINGMINIMUM MEAN PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF (50 YP. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
37	230	-50.730	10.890	-12.120	-84.390
38	230	-48.360	7.620	-19.560	-77.580
39	330	-39.240	6.750	-14.370	-61.740
40	160	-40.320	10.920	-3.240	-73.650
41	150	-35.970	5.760	-9.060	-55.590
42	80	-21.180	6.960	7.590	-49.380
43	80	-24.360	5.970	11.730	-47.760
44	80	-23.910	5.250	-2.970	-45.330
45	80	-28.320	8.310	3.090	-74.400
46	220	-41.460	13.200	2.940	-84.900
47	240	-42.930	8.970	-14.010	-76.380
48	240	-48.480	8.040	-22.470	-77.040
49	330	-38.610	5.370	-20.640	-54.620
50	320	-38.220	7.110	-13.650	-59.490
51	150	-33.660	4.530	-22.320	-47.340
52	70	-15.630	3.690	-5.730	-35.160
53	300	-16.050	5.040	-.480	-33.780
54	300	-19.440	5.790	.930	-37.410
55	300	-20.880	3.540	-6.480	-34.020
56	80	-17.490	7.410	8.790	-48.360
57	240	-33.030	9.810	-8.520	-70.530
58	240	-45.450	8.310	-16.710	-73.440
59	330	-31.830	4.890	-14.280	-48.450
60	320	-28.170	6.360	-9.240	-54.840
61	160	-27.450	4.410	-12.390	-42.210
62	306	0.000	0.000	0.000	0.000
63	80	-11.580	4.350	6.420	-29.480
64	80	-11.820	3.660	-.030	-26.370
65	286	-17.160	2.280	-13.080	-88.920
66	80	-4.890	3.630	6.420	-21.300
67	286	-42.210	4.170	-21.870	-68.880
68	150	-20.220	3.240	-10.460	-33.810
69	286	-9.990	3.270	.090	-24.180
70	70	-18.450	5.640	-.480	-34.890
71	286	-27.150	5.070	-10.860	-45.780
72	250	-23.040	4.650	.330	-41.550



TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
1	170	-25.290	2.820	-13.530	-37.620
2	180	-23.610	4.020	-7.830	-41.610
3	180	-24.750	2.880	-14.670	-37.530
4	170	-25.320	2.610	-14.580	-33.900
5	50	-23.430	2.310	-14.640	-31.320
6	50	-21.180	2.070	-14.460	-27.750
7	170	-27.480	2.520	-19.290	-38.610
8	170	-24.000	2.610	-15.540	-38.130
9	270	-21.570	4.620	-6.960	-43.590
10	50	-20.190	2.010	-12.540	-26.940
11	170	-25.080	2.520	-16.230	-35.160
12	180	-21.720	2.580	-13.440	-35.610
13	50	-19.170	1.470	-14.370	-25.110
14	240	-25.320	10.320	5.490	-70.950
15	180	-29.760	3.930	-15.210	-42.660
16	30	-28.110	5.220	-13.320	-49.860
17	180	-28.020	3.330	-15.660	-43.650
18	180	-26.400	3.480	-12.540	-41.430
19	180	-27.000	3.840	-12.900	-44.850
20	180	-22.380	4.020	5.490	-37.140
21	20	-19.530	4.650	-3.810	-41.310
22	20	-21.300	3.300	-9.240	-33.000
23	20	-23.400	2.970	-14.700	-36.060
24	20	-25.260	3.270	-14.640	-40.230
25	130	-18.480	3.150	-7.680	-28.800
26	180	-16.110	2.910	-8.250	-27.510
27	330	-23.190	5.760	-3.480	-45.510
28	310	-19.020	3.510	-6.360	-33.240
29	200	-13.200	2.280	-5.970	-26.760
30	270	-15.930	2.550	-6.600	-29.070
31	270	-15.900	2.940	-7.020	-29.970
32	270	-23.670	4.650	-10.710	-44.250
33	270	-26.970	7.080	-5.460	-53.190
34	50	-21.750	3.870	-8.430	-34.470

TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
35	220	-19.770	6.000	-.600	-51.510
36	20	-31.380	4.530	-16.170	-55.860
37	20	-27.360	3.840	-8.670	-43.230
38	20	-24.870	4.410	-4.560	-38.820
39	200	-22.290	5.070	-5.700	-49.500
40	210	-25.830	6.630	6.750	-45.330
41	196	-32.250	5.190	-15.720	-50.640
42	300	-23.460	9.600	14.730	-69.480
43	10	-19.290	5.460	-6.120	-47.670
44	160	-28.470	4.230	-13.920	-41.460
45	250	-22.350	4.620	-3.270	-37.710
46	300	-17.130	4.740	-4.080	-40.290
47	10	-14.970	2.280	-7.980	-24.360
48	10	-14.700	2.010	-8.340	-23.220
49	40	-15.270	1.470	-10.200	-21.330
50	40	-15.870	1.500	-10.650	-22.380
51	40	-15.360	2.010	-9.900	-30.000
52	50	-14.730	1.680	-8.850	-21.690
53	250	-24.810	5.100	-9.960	-49.650
54	180	-27.150	3.780	-16.440	-47.550
55	50	-28.170	5.040	-14.730	-48.600
56	180	-22.920	3.060	-13.770	-56.550
57	180	-22.980	3.270	-9.270	-43.230
58	180	-22.200	3.810	-6.150	-42.150
59	180	-19.350	4.560	2.250	-38.430
60	20	-20.130	3.480	-7.350	-34.500
61	20	-21.420	3.030	-11.370	-33.810
62	20	-22.860	3.060	-13.080	-35.790
63	130	-17.430	3.720	-5.910	-27.960
64	190	-14.190	3.600	-1.890	-31.050
65	0	-22.650	4.320	-10.830	-42.030
66	300	-18.660	6.660	9.390	-48.660
67	300	-22.980	6.060	-2.190	-45.570
68	270	-13.770	1.800	-6.600	-20.670

TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
69	290	-15.630	6.510	1.290	-41.520
70	310	-23.220	7.740	.750	-50.730
71	310	-22.470	6.780	3.180	-46.710
72	20	-31.890	6.150	-6.780	-58.440
73	20	-25.560	7.170	4.980	-49.740
74	200	-22.230	6.870	-1.950	-54.780
75	200	-21.600	6.420	1.950	-49.080
76	200	-23.370	6.900	6.090	-55.170
77	210	-28.560	12.900	31.380	-71.100
78	300	-24.870	9.600	10.410	-61.590
79	150	-19.050	3.990	-7.470	-35.250
80	160	-28.590	3.780	-8.820	-41.250
81	280	-22.950	5.100	-8.580	-47.430
82	300	-18.180	5.190	-1.980	-40.350
83	300	-14.580	5.130	.270	-41.490
84	290	-13.350	4.080	2.790	-37.140
85	40	-13.320	1.440	-8.160	-18.900
86	40	-13.650	1.410	-8.880	-19.230
87	50	-13.500	1.530	-7.470	-18.840
88	250	-18.660	4.320	-.870	-37.230
89	180	-28.410	5.010	-16.920	-58.140
90	180	-24.150	4.020	-14.760	-47.760
91	180	-23.520	3.240	-14.220	-42.180
92	180	-22.230	3.420	-11.640	-36.780
93	180	-23.730	3.870	-7.350	-44.790
94	180	-22.710	4.470	2.520	-40.950
95	180	-19.500	5.370	4.290	-37.830
96	20	-19.020	3.240	-6.930	-32.550
97	20	-20.280	3.090	-11.820	-35.610
98	20	-21.450	3.300	-12.840	-40.650
99	20	-16.050	2.640	-7.650	-27.510
100	190	-13.920	3.660	-2.670	-32.490
101	0	-21.900	4.380	-10.050	-37.830
102	270	-16.230	1.590	-9.330	-24.210

TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
103	270	-10.890	1.470	-4.950	-18.870
104	300	-14.820	5.430	4.980	-36.540
105	270	-12.660	1.740	-6.360	-20.100
106	310	-16.470	6.750	3.120	-48.180
107	200	-10.890	2.010	-5.280	-21.960
108	310	-18.150	6.900	7.140	-45.180
109	280	-22.410	6.510	-5.910	-52.320
110	280	-29.730	7.440	-13.020	-66.900
111	280	-31.200	10.560	-.480	-73.800
112	30	-27.600	6.570	-13.410	-54.360
113	30	-24.930	4.620	-13.500	-46.560
114	280	-29.910	8.160	-12.660	-82.260
115	40	-23.580	3.480	-14.550	-39.600
116	40	-21.900	4.530	.120	-43.350
117	40	-21.240	4.050	-6.660	-42.120
118	200	-21.120	6.360	-1.290	-51.270
119	200	-22.500	6.330	2.850	-50.400
120	200	-24.540	6.090	-5.880	-53.790
121	200	-25.980	6.360	-11.550	-60.630
122	300	-25.500	7.980	.480	-58.740
123	300	-19.650	8.670	7.140	-52.260
124	160	-26.940	4.290	-13.290	-42.060
125	280	-20.490	4.560	-9.540	-43.350
126	280	-18.000	3.780	-6.930	-38.880
127	280	-14.970	2.520	-6.390	-28.800
128	280	-14.250	3.300	-.990	-27.750
129	280	-12.990	3.150	-.450	-27.930
130	20	-12.030	1.560	-6.120	-19.860
131	30	-12.420	1.320	-8.190	-17.880
132	280	-31.350	10.950	-2.550	-74.550
133	250	-15.720	2.850	-5.130	-29.760
134	200	-28.350	5.460	-9.840	-49.050
135	180	-27.090	4.650	-14.520	-48.990
136	180	-22.230	3.240	-12.600	-33.630

TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS(PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
137	180	-23.760	4.500	1.530	-78.540
138	180	-22.050	5.100	3.330	-63.810
139	190	-17.520	3.840	-.900	-34.500
140	20	-18.180	3.690	-6.840	-33.840
141	20	-19.590	3.510	-10.020	-41.070
142	20	-20.790	3.780	-10.620	-50.400
143	20	-15.870	2.940	-5.070	-29.460
144	190	-12.870	3.120	-2.310	-28.200
145	0	-20.970	4.590	-9.570	-39.840
146	270	-16.470	1.770	-9.570	-23.610
147	300	-12.840	3.690	-.600	-30.180
148	270	-12.510	1.680	-3.150	-21.090
149	310	-13.230	4.260	7.290	-32.040
150	310	-19.800	4.290	3.900	-42.210
151	310	-14.310	3.960	1.200	-32.850
152	280	-20.790	4.560	-7.560	-43.890
153	280	-23.820	5.400	-11.130	-47.850
154	280	-35.910	8.340	-10.080	-67.920
155	30	-25.230	7.200	-12.090	-59.160
156	30	-21.840	4.560	-10.590	-52.710
157	30	-20.370	3.360	-9.390	-36.690
158	30	-23.220	4.410	-.420	-42.480
159	30	-22.320	4.740	7.320	-40.830
160	40	-20.880	3.900	-5.160	-39.360
161	200	-21.000	4.950	-.750	-44.670
162	200	-23.460	4.410	-10.590	-44.130
163	200	-25.260	4.710	-11.370	-48.240
164	290	-23.520	5.160	-8.820	-48.840
165	290	-20.010	5.520	-2.070	-48.300
166	160	-25.590	5.040	-11.880	-42.900
167	280	-16.500	3.360	-4.800	-33.420
168	280	-15.900	3.600	-4.140	-33.930
169	280	-14.280	3.390	-3.090	-33.240
170	280	-13.980	2.850	-3.180	-25.650

TABLE 9 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM MEAN LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 MEAN OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
171	280	-13.020	2.430	-2.670	-21.900
172	30	-13.170	1.110	-9.750	-17.820
173	50	-15.150	1.200	-11.820	-19.260
174	250	-12.600	2.010	-5.250	-23.430
175	200	-24.810	5.670	-6.720	-47.610
176	180	-22.890	3.810	-13.020	-39.750
177	180	-21.210	3.540	-10.320	-34.470
178	180	-20.340	3.810	-6.390	-34.560
179	20	-18.810	3.630	-8.850	-32.100
180	270	-15.810	1.320	-10.980	-20.280
181	200	-14.610	0.000	0.000	0.000
182	280	-19.380	4.350	-4.800	-45.120
183	280	-25.020	5.880	-12.660	-52.050
184	180	-17.340	0.000	0.000	0.000
185	30	-36.600	7.890	-17.310	-70.350
186	30	-27.900	6.690	-12.780	-57.030
187	280	-25.530	6.030	-12.660	-57.690
188	30	-23.700	4.830	2.190	-43.260
189	80	-12.930	2.610	-5.610	-25.170
190	60	-15.180	4.830	3.420	-33.990
191	160	-11.670	3.330	-2.790	-21.930
192	160	-17.670	3.300	-8.100	-29.220
193	160	-21.570	3.360	-11.070	-35.430
194	170	-23.850	3.480	-12.390	-39.780
195	160	-18.750	2.400	-11.640	-29.700
196	280	-16.920	4.020	-3.090	-38.490
197	280	-17.280	3.060	-4.560	-34.920
198	280	-18.930	3.270	-9.870	-36.150
199	280	-16.440	3.240	-6.720	-31.320
200	280	-18.690	2.940	-9.060	-35.850
201	280	-13.830	2.880	-5.640	-30.090
202	280	-13.110	2.190	-6.630	-29.700
203	280	-13.950	2.370	-6.210	-26.250
204	50	-12.900	1.200	-9.750	-17.070

TABLE 10

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
CENTER BUILDING

MINIMUM PEAK PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
1	306	-16.590	2.100	-12.810	-88.920
2	306	0.000	0.000	0.000	0.000
3	296	-45.240	4.170	-22.470	-58.740
4	210	-28.470	5.640	-8.100	-53.850
5	50	-38.340	3.750	-22.650	-56.250
6	110	-42.300	4.500	-24.000	-59.430
7	250	-57.270	10.530	-19.740	-80.760
8	50	-34.920	10.560	-11.010	-69.600
9	40	-21.540	6.360	-6.360	-74.520
10	30	-18.450	4.920	-5.250	-66.600
11	306	-47.130	6.030	-16.500	-63.930
12	306	-22.740	8.340	-2.940	-90.090
13	296	-17.610	5.610	-0.060	-88.920
14	286	-43.980	5.190	-28.560	-63.300
15	110	-33.810	3.780	-21.420	-49.650
16	106	-26.520	10.020	-5.040	-79.140
17	50	-63.270	8.070	-37.350	-87.390
18	40	-51.300	8.670	-16.950	-85.230
19	30	-36.090	8.880	-2.610	-66.630
20	30	-25.410	9.090	-2.040	-78.960
21	306	-47.130	7.950	-19.350	-72.120
22	90	-27.120	7.290	7.890	-58.590
23	100	-30.720	7.770	1.200	-64.110
24	110	-23.520	10.380	-3.270	-67.230
25	110	-34.470	12.750	-8.280	-74.880
26	100	-46.530	13.470	-4.470	-88.860
27	70	-57.330	11.460	-12.750	-87.360
28	240	-57.120	6.210	-39.300	-82.470
29	120	-29.670	8.460	-8.370	-65.730
30	290	-18.690	7.920	1.020	-82.050
31	120	-13.230	6.480	5.310	-64.170
32	306	-8.370	3.720	3.150	-72.240
33	90	-26.040	6.960	7.980	-56.430
34	286	-62.970	4.680	-44.460	-84.810
35	90	-27.030	7.290	-1.410	-68.490
36	210	-39.690	13.050	12.960	-85.440

TABLE 10 (continued)

WIND ENGINEERING STUDY, RENAISSANCE CENTER, DETROIT  
 CENTER BUILDING  
 MINIMUM PEAK PRESSURE LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF ( 50 YR. RECURRENCE)

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOADS (PSF)	RMS PRESSURE LOADS (PSF)	MAXIMUM PRESSURE LOADS (PSF)	MINIMUM PRESSURE LOADS (PSF)
37	70	-48.870	11.760	-9.090	-87.360
38	230	-48.360	7.620	-19.560	-77.580
39	170	-30.480	9.540	.300	-67.170
40	150	-38.820	7.890	-.570	-75.630
41	286	-9.810	4.290	1.560	-88.920
42	80	-21.180	6.960	7.590	-49.380
43	80	-24.360	5.970	11.730	-47.760
44	80	-23.910	5.250	-2.970	-45.330
45	80	-28.320	8.310	3.090	-74.400
46	220	-41.460	13.200	2.940	-84.900
47	240	-42.930	8.970	-14.010	-76.380
48	240	-48.480	8.040	-22.470	-77.040
49	296	-9.630	4.410	1.770	-60.780
50	160	-35.310	6.900	-9.960	-65.430
51	160	-32.940	5.820	-13.140	-55.260
52	350	-8.250	3.120	2.160	-36.330
53	300	-16.050	5.040	-.480	-33.780
54	300	-19.440	5.790	.930	-37.410
55	80	-16.890	5.700	-.270	-46.590
56	230	-15.060	4.830	-4.410	-56.940
57	230	-22.710	9.750	-6.810	-74.970
58	230	-42.180	8.190	-11.250	-74.760
59	320	-29.820	6.150	-12.390	-54.600
60	320	-28.170	6.360	-9.240	-54.840
61	150	-27.180	3.960	-16.140	-44.850
62	96	2.100	2.040	10.950	-9.060
63	80	-11.580	4.350	6.420	-29.880
64	80	-11.820	3.660	-.030	-26.370
65	286	-17.160	2.280	-13.080	-88.920
66	220	-3.750	4.620	6.390	-25.380
67	286	-42.210	4.170	-21.870	-68.880
68	150	-20.220	3.240	-10.860	-33.810
69	306	-9.000	2.400	-2.880	-88.920
70	250	-13.350	4.110	6.570	-40.200
71	286	-27.150	5.070	-10.860	-45.780
72	240	-21.510	5.250	-6.780	-44.970



TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
1					
2	180	-23.610	4.020	-7.830	-41.610
3	250	-21.450	4.440	-.750	-44.310
4					
5	280	-21.210	6.660	4.410	-49.830
6	0	-18.390	3.390	-4.710	-38.070
7	260	-13.560	6.000	3.690	-40.080
8	250	-21.450	4.050	-4.770	-44.190
9	280	-21.360	6.420	1.410	-51.180
10	296	.090	5.580	23.010	-38.520
11	250	-15.270	7.200	11.010	-41.400
12	220	-17.340	5.310	-1.950	-46.380
13					
14					
15	186	-25.890	7.530	.660	-59.100
16					
17					
18	330	-9.510	3.090	19.350	-47.790
19	180	-27.000	3.840	-12.900	-44.850
20					
21					
22	190	-17.460	3.720	.630	-36.300
23	20	-23.400	2.970	-14.700	-36.060
24	20	-25.260	3.270	-14.640	-40.230
25	180	-17.370	3.390	-7.770	-34.860
26	190	-13.770	3.300	-2.490	-29.760
27	330	-23.190	5.760	-3.480	-45.510
28	310	-19.020	3.510	-6.360	-33.240
29	270	-12.540	2.430	-4.770	-28.140
30	290	-12.150	4.080	-.900	-41.130
31	290	-14.790	5.040	-.360	-40.260
32	310	-22.860	6.060	-2.640	-51.210
33	300	-25.680	6.240	-5.580	-54.030
34	290	-14.700	5.370	4.440	-37.680

TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS(PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
35	220	-19.770	6.000	-.600	-51.510
36	20	-31.380	4.530	-16.170	-55.860
37	10	-22.260	7.950	7.410	-47.250
38	200	-21.660	4.650	-5.250	-51.720
39	286	-3.210	7.350	24.660	-52.320
40	286	-3.990	8.400	27.870	-58.800
41					
42	300	-23.460	9.600	14.730	-69.480
43	290	-13.290	9.660	18.270	-56.520
44	280	-11.310	8.190	25.080	-49.380
45					
46	296	-15.180	5.310	2.760	-43.410
47	300	-13.110	4.380	-.600	-40.470
48	300	-11.370	3.720	2.310	-35.490
49	320	-9.150	3.240	1.950	-36.300
50	100	-9.420	2.190	-3.750	-26.460
51	40	-15.360	2.010	-9.900	-30.000
52	80	-9.540	2.280	-1.740	-37.170
53	230	-23.850	9.060	4.770	-71.400
54	210	-21.090	7.650	-3.990	-58.710
55					
56					
57	196	-12.570	4.980	-.120	-50.370
58					
59	190	-17.640	4.440	2.580	-42.120
60	190	-18.180	4.710	4.230	-40.380
61	190	-18.390	4.830	1.290	-41.340
62	190	-17.730	5.400	1.080	-41.340
63	190	-14.550	4.500	1.350	-31.620
64	310	-12.600	4.830	3.840	-37.440
65	300	-14.850	7.080	7.230	-45.000
66	300	-18.660	6.660	9.390	-48.660
67	300	-22.980	6.060	-2.190	-45.570
68	290	-12.420	5.190	1.440	-35.430

TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
69	290	-15.630	6.510	1.290	-41.520
70	310	-23.220	7.740	.750	-50.730
71	310	-22.470	6.780	3.180	-46.710
72	20	-31.890	6.150	-6.780	-58.440
73					
74	200	-22.230	6.870	-1.950	-54.780
75	210	-17.100	7.650	12.570	-50.040
76	210	-21.240	10.140	7.830	-60.480
77	210	-28.560	12.900	11.380	-71.100
78	310	-22.980	9.390	11.430	-71.190
79	320	-18.180	10.110	20.640	-60.840
80	310	-16.050	6.150	9.600	-49.710
81					
82	290	-17.550	4.770	-2.790	-45.270
83	300	-14.580	5.130	.270	-41,490
84					
85	300	-11.280	4.080	3.060	-31.590
86	100	-8.160	3.120	1.440	-35.280
87	116	-5.610	4.740	5.190	-35.070
88	220	-8.730	10.170	24.510	-50.430
89	210	-19.020	7.620	-4.680	-61.560
90	180	-24.150	4.020	-14.760	-47.760
91	216	-9.510	5.250	1.410	-53.700
92	180	-22.230	3.420	-11.640	-36.780
93					
94	20	-16.950	4.830	-1.050	-44.760
95	190	-17.820	4.560	-2.640	-40.470
96	190	-18.150	4.800	.570	-38.190
97	190	-17.880	4.920	-.270	-41.640
98	190	-16.770	5.250	-.630	-44.460
99	190	-13.680	4.410	-.750	-33.420
100	190	-13.920	3.660	-2.670	-32.490
101	190	-15.180	4.110	-3.750	-42.870
102	300	-11.700	6.450	11.040	-38.610

TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
103	310	-8.430	3.480	8.580	-24.780
104	80	7.140	2.370	15.060	-45.180
105	310	-11.070	5.250	3.840	-32.370
106	310	-16.470	6.750	3.120	-48.180
107	200	-10.890	2.010	-5.280	-21.960
108					
109	290	-18.780	7.590	-1.320	-54.690
110					
111					
112	40	-27.450	6.450	-15.210	-64.140
113					
114	280	-29.910	8.160	-12.660	-82.260
115	20	-19.080	7.650	20.940	-49.650
116	200	-17.250	7.380	5.580	-57.630
117					
118	200	-21.120	6.360	-1.290	-51.270
119	200	-22.500	6.330	2.850	-50.400
120	200	-24.540	6.090	-5.880	-53.790
121	200	-25.980	6.360	-11.550	-60.630
122	310	-24.060	7.830	.090	-59.100
123	300	-19.650	8.670	7.140	-52.260
124	310	-16.260	6.120	2.160	-44.730
125					
126	310	-15.660	5.250	.480	-40.980
127	300	-14.280	3.900	-2.460	-30.570
128	310	-12.360	4.950	1.800	-39.480
129	310	-11.250	4.230	1.980	-43.020
130	120	-11.400	4.680	12.420	-30.720
131	110	-9.480	3.870	-.300	-33.510
132	280	-31.350	10.950	-2.550	-74.550
133	280	.120	8.940	26.910	-32.850
134	190	-27.420	6.420	-8.880	-50.130
135	190	-20.790	4.530	-8.040	-52.410
136	220	-9.450	2.490	.120	-45.510

TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS (PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD (PSF)	RMS PRESSURE LOAD (PSF)	MAXIMUM PRESSURE LOAD (PSF)	MINIMUM PRESSURE LOAD (PSF)
137					
138					
139					
140		-17.520	4.140	.180	-36.240
141	20	-19.590	3.510	-10.020	-41.070
142					
143	200	-12.900	3.780	-1.500	-33.780
144					
145	10	-19.920	4.950	-6.570	-43.380
146	300	-13.170	3.960	5.100	-30.330
147	300	-12.840	3.690	-.600	-30.180
148	290	-10.110	4.200	3.030	-35.370
149	290	-11.820	4.980	3.030	-34.830
150	310	-19.800	4.290	3.900	-42.210
151	290	-13.200	5.580	5.040	-39.270
152	280	-20.790	4.560	-7.560	-43.890
153	280	-23.820	5.400	-11.130	-47.850
154					
155	30	-25.230	7.200	-12.090	-59.160
156	50	-21.600	3.930	-10.230	-53.550
157	200	-11.070	6.510	18.660	-40.470
158	20	-18.810	5.880	4.620	-43.410
159					
160	200	-19.560	5.790	-1.560	-42.060
161	200	-21.000	4.950	-.750	-44.670
162	210	-20.760	4.320	-6.600	-44.250
163					
164	320	-18.960	6.630	-3.150	-49.110
165	290	-20.010	5.520	-2.070	-48.300
166	340	-15.960	4.500	-.570	-46.980
167	340	-14.940	4.080	-2.910	-48.300
168	340	-14.610	4.350	-2.460	-52.380
169	310	-12.510	4.770	3.120	-34.860
170	320	-11.370	3.990	.030	-30.180

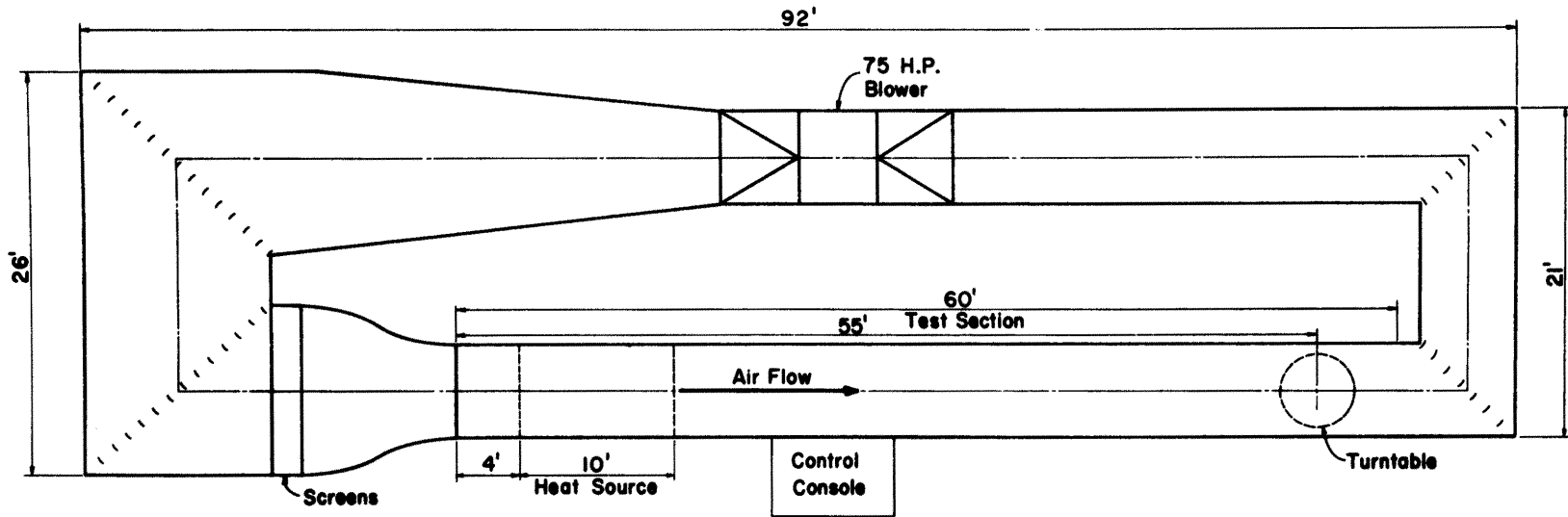
TABLE 10 (continued)

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER, DETROIT  
 OUTER BUILDING  
 MINIMUM PEAK LOADS(PSF) BASED ON ALL WIND DIRECTIONS TESTED AND  
 THE OTHER VALUES ASSOCIATED WITH THE WIND DIRECTION AT WHICH THE MINIMUM  
 PEAK OCCURRED, BASED ON A REFERENCE PRESSURE OF 30.0 PSF

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE LOAD(PSF)	RMS PRESSURE LOAD(PSF)	MAXIMUM PRESSURE LOAD(PSF)	MINIMUM PRESSURE LOAD(PSF)
171	310	-11.190	3.150	.180	-28.680
172	110	-9.930	3.900	.480	-35.580
173	110	-10.470	4.440	-1.950	-33.960
174	80	-6.690	2.850	1.710	-29.070
175	200	-24.810	5.670	-6.720	-47.610
176	180	-22.890	3.810	-13.020	-39.750
177	180	-21.210	3.540	-10.320	-34.470
178	190	-18.510	3.750	-10.230	-36.540
179	10	-17.460	3.630	-9.330	-38.250
180	310	-13.080	2.190	-5.580	-24.150
181	280	-9.150	4.020	4.560	-30.780
182	280	-19.380	4.350	-4.800	-45.120
183	280	-25.020	5.880	-12.660	-52.050
184	36	-3.960	5.340	9.840	-27.540
185	50	-32.910	8.370	-17.490	-71.850
186	50	-24.810	6.330	-12.360	-65.820
187	280	-25.530	6.030	-12.660	-57.690
188					
189	280	-.600	6.990	20.340	-28.590
190	40	-10.710	6.180	11.640	-36.060
191	140	-8.880	3.450	4.320	-31.080
192	140	-12.870	3.630	8.400	-40.860
193	210	-21.240	5.040	-4.620	-45.390
194	200	-23.670	4.590	-12.480	-42.210
195	160	-18.750	2.400	-11.640	-29.700
196	280	-16.920	4.020	-3.090	-38.490
197	210	-11.220	4.230	.390	-36.060
198	280	-18.930	3.270	-9.870	-36.150
199	290	-16.260	4.440	-4.440	-41.970
200					
201	330	-9.090	3.420	-.330	-35.100
202	280	-13.110	2.190	-6.630	-29.700
203	280	-13.950	2.370	-6.210	-26.250
204	110	-7.650	3.960	3.300	-25.200

Table 11. Forces and Moments on Outer Office Building

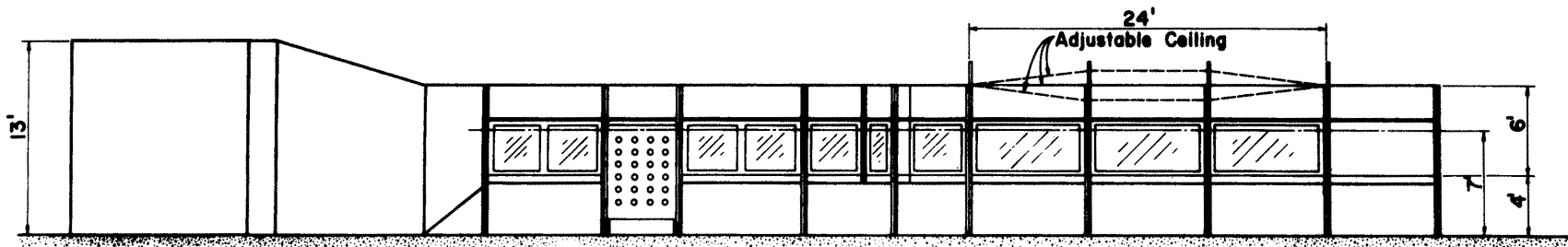
Wind Direction	Resultant Force (KIPS)	Resultant Moment (FT-KIPS)
0	$1.2 \times 10^3$	$3.2 \times 10^5$
10	$1.3 \times 10^3$	$3.4 \times 10^5$
90	$1.4 \times 10^3$	$3.4 \times 10^5$
180	$1.4 \times 10^3$	$3.5 \times 10^5$
270	$5.0 \times 10^2$	$1.2 \times 10^5$
96	$6.3 \times 10^2$	$1.5 \times 10^5$



PLAN



89



ELEVATION

INDUSTRIAL AERODYNAMICS WIND TUNNEL  
 FLUID DYNAMICS & DIFFUSION LABORATORY  
 COLORADO STATE UNIVERSITY

Figure 1. Industrial Aerodynamics Wind Tunnel



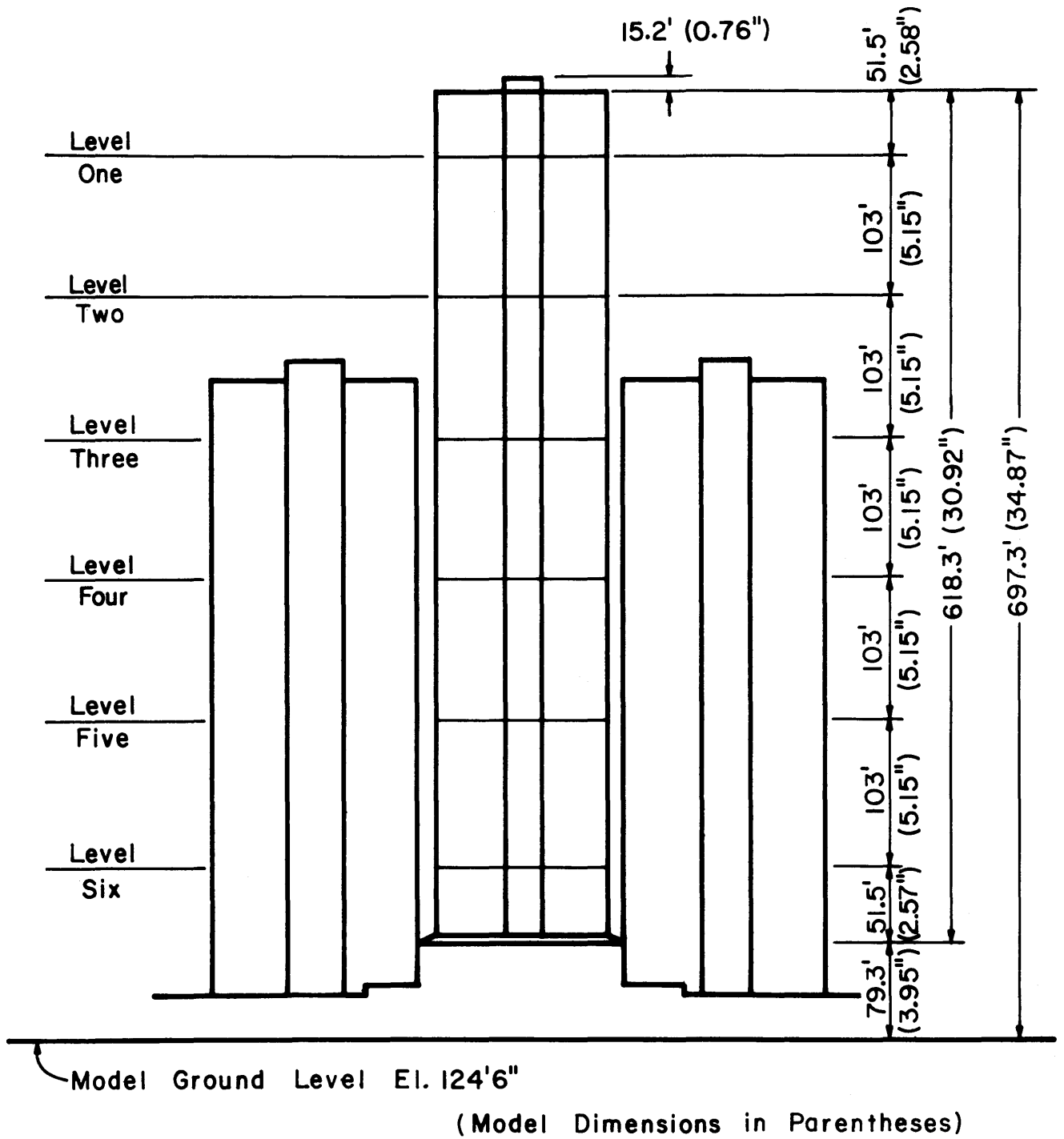
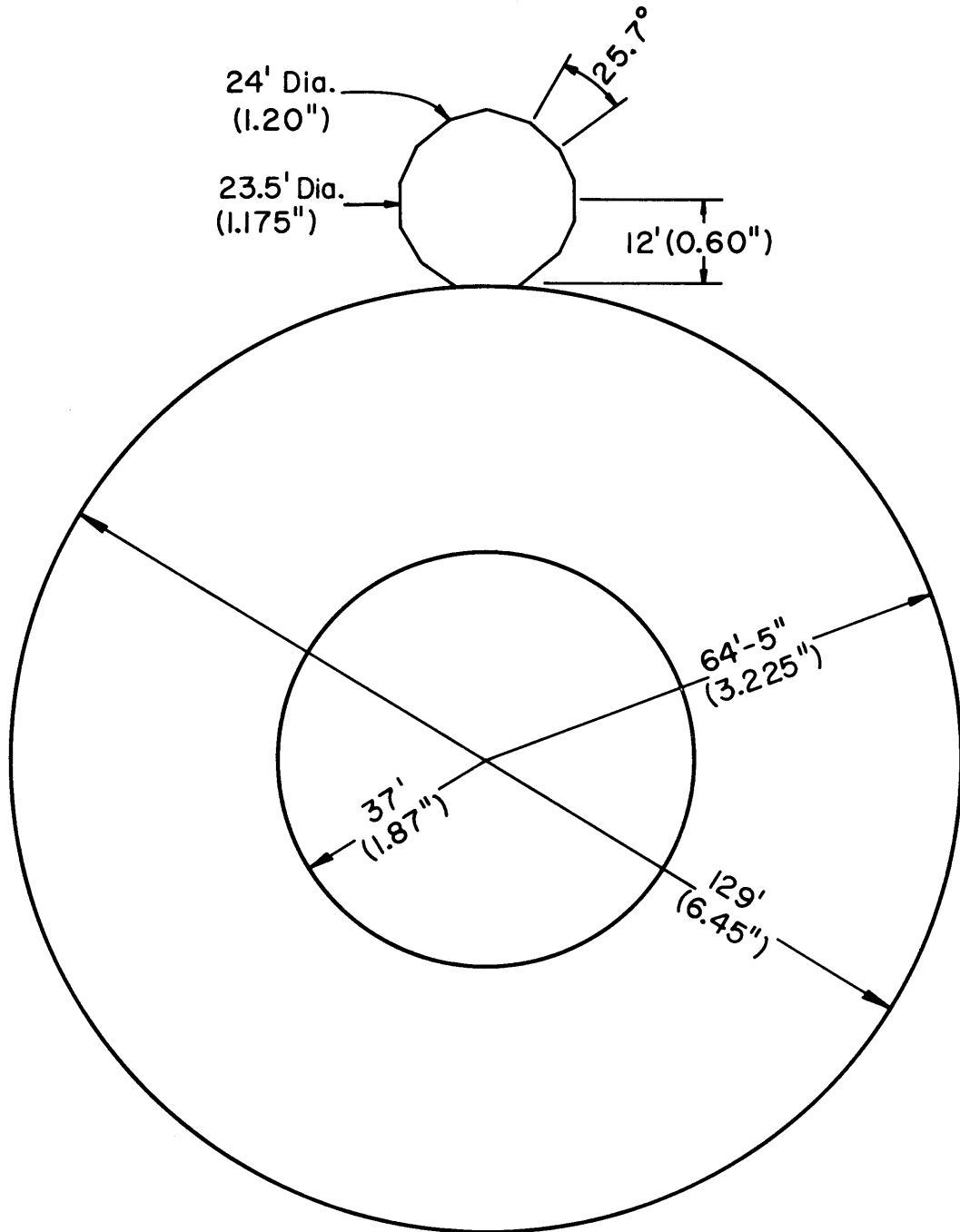


Figure 2a. Pressure Tap Locations



(Model Dimensions in Parentheses)

Figure 2b. Pressure Tap Locations

- Indicates Tap Location
- Indicates Tap Halfway Up Side

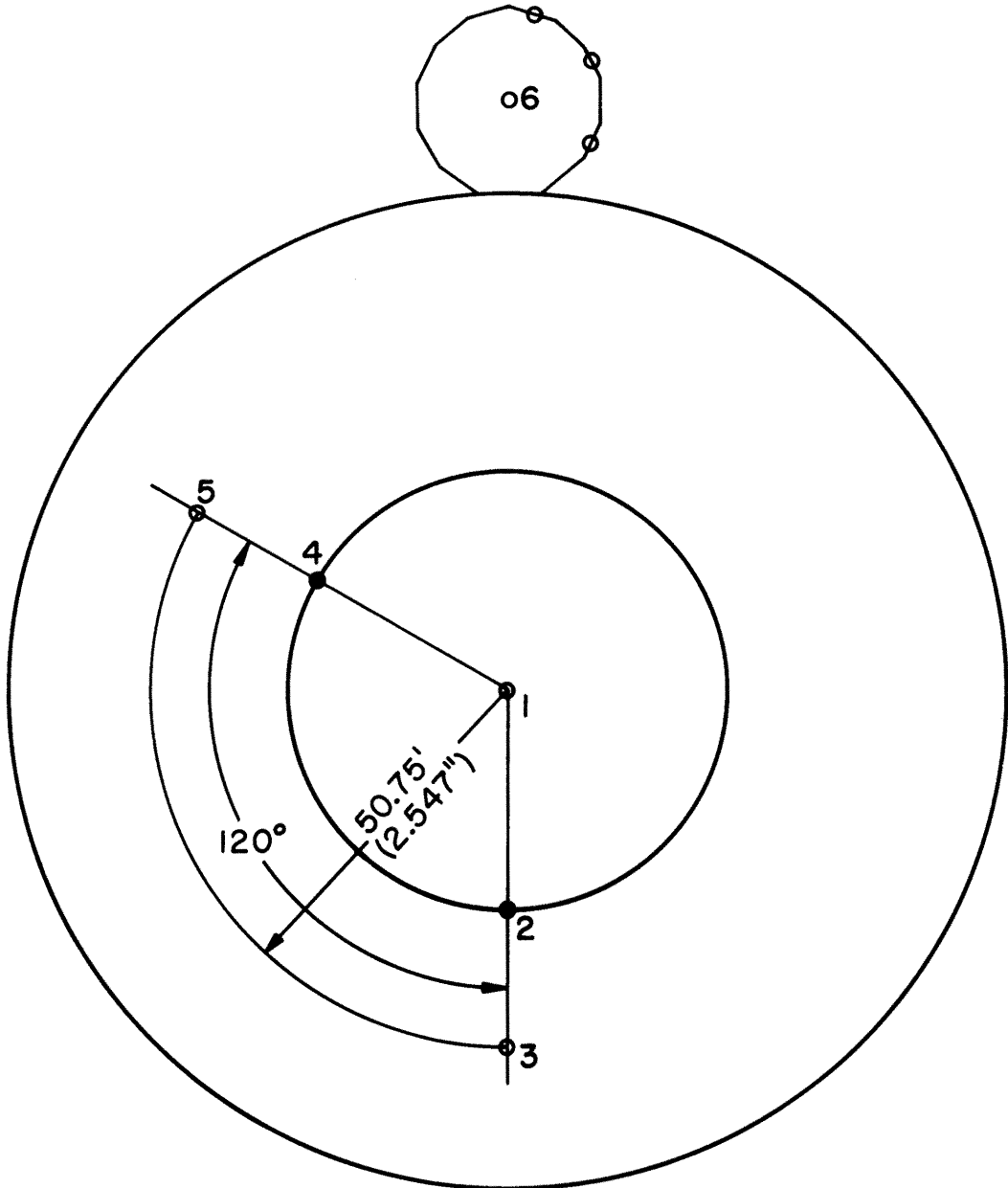


Figure 2c. Pressure Tap Locations

● Indicates Tap Location

Tap	Distance Below Level One	Elevation Full Scale
14	0 (0")	645.8'
15	5' (0.25")	640.8'
16	10' (0.50")	635.8'

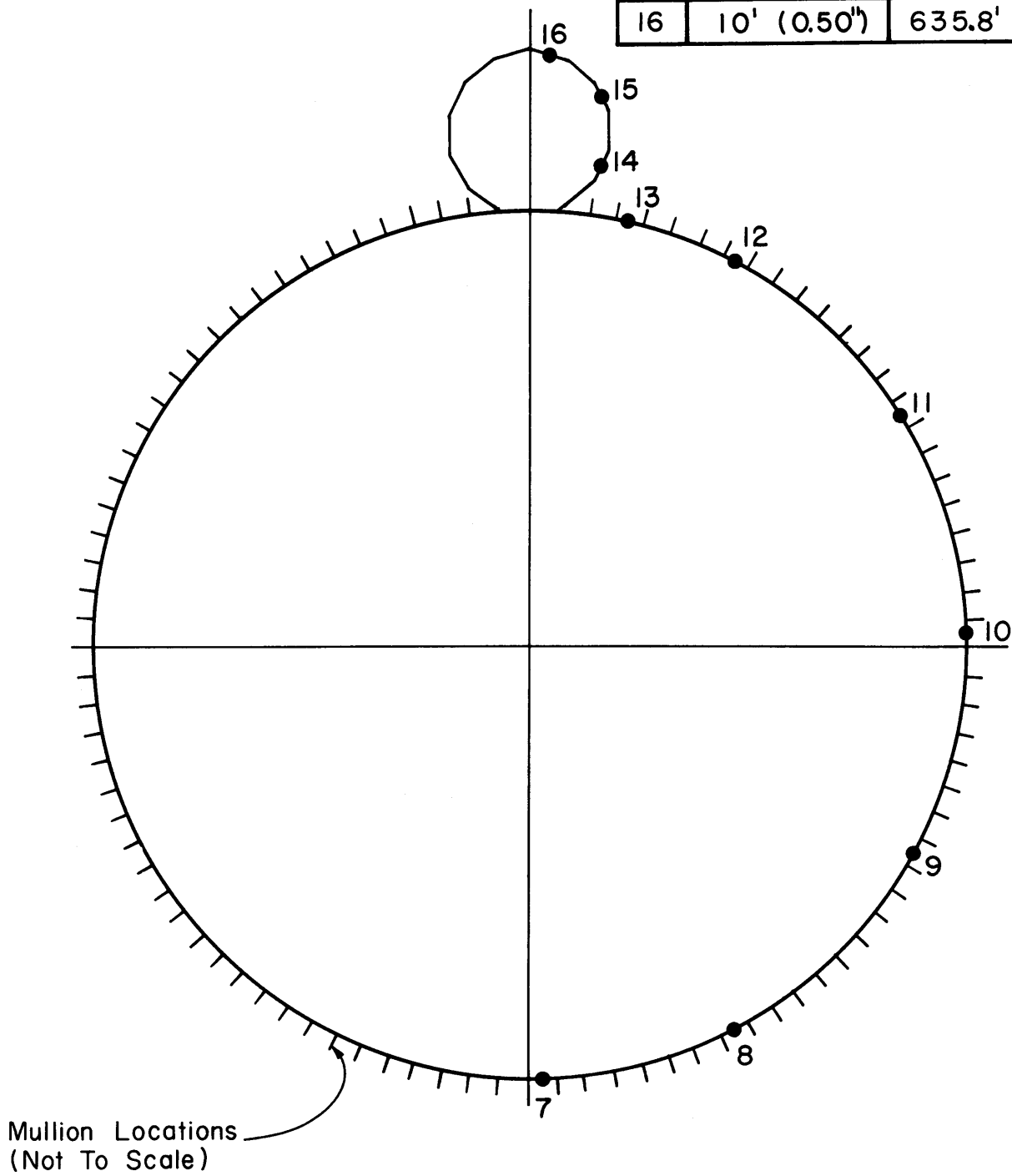


Figure 2d. Pressure Tap Locations

● Indicates Tap Location

Tap	Distance Below Level 2	Elevation Full Scale
24	0 (0")	542.8'
25	5' (0.25")	537.8'
26	10' (0.50")	532.8'

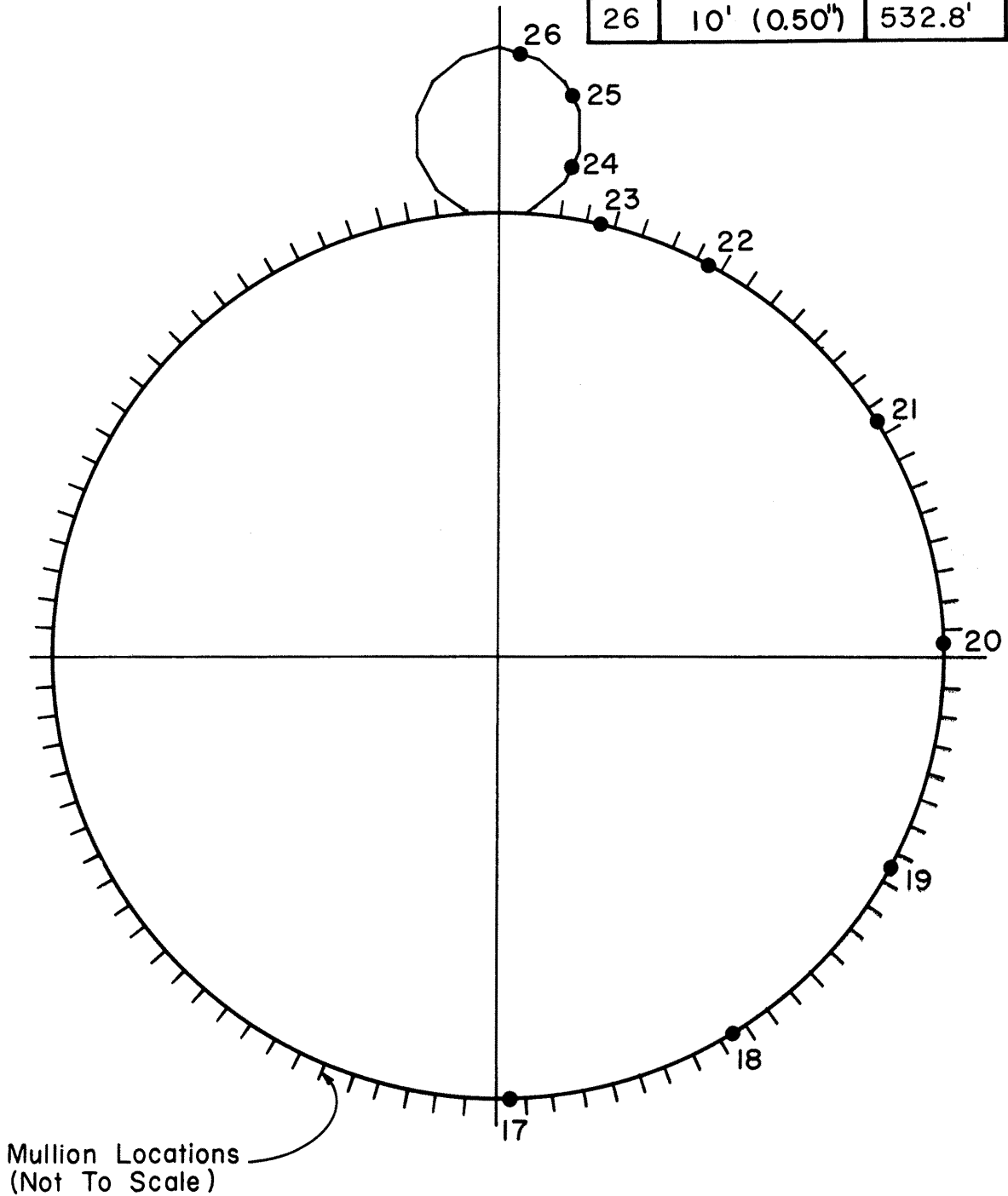


Figure 2e. Pressure Tap Locations

● Indicates Tap Location

Tap	Distance Below Level 3	Elevation Full Scale
34	0 (0")	439.8'
35	5' (0.25")	434.8'
36	10' (0.50")	429.8'

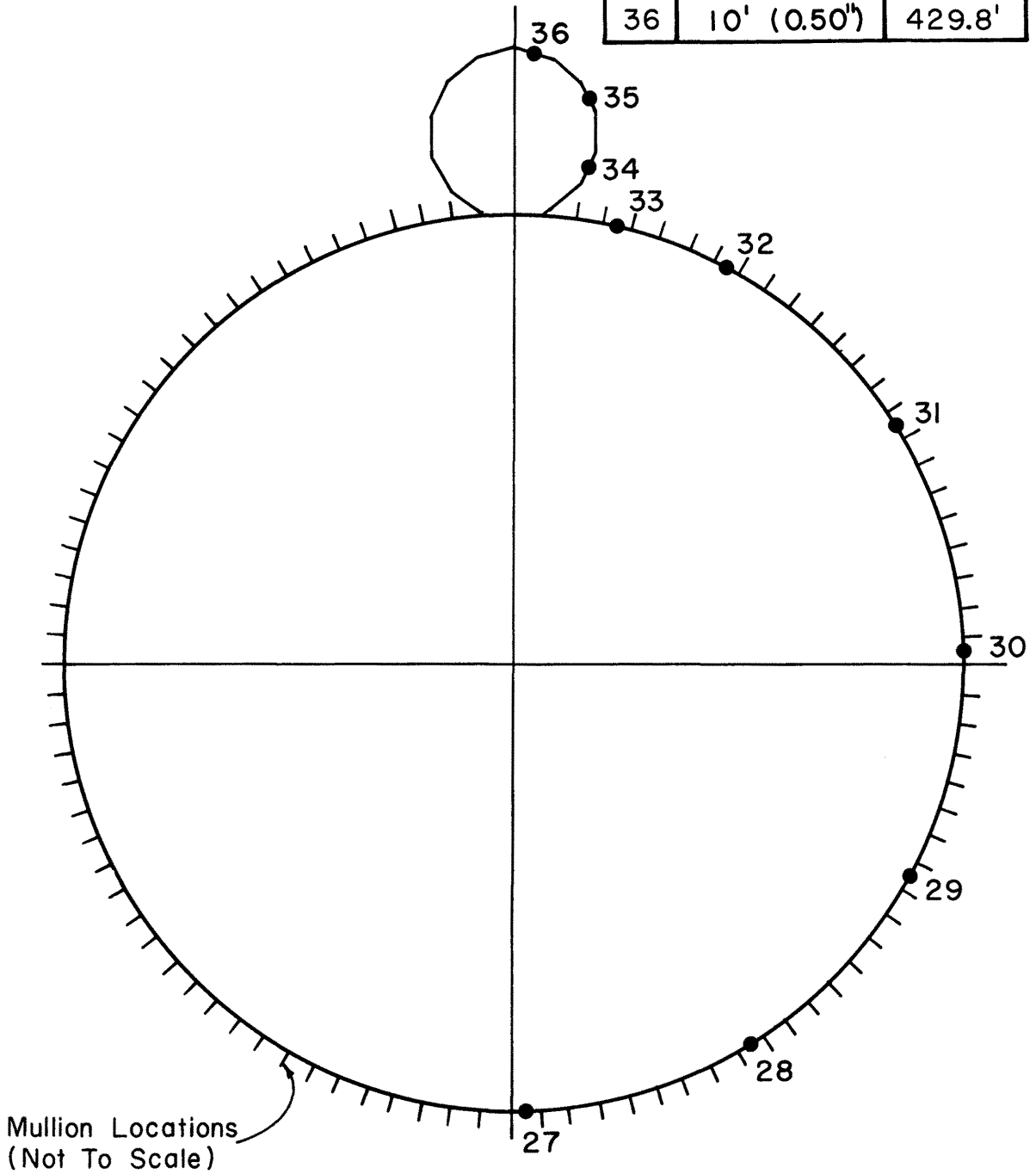


Figure 2f. Pressure Tap Locations

● Indicates Tap Location

Tap	Distance Below Level 4	Elevation Full Scale
44	0 (0")	336.8'
45	5' (0.25")	331.8'
46	10' (0.50")	326.8'

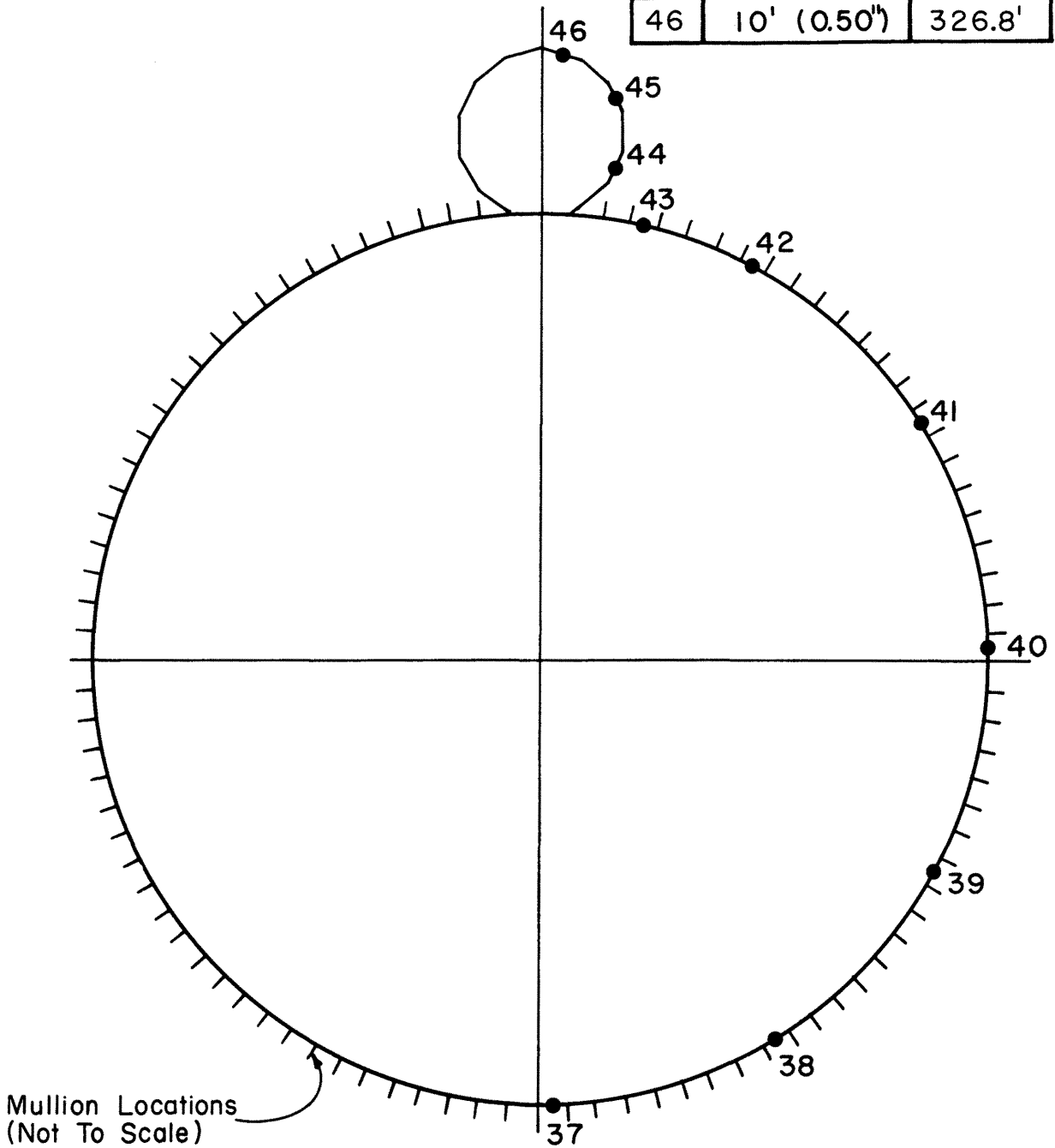


Figure 2g. Pressure Tap Locations

● Indicates Tap Location

Tap	Distance Below Level 5	Elevation Full Scale
54	0 (0")	233.8'
55	5' (0.25")	228.8'
56	10' (0.50")	223.8'

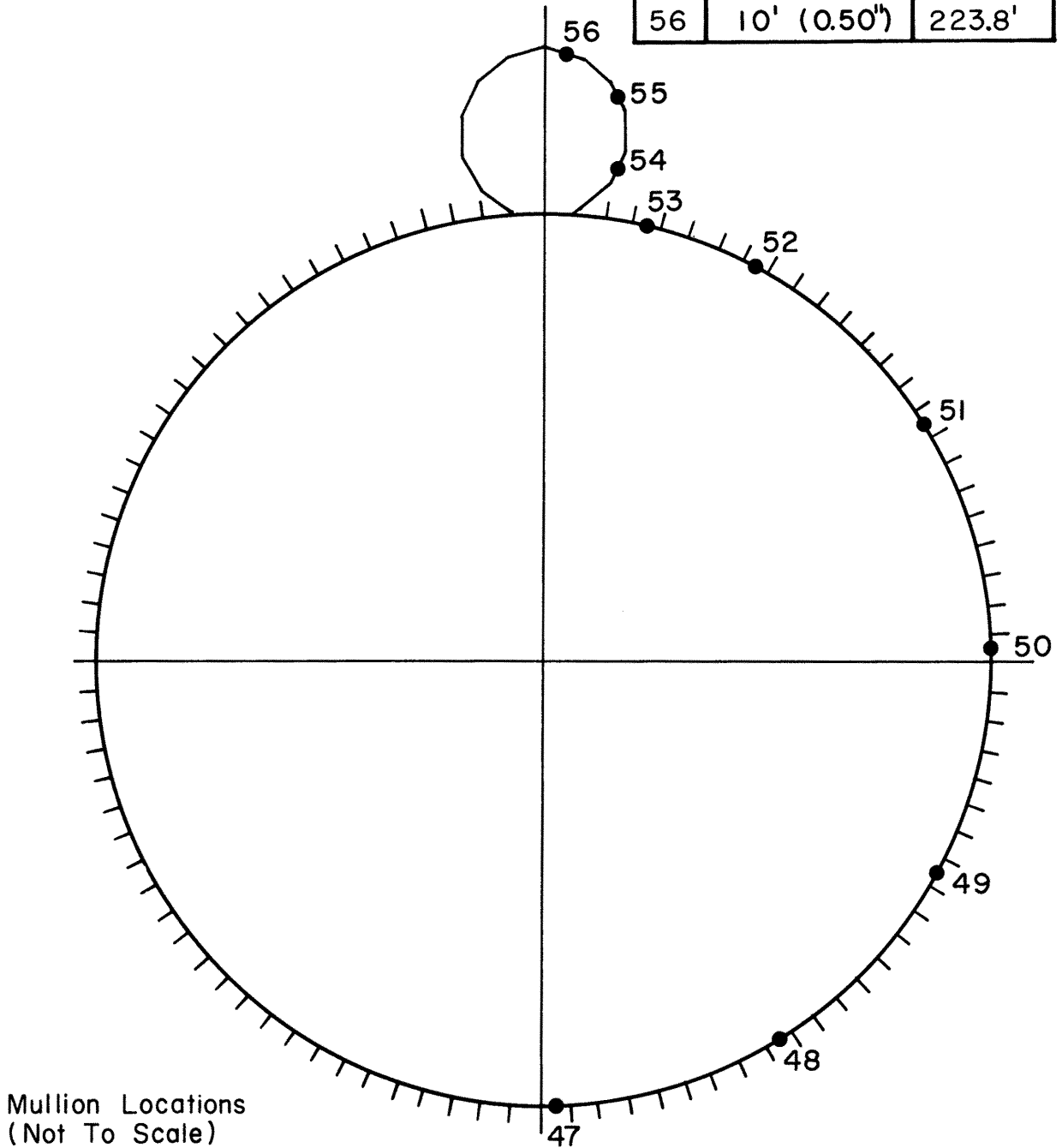


Figure 2h. Pressure Tap Locations



Tap	Distance Below Level 6	Elevation Full Scale
64	0 (0")	130.8'
65	5' (0.25")	125.8'
66	10' (0.50")	120.8'

- Indicates Tap Location
- Taps 67-72 Are At Base Level

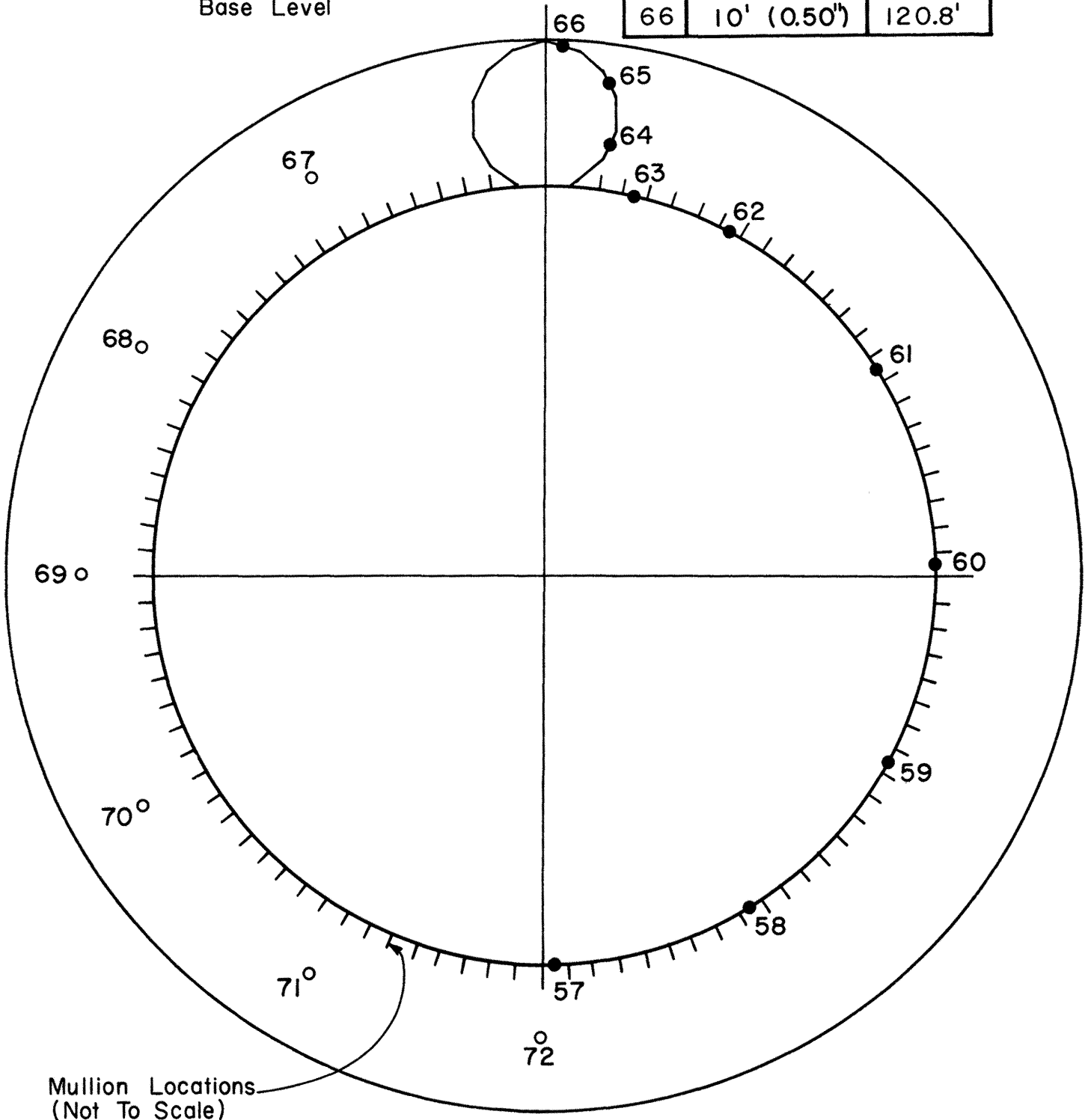


Figure 2i. Pressure Tap Locations

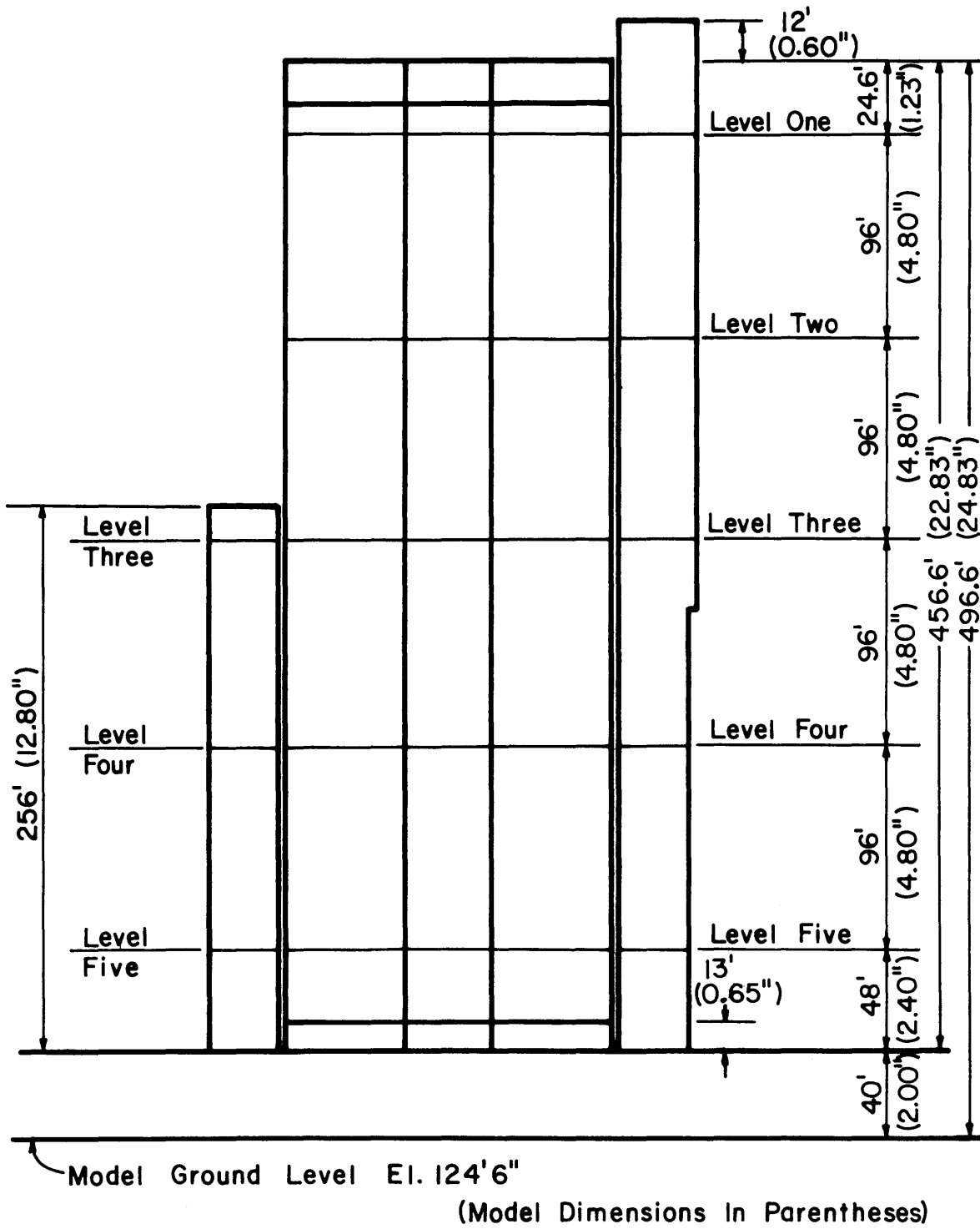
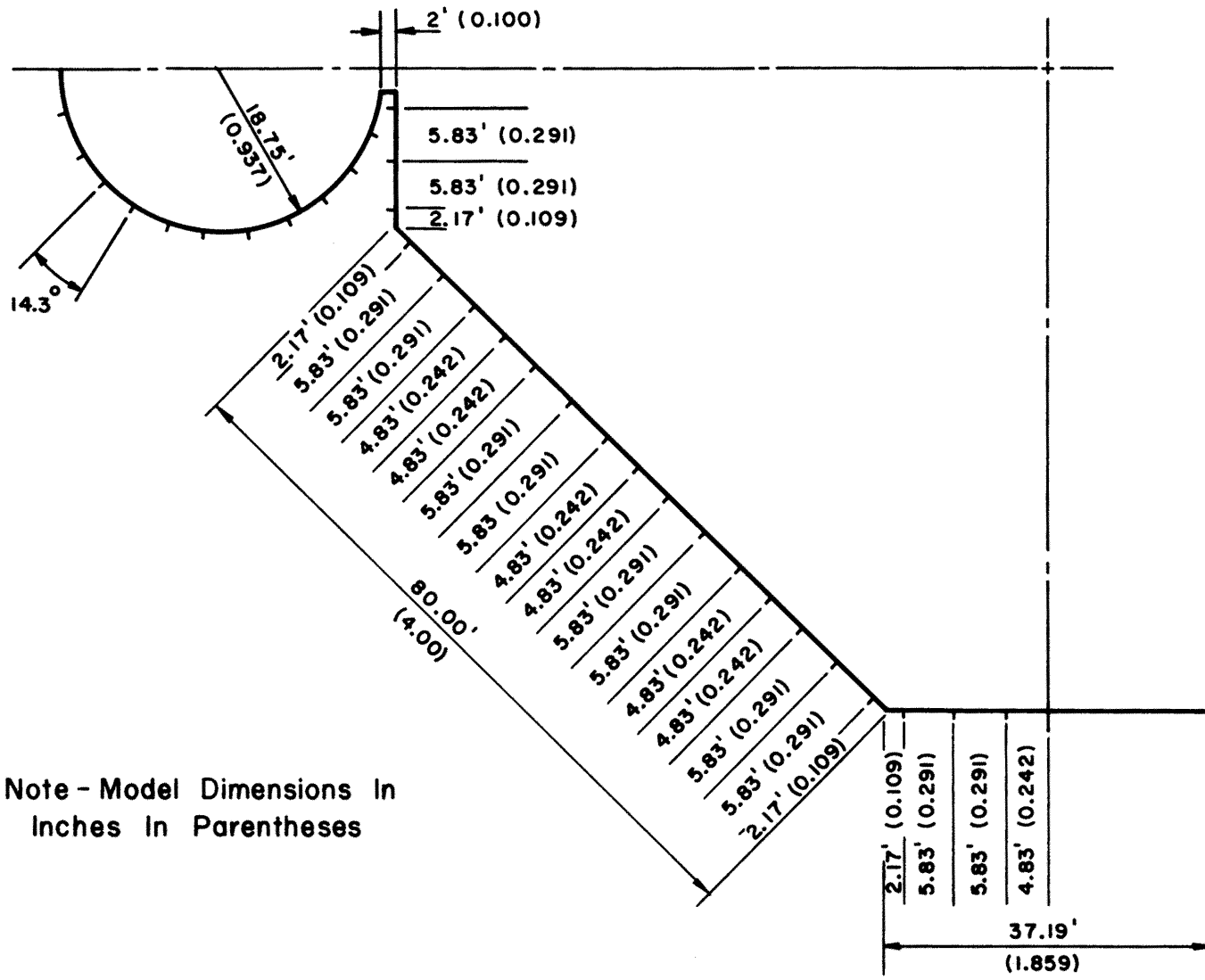


Figure 2j. Pressure Tap Locations



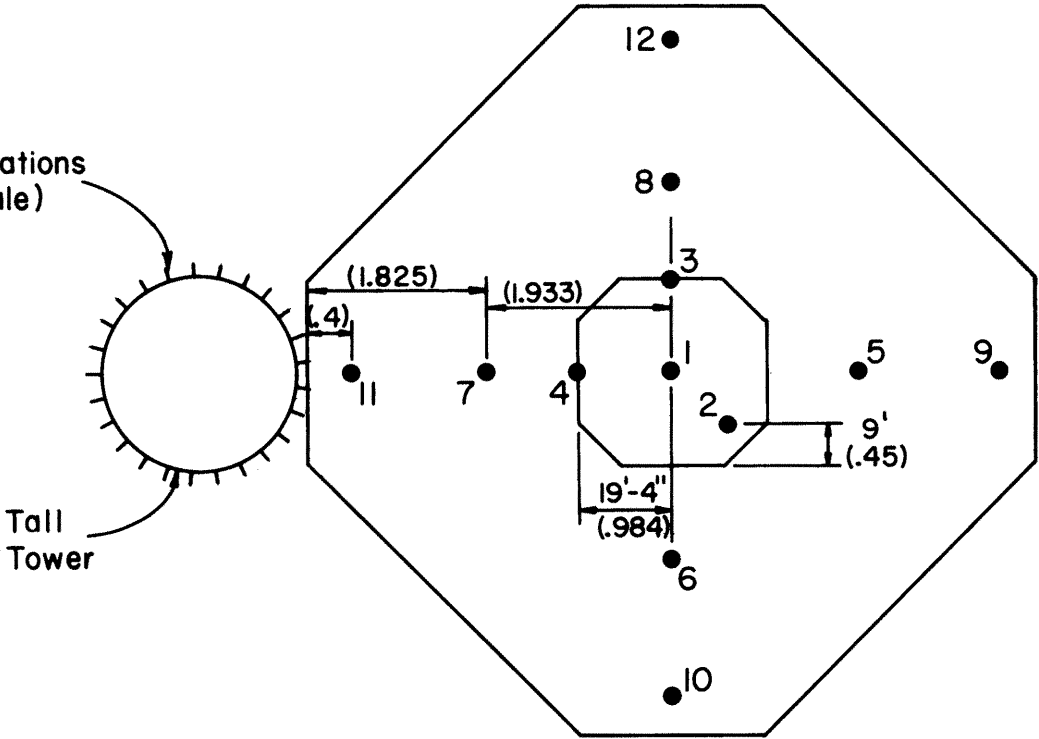
Note - Model Dimensions In  
Inches In Parentheses

DETAILS OF CROSS-SECTION  
OUTER BUILDING

Figure 2k. Pressure Tap Locations

● Indicates Tap Location

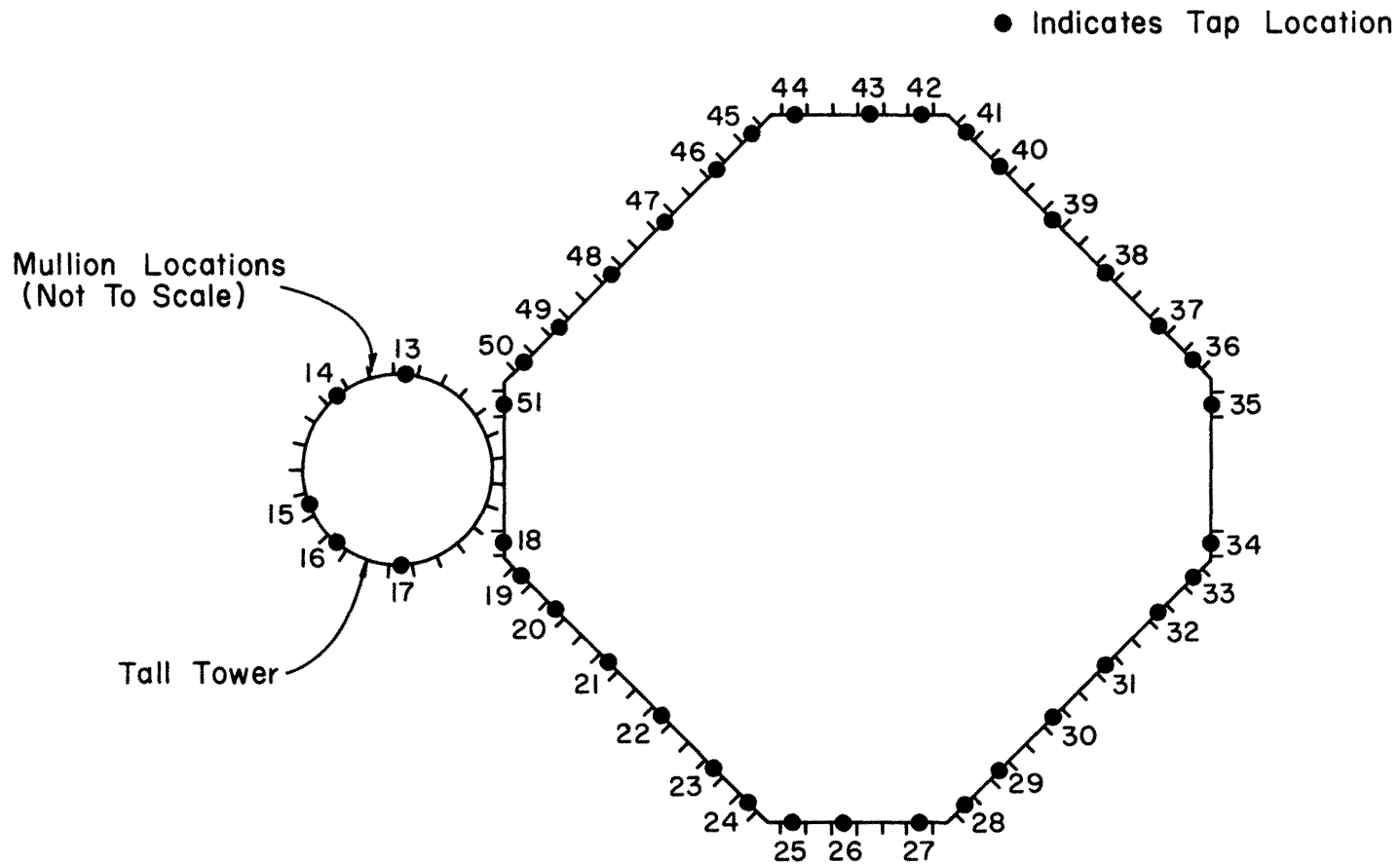
Mullion Locations  
(Not To Scale)



Tall  
Tower

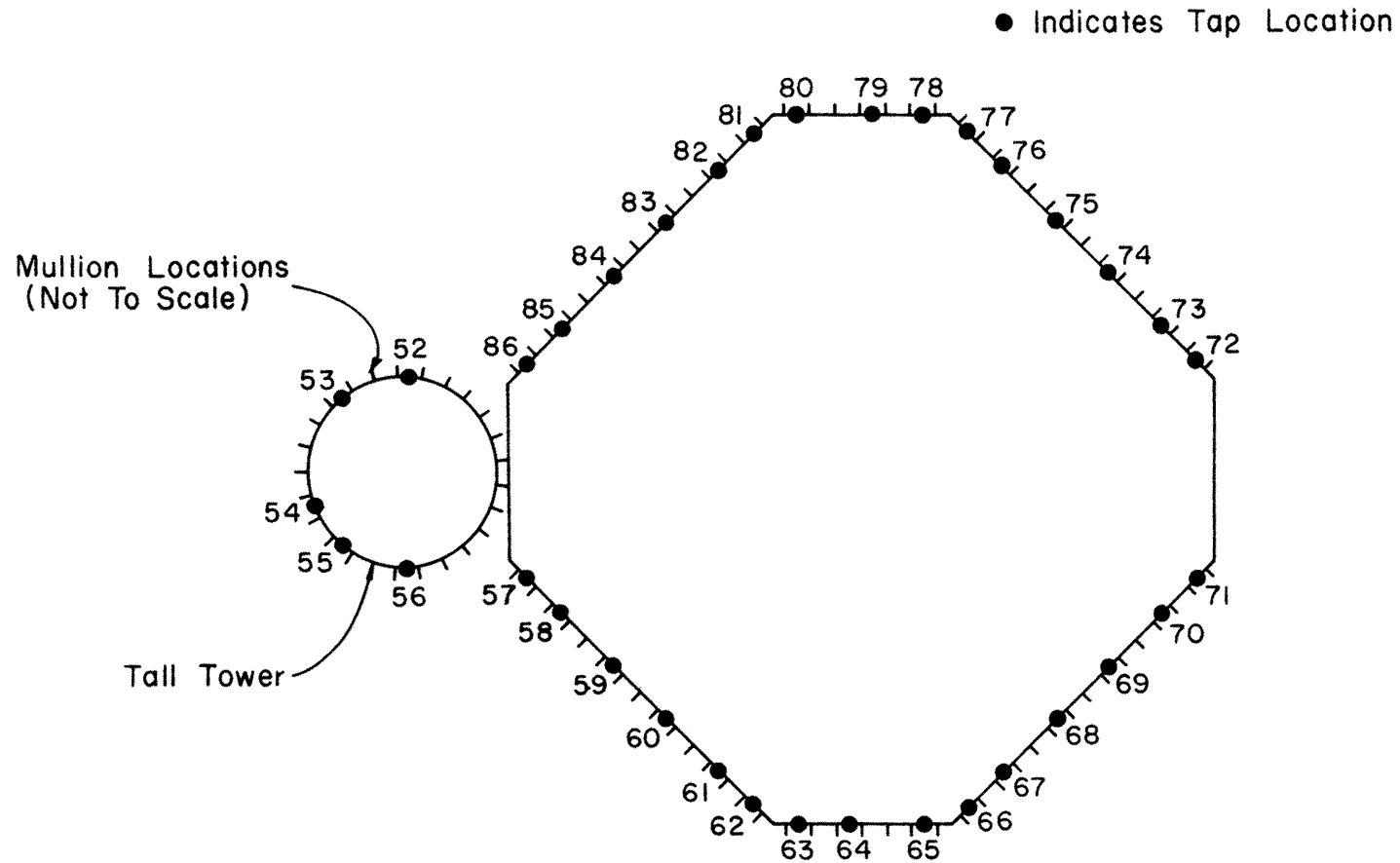
(Model Dimensions in Parentheses)

Figure 21. Pressure Tap Locations



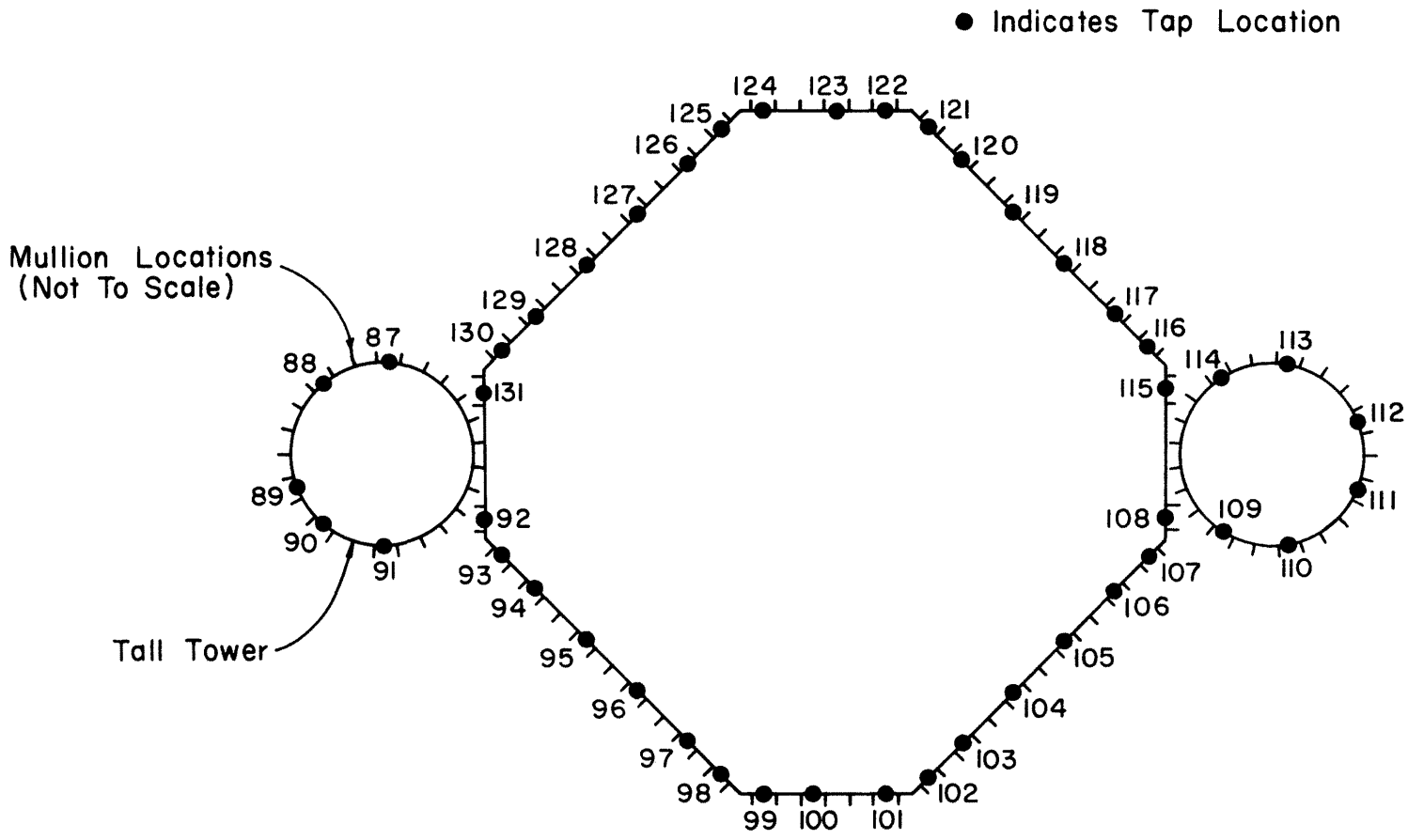
Tap	Distance Above Level One	Elevation Full Scale
15	0' (0.00")	596.5'
16	5' (0.25")	591.5'
17	10' (0.50")	586.5'
13	15' (0.75")	581.5'
14	20' (1.00")	576.5'

Figure 2m. Pressure Tap Locations



Tap	Distance Above Level Two	Elevation Full Scale
54	0' (0.00")	500.5'
55	5' (0.25")	505.5'
56	10' (0.50")	510.5'
57	15' (0.75")	515.5'
58	20' (1.00")	520.5'

Figure 2n. Pressure Tap Locations



Tap	Distance Above Level Three	Elevation Full Scale
89	0' (0.00")	404.5'
90	5' (0.25")	409.5'
91	10' (0.50")	414.5'
87	15' (0.75")	419.5'
88	20' (1.00")	424.5'

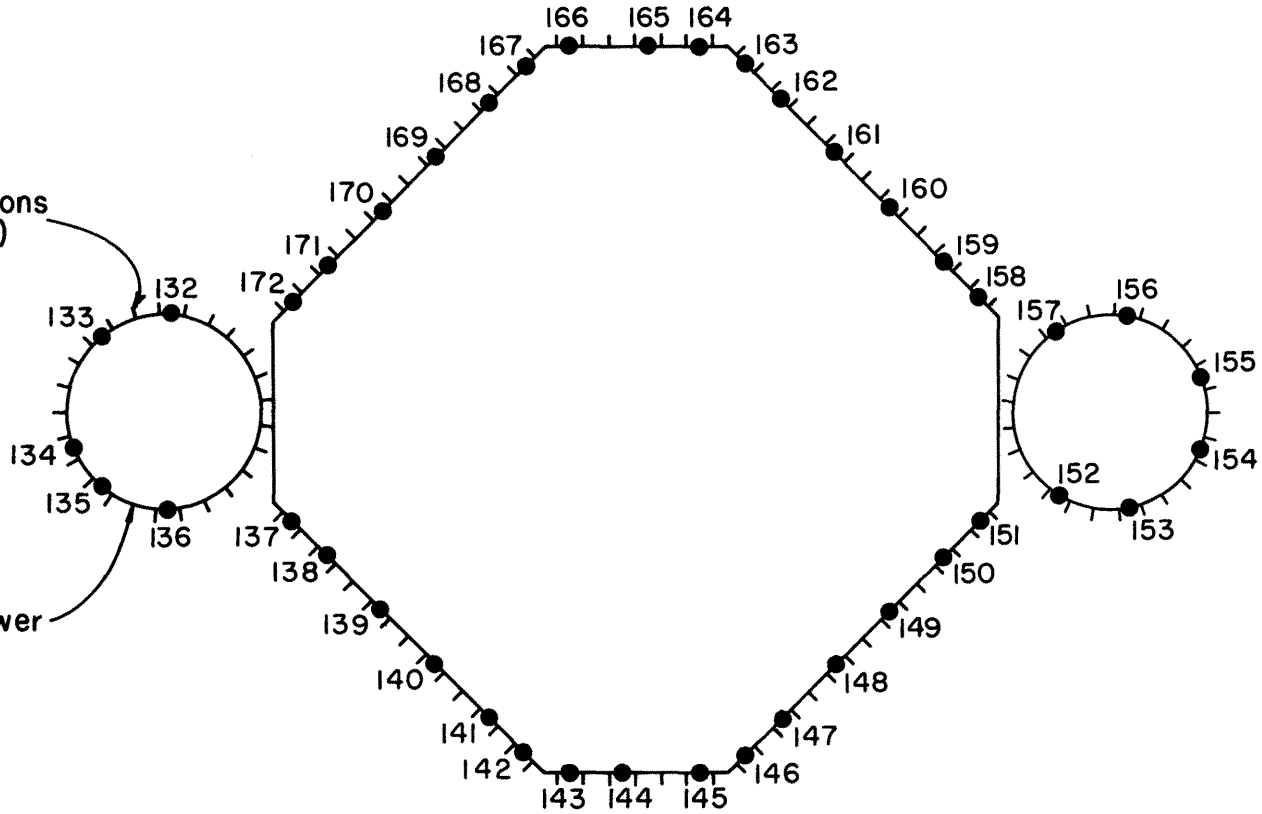
Tap	Distance Below Level Three	Elevation Full Scale
109	0' (0.00")	404.5'
110	5' (0.25")	399.5'
111	10' (0.50")	394.5'
112	15' (0.75")	389.5'
113	20' (1.00")	384.5'
114	25' (1.25")	379.5'

Figure 20. Pressure Tap Locations

● Indicates Tap Location

Mullion Locations  
(Not To Scale)

Tall Tower

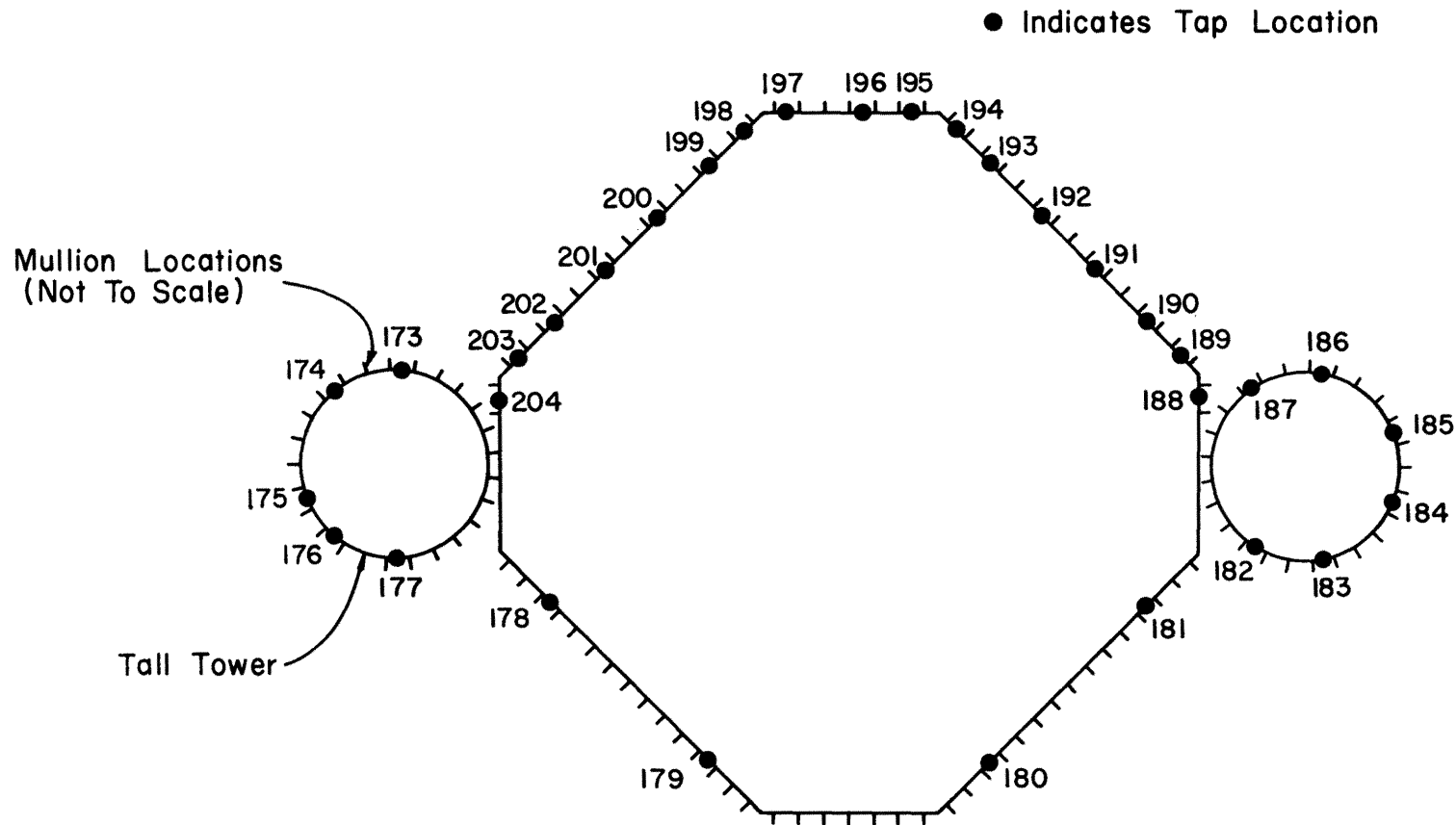


Tap	Distance Above Level Four	Elevation Full Scale
134	0' (0.00")	308.5'
135	5' (0.25")	313.5'
136	10' (0.50")	318.5'
132	15' (0.75")	323.5'
133	20' (1.00")	328.5'

Tap	Distance Above Level Five	Elevation Full Scale
152	0' (0.00")	308.5'
153	5' (0.25")	313.5'
154	10' (0.50")	318.5'
155	15' (0.75")	323.5'
156	20' (1.00")	328.5'
157	25' (1.25")	333.5'

Figure 2p. Pressure Tap Locations





Tap	Distance Above Level Five	Elevation Full Scale
175	0' (0.00")	212.5'
176	5' (0.25")	217.5'
177	10' (0.50")	222.5'
173	15' (0.75")	227.5'
174	20' (1.00")	232.5'

Tap	Distance Above Level Five	Elevation Full Scale
182	0' (0.00")	212.5'
183	5' (0.25")	217.5'
184	10' (0.50")	222.5'
185	15' (0.75")	227.5'
186	20' (1.00")	232.5'
187	25' (1.25")	237.5'

Figure 2q. Pressure Tap Locations



Figure 3. Completed Model Installed in the Wind Tunnel

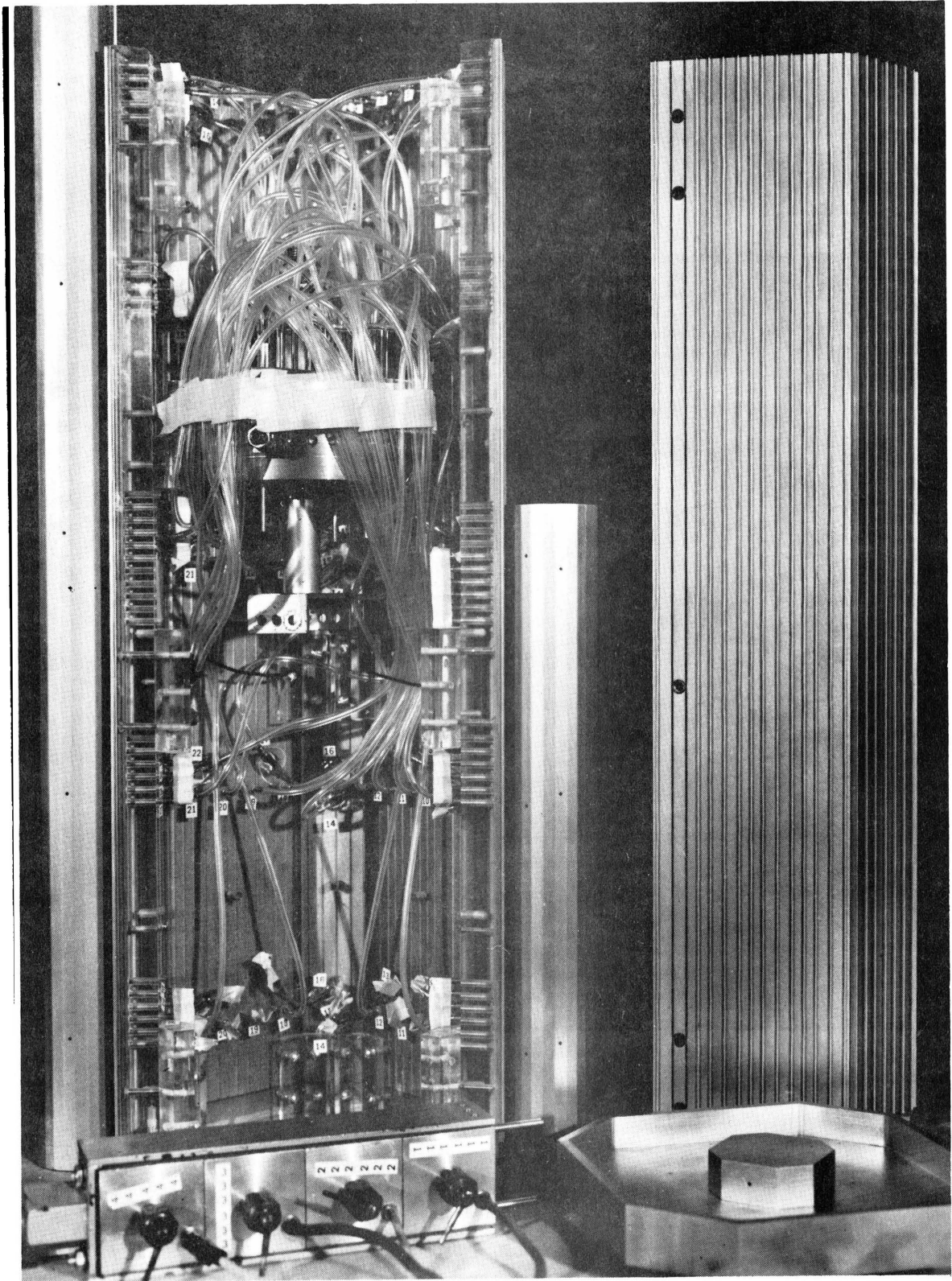


Figure 4. Pressure Switch Installed in the Model

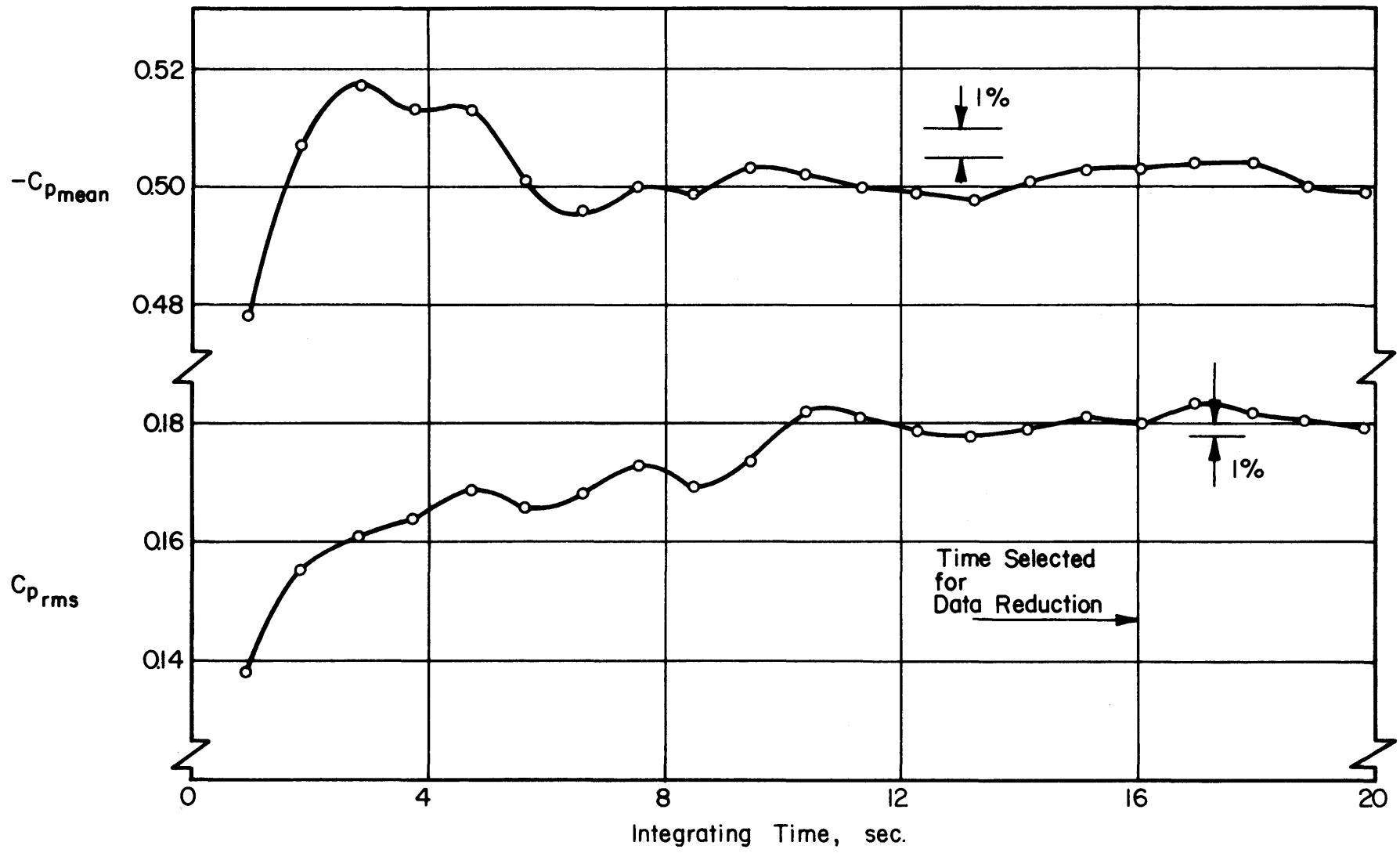


Figure 5 Data Sampling Time Verification

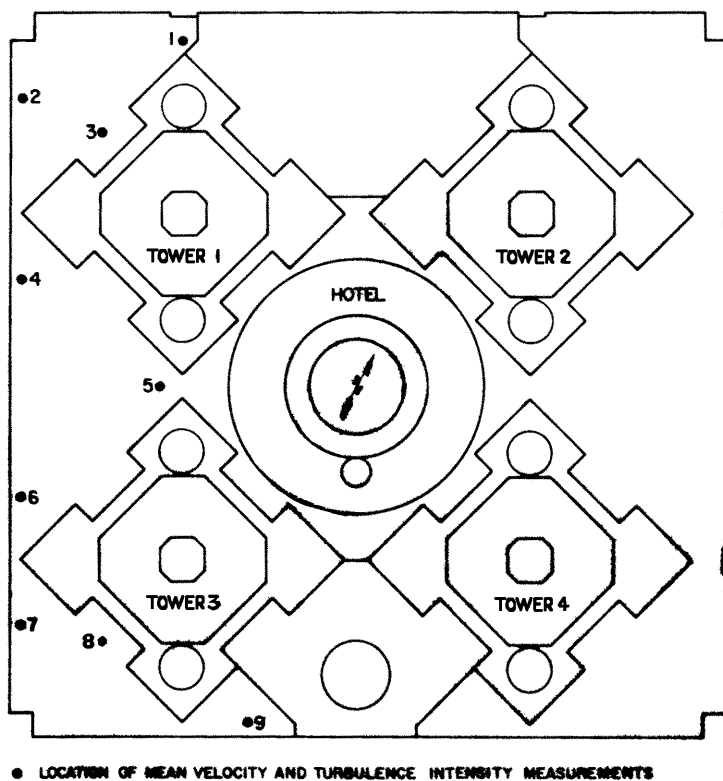


Figure 6. Plaza Velocity Measurement Locations

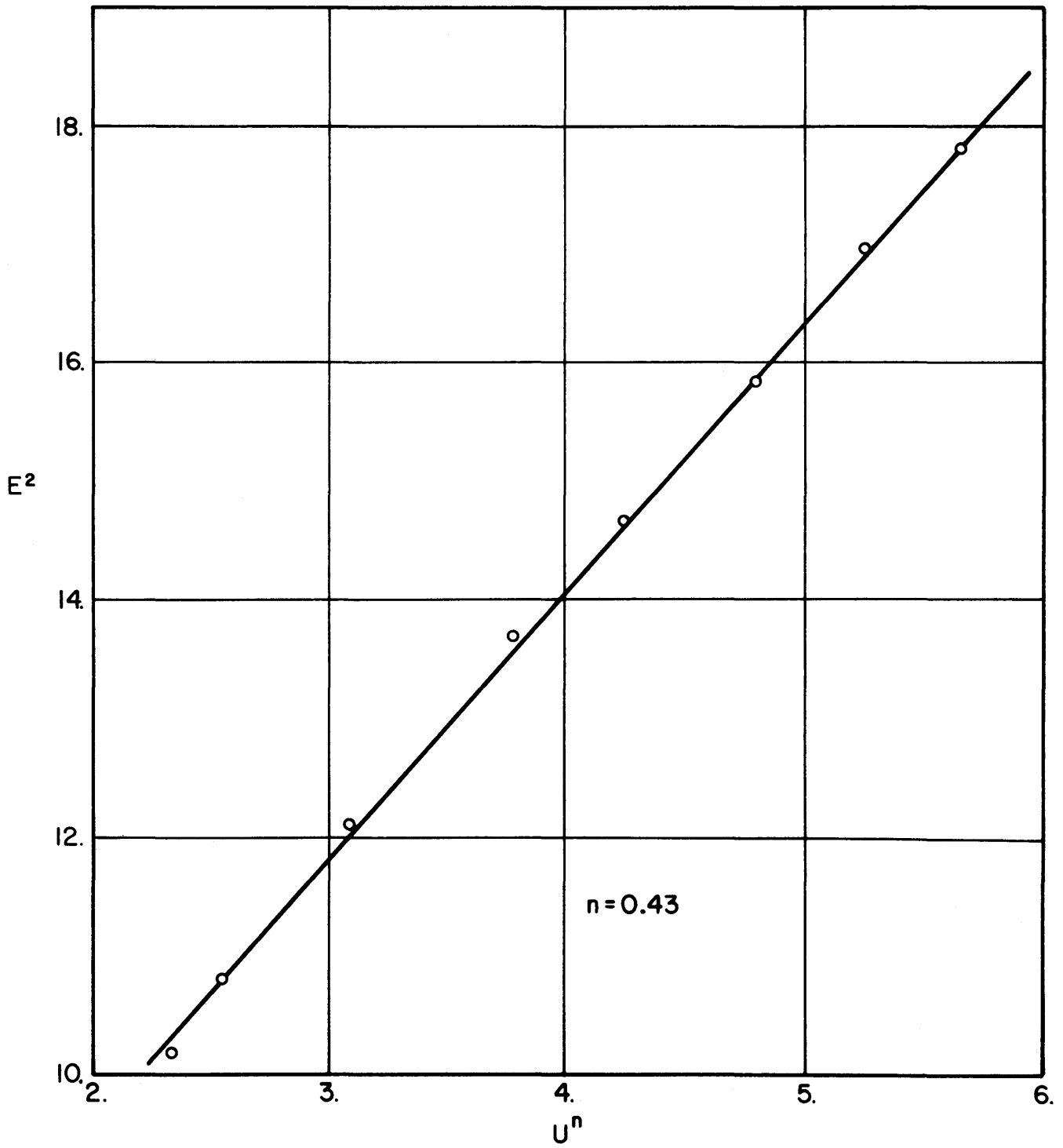


Figure 7. Typical Hot Wire Calibration

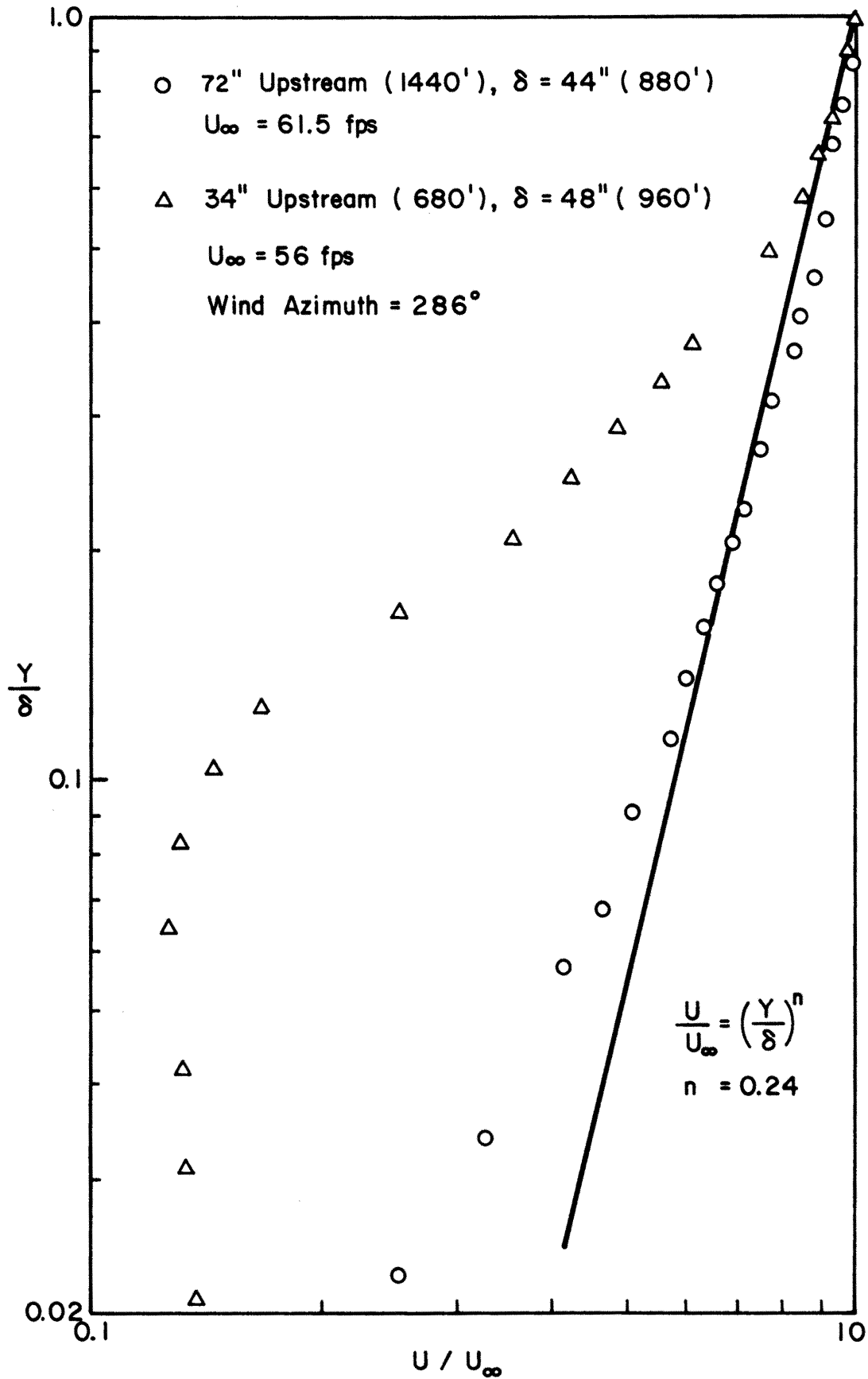


Figure 8a. Mean Velocity Profile Approaching the Model

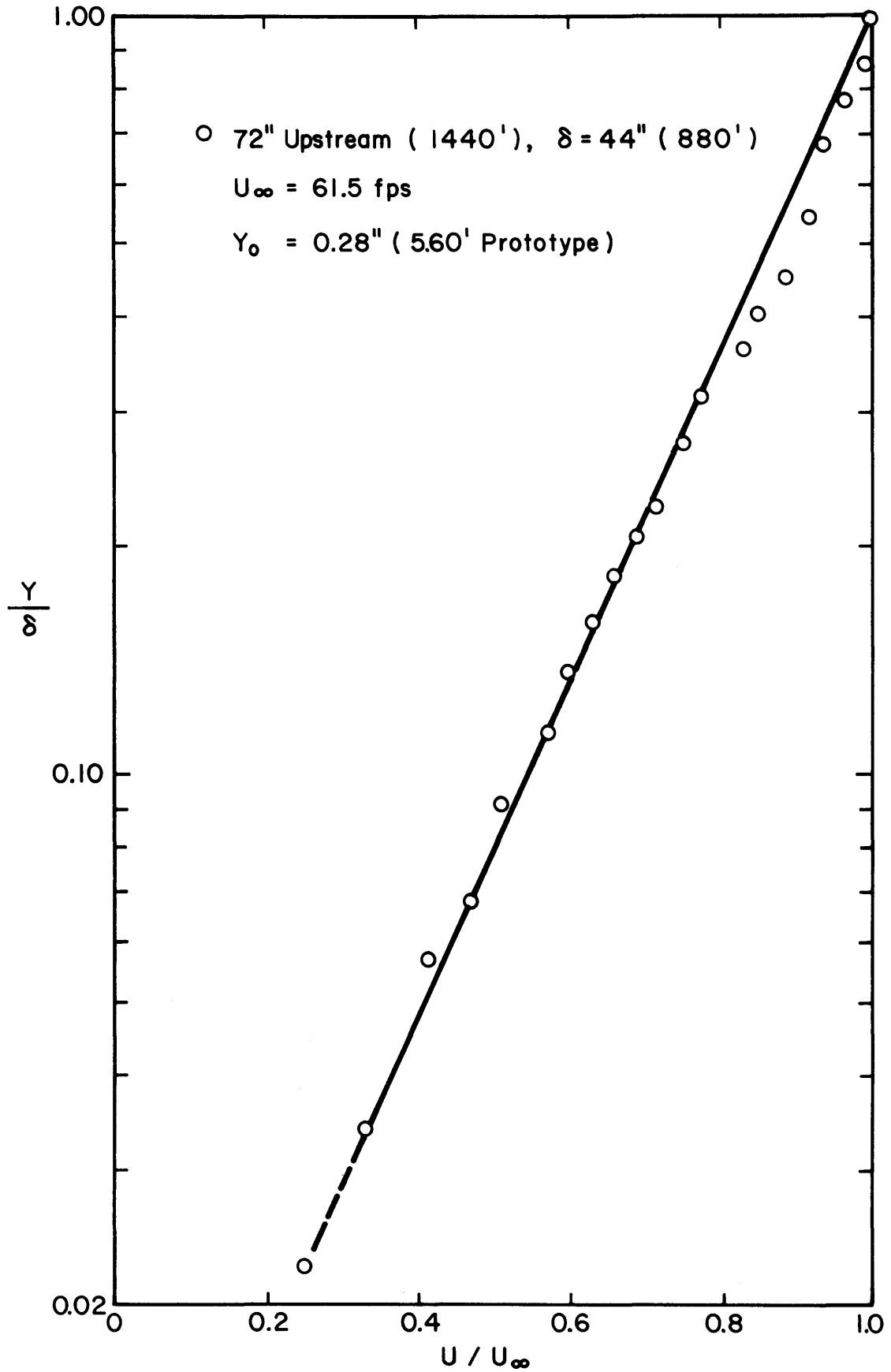


Figure 8b. Mean Velocity Profile Approaching the Model



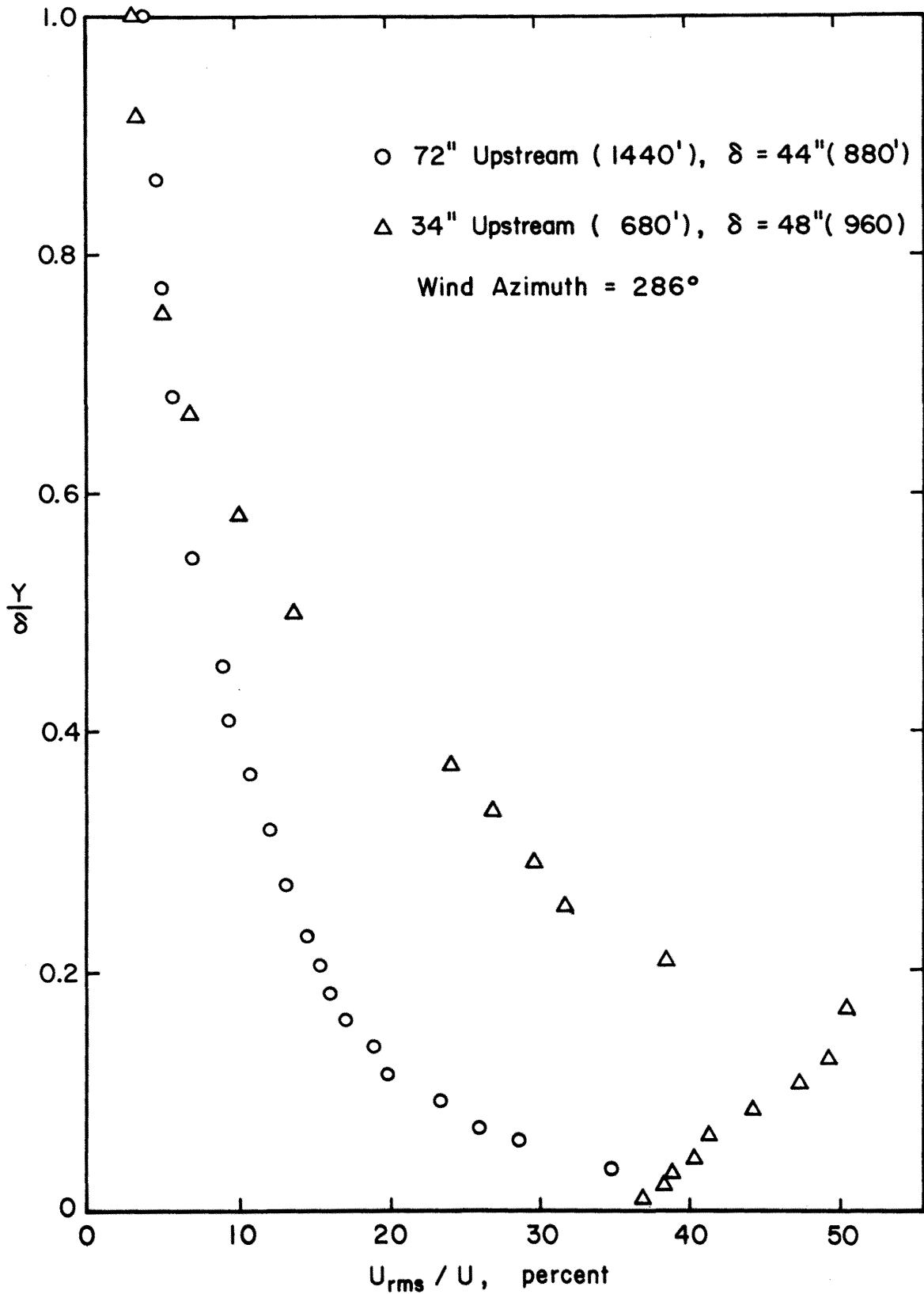


Figure 9. Turbulence Intensity Profiles

## Podium Location 2

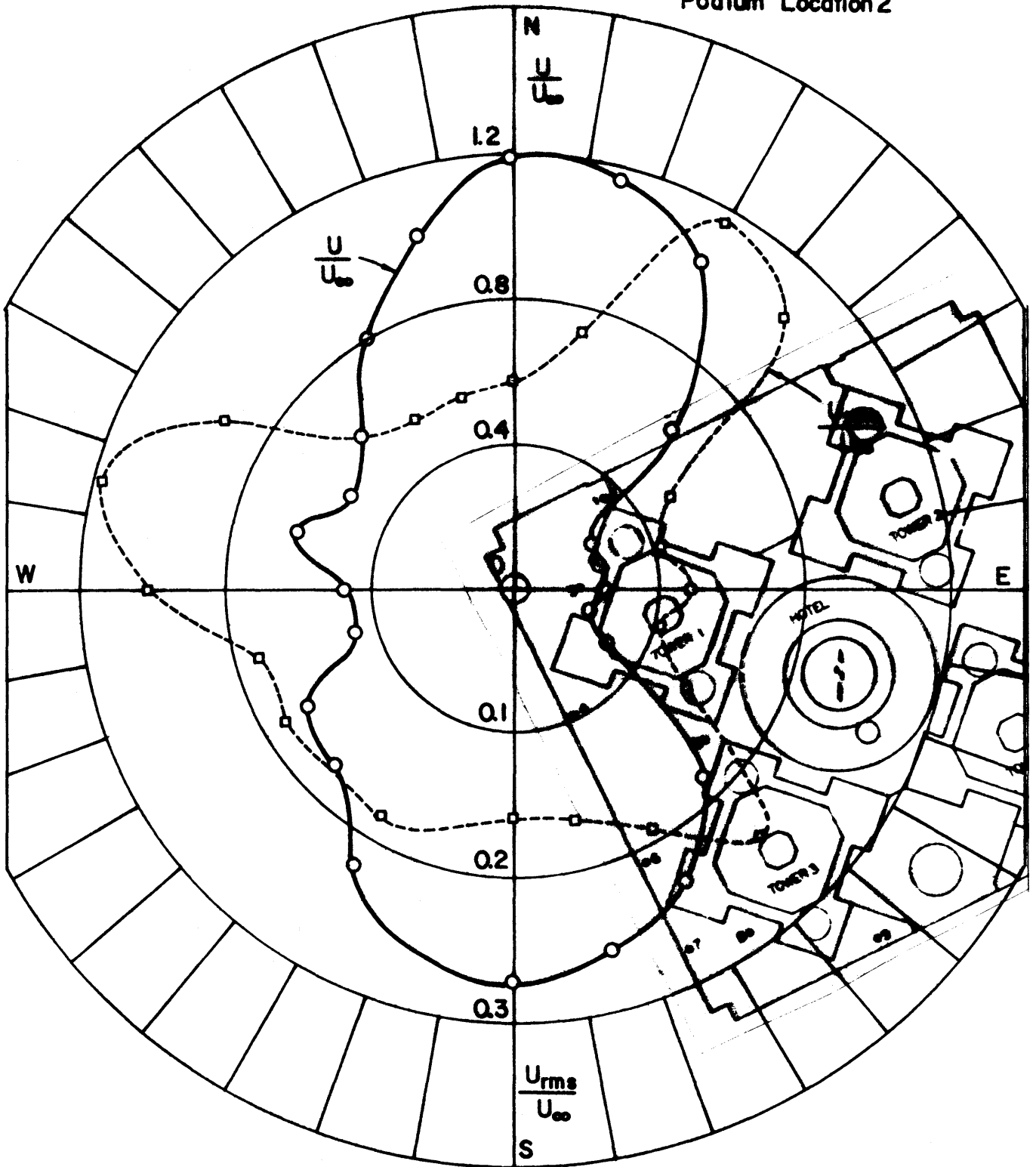


Figure 10. Mean Velocity and Turbulence Intensity at Podium Site 2

Podium Location 3

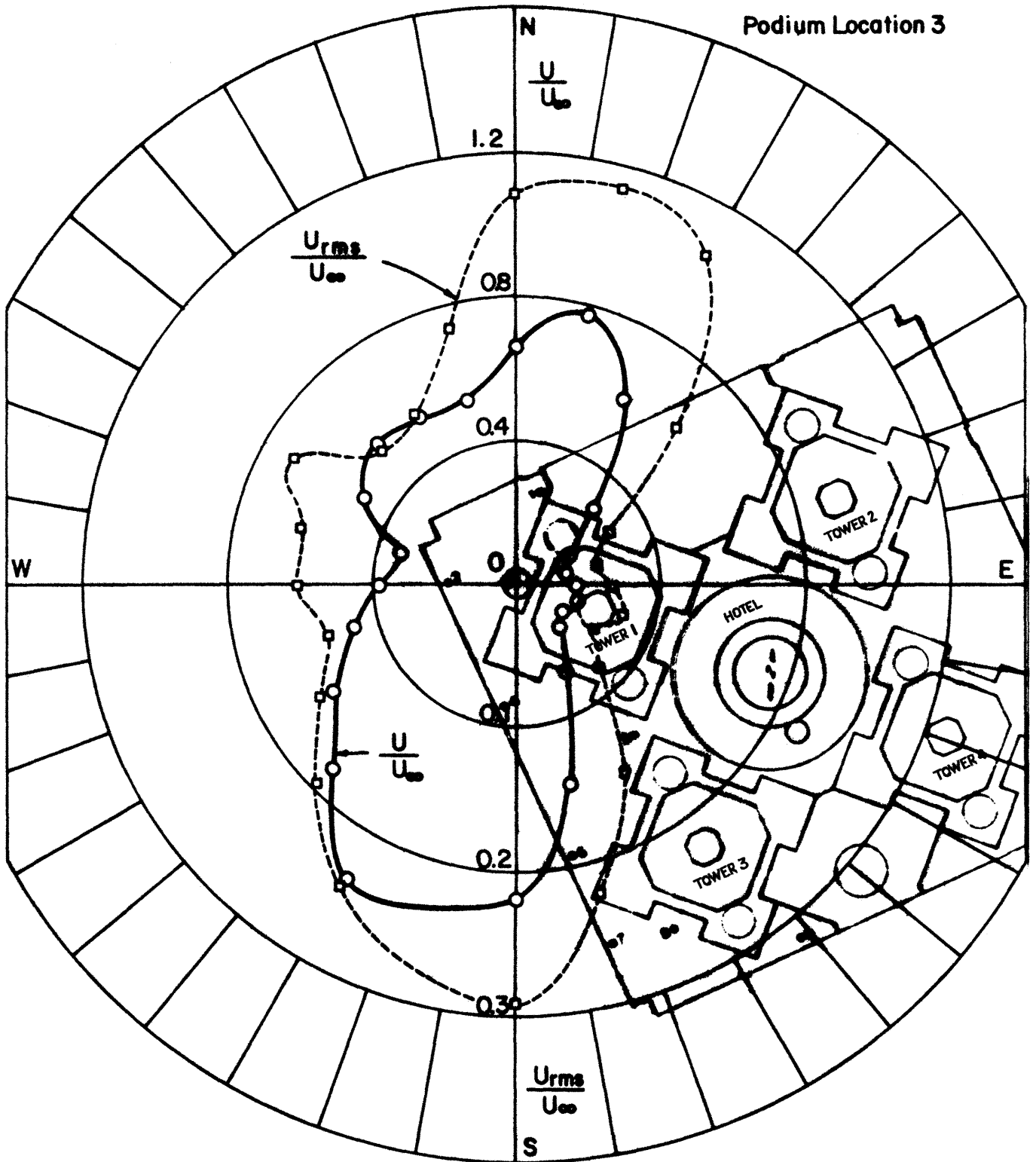


Figure 11. Mean Velocity and Turbulence Intensity at Podium Site 3

## Podium Location 4

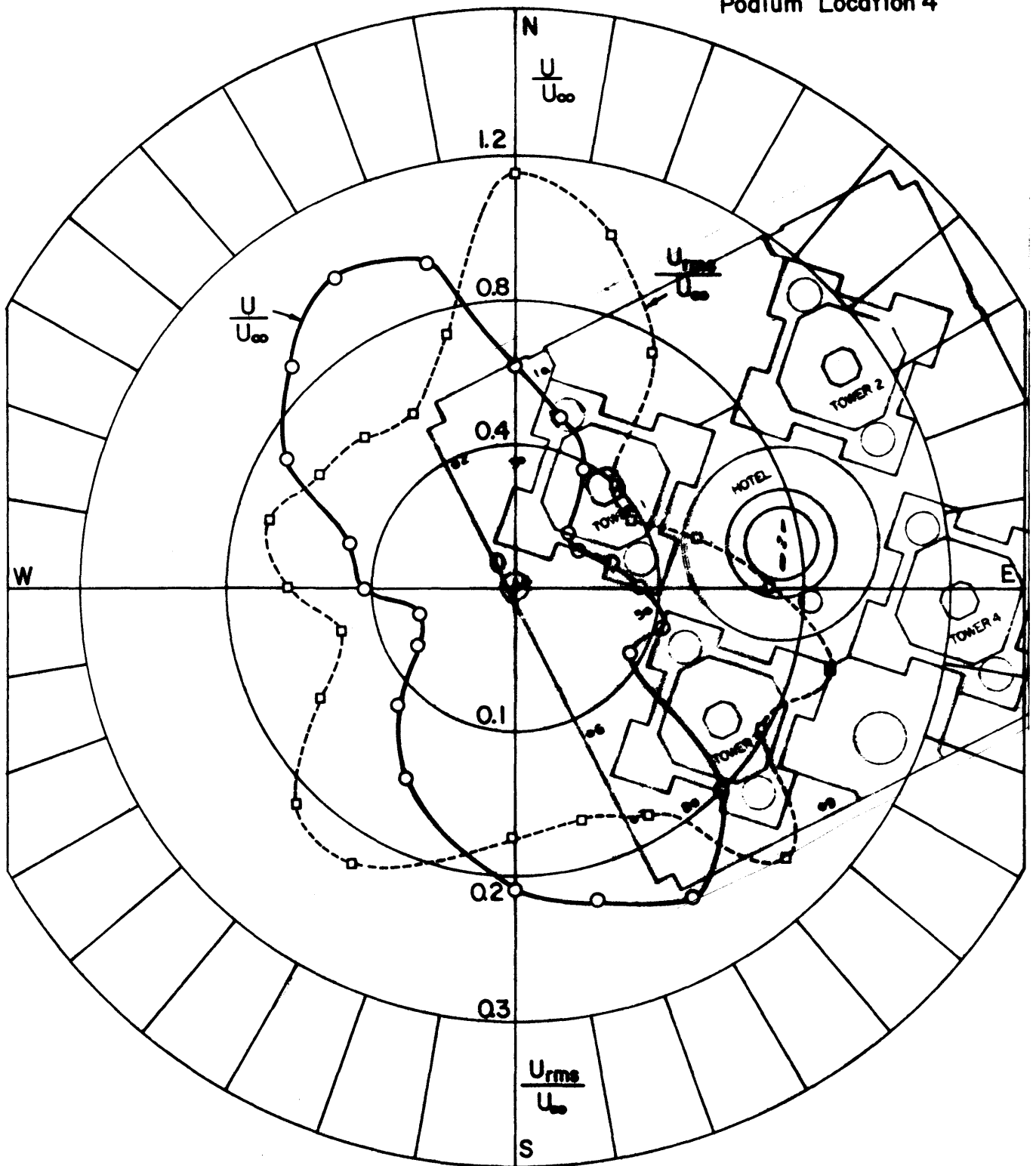


Figure 12. Mean Velocity and Turbulence Intensity at Podium Site 4

## Podium Location 5

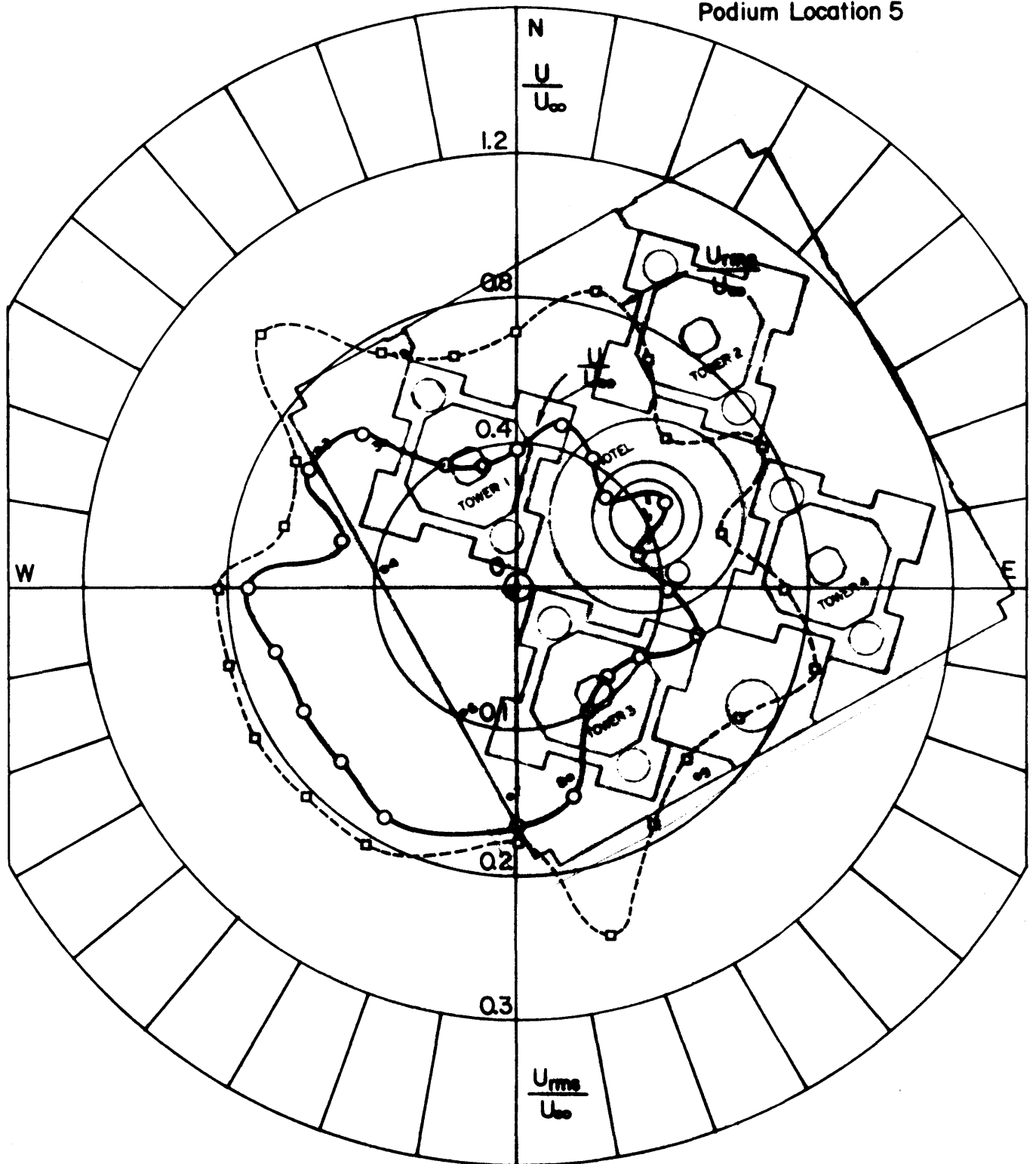


Figure 13, Mean Velocity and Turbulence Intensity at Podium Site 5

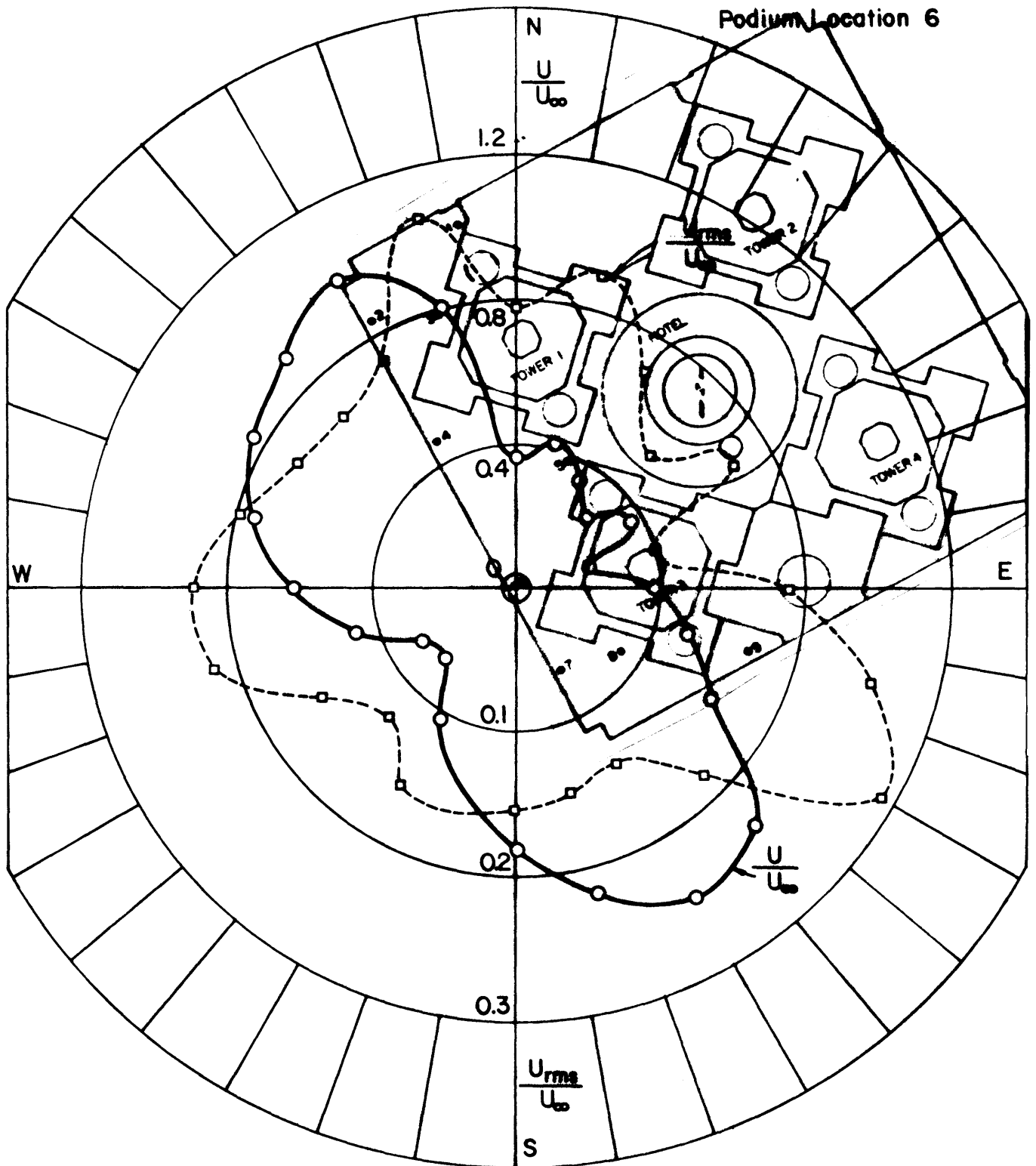


Figure 14. Mean Velocity and Turbulence Intensity at Podium Site 6

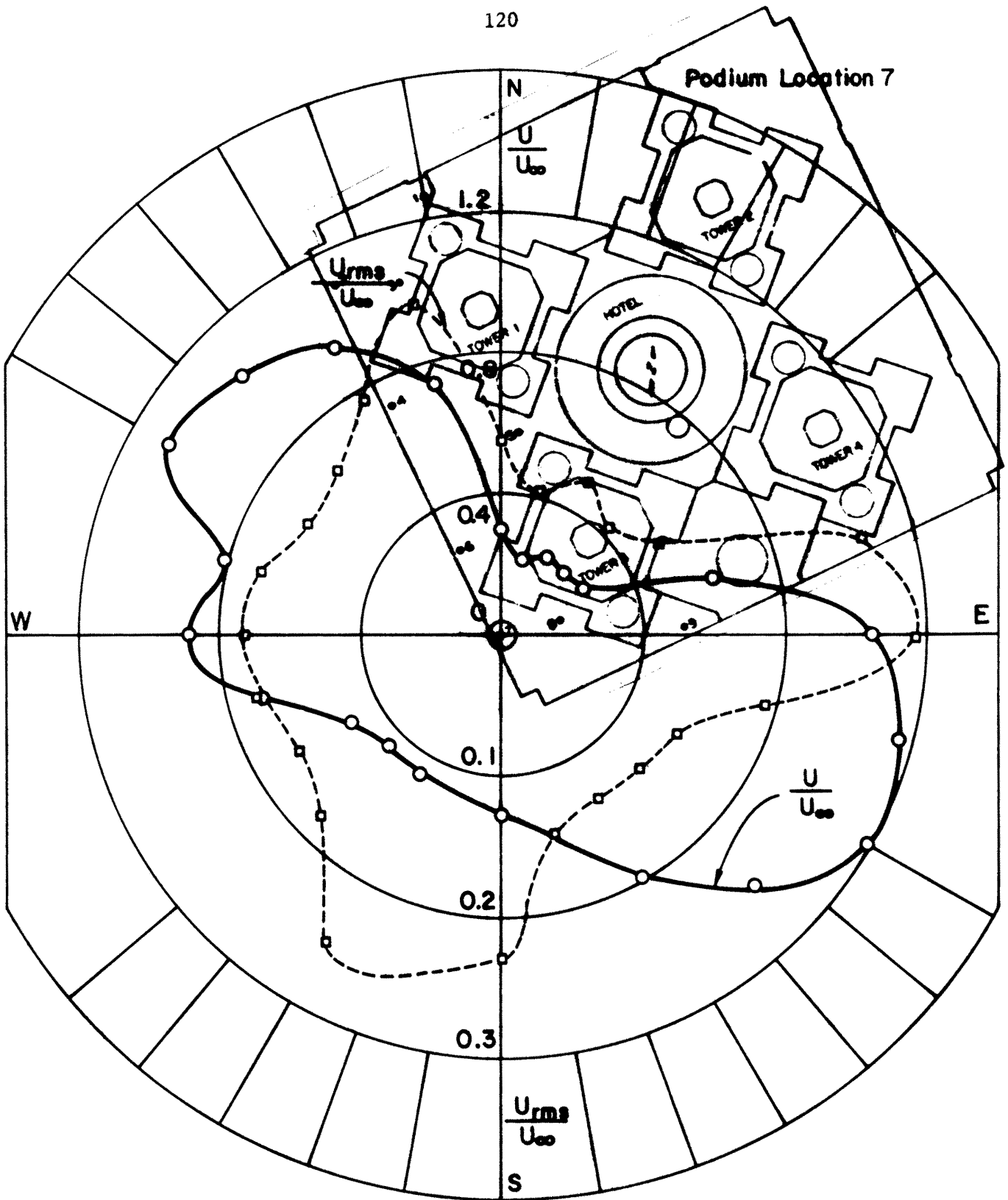


Figure 15. Mean Velocity and Turbulence Intensity at Podium Site 7

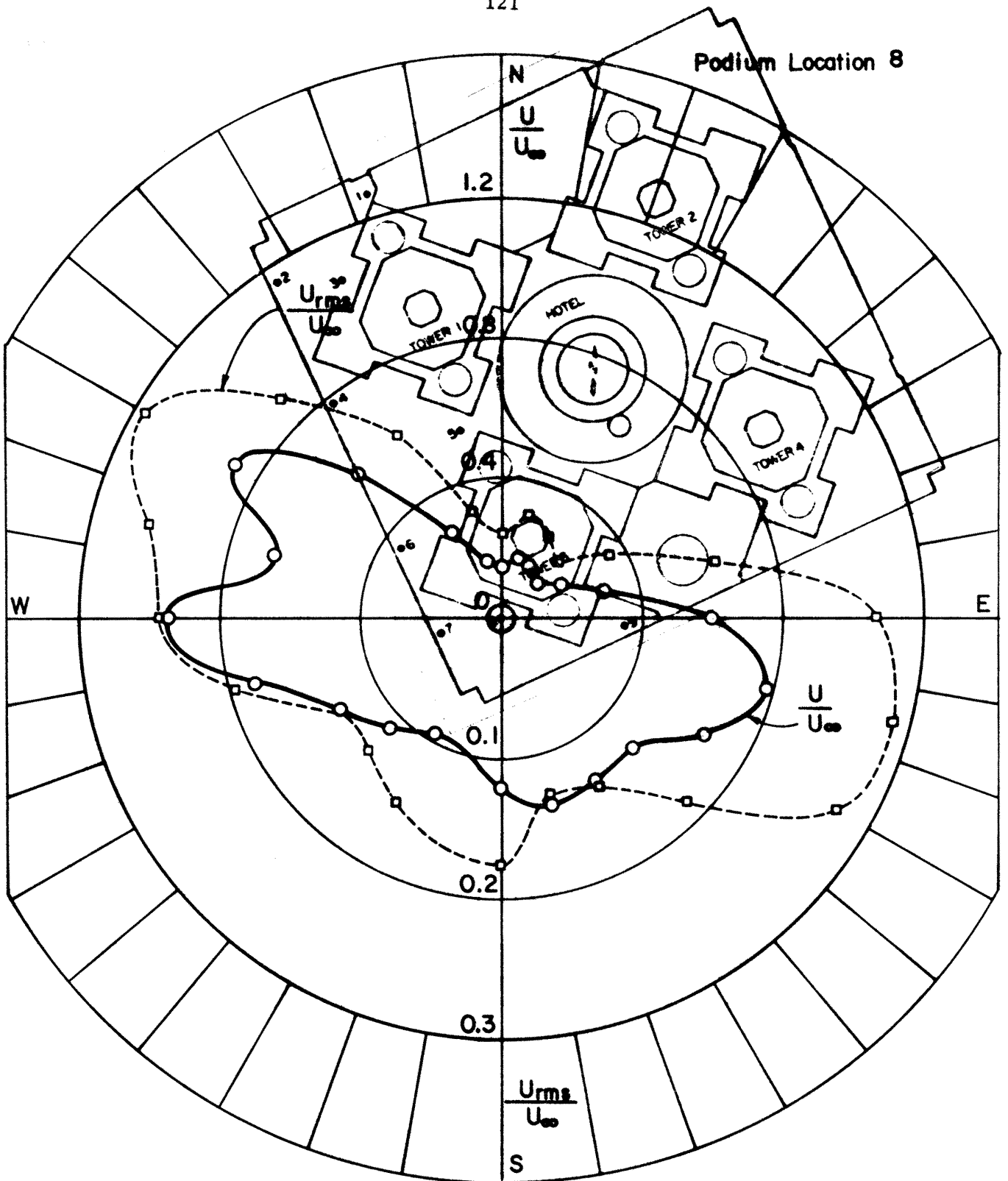


Figure 16. Mean Velocity and Turbulence Intensity at Podium Site 8



APPENDIX A

PRESSURE DATA

Notes--

1. Pressure coefficients are defined in section 4.3  
Pressure tap designation is explained in Figure 2

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.478	.035	-.354	-.654	37	.523	.119	.929	.159
2	-0.000	-0.000	-0.000	-0.000	38	-.490	.111	-.122	-.967
3	-1.514	.124	-.987	-1.957	39	-1.082	.252	-.297	-1.798
4	-.650	.079	-.251	-.942	40	-.452	.163	-.051	-1.310
5	-.761	.106	-.360	-1.157	41	-.354	.142	.075	-1.378
6	-.361	.060	-.166	-.599	42	-.298	.105	.307	-.922
7	.101	.106	.453	-.292	43	-.257	.091	.122	-.833
8	-.923	.175	-.515	-1.460	44	-.269	.091	.174	-.732
9	-.849	.247	-.348	-1.607	45	-.320	.145	.144	-1.205
10	-.510	.133	-.088	-1.216	46	-.349	.153	.211	-1.262
11	-.473	.109	-.164	-.990	47	.447	.170	.922	.051
12	-.432	.088	-.161	-.891	48	-.541	.098	-.248	-.957
13	-.425	.040	-.320	-.564	49	-1.098	.182	-.396	-1.743
14	-.428	.077	-.225	-.709	50	-.422	.136	-.116	-1.187
15	-.445	.093	-.211	-.956	51	-.301	.103	.023	-1.017
16	-0.000	-0.000	-0.000	-0.000	52	-.278	.083	.017	-.774
17	.290	.096	.596	-.135	53	-.235	.069	.188	-.627
18	-.919	.169	-.446	-1.423	54	-.253	.069	.027	-.809
19	-1.034	.280	-.314	-1.794	55	-.281	.099	.071	-.947
20	-.590	.200	-.091	-1.437	56	-.295	.108	.154	-.845
21	-.488	.146	-.089	-1.110	57	.260	.122	.719	-.135
22	-.419	.082	-.198	-.905	58	-.481	.093	-.185	-.854
23	-.406	.084	-.198	-.881	59	-.973	.153	-.565	-1.566
24	-.405	.086	-.125	-.976	60	-.404	.108	-.157	-.865
25	-.453	.133	-.170	-1.817	61	-.270	.058	-.068	-.688
26	-.479	.150	-.109	-1.866	62	-0.000	-0.000	-0.000	-0.000
27	.529	.114	.874	.149	63	-.231	.053	-.045	-.423
28	-.628	.110	-.249	-1.188	64	-.242	.050	-.013	-.430
29	-1.229	.246	-.224	-1.944	65	-.250	.081	.010	-.779
30	-.475	.153	-.028	-1.180	66	-.010	.060	.176	-.363
31	-.406	.122	-.016	-1.062	67	-0.000	-0.000	-0.000	-0.000
32	-.358	.096	.174	-.885	68	-.386	.091	.025	-.714
33	-.321	.091	.120	-.718	69	-0.000	-0.000	-0.000	-0.000
34	-.331	.092	.185	-.841	70	.030	.085	.302	-.304
35	-.404	.147	.130	-1.228	71	-0.000	-0.000	-0.000	-0.000
36	-.413	.143	.161	-1.191	72	.161	.107	.573	-.180

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.506	.035	-.392	-.627	37	.331	.258	1.021	-.692
2	-0.000	-0.000	-0.000	-0.000	38	-.407	.154	.290	-.932
3	-1.505	.116	-.912	-1.822	39	-1.217	.225	-.422	-1.988
4	-.657	.098	-.295	-1.011	40	-.520	.178	-.097	-1.358
5	-.990	.131	-.489	-1.454	41	-.348	.098	-.079	-1.001
6	-.437	.064	-.247	-.708	42	-.330	.093	.008	-.904
7	-.303	.113	-.078	-.723	43	-.283	.080	.252	-.602
8	-1.066	.247	-.524	-1.751	44	-.298	.076	.038	-.639
9	-.796	.251	-.219	-1.795	45	-.350	.124	.069	-.983
10	-.579	.161	-.049	-1.564	46	-.373	.135	.173	-1.060
11	-.519	.104	-.223	-.942	47	.368	.206	.926	-.728
12	-.470	.080	-.272	-.794	48	-.502	.161	.708	-.964
13	-.461	.077	-.265	-.761	49	-1.189	.200	-.436	-1.820
14	-.463	.077	-.268	-.733	50	-.479	.158	-.152	-1.222
15	-.487	.088	-.258	-.926	51	-.313	.073	-.021	-.880
16	-.518	.104	-.241	-1.062	52	-.305	.080	.007	-.656
17	.089	.181	.688	-.771	53	-.260	.068	.031	-.626
18	-.952	.164	-.354	-1.510	54	-.278	.067	.013	-.582
19	-1.073	.280	-.358	-1.984	55	-.301	.093	.065	-.771
20	-.703	.243	-.055	-1.903	56	-.316	.103	.123	-.753
21	-.586	.174	-.111	-1.511	57	.241	.153	.764	-.306
22	-.491	.102	-.247	-.908	58	-.529	.103	-.066	-.929
23	-.466	.101	-.151	-1.235	59	-1.018	.166	-.577	-1.726
24	-.467	.101	-.111	-1.136	60	-.428	.111	-.147	-.956
25	-.549	.183	-.172	-1.860	61	-.288	.057	-.062	-.523
26	-.563	.183	-.103	-1.802	62	-0.000	-0.000	-0.000	-0.000
27	.335	.248	1.084	-.523	63	-.244	.052	.041	-.446
28	-.477	.150	.165	-1.097	64	-.257	.049	-.007	-.485
29	-1.362	.224	-.651	-2.080	65	-.260	.071	.078	-.742
30	-.654	.233	-.176	-1.829	66	-.016	.053	.165	-.368
31	-.421	.098	-.113	-.986	67	-0.000	-0.000	-0.000	-0.000
32	-.411	.093	-.133	-.908	68	-.351	.086	.007	-.689
33	-.369	.079	-.041	-.849	69	-0.000	-0.000	-0.000	-0.000
34	-.386	.082	-.047	-.871	70	.069	.091	.437	-.243
35	-.424	.128	.016	-1.158	71	-0.000	-0.000	-0.000	-0.000
36	-.448	.152	.016	-1.248	72	.126	.138	.627	-.375

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 20

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.530	.033	-.419	-.724	37	-.138	.219	.631	-.896
2	-0.000	-0.000	-0.000	-0.000	38	-.415	.249	.510	-1.561
3	-1.505	.112	-1.016	-1.883	39	-.899	.185	-.310	-1.533
4	-.764	.131	-.282	-1.272	40	-.459	.128	-.094	-1.127
5	-1.195	.139	-.601	-1.629	41	-.377	.084	-.057	-.746
6	-.534	.093	-.255	-.994	42	-.325	.074	-.028	-.722
7	-.774	.140	-.309	-1.325	43	-.271	.066	-.027	-.554
8	-1.235	.337	-.594	-2.141	44	-.284	.061	-.046	-.554
9	-.838	.267	-.177	-1.929	45	-.301	.112	.137	-1.335
10	-.614	.191	-.137	-1.648	46	-.323	.126	.054	-1.129
11	-.519	.094	-.228	-.869	47	-.003	.209	.668	-.815
12	-.470	.065	-.298	-.722	48	-.333	.177	.575	-1.000
13	-.450	.059	-.289	-.687	49	-.976	.179	-.439	-1.584
14	-.447	.060	-.273	-.682	50	-.482	.124	-.132	-1.091
15	-.469	.064	-.279	-.695	51	-.347	.075	-.095	-.728
16	-.489	.074	-.269	-.798	52	-.341	.078	-.031	-.745
17	-.616	.253	.426	-1.738	53	-.276	.060	.030	-.480
18	-1.188	.246	-.272	-2.245	54	-.292	.058	-.004	-.533
19	-1.204	.255	-.329	-2.065	55	-.307	.085	.110	-1.035
20	-.763	.262	-.048	-2.196	56	-.328	.101	0.000	-.778
21	-.602	.185	-.064	-1.501	57	.215	.169	.798	-.308
22	-.490	.090	-.269	-.869	58	-.427	.134	.128	-.850
23	-.463	.084	-.189	-.931	59	-1.013	.146	-.507	-1.456
24	-.469	.085	-.184	-.961	60	-.473	.115	-.218	-.980
25	-.490	.118	-.221	-1.335	61	-.312	.057	-.107	-.625
26	-.515	.137	-.120	-1.367	62	-0.000	-0.000	-0.000	-0.000
27	-.412	.251	.516	-1.325	63	-.273	.046	-.056	-.461
28	-.770	.252	.258	-1.541	64	-.284	.045	-.105	-.464
29	-.864	.233	-.266	-1.799	65	-.282	.064	-.033	-.681
30	-.477	.152	-.031	-1.702	66	-.029	.050	.111	-.272
31	-.424	.091	-.087	-.896	67	-0.000	-0.000	-0.000	-0.000
32	-.376	.077	-.070	-.899	68	-.354	.088	-.023	-.682
33	-.316	.071	.031	-.721	69	-0.000	-0.000	-0.000	-0.000
34	-.325	.069	.040	-.729	70	.012	.095	.463	-.373
35	-.338	.099	.077	-.946	71	-0.000	-0.000	-0.000	-0.000
36	-.361	.114	-.010	-.886	72	.105	.171	.771	-.487

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
CENTER BUILDING  
WIND DIRECTION 30

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.534	.034	-.431	-.653	37	-.437	.289	.587	-1.491
2	-0.000	-0.000	-0.000	-0.000	38	-.598	.265	.312	-1.364
3	-1.510	.119	-1.079	-1.909	39	-.897	.158	-.210	-1.494
4	-.771	.131	-.269	-1.257	40	-.515	.125	-.145	-1.145
5	-1.184	.141	-.590	-1.608	41	-.435	.090	-1.100	-.857
6	-.527	.093	-.279	-.967	42	-.362	.076	-.046	-.680
7	-.773	.138	-.326	-1.247	43	-.296	.064	-.017	-.542
8	-1.238	.327	-.575	-2.274	44	-.311	.058	-.061	-.542
9	-.771	.223	-.205	-1.706	45	-.314	.044	-.010	-.891
10	-.615	.164	-.175	-2.220	46	-.329	.104	.030	-.900
11	-.545	.082	-.282	-.825	47	-.252	.160	.378	-1.002
12	-.512	.061	-.318	-.733	48	-.381	.242	.570	-1.222
13	-.500	.059	-.274	-.773	49	-.776	.153	-.239	-1.293
14	-.493	.060	-.272	-.744	50	-.562	.147	-.185	-1.269
15	-.521	.064	-.287	-.763	51	-.389	.074	-.140	-.747
16	-.533	.068	-.278	-.808	52	-.361	.064	-.114	-.714
17	-1.222	.269	-.083	-2.090	53	-.300	.050	-.091	-.510
18	-1.551	.294	-.550	-2.662	54	-.309	.050	-.113	-.529
19	-1.203	.296	-.087	-2.221	55	-.313	.067	-.016	-.716
20	-.847	.303	-.068	-2.632	56	-.323	.090	-.031	-.835
21	-.644	.183	-.040	-1.558	57	.030	.174	.721	-.582
22	-.521	.091	-.261	-.905	58	-.276	.176	.391	-.951
23	-.500	.089	-.239	-.871	59	-.898	.138	-.342	-1.418
24	-.504	.089	-.234	-.854	60	-.524	.126	-.230	-.991
25	-.526	.124	-.205	-1.317	61	-.340	.060	-.135	-.584
26	-.531	.131	-.066	-1.220	62	-0.000	-0.000	-0.000	-0.000
27	-1.067	.228	-.033	-1.816	63	-.297	.042	-.118	-.459
28	-1.175	.189	-.249	-1.935	64	-.305	.041	-.117	-.515
29	-.792	.196	-.221	-1.644	65	-.304	.049	-.098	-.587
30	-.494	.138	-.031	-1.267	66	-.037	.042	.121	-.255
31	-.495	.108	-.081	-.945	67	-0.000	-0.000	-0.000	-0.000
32	-.408	.083	-.061	-.751	68	-.341	.068	.046	-.587
33	-.350	.076	-.003	-.700	69	-0.000	-0.000	-0.000	-0.000
34	-.354	.073	-.100	-.633	70	-.180	.103	.212	-.620
35	-.377	.109	.051	-1.225	71	-0.000	-0.000	-0.000	-0.000
36	-.400	.118	.034	-1.085	72	-.133	.171	.543	-.684

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 40

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.559	.051	-.409	-.922	37	-.651	.375	.687	-2.067
2	-0.000	-0.000	-0.000	-0.000	38	-.613	.256	.396	-1.476
3	-1.238	.117	-.679	-1.565	39	-.658	.148	-.134	-1.257
4	-1.198	.139	-.450	-1.538	40	-.505	.092	-.206	-.893
5	-1.338	.133	-.592	-1.743	41	-.406	.054	-.219	-.685
6	-.509	.101	-.266	-1.275	42	-.372	.042	-.213	-.555
7	-1.649	.213	-.743	-2.209	43	-.356	.042	-.186	-.513
8	-1.348	.329	-.416	-2.112	44	-.362	.039	-.185	-.517
9	-.718	.212	-.212	-2.484	45	-.357	.047	-.176	-.545
10	-.563	.114	-.281	-2.214	46	-.360	.060	-.156	-.604
11	-.542	.068	-.347	-.817	47	-.449	.169	.257	-1.148
12	-.519	.053	-.369	-.750	48	-.479	.128	.116	-.945
13	-.510	.048	-.355	-.719	49	-.522	.096	-.241	-1.085
14	-.502	.049	-.339	-.730	50	-.432	.076	-.149	-1.000
15	-.523	.052	-.361	-.746	51	-.377	.046	-.226	-.851
16	-.537	.057	-.344	-.807	52	-.358	.038	-.214	-.490
17	-1.859	.261	-.582	-2.633	53	-.342	.035	-.195	-.497
18	-1.710	.289	-.565	-2.841	54	-.336	.034	-.175	-.481
19	-.910	.209	-.338	-1.910	55	-.340	.038	-.210	-.490
20	-.828	.229	-.256	-2.032	56	-.350	.049	-.162	-.706
21	-.708	.158	-.158	-1.658	57	-.398	.154	.067	-1.102
22	-.554	.079	-.298	-.998	58	-.404	.139	.325	-.854
23	-.519	.069	-.263	-.878	59	-.483	.087	-.169	-.886
24	-.524	.068	-.294	-.898	60	-.413	.064	-.241	-.795
25	-.523	.097	-.178	-1.531	61	-.359	.041	-.207	-.790
26	-.524	.100	-.169	-1.172	62	-0.000	-0.000	-0.000	-0.000
27	-1.470	.269	-.072	-2.392	63	-.331	.031	-.234	-.442
28	-1.300	.252	-.129	-2.172	64	-.335	.031	-.241	-.447
29	-.831	.177	-.253	-1.534	65	-.335	.031	-.227	-.452
30	-.588	.158	-.111	-1.317	66	-.054	.026	.027	-.196
31	-.496	.096	-.190	-.947	67	-0.000	-0.000	-0.000	-0.000
32	-.444	.063	-.168	-.703	68	-.325	.099	.169	-.739
33	-.403	.055	-.207	-.592	69	-0.000	-0.000	-0.000	-0.000
34	-.401	.054	-.203	-.585	70	-.327	.134	.178	-.751
35	-.402	.062	-.129	-.758	71	-0.000	-0.000	-0.000	-0.000
36	-.413	.073	-.139	-.861	72	-.362	.126	.060	-.793

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 50

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.602	.079	-.393	-.982	37	-1.172	.398	.228	-2.532
2	-0.000	-0.000	-0.000	-0.000	38	-.830	.303	.185	-1.770
3	-1.024	.114	-.597	-1.334	39	-.566	.179	.026	-1.246
4	-1.269	.121	-.583	-1.606	40	-.440	.103	-.129	-1.139
5	-1.278	.125	-.755	-1.875	41	-.432	.069	-.222	-.903
6	-.496	.070	-.277	-.945	42	-.413	.056	-.239	-.710
7	-1.866	.309	-.637	-2.602	43	-.409	.053	-.233	-.612
8	-1.164	.352	-.367	-2.320	44	-.408	.052	-.249	-.596
9	-.734	.183	-.245	-1.989	45	-.415	.060	-.225	-.642
10	-.583	.089	-.296	-1.038	46	-.414	.068	-.162	-.849
11	-.565	.064	-.387	-.991	47	-.957	.257	.036	-1.838
12	-.542	.052	-.393	-1.017	48	-.694	.171	-.211	-1.233
13	-.529	.048	-.347	-.723	49	-.504	.119	-.156	-1.395
14	-.520	.050	-.329	-.725	50	-.412	.077	-.192	-.919
15	-.538	.052	-.344	-.750	51	-.394	.048	-.243	-.656
16	-.550	.055	-.351	-.748	52	-.391	.048	.152	-.627
17	-2.109	.269	-1.245	-2.913	53	-.389	.045	-.270	-.553
18	-1.220	.367	-.366	-2.596	54	-.377	.044	-.259	-.552
19	-.808	.183	-.253	-1.597	55	-.393	.050	-.250	-.580
20	-.792	.170	-.321	-1.669	56	-.401	.054	-.230	-.616
21	-.656	.132	-.270	-1.296	57	-.869	.218	-.192	-1.688
22	-.549	.070	-.246	-.954	58	-.590	.140	-.162	-1.166
23	-.528	.065	-.316	-.947	59	-.452	.099	-.154	-.996
24	-.526	.067	-.304	-.962	60	-.396	.060	-.201	-.706
25	-.521	.079	-.250	-.912	61	-.377	.042	-.212	-.552
26	-.514	.086	-.243	-.871	62	-0.000	-0.000	-0.000	-0.000
27	-1.850	.263	-.778	-2.650	63	-.356	.039	-.117	-.518
28	-1.242	.314	-.280	-2.320	64	-.355	.038	-.230	-.508
29	-.750	.197	-.112	-1.568	65	-.361	.044	-.178	-.607
30	-.579	.235	.105	-1.737	66	-.071	.031	.034	-.236
31	-.509	.108	-.083	-1.085	67	-0.000	-0.000	-0.000	-0.000
32	-.486	.070	-.277	-.740	68	-.237	.125	.321	-.619
33	-.453	.064	-.208	-.654	69	-0.000	-0.000	-0.000	-0.000
34	-.439	.066	-.141	-.642	70	-.357	.158	.202	-.875
35	-.448	.066	-.215	-.696	71	-0.000	-0.000	-0.000	-0.000
36	-.452	.072	-.158	-.815	72	-.643	.133	-.189	-1.156

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 60

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.654	.100	-.414	-1.002	37	-1.456	.441	.064	-2.903
2	-0.000	-0.000	-0.000	-0.000	38	-.945	.356	.278	-2.556
3	-.823	.094	-.481	-1.208	39	-.617	.227	-.037	-1.528
4	-1.182	.129	-.648	-1.608	40	-.442	.137	-.145	-1.225
5	-1.142	.138	-.763	-1.747	41	-.462	.087	-.169	-.910
6	-.506	.062	-.292	-.817	42	-.441	.066	-.230	-.774
7	-1.682	.308	-.424	-2.625	43	-.433	.065	-.198	-.671
8	-.901	.199	-.369	-1.673	44	-.431	.064	-.089	-.665
9	-.669	.129	-.337	-1.419	45	-.444	.075	-.143	-.842
10	-.588	.075	-.318	-1.218	46	-.439	.083	-.116	-.961
11	-.566	.057	-.371	-.870	47	-1.234	.304	-.133	-2.458
12	-.557	.052	-.408	-.812	48	-.712	.207	-.014	-1.796
13	-.546	.049	-.394	-.788	49	-.521	.162	-.054	-1.335
14	-.534	.050	-.356	-.794	50	-.424	.106	-.149	-1.552
15	-.552	.051	-.391	-.836	51	-.413	.063	-.193	-.784
16	-.569	.057	-.396	-.856	52	-.416	.061	-.235	-.641
17	-1.944	.318	-.445	-2.730	53	-.403	.059	-.231	-.614
18	-.840	.192	-.262	-1.983	54	-.387	.060	-.221	-.621
19	-.767	.154	-.322	-1.551	55	-.412	.069	-.237	-.758
20	-.752	.146	-.333	-1.586	56	-.420	.072	-.197	-.724
21	-.643	.106	-.357	-1.252	57	-.716	.249	-.184	-1.738
22	-.569	.073	-.339	-1.099	58	-.532	.156	-.145	-1.369
23	-.555	.070	-.308	-1.058	59	-.501	.115	-.109	-1.263
24	-.556	.071	-.322	-1.019	60	-.420	.064	-.136	-.723
25	-.557	.087	-.238	-1.022	61	-.389	.051	-.227	-.611
26	-.553	.095	-.206	-1.082	62	-0.000	-0.000	-0.000	-0.000
27	-2.067	.311	-.193	-2.903	63	-.357	.056	-.200	-.602
28	-1.258	.338	-.245	-2.525	64	-.357	.055	-.190	-.594
29	-.810	.206	-.189	-1.711	65	-.367	.062	-.196	-.696
30	-.703	.259	-.001	-1.810	66	-.073	.042	.045	-.286
31	-.585	.137	-.189	-1.347	67	-0.000	-0.000	-0.000	-0.000
32	-.510	.090	-.184	-1.102	68	-.100	.125	.327	-.604
33	-.477	.071	-.170	-.751	69	-0.000	-0.000	-0.000	-0.000
34	-.462	.073	-.180	-.744	70	-.507	.187	.074	-1.082
35	-.470	.076	-.180	-.757	71	-0.000	-0.000	-0.000	-0.000
36	-.473	.081	-.180	-.831	72	-.502	.125	-.167	-.992



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.759	.101	-.425	-1.061	37	-1.629	.392	-.303	-2.912
2	-0.000	-0.000	-0.000	-0.000	38	-.867	.355	.044	-2.530
3	-.749	.090	-.410	-1.062	39	-.598	.239	.018	-1.645
4	-1.087	.128	-.693	-1.571	40	-.508	.163	-.051	-1.560
5	-1.036	.120	-.663	-1.536	41	-.517	.118	-.065	-1.452
6	-.557	.065	-.354	-.791	42	-.531	.118	.044	-1.408
7	-1.389	.346	-.280	-2.235	43	-.510	.104	-.209	-1.062
8	-.740	.156	-.331	-1.615	44	-.503	.100	-.226	-.957
9	-.601	.100	-.246	-1.369	45	-.533	.132	-.178	-1.479
10	-.551	.059	-.338	-.875	46	-.525	.137	-.047	-1.594
11	-.561	.049	-.380	-.789	47	-.928	.374	-.220	-2.139
12	-.568	.049	-.377	-.776	48	-.529	.156	-.152	-1.347
13	-.564	.047	-.347	-.772	49	-.491	.144	-.102	-1.660
14	-.549	.049	-.320	-.778	50	-.411	.096	.050	-.991
15	-.568	.051	-.310	-.897	51	-.467	.112	.036	-.944
16	-.596	.057	-.346	-.920	52	-.521	.123	-.191	-1.172
17	-1.570	.408	-.341	-2.806	53	-.463	.096	-.220	-1.085
18	-.719	.161	-.265	-1.519	54	-.443	.097	-.104	-.913
19	-.713	.147	-.348	-1.496	55	-.481	.124	-.188	-1.496
20	-.681	.125	-.327	-1.324	56	-.486	.134	-.118	-1.433
21	-.631	.086	-.360	-1.192	57	-.598	.219	-.212	-1.788
22	-.593	.080	-.378	-1.368	58	-.497	.145	-.125	-1.219
23	-.587	.072	-.368	-1.131	59	-.496	.115	-.112	-1.274
24	-.587	.072	-.390	-1.055	60	-.416	.075	-.166	-.799
25	-.587	.086	-.344	-1.072	61	-.387	.079	-.088	-.745
26	-.596	.100	-.256	-1.135	62	-0.000	-0.000	-0.000	-0.000
27	-1.911	.382	-.425	-2.912	63	-.376	.095	-.124	-.865
28	-.935	.344	-.250	-2.419	64	-.371	.090	-.090	-.745
29	-.760	.225	-.215	-1.943	65	-.422	.114	-.155	-.971
30	-.708	.224	.013	-1.822	66	-.101	.074	.082	-.428
31	-.632	.130	.270	-1.401	67	-0.000	-0.000	-0.000	-0.000
32	-.595	.114	-.225	-1.345	68	-.081	.121	-.384	-.482
33	-.549	.092	-.208	-1.138	69	-0.000	-0.000	-0.000	-0.000
34	-.529	.094	-.192	-1.135	70	-.615	.188	-.016	-1.163
35	-.538	.100	-.230	-1.119	71	-0.000	-0.000	-0.000	-0.000
36	-.537	.102	-.168	-1.096	72	-.484	.118	-.185	-1.079

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 80

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.748	.097	-.425	-1.184	37	-.786	.307	-.122	-2.383
2	-0.000	-0.000	-0.000	-0.000	38	-.471	.156	-.053	-1.218
3	-.712	.100	-.302	-1.039	39	-.450	.103	-.091	-1.096
4	-1.050	.118	-.628	-1.472	40	-.474	.075	-.182	-.883
5	-.989	.113	-.658	-1.491	41	-.573	.101	-.073	-1.033
6	-.582	.078	-.343	-1.013	42	-.706	.232	.253	-1.646
7	-.907	.259	-.313	-1.952	43	-.812	.199	.391	-1.592
8	-.632	.117	-.361	-1.254	44	-.797	.175	-.099	-1.511
9	-.568	.080	-.263	-.980	45	-.944	.277	.103	-2.480
10	-.545	.061	-.292	-.944	46	-1.022	.329	.417	-2.564
11	-.596	.064	-.349	-.869	47	-.384	.103	-.101	-1.353
12	-.586	.059	-.384	-.825	48	-.366	.069	-.132	-.816
13	-.571	.054	-.382	-.786	49	-.397	.070	-.188	-.889
14	-.552	.056	-.345	-.769	50	-.444	.082	-.172	-.954
15	-.571	.062	-.351	-.809	51	-.497	.086	-.251	-.904
16	-.617	.079	-.348	-1.112	52	-.401	.164	.226	-1.181
17	-1.119	.363	-.215	-2.278	53	-.474	.165	.264	-1.054
18	-.664	.166	-.247	-1.710	54	-.470	.149	.086	-1.050
19	-.646	.113	-.362	-1.329	55	-.563	.190	-.009	-1.553
20	-.610	.082	-.246	-.952	56	-.583	.247	.293	-1.612
21	-.650	.120	-.174	-1.498	57	-.350	.064	-.141	-.845
22	-.625	.109	-.306	-1.506	58	-.335	.052	-.171	-.595
23	-.617	.094	-.329	-1.258	59	-.376	.054	-.180	-.602
24	-.613	.093	-.332	-1.254	60	-.439	.073	-.132	-.744
25	-.626	.097	-.227	-1.297	61	-.465	.076	-.180	-.780
26	-.655	.111	-.205	-1.418	62	-0.000	-0.000	-0.000	-0.000
27	-1.007	.366	-.218	-2.238	63	-.386	.145	.214	-.996
28	-.594	.171	-.218	-1.631	64	-.394	.122	-.001	-.879
29	-.598	.148	-.273	-1.539	65	-.463	.146	.108	-1.129
30	-.580	.097	.112	-1.136	66	-.163	.121	.214	-.710
31	-.733	.137	-.108	-1.408	67	-0.000	-0.000	-0.000	-0.000
32	-.748	.152	-.108	-1.751	68	-.124	.115	.309	-.510
33	-.706	.126	-.353	-1.645	69	-0.000	-0.000	-0.000	-0.000
34	-.685	.122	-.343	-1.626	70	-.602	.113	-.154	-.983
35	-.716	.134	-.379	-1.556	71	-0.000	-0.000	-0.000	-0.000
36	-.720	.135	-.361	-1.628	72	-.346	.055	-.125	-.616

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
CENTER BUILDING  
WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.784	.100	-.396	-1.362	37	-.462	.196	.036	-1.518
2	0.000	-0.000	-0.000	-0.000	38	-.345	.140	.078	-1.126
3	-.648	.116	-.171	-1.107	39	-.375	.108	.065	-.933
4	-1.132	.154	-.656	-1.645	40	-.489	.154	-.039	-1.457
5	-1.107	.144	-.649	-1.619	41	-.680	.155	-.130	-1.277
6	-.774	.168	-.403	-1.549	42	-.330	.254	.571	-1.252
7	-.695	.182	-.119	-1.871	43	-.545	.293	.833	-1.576
8	-.570	.120	-.213	-1.265	44	-.592	.230	.296	-1.411
9	-.549	.095	-.263	-1.079	45	-.736	.288	.197	-1.917
10	-.618	.115	-.174	-1.190	46	-.830	.416	.587	-2.175
11	-.781	.173	-.078	-1.639	47	-.282	.076	-.016	-.708
12	-.746	.148	-.383	-1.602	48	-.299	.067	-.017	-.698
13	-.688	.108	-.394	-1.264	49	-.343	.078	.072	-.833
14	-.654	.107	-.345	-1.259	50	-.426	.120	-.107	-1.003
15	-.649	.116	-.308	-1.176	51	-.600	.131	-.212	-1.100
16	-.831	.202	-.350	-1.985	52	-.300	.144	.393	-.741
17	-.815	.253	-.191	-2.045	53	-.299	.143	.435	-.806
18	-.607	.187	-.114	-1.700	54	-.308	.126	.191	-.723
19	-.598	.123	-.200	-1.166	55	-.361	.130	.134	-.944
20	-.699	.197	-.053	-1.832	56	-.334	.156	.295	-.960
21	-.846	.257	-.043	-1.989	57	-.310	.060	-.127	-.587
22	-.904	.243	.263	-1.953	58	-.305	.051	-.132	-.530
23	-.877	.197	-.353	-1.860	59	-.337	.058	-.155	-.616
24	-.868	.184	-.371	-1.636	60	-.454	.103	-.212	-.843
25	-.874	.207	-.216	-1.860	61	-.611	.115	-.250	-1.137
26	-1.125	.311	-.374	-2.948	62	-0.000	-0.000	-0.000	-0.000
27	-.594	.229	.040	-1.621	63	-.216	.129	.390	-.596
28	-.484	.169	-.036	-1.786	64	-.245	.104	.197	-.615
29	-.476	.139	.033	-1.281	65	-.311	.112	.214	-.782
30	-.534	.165	.088	-1.236	66	.019	.114	.367	-.584
31	-.724	.216	.013	-1.477	67	-0.000	-0.000	-0.000	-0.000
32	-.857	.313	.357	-1.979	68	-.143	.070	.209	-.438
33	-.868	.232	.266	-1.881	69	-0.000	-0.000	-0.000	-0.000
34	-.824	.211	.214	-1.659	70	-.561	.082	-.180	-.879
35	-.901	.243	-.047	-2.283	71	-0.000	-0.000	-0.000	-0.000
36	-.941	.244	.134	-2.378	72	-.303	.056	-.039	-.649

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 100

PRESSURE TAP NUMBRER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRFSSURE TAP NUMBRER	MEAN PRESSURE COEFFICIENT	RMS PRFSSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.822	.108	-.487	-1.304	37	-.373	.166	.207	-1.223
2	-0.000	-0.000	-0.000	-0.000	38	-.307	.141	.228	-1.200
3	-.541	.108	-.208	-.960	39	-.321	.126	.136	-1.098
4	-1.171	.129	-.787	-1.644	40	-.376	.154	.046	-1.196
5	-1.155	.132	-.683	-1.576	41	-.701	.197	-.087	-1.432
6	-1.117	.233	-.508	-1.878	42	-.258	.225	.671	-1.166
7	-.572	.155	-.107	-1.445	43	-.338	.244	.555	-1.113
8	-.511	.109	-.202	-.953	44	-.397	.216	.250	-1.233
9	-.512	.104	-.198	-.901	45	-.482	.255	.331	-1.985
10	-.636	.167	-.055	-1.309	46	-.373	.394	.720	-1.727
11	-.833	.226	.062	-2.011	47	-.290	.094	.055	-.956
12	-1.007	.217	-.360	-1.935	48	-.304	.082	-.016	-.917
13	-.946	.175	-.315	-1.605	49	-.338	.077	.036	-.774
14	-.890	.173	-.275	-1.497	50	-.420	.129	.049	-.973
15	-.901	.190	-.291	-1.550	51	-.767	.158	-.054	-1.390
16	-1.034	.267	-.273	-2.346	52	-.211	.164	.483	-.779
17	-.686	.256	-.043	-1.821	53	-.177	.160	.431	-.664
18	-.559	.184	-.098	-1.416	54	-.186	.140	.373	-.658
19	-.576	.172	-.101	-1.852	55	-.243	.139	.380	-.751
20	-.675	.213	.049	-2.198	56	-.141	.185	.626	-.753
21	-.866	.249	-.017	-1.825	57	-.317	.063	-.110	-.688
22	-.758	.376	.563	-1.864	58	-.300	.052	-.124	-.516
23	-1.024	.259	.040	-2.137	59	-.321	.054	-.139	-.581
24	-.997	.217	-.291	-1.988	60	-.426	.095	-.178	-.856
25	-1.122	.266	-.408	-2.298	61	-.783	.105	-.385	-1.199
26	-1.551	.449	-.149	-2.962	62	-0.000	-0.000	-0.000	-0.000
27	-.399	.167	.108	-1.401	63	-.179	.109	.268	-.557
28	-.374	.146	.036	-1.225	64	-.200	.090	.133	-.542
29	-.362	.144	.179	-1.072	65	-.270	.104	.040	-.713
30	-.390	.181	.161	-1.790	66	.158	.088	.409	-.227
31	-.741	.245	-.017	-1.602	67	-0.000	-0.000	-0.000	-0.000
32	-.463	.276	.448	-1.456	68	-.057	.081	.250	-.791
33	-.609	.223	.291	-1.408	69	-0.000	-0.000	-0.000	-0.000
34	-.597	.074	-.328	-.797	70	-.526	.084	-.097	-.884
35	-.714	.235	.132	-2.035	71	-0.000	-0.000	-0.000	-0.000
36	-.823	.284	.431	-1.711	72	-.307	.066	-.117	-.652

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-0.000	-0.000	-0.000	-0.000	37	-.358	.138	.275	-1.645
2	-0.000	-0.000	-0.000	-0.000	38	-.298	.097	.293	-.770
3	-0.000	-0.000	-0.000	-0.000	39	-.300	.081	.077	-.774
4	-0.000	-0.000	-0.000	-0.000	40	-.434	.166	-.033	-1.198
5	-1.196	.106	-.764	-1.545	41	-.997	.173	-.317	-1.603
6	-1.410	.150	-.800	-1.981	42	-.039	.150	.301	-.720
7	-.524	.149	-.093	-1.947	43	-.072	.156	.530	-.687
8	-.455	.084	-.200	-.918	44	-.082	.131	.324	-.758
9	-.482	.100	-.167	-.852	45	-.148	.158	.417	-.800
10	-.517	.130	-.025	-1.025	46	.212	.259	.938	-1.202
11	-.711	.154	-.131	-1.291	47	-.310	.086	.017	-.979
12	-1.098	.165	-.232	-1.576	48	-.288	.076	.209	-.995
13	-1.120	.116	-.678	-1.522	49	-.308	.068	-.116	-.696
14	-1.088	.114	-.688	-1.513	50	-.372	.121	-.073	-1.077
15	-1.127	.126	-.714	-1.655	51	-.974	.168	-.369	-1.545
16	-1.201	.221	-.752	-2.399	52	-.079	.125	.276	-.566
17	-.669	.276	.112	-1.837	53	-.134	.123	.484	-.616
18	-.523	.182	.100	-1.562	54	-.113	.108	.334	-.598
19	-.450	.146	-.052	-1.179	55	-.176	.118	.315	-.720
20	-.537	.181	-.142	-1.455	56	.181	.207	.797	-.623
21	-1.241	.202	-.569	-1.869	57	-.304	.072	-.046	-.675
22	-.135	.179	.405	-1.305	58	-.266	.058	.100	-.621
23	-.759	.300	.455	-2.045	59	-.288	.053	-.125	-.543
24	-.784	.346	-.109	-2.241	60	-.318	.064	-.112	-.576
25	-1.149	.425	-.276	-2.496	61	-.772	.110	-.513	-1.255
26	-.804	.340	.197	-2.027	62	-0.000	-0.000	-0.000	-0.000
27	-.413	.190	.138	-1.394	63	-.180	.069	.202	-.486
28	-.347	.153	.180	-1.038	64	-.178	.062	.107	-.555
29	-.330	.122	.122	-1.056	65	-.233	.089	.074	-.913
30	-.420	.194	.048	-1.345	66	.177	.081	.470	-.292
31	-1.038	.190	-.389	-1.697	67	-0.000	-0.000	-0.000	-0.000
32	-.098	.142	.280	-.749	68	.006	.081	.350	-.401
33	-.046	.162	.529	-.812	69	-0.000	-0.000	-0.000	-0.000
34	-.054	.138	.379	-.874	70	-.507	.101	-.026	-1.015
35	-.149	.157	.360	-.967	71	-0.000	-0.000	-0.000	-0.000
36	.194	.256	.873	-1.162	72	-.286	.072	-.012	-.803

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMREP	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.725	.091	-.411	-1.041	37	-.328	.138	.170	-1.076
2	-0.000	-0.000	-0.000	-0.000	38	-.253	.131	.360	-1.031
3	-.385	.080	-.113	-.656	39	-.201	.099	.161	-.803
4	-1.093	.089	-.793	-1.419	40	-.213	.102	.113	-.659
5	.303	.007	.344	.277	41	-.844	.151	-.376	-1.483
6	-1.338	.099	-1.028	-1.658	42	.114	.082	.357	-.179
7	-.459	.028	-.375	-.536	43	-.138	.077	.151	-.424
8	-0.000	-0.000	-0.000	-0.000	44	-.094	.072	.173	-.389
9	-.428	.080	-.215	-.789	45	-.100	.073	.141	-.601
10	-.437	.079	-.222	-.735	46	.312	.106	.707	-.160
11	-.956	.136	-.338	-1.352	47	-.299	.110	.045	-.829
12	-.810	.187	.155	-1.330	48	-.260	.083	.058	-.649
13	-1.010	.104	-.572	-1.474	49	-.261	.065	-.046	-.678
14	-.966	.103	-.545	-1.445	50	-.263	.080	.006	-.693
15	-1.003	.116	-.569	-1.606	51	-.856	.130	-.379	-1.339
16	-1.045	.214	-.257	-1.763	52	.041	.072	.270	-.216
17	-.581	.248	.145	-1.650	53	-.151	.064	.144	-.376
18	-.464	.139	-.038	-1.130	54	-.096	.063	.183	-.327
19	-.418	.108	.060	-.938	55	-.110	.064	.103	-.431
20	-.455	.146	-.090	-1.258	56	.238	.105	.623	-.129
21	-1.217	.171	-.667	-1.759	57	-.281	.087	-.016	-.738
22	-.075	.223	.494	-.967	58	-.233	.055	-.013	-.516
23	-.860	.247	-.036	-1.676	59	-.251	.049	-.112	-.457
24	-.825	.261	-.173	-2.002	60	-.284	.064	-.102	-.690
25	-.999	.290	-.289	-2.138	61	-.748	.112	-.396	-1.168
26	-.563	.208	.074	-1.244	62	-0.000	-0.000	-0.000	-0.000
27	-.434	.213	.213	-1.870	63	-.128	.068	.138	-.338
28	-.371	.159	.139	-1.046	64	-.124	.063	.119	-.418
29	-.989	.282	-.279	-2.191	65	-.147	.073	.080	-.472
30	-.542	.197	.049	-1.352	66	.236	.056	.430	.049
31	-.441	.216	.177	-2.139	67	-0.000	-0.000	-0.000	-0.000
32	-.374	.166	.173	-1.311	68	-.094	.119	.273	-.645
33	-.273	.078	.344	-.633	69	-0.000	-0.000	-0.000	-0.000
34	-.186	.073	.033	-.529	70	-.466	.092	-.068	-.845
35	-.188	.080	.065	-.884	71	-0.000	-0.000	-0.000	-0.000
36	.228	.106	.616	-.238	72	-.257	.069	-.007	-.635

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.648	.080	-.370	-.920	37	-.363	.172	.205	-1.446
2	-0.000	-0.000	-0.000	-0.000	38	-.245	.133	.305	-.946
3	-.385	.075	-.084	-.696	39	-.195	.094	.131	-.639
4	-1.054	.082	-.805	-1.311	40	-.244	.119	.093	-.971
5	-1.031	.085	-.690	-1.466	41	-.830	.152	-.389	-1.344
6	-1.227	.110	-.773	-1.609	42	-.143	.082	.412	-.174
7	-.391	.090	-.084	-.842	43	-.054	.087	.251	-.350
8	-.371	.054	-.217	-.620	44	-.016	.084	.289	-.322
9	-.396	.067	-.201	-.743	45	-.032	.087	.236	-.440
10	-.464	.100	-.245	-1.024	46	.370	.131	.761	-.235
11	-1.138	.104	-.802	-1.450	47	-.275	.173	.617	-.932
12	-.206	.184	.317	-.776	48	-.235	.082	.069	-.687
13	-.617	.107	-.242	-.969	49	-.244	.069	.050	-.516
14	-.557	.106	-.148	-.957	50	-.273	.100	-.027	-.863
15	-.573	.103	-.156	-1.087	51	-.824	.142	-.345	-1.260
16	-.257	.138	.174	-.745	52	.066	.071	.345	-.229
17	-.555	.178	.038	-1.435	53	-.086	.072	.193	-.330
18	-.466	.116	.077	-1.013	54	-.030	.069	.230	-.258
19	-.411	.101	-.117	-.960	55	-.043	.068	.220	-.295
20	-.508	.165	-.038	-1.313	56	.299	.105	.668	-.027
21	-1.182	.156	-.707	-1.752	57	-.295	.104	.024	-.811
22	.040	.143	.566	-.609	58	-.230	.060	-.021	-.537
23	-.466	.166	.114	-1.040	59	-.236	.052	-.075	-.422
24	-.407	.157	-.056	-1.285	60	-.296	.078	-.066	-.633
25	-.454	.168	.028	-1.415	61	-.737	.108	-.441	-1.131
26	-.027	.138	.478	-.642	62	-0.000	-0.000	-0.000	-0.000
27	-.469	.197	.212	-1.509	63	-.048	.074	.314	-.258
28	-.385	.166	.220	-1.255	64	-.043	.069	.252	-.263
29	-.278	.124	.099	-.997	65	-.076	.067	.156	-.353
30	-.269	.143	.084	-1.251	66	.281	.049	.448	.117
31	-.953	.175	-.431	-1.717	67	-0.000	-0.000	-0.000	-0.000
32	.132	.072	.327	-.136	68	-.288	.124	.074	-.829
33	-.169	.087	.196	-.416	69	-0.000	-0.000	-0.000	-0.000
34	-.081	.084	.276	-.351	70	-.391	.082	-.128	-.681
35	-.079	.082	.267	-.353	71	-0.000	-0.000	-0.000	-0.000
36	.311	.113	.705	-.041	72	-.236	.058	-.009	-.497

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 140

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.544	.060	-.373	-.767	37	-.411	.204	.188	-1.613
2	-0.000	-0.000	-0.000	-0.000	38	-.267	.127	.145	-.947
3	-.400	.079	-.138	-.704	39	-.250	.103	.119	-.770
4	-1.071	.080	-.720	-1.380	40	-.502	.241	.010	-1.427
5	-1.009	.078	-.738	-1.326	41	-.987	.163	-.368	-1.606
6	-.994	.080	-.660	-1.310	42	.161	.075	.383	-.117
7	-.386	.069	-.197	-.689	43	.064	.095	.456	-.296
8	-.370	.058	-.191	-.631	44	.096	.090	.439	-.211
9	-.391	.063	-.192	-.678	45	.070	.093	.361	-.255
10	-1.074	.187	-.287	-1.518	46	.482	.125	.870	.114
11	-1.256	.118	-.846	-1.584	47	-.308	.128	.054	-.968
12	.203	.076	.397	-.304	48	-.278	.099	.016	-.829
13	-.176	.080	.119	-.507	49	-.288	.078	-.059	-.616
14	-.069	.079	.210	-.368	50	-.552	.229	-.043	-1.261
15	-.077	.083	.227	-.444	51	-.983	.156	-.443	-1.490
16	.301	.116	.667	-.063	52	.081	.072	.311	-.194
17	-.500	.116	-.138	-1.159	53	.009	.085	.336	-.307
18	-.440	.092	-.167	-1.016	54	.069	.082	.345	-.220
19	-.424	.084	-.139	-.920	55	.052	.080	.323	-.223
20	-.965	.277	-.204	-1.723	56	.412	.118	.823	.076
21	-1.298	.156	-.810	-1.973	57	-.276	.061	-.054	-.638
22	.147	.073	.397	-.164	58	-.246	.061	-.038	-.549
23	-.047	.088	.246	-.566	59	-.262	.058	-.040	-.510
24	-.011	.083	.258	-.600	60	-.458	.151	-.078	-1.082
25	-.019	.093	.287	-.538	61	-.880	.135	-.538	-1.376
26	.410	.135	.782	-.125	62	-0.000	-0.000	-0.000	-0.000
27	-.541	.214	.180	-1.781	63	.017	.082	.342	-.229
28	-.394	.142	.110	-1.119	64	.018	.077	.327	-.304
29	-.341	.117	.009	-1.087	65	-.020	.080	.296	-.296
30	-.584	.290	.022	-1.849	66	.319	.054	.528	.125
31	-1.103	.176	-.393	-1.694	67	-0.000	-0.000	-0.000	-0.000
32	.127	.072	.349	-.176	68	-.594	.136	-.145	-1.101
33	.010	.091	.392	-.282	69	-0.000	-0.000	-0.000	-0.000
34	.083	.088	.377	-.185	70	-.277	.082	-.006	-.609
35	.077	.087	.361	-.238	71	-0.000	-0.000	-0.000	-0.000
36	.490	.119	.835	.087	72	-.248	.052	-.089	-.571



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
CENTER BUILDING  
WIND DIRECTION 150

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.462	.027	-.364	-.541	37	-.358	.160	.284	-1.477
2	-0.000	-0.000	-0.000	-0.000	38	-.363	.180	.128	-1.186
3	-.422	.048	-.258	-.602	39	-.461	.209	.094	-1.621
4	-1.188	.093	-.797	-1.439	40	-1.294	.263	-.019	-2.521
5	-1.170	.088	-.816	-1.479	41	-1.199	.192	-.302	-1.853
6	-.907	.061	-.692	-1.348	42	.118	.081	.403	-.135
7	-.415	.052	-.253	-.598	43	.139	.101	.453	-.191
8	-.429	.061	-.229	-.823	44	.165	.097	.450	-.137
9	-.477	.086	-.235	-.838	45	.155	.093	.482	-.149
10	-1.391	.150	-.797	-1.821	46	.541	.128	1.024	.120
11	-1.126	.109	-.728	-1.407	47	-.305	.084	-.018	-.806
12	.288	.066	.509	-.055	48	-.315	.103	-.021	-.863
13	.198	.097	.636	-.127	49	-.321	.087	-.065	-.817
14	.254	.086	.532	-.065	50	-.995	.211	-.290	-1.618
15	.272	.086	.541	-.044	51	-1.122	.151	-.744	-1.578
16	.683	.103	.953	.294	52	.050	.077	.301	-.197
17	-.355	.055	-.179	-.671	53	.091	.089	.501	-.260
18	-.372	.072	-.138	-.761	54	.112	.085	.511	-.193
19	-.407	.083	-.155	-.895	55	.101	.082	.440	-.203
20	-1.371	.171	-.722	-1.880	56	.468	.119	.899	.120
21	-1.265	.142	-.737	-1.705	57	-.260	.071	.046	-.595
22	.196	.077	.457	-.064	58	-.299	.077	-.087	-.732
23	.234	.097	.630	-.109	59	-.279	.062	-.062	-.509
24	.258	.091	.598	-.080	60	-.515	.167	-.110	-1.088
25	.246	.092	.580	-.086	61	-.906	.132	-.538	-1.495
26	.631	.124	1.022	.144	62	-0.000	-0.000	-0.000	-0.000
27	-.420	.143	.014	-1.071	63	.053	.088	.421	-.195
28	-.418	.164	.203	-1.136	64	.056	.082	.385	-.184
29	-.470	.170	-.098	-1.564	65	.030	.084	.371	-.249
30	-1.385	.234	-.373	-2.376	66	.340	.056	.561	.167
31	-1.308	.154	-.672	-1.745	67	-0.000	-0.000	-0.000	-0.000
32	.117	.073	.371	-.124	68	-.674	.108	-.362	-1.127
33	.181	.095	.504	-.121	69	-0.000	-0.000	-0.000	-0.000
34	.205	.092	.540	-.109	70	-.313	.069	-.094	-.685
35	.198	.089	.588	-.090	71	-0.000	-0.000	-0.000	-0.000
36	.600	.114	.955	.225	72	-.280	.067	-.070	-.723

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 160

PRESSURE TAP NUMBRER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBRER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.494	.044	-.359	-.691	37	-.414	.213	.225	-1.454
2	-0.000	-0.000	-0.000	-0.000	38	-.534	.220	.101	-1.350
3	-.414	.071	-.175	-.669	39	-.972	.305	0.000	-1.977
4	-1.056	.098	-.680	-1.332	40	-1.344	.364	-.108	-2.455
5	-1.144	.095	-.687	-1.617	41	-1.073	.264	-.078	-1.924
6	-.978	.074	-.680	-1.303	42	.140	.084	.450	-.193
7	-.397	.064	-.207	-.692	43	.251	.108	.605	-.110
8	-.457	.115	-.079	-1.061	44	.265	.103	.589	-.097
9	-.631	.181	-.121	-1.416	45	.245	.104	.659	-.108
10	-1.259	.211	-.626	-2.041	46	.573	.131	.986	.143
11	-.744	.108	-.411	-1.230	47	-.326	.117	-.003	-1.329
12	.415	.086	.712	.064	48	-.345	.130	.049	-.902
13	.550	.101	.844	.146	49	-.540	.205	-.083	-1.460
14	.538	.092	.763	.167	50	-1.177	.230	-.332	-2.181
15	.549	.099	.794	.136	51	-1.098	.194	-.438	-1.842
16	.748	.108	1.073	.317	52	.079	.082	.377	-.254
17	-.429	.088	-.086	-.892	53	.163	.096	.546	-.178
18	-.446	.115	-.061	-1.038	54	.179	.095	.570	-.174
19	-.605	.166	-.074	-1.443	55	.161	.093	.512	-.128
20	-1.449	.206	-.652	-2.052	56	.480	.129	.923	.157
21	-1.019	.134	-.559	-1.443	57	-.271	.059	-.065	-.612
22	.315	.075	.620	.001	58	-.294	.088	-.008	-.752
23	.484	.092	.806	.157	59	-.306	.075	-.044	-.631
24	.489	.089	.763	.086	60	-.758	.181	-.266	-1.389
25	.446	.100	.730	.101	61	-.915	.147	-.413	-1.407
26	.692	.114	1.033	.210	62	-0.000	-0.000	-0.000	-0.000
27	-.546	.206	.065	-1.633	63	.115	.097	.550	-.186
28	-.566	.173	-.007	-1.189	64	.117	.093	.455	-.165
29	-1.068	.243	-.289	-1.981	65	.083	.092	.385	-.272
30	-1.540	.248	-.646	-2.334	66	.348	.057	.614	.181
31	-1.211	.182	-.491	-1.750	67	-0.000	-0.000	-0.000	-0.000
32	.149	.072	.368	-.186	68	-.638	.102	-.339	-.995
33	.326	.101	.666	-.008	69	-0.000	-0.000	-0.000	-0.000
34	.337	.101	.681	.008	70	-.302	.064	-.121	-.623
35	.318	.098	.646	-.103	71	-0.000	-0.000	-0.000	-0.000
36	.646	.124	1.031	.225	72	-.281	.061	-.072	-.659

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.598	.067	-.386	-.836	37	-.429	.183	.287	-1.138
2	-0.000	-0.000	-0.000	-0.000	38	-.826	.215	-.118	-1.746
3	-.409	.078	-.062	-.723	39	-1.016	.318	.010	-2.239
4	-.706	.098	-.354	-1.091	40	-1.040	.368	.161	-2.336
5	-1.016	.121	-.542	-1.459	41	-.823	.239	.073	-1.701
6	-1.164	.094	-.798	-1.558	42	.197	.078	.484	-.111
7	-.401	.082	-.091	-.889	43	.363	.096	.660	.066
8	-.509	.159	-.120	-1.421	44	.368	.095	.676	.078
9	-1.028	.288	-.161	-1.722	45	.354	.104	.704	.029
10	-1.286	.187	-.637	-1.756	46	.590	.125	.970	.125
11	-.346	.095	-.048	-.699	47	-.344	.156	.122	-1.000
12	.602	.097	.938	.231	48	-.482	.186	-.010	-1.214
13	.722	.098	.994	.364	49	-.855	.216	-.204	-1.764
14	.701	.094	.970	.363	50	-1.033	.263	-.060	-2.093
15	.728	.097	.996	.372	51	-.852	.214	-.062	-1.836
16	.510	.117	.875	.087	52	.141	.079	.452	-.088
17	-.524	.147	.116	-2.194	53	.268	.094	.592	-.049
18	-.535	.155	-.042	-1.263	54	.276	.094	.606	-.049
19	-1.306	.243	-.280	-1.953	55	.258	.095	.597	-.043
20	-1.491	.185	-.903	-2.144	56	.492	.126	.900	.087
21	-.603	.126	-.129	-1.082	57	-.278	.089	.014	-.738
22	.487	.096	.793	.137	58	-.329	.110	-.018	-.781
23	.667	.112	1.014	.281	59	-.608	.155	-.193	-1.154
24	.648	.104	.958	.295	60	-.793	.207	-.221	-1.535
25	.656	.101	.970	.280	61	-.638	.185	-.144	-1.353
26	.606	.123	.959	.113	62	-0.000	-0.000	-0.000	-0.000
27	-.564	.206	.148	-1.613	63	.200	.085	.522	-.045
28	-.817	.219	-.139	-1.693	64	.197	.077	.463	-.043
29	-1.243	.229	-.463	-2.119	65	.170	.086	.501	-.102
30	-1.335	.245	-.447	-2.105	66	.353	.063	.654	.188
31	-.939	.174	-.379	-1.522	67	-0.000	-0.000	-0.000	-0.000
32	.235	.071	.480	-.015	68	-.542	.088	-.307	-.959
33	.462	.093	.832	.164	69	-0.000	-0.000	-0.000	-0.000
34	.468	.093	.791	.167	70	-.236	.056	-.056	-.479
35	.451	.097	.807	.139	71	-0.000	-0.000	-0.000	-0.000
36	.642	.121	.979	.272	72	-.246	.066	-.027	-.643

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 180

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.717	.092	-.399	-1.013	37	-.371	.163	.239	-1.085
2	-0.000	-0.000	-0.000	-0.000	38	-.825	.211	-.024	-1.582
3	-.398	.080	-.074	-.648	39	-.927	.236	.093	-1.890
4	-.553	.069	-.312	-.818	40	-.805	.257	.426	-1.867
5	-.695	.104	-.344	-1.132	41	-.614	.172	-.003	-1.242
6	-1.346	.129	-.717	-1.798	42	.251	.077	.542	-.007
7	-.441	.118	-.152	-1.079	43	.429	.096	.745	.129
8	-.562	.158	-.138	-1.253	44	.430	.095	.729	.157
9	-1.032	.451	.936	-1.752	45	.411	.099	.694	.097
10	-.982	.148	-.552	-1.658	46	.584	.125	1.016	.233
11	.059	.250	.469	-1.370	47	-.312	.132	.089	-.991
12	.707	.164	1.028	-.212	48	-.456	.160	-.039	-1.061
13	.747	.097	1.045	.343	49	-.870	.171	-.372	-1.589
14	.756	.098	1.054	.346	50	-.852	.210	-.149	-1.536
15	.729	.101	.995	.299	51	-.646	.167	-.171	-1.228
16	-.028	.145	.478	-.753	52	.190	.081	.520	-.066
17	-.525	.223	.055	-1.401	53	.346	.092	.688	.048
18	-.794	.295	.018	-1.863	54	.352	.090	.725	.077
19	-1.324	.239	-.524	-2.122	55	.336	.093	.728	-.037
20	-.966	.186	-.302	-1.704	56	.499	.125	.922	.056
21	-.085	.124	.334	-.486	57	-.286	.093	-.038	-.719
22	.647	.100	.981	.294	58	-.562	.150	-.034	-1.123
23	.735	.102	.989	.358	59	-.702	.147	-.098	-1.363
24	.731	.101	.986	.364	60	-.420	.195	.185	-1.145
25	.731	.109	1.014	.374	61	-.327	.132	.052	-.778
26	.261	.141	.697	-.254	62	-0.000	-0.000	-0.000	-0.000
27	-.437	.202	.152	-1.613	63	.264	.096	.615	.013
28	-.643	.239	-.031	-1.606	64	.245	.084	.537	-.058
29	-1.141	.196	-.416	-1.760	65	.221	.091	.601	-.039
30	-1.065	.194	-.443	-1.784	66	.329	.066	.576	.145
31	-.663	.133	-.239	-1.137	67	-0.000	-0.000	-0.000	-0.000
32	.318	.081	.587	.011	68	-.503	.075	-.222	-.829
33	.547	.096	.896	.221	69	-0.000	-0.000	-0.000	-0.000
34	.543	.093	.819	.239	70	-.237	.055	-.027	-.483
35	.540	.099	.863	-.098	71	-0.000	-0.000	-0.000	-0.000
36	.621	.120	.961	.097	72	-.256	.080	.108	-.642

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.732	.099	-.296	-1.077	37	-.342	.141	.156	-1.739
2	-0.000	-0.000	-0.000	-0.000	38	-.573	.178	.100	-1.265
3	-.399	.077	-.098	-.691	39	-.607	.182	.074	-1.284
4	-.435	.092	-.116	-.797	40	-.380	.201	.361	-1.310
5	-.521	.094	-.146	-.860	41	-.296	.188	.253	-1.008
6	-1.406	.141	-.905	-1.825	42	.080	.130	.514	-.629
7	-.493	.143	-.056	-1.436	43	.172	.174	.758	-.563
8	-.671	.228	-.097	-1.582	44	.160	.164	.571	-.361
9	-1.024	.284	-.444	-1.835	45	.141	.194	.641	-.646
10	-.527	.113	-.185	-.926	46	.425	.250	1.025	-.695
11	.485	.095	.773	.149	47	-.298	.090	.044	-.787
12	.781	.095	1.034	.424	48	-.477	.134	-.053	-1.018
13	.747	.107	1.018	.202	49	-.700	.142	-.184	-1.217
14	.769	.110	1.054	.206	50	-.437	.195	.571	-1.182
15	.556	.110	.907	.025	51	-.333	.156	.272	-.945
16	-.711	.180	.122	-1.356	52	.123	.099	.483	-.232
17	-.633	.268	.029	-1.777	53	.209	.144	.681	-.319
18	-.957	.295	-.058	-1.893	54	.200	.136	.641	-.307
19	-1.017	.230	-.241	-1.902	55	.166	.165	.678	-.502
20	-.282	.191	.320	-1.133	56	.401	.206	.964	-.401
21	.279	.183	.780	-.432	57	-.277	.074	-.036	-.733
22	.542	.132	.928	-.101	58	-.574	.174	-.118	-1.238
23	.596	.125	.999	-.097	59	-.629	.143	-.031	-1.370
24	.607	.124	.995	-.095	60	-.209	.148	.507	-.827
25	.565	.165	1.057	-.379	61	-.157	.114	.213	-.598
26	.001	.228	.707	-1.164	62	-0.000	-0.000	-0.000	-0.000
27	-.417	.193	.142	-1.380	63	.231	.115	.644	-.140
28	-.763	.257	-.125	-1.823	64	.185	.091	.484	-.101
29	-.846	.298	.389	-1.711	65	.164	.099	.517	-.257
30	-.575	.224	.529	-1.284	66	.296	.072	.619	.007
31	-.340	.170	.188	-1.020	67	-0.000	-0.000	-0.000	-0.000
32	.106	.138	.592	-.487	68	-.469	.087	-.132	-.801
33	.285	.160	.893	-.298	69	-0.000	-0.000	-0.000	-0.000
34	.251	.159	.731	-.358	70	-.255	.059	-.072	-.629
35	.170	.200	.761	-.639	71	-0.000	-0.000	-0.000	-0.000
36	.420	.245	1.128	-.487	72	-.246	.079	.097	-.641

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.771	.106	-.437	-1.253	37	-.339	.147	.048	-1.285
2	-0.000	-0.000	-0.000	-0.000	38	-.877	.259	-.122	-1.648
3	-.480	.104	-.114	-.952	39	-.341	.143	.336	-.917
4	-.701	.184	-.131	-1.344	40	-.139	.317	.975	-.770
5	-.690	.180	-.129	-1.212	41	-.164	.144	.282	-.735
6	-1.252	.224	-.619	-1.964	42	-.132	.135	.336	-1.089
7	-.551	.159	-.093	-1.997	43	-.040	.143	.451	-.885
8	-.956	.332	-.143	-1.893	44	-.009	.157	.659	-.841
9	-1.171	.234	-.553	-1.761	45	-.255	.218	.525	-1.087
10	-.222	.107	.110	-.628	46	-.311	.385	.943	-1.957
11	.655	.098	.934	.048	47	-.291	.086	0.000	-1.080
12	.730	.105	1.052	.280	48	-.505	.166	-.111	-1.160
13	.725	.096	1.011	.364	49	-.501	.116	-.125	-1.034
14	.771	.102	1.084	.389	50	-.156	.139	.612	-.671
15	.399	.112	.770	-.065	51	-.126	.081	.159	-.548
16	-.873	.248	-.270	-2.125	52	-.083	.089	.305	-.416
17	-.726	.284	.024	-1.863	53	-.060	.106	.402	-.566
18	-1.177	.296	-.083	-2.283	54	-.062	.099	.303	-.420
19	-.998	.179	-.471	-1.627	55	-.112	.121	.388	-.655
20	.169	.126	.589	-.423	56	-.082	.197	.700	-.760
21	.599	.132	.985	-.157	57	-.306	.070	-.046	-.846
22	.421	.122	.785	-.028	58	-.533	.161	-.155	-1.121
23	.448	.119	.791	-.031	59	-.568	.117	-.208	-1.041
24	.491	.125	.872	-.014	60	-.172	.139	.496	-.671
25	.077	.201	.659	-.816	61	-.121	.075	.280	-.434
26	-.868	.463	.431	-2.707	62	-0.000	-0.000	-0.000	-0.000
27	-.406	.189	.140	-1.653	63	.037	.122	.709	-.487
28	-1.095	.241	-.347	-1.968	64	-.004	.092	.493	-.435
29	-.378	.159	.402	-.935	65	-.029	.105	.395	-.511
30	.292	.271	1.178	-.690	66	.183	.104	.490	-.333
31	-.034	.153	.449	-.514	67	-0.000	-0.000	-0.000	-0.000
32	-.001	.120	.400	-.539	68	-.495	.083	-.164	-.775
33	.059	.136	.607	-.407	69	-0.000	-0.000	-0.000	-0.000
34	.080	.138	.628	-.524	70	-.300	.058	-.081	-.603
35	-.282	.268	.518	-1.127	71	-0.000	-0.000	-0.000	-0.000
36	-.637	.585	.833	-2.356	72	-.283	.069	.032	-.582

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
CENTER BUILDING  
WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.793	.102	-.368	-1.172	37	-.530	.250	.129	-1.715
2	-0.000	-0.000	-0.000	-0.000	38	-1.114	.283	-.242	-1.990
3	-.622	.113	-.252	-1.040	39	-.446	.119	-.095	-.809
4	-.949	.188	-.270	-1.795	40	.530	.141	.987	-.121
5	-.872	.153	-.256	-1.360	41	-.061	.148	.445	-.608
6	-.789	.180	-.373	-1.723	42	-.217	.106	.160	-.642
7	-.674	.189	-.174	-1.517	43	-.017	.139	.496	-.580
8	-1.286	.295	-.355	-2.260	44	.084	.165	.662	-.453
9	-1.127	.181	-.562	-1.684	45	-.520	.250	.380	-1.278
10	.069	.102	.394	-.792	46	-.966	.532	.610	-2.759
11	.723	.098	1.057	.367	47	-.278	.080	.011	-.706
12	.627	.097	.923	.280	48	-.688	.169	-.177	-1.327
13	.618	.100	.978	.207	49	-.478	.091	-.172	-.994
14	.691	.114	1.112	.259	50	-.042	.169	.727	-.474
15	.157	.111	.560	-.334	51	-.236	.094	.070	-.623
16	-1.108	.322	-.359	-2.606	52	-.194	.075	.108	-.576
17	-.863	.280	-.159	-2.004	53	-.146	.071	.118	-.441
18	-1.541	.302	-.640	-2.411	54	-.109	.081	.355	-.462
19	-1.029	.158	-.569	-1.518	55	-.252	.121	.125	-.723
20	.299	.100	.608	-.115	56	-.307	.169	.221	-.983
21	.684	.109	1.005	.321	57	-.291	.058	-.063	-.572
22	.443	.098	.750	.088	58	-.635	.175	-.196	-1.400
23	.482	.103	.822	.128	59	-.515	.092	-.175	-.898
24	.550	.115	.941	.131	60	-.041	.178	.647	-.451
25	-.201	.179	.492	-.816	61	-.225	.088	.054	-.677
26	-1.702	.487	.139	-2.848	62	-0.000	-0.000	-0.000	-0.000
27	-.612	.256	.011	-1.859	63	-.108	.099	.353	-.421
28	-1.370	.285	-.444	-2.240	64	-.117	.059	.172	-.331
29	-.566	.111	-.195	-.976	65	-.181	.093	.135	-.598
30	.589	.121	1.032	.168	66	.027	.101	.339	-.535
31	.165	.098	.464	-.221	67	-0.000	-0.000	-0.000	-0.000
32	.016	.088	.288	-.285	68	-.423	.089	.035	-.787
33	.168	.110	.601	-.332	69	-0.000	-0.000	-0.000	-0.000
34	.235	.123	.815	-.277	70	-.295	.059	-.028	-.679
35	-.651	.193	.306	-1.393	71	-0.000	-0.000	-0.000	-0.000
36	-1.323	.435	.432	-2.848	72	-.276	.057	-.060	-.592

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 220

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.732	.091	-.424	-1.072	37	-.940	.350	-.160	-2.152
2	-0.000	-0.000	-0.000	-0.000	38	-1.440	.247	-.452	-2.334
3	-.685	.103	-.326	-1.056	39	-.475	.118	-.036	-.873
4	-.673	.135	-.286	-1.385	40	.549	.128	.978	.095
5	-.705	.130	-.275	-1.418	41	.014	.131	.482	-.430
6	-.590	.082	-.337	-.967	42	-.235	.103	.162	-.612
7	-.914	.271	-.249	-1.931	43	-.083	.155	.410	-.597
8	-1.451	.319	-.658	-2.150	44	.035	.176	.726	-.524
9	-.863	.126	-.417	-1.356	45	-.653	.210	.101	-1.429
10	.379	.097	.715	-.001	46	-1.382	.440	.098	-2.830
11	.729	.101	.304	-.977	47	-.371	.077	-.127	-.737
12	.531	.088	.771	.202	48	-1.025	.201	-.373	-1.786
13	.515	.094	.828	.156	49	-.571	.092	-.216	-.904
14	.605	.113	.970	.158	50	.022	.215	.752	-.507
15	.025	.084	.312	-.287	51	-.355	.116	-.057	-.771
16	-.802	.220	-.314	-1.757	52	-.268	.076	-.048	-.601
17	-1.132	.364	-.247	-2.315	53	-.193	.078	.109	-.637
18	-1.714	.321	-.609	-2.475	54	-.133	.094	.571	-.489
19	-.843	.138	-.430	-1.302	55	-.402	.169	.104	-.965
20	.478	.110	.785	.086	56	-.486	.240	.140	-1.616
21	.632	.107	.947	.220	57	-.347	.064	-.159	-.695
22	.407	.086	.692	.093	58	-.871	.213	-.323	-1.707
23	.438	.094	.800	.082	59	-.607	.097	-.249	-.970
24	.519	.115	.981	.036	60	.068	.240	.806	-.474
25	-.182	.107	.220	-.651	61	-.347	.123	-.030	-.882
26	-.866	.203	-.363	-2.532	62	-0.000	-0.000	-0.000	-0.000
27	-1.152	.412	-.210	-2.204	63	-.170	.058	.101	-.384
28	-1.643	.268	-.698	-2.360	64	-.142	.072	.234	-.392
29	-.560	.116	-.189	-.998	65	-.332	.140	.008	-.900
30	.592	.126	.952	.069	66	-.125	.154	.213	-.846
31	.200	.074	.438	-.059	67	-0.000	-0.000	-0.000	-0.000
32	-.019	.071	.227	-.271	68	-.379	.059	-.127	-.579
33	.115	.131	.600	-.441	69	-0.000	-0.000	-0.000	-0.000
34	.216	.145	.858	-.346	70	-.327	.048	-.158	-.561
35	-.578	.131	-.181	-1.404	71	-0.000	-0.000	-0.000	-0.000
36	-.880	.196	-.424	-2.189	72	-.322	.061	-.138	-.636



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.735	.096	-.390	-1.096	37	-1.691	.363	-.404	-2.813
2	-0.000	-0.000	-0.000	-0.000	38	-1.612	.254	-.652	-2.586
3	-.706	.094	-.365	-1.027	39	-.416	.136	.067	-.856
4	-.593	.095	-.320	-1.076	40	.555	.129	.953	.125
5	-.638	.101	-.332	-1.185	41	.030	.127	.484	-.409
6	-.563	.066	-.348	-.856	42	-.208	.115	.179	-.654
7	-1.205	.355	-.284	-2.161	43	-.086	.175	.543	-.687
8	-1.499	.262	-.577	-2.206	44	.042	.191	.797	-.584
9	-.518	.119	-.154	-.992	45	-.510	.190	.135	-1.279
10	.578	.107	.894	.089	46	-.772	.358	-.144	-2.751
11	.620	.101	.990	.183	47	-1.054	.440	-.246	-2.442
12	.395	.082	.698	.087	48	-1.594	.276	-.775	-2.437
13	.373	.094	.815	.034	49	-.660	.111	-.191	-1.063
14	.488	.117	.949	.073	50	.336	.241	.953	-.514
15	-.125	.070	.129	-.445	51	-.510	.142	-.078	-1.044
16	-.761	.109	-.464	-1.224	52	-.307	.081	-.058	-.615
17	-1.469	.401	-.379	-2.463	53	-.175	.108	.239	-.655
18	-1.802	.254	-.608	-2.622	54	-.102	.133	.474	-.532
19	-.601	.126	-.177	-1.048	55	-.530	.135	-.081	-1.063
20	.603	.114	.989	.117	56	-.502	.161	-.147	-1.898
21	.505	.103	.821	.179	57	-.757	.325	-.227	-2.499
22	.287	.081	.560	.025	58	-1.406	.273	-.375	-2.492
23	.325	.107	.754	-.070	59	-.691	.129	-.195	-1.152
24	.426	.134	.897	.012	60	.337	.181	.834	-.339
25	-.297	.092	.137	-.742	61	-.497	.143	-.080	-1.076
26	-.777	.128	-.369	-1.552	62	-0.000	-0.000	-0.000	-0.000
27	-1.835	.385	-.249	-2.813	63	-.164	.086	.152	-.510
28	-1.863	.214	-.938	-2.523	64	-.121	.097	.272	-.426
29	-.480	.117	-.091	-.955	65	-.407	.111	-.130	-.915
30	.605	.116	.935	.183	66	-.088	.070	.058	-.471
31	.148	.073	.416	-.088	67	-0.000	-0.000	-0.000	-0.000
32	-.068	.062	.174	-.268	68	-.346	.068	-.124	-.788
33	.031	.140	.577	-.442	69	-0.000	-0.000	-0.000	-0.000
34	.147	.169	.875	-.437	70	-.433	.121	.065	-1.295
35	-.520	.121	-.084	-.942	71	-0.000	-0.000	-0.000	-0.000
36	-.661	.141	-.234	-1.216	72	-.559	.174	-.148	-1.435

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.688	.106	-.412	-1.070	37	-1.642	.419	-.256	-2.794
2	-0.000	-0.000	-0.000	-0.000	38	-1.476	.269	-.547	-2.471
3	-.760	.091	-.385	-1.100	39	-.280	.147	.295	-.810
4	-.582	.100	-.292	-1.008	40	.583	.128	1.098	.181
5	-.576	.093	-.243	-1.067	41	-.046	.117	.415	-.439
6	-.516	.069	-.251	-.918	42	-.228	.101	.168	-.632
7	-1.555	.345	-.486	-2.509	43	-.107	.171	.525	-.734
8	-1.467	.188	-.799	-2.011	44	.019	.191	.793	-.538
9	-.190	.112	-.188	-.729	45	-.432	.136	.061	-.895
10	.701	.106	.965	.300	46	-.475	.102	-.157	-.918
11	.457	.098	.805	.059	47	-1.431	.299	-.467	-2.545
12	.250	.077	.544	-.061	48	-1.616	.268	-.749	-2.568
13	.224	.102	.640	-.146	49	-.623	.127	-.090	-1.131
14	.355	.131	.854	.040	50	.525	.137	1.055	-.321
15	-.217	.067	-.012	-.471	51	-.556	.132	-.119	-1.139
16	-.693	.083	-.413	-1.033	52	-.355	.104	0.000	-.756
17	-1.775	.401	-.385	-2.789	53	-.223	.134	.168	-.899
18	-1.769	.252	-.829	-2.577	54	-.152	.156	.450	-.812
19	-.338	.132	.089	-.872	55	-.483	.105	-.134	-.899
20	.681	.123	1.142	.226	56	-.427	.082	-.128	-1.082
21	.328	.094	.644	.015	57	-1.101	.327	-.284	-2.351
22	.144	.072	.356	-.098	58	-1.515	.277	-.557	-2.448
23	.196	.115	.559	-.261	59	-.665	.145	-.146	-1.202
24	.309	.152	.941	-.064	60	.444	.128	.883	-.224
25	-.364	.094	-.068	-.884	61	-.543	.132	-.119	-1.143
26	-.683	.138	-.237	-1.963	62	-0.000	-0.000	-0.000	-0.000
27	-2.143	.321	-.915	-2.794	63	-.178	.095	.228	-.776
28	-1.904	.207	-1.310	-2.749	64	-.132	.111	.424	-.768
29	-.385	.123	.102	-.810	65	-.425	.084	-.145	-.771
30	.633	.122	1.012	.258	66	-.093	.040	.025	-.295
31	.088	.076	.330	-.213	67	-0.000	-0.000	-0.000	-0.000
32	-.098	.057	.160	-.297	68	-.362	.054	-.196	-.656
33	-.009	.123	.460	-.535	69	-0.000	-0.000	-0.000	-0.000
34	.089	.162	.890	-.312	70	-.473	.152	-.023	-1.263
35	-.466	.109	-.019	-1.008	71	-0.000	-0.000	-0.000	-0.000
36	-.525	.115	-.086	-.945	72	-.717	.175	-.226	-1.499

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 250

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.601	.082	-.361	-.964	37	-1.352	.413	.311	-2.787
2	-0.000	-0.000	-0.000	-0.000	38	-1.255	.283	-.249	-2.221
3	-.954	.111	-.486	-1.404	39	-.150	.148	.474	-.728
4	-.790	.148	-.391	-1.273	40	.578	.132	.981	.141
5	-.524	.091	-.211	-.879	41	-.139	.098	.244	-.485
6	-.491	.072	-.223	-.866	42	-.265	.081	.031	-.604
7	-1.909	.351	-.658	-2.692	43	-.146	.161	.628	-.842
8	-1.175	.151	-.627	-1.678	44	-.043	.186	.783	-.738
9	.198	.108	.537	-.204	45	-.426	.111	.085	-.866
10	.736	.094	.985	.330	46	-.446	.078	-.196	-.860
11	.198	.082	.468	-.104	47	-1.101	.286	-.041	-2.209
12	.053	.063	.245	-.186	48	-1.242	.271	.005	-2.367
13	.036	.119	.489	-.328	49	-.561	.149	-.081	-1.094
14	.177	.147	.732	-.290	50	.529	.127	.932	.145
15	-.297	.078	-.071	-.694	51	-.532	.098	-.185	-.965
16	-.661	.086	-.396	-1.343	52	-.406	.110	-.081	-.891
17	-2.265	.324	-1.059	-2.803	53	-.273	.139	.182	-.764
18	-1.609	.196	-1.091	-2.310	54	-.201	.165	.568	-.803
19	-.011	.117	.381	-.437	55	-.485	.083	-.133	-.845
20	.718	.108	1.054	.285	56	-.426	.059	-.260	-.756
21	.117	.089	.389	-.177	57	-1.041	.257	-.071	-2.143
22	-.013	.070	.238	-.304	58	-1.223	.287	-.287	-2.345
23	.056	.130	.537	-.415	59	-.533	.151	.023	-1.143
24	.172	.174	.842	-.319	60	.419	.123	.944	.019
25	-.396	.097	-.051	-.799	61	-.561	.107	-.096	-1.057
26	-.594	.111	-.179	-1.151	62	-0.000	-0.000	-0.000	-0.000
27	-2.051	.281	-.947	-2.803	63	-.219	.113	.363	-.735
28	-1.745	.203	-.894	-2.353	64	-.163	.124	.313	-.699
29	-.227	.118	.203	-.797	65	-.448	.068	-.186	-.736
30	.629	.125	1.039	.248	66	-.112	.033	-.005	-.274
31	-.020	.086	.311	-.349	67	-0.000	-0.000	-0.000	-0.000
32	-.160	.061	.097	-.379	68	-.377	.043	-.220	-.658
33	-.079	.126	.413	-.557	69	-0.000	-0.000	-0.000	-0.000
34	.029	.177	.855	-.490	70	-.445	.137	.219	-1.340
35	-.444	.102	.148	-.888	71	-0.000	-0.000	-0.000	-0.000
36	-.499	.090	-.207	-.910	72	-.768	.155	.011	-1.385

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 260

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.562	.058	-.391	-.862	37	-.168	.139	.300	-.628
2	-0.000	-0.000	-0.000	-0.000	38	-.060	.192	.779	-.623
3	-1.146	.126	-.547	-1.564	39	-.415	.103	.037	-.764
4	-.826	.122	-.416	-1.202	40	-.464	.075	-.233	-.836
5	-.423	.077	-.172	-.728	41	-.264	.098	.083	-.643
6	-.502	.082	-.238	-.987	42	-.319	.077	-.018	-.664
7	-1.846	.194	-.951	-2.435	43	-.209	.150	.308	-.680
8	-.678	.123	-.235	-1.082	44	-.118	.174	.606	-.647
9	.507	.106	.792	.101	45	-.406	.093	.048	-.738
10	.608	.102	.884	.242	46	-.416	.062	-.177	-.761
11	-.137	.084	.112	-.538	47	-.610	.229	.146	-1.570
12	-.178	.061	-.439	-.439	48	-.792	.232	-.153	-1.801
13	-.154	.134	.400	-.598	49	-.532	.142	-.135	-1.081
14	-.023	.173	.810	-.469	50	.463	.152	.906	-.294
15	-.334	.092	-.044	-.672	51	-.531	.082	-.223	-.825
16	-.609	.073	-.372	-1.134	52	-.397	.101	-.126	-.951
17	-2.112	.255	-1.147	-2.803	53	-.257	.125	.161	-.781
18	-1.046	.179	-.369	-1.641	54	-.172	.153	.474	-.775
19	.338	.116	.760	-.141	55	-.454	.074	-.179	-.792
20	.638	.113	.955	.248	56	-.398	.052	-.198	-.619
21	-.156	.081	.129	-.479	57	-.612	.201	.097	-1.438
22	-.196	.071	.078	-.468	58	-.763	.227	-.040	-1.950
23	-.113	.140	.380	-.521	59	-.458	.137	-.019	-1.160
24	-.009	.179	.872	-.617	60	.400	.126	1.055	-.209
25	-.447	.104	-.073	-.836	61	-.627	.092	-.301	-1.103
26	-.580	.097	-.203	-1.117	62	-0.000	-0.000	-0.000	-0.000
27	-1.705	.283	-.578	-2.663	63	-.236	.092	.051	-.805
28	-1.353	.202	-.452	-2.023	64	-.179	.109	.316	-.694
29	.019	.103	.374	-.395	65	-.438	.060	-.167	-.680
30	.596	.115	.963	.187	66	-.105	.030	0.000	-.324
31	-.186	.090	.109	-.509	67	-0.000	-0.000	-0.000	-0.000
32	-.260	.067	-.011	-.509	68	-.362	.037	-.223	-.565
33	.020	.100	.472	-.359	69	-0.000	-0.000	-0.000	-0.000
34	.592	.116	.950	.178	70	-.392	.084	.007	-.798
35	-.188	.089	.130	-.490	71	-0.000	-0.000	-0.000	-0.000
36	-.259	.066	-.010	-.486	72	-.514	.145	.038	-.969

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.549	.041	-.391	-.758	37	-.573	.317	.491	-1.676
2	-0.000	-0.000	-0.000	-0.000	38	-.709	.224	.116	-1.436
3	-1.367	.121	-.903	-1.779	39	.073	.143	.577	-.364
4	-.558	.100	-.307	-1.012	40	.542	.127	.929	.119
5	-.479	.084	-.125	-.769	41	-.324	.093	.055	-.707
6	-.645	.164	-.248	-1.265	42	-.323	.079	-.050	-.605
7	-1.423	.146	-.831	-1.879	43	-.209	.151	.320	-.915
8	-0.000	-0.000	-0.000	-0.000	44	-.130	.177	.513	-.768
9	.654	.073	.775	.238	45	-.352	.104	.101	-.728
10	.373	.088	.641	.015	46	-.357	.090	-.050	-.941
11	-.488	.077	-.130	-.769	47	-.299	.140	.183	-.910
12	-.399	.068	-.102	-.624	48	-.341	.208	.141	-.983
13	-.333	.136	.276	-.730	49	-.404	.129	.084	-.899
14	-.240	.179	.590	-.673	50	.299	.205	.895	-.495
15	-.371	.103	-.039	-.742	51	-.469	.079	-.167	-.768
16	-.595	.073	-.383	-.890	52	-.324	.082	-.096	-.608
17	-1.496	.283	-.318	-2.256	53	-.188	.096	.110	-.608
18	-.422	.170	.208	-.983	54	-.097	.124	.456	-.630
19	.598	.123	1.008	.080	55	-.390	.089	-.076	-.819
20	.478	.110	.816	.092	56	-.339	.075	-.072	-.899
21	-.459	.087	-.176	-.776	57	-.202	.172	.536	-.781
22	-.361	.094	-.033	-.702	58	-.272	.194	.269	-1.078
23	-.252	.173	.353	-.850	59	-.389	.157	.074	-1.030
24	-.143	.203	.675	-.668	60	.267	.217	.832	-.535
25	-.476	.134	.029	-1.005	61	-.575	.081	-.280	-.925
26	-.596	.155	-.139	-1.603	62	-0.000	-0.000	-0.000	-0.000
27	-1.341	.230	-.383	-2.124	63	-.198	.075	.057	-.577
28	-.997	.173	-.415	-1.589	64	-.148	.093	.236	-.513
29	.169	.091	.520	-.208	65	-.387	.073	-.130	-.706
30	.582	.117	.943	.150	66	-.072	.042	.116	-.274
31	-.318	.086	-.047	-.667	67	-0.000	-0.000	-0.000	-0.000
32	-.321	.076	-.043	-.584	68	-.354	.062	-.154	-.655
33	-.209	.154	.412	-.809	69	-0.000	-0.000	-0.000	-0.000
34	-.094	.204	.660	-.718	70	-.452	.115	.234	-.844
35	-.381	.126	.289	-.908	71	-0.000	-0.000	-0.000	-0.000
36	-.422	.107	0.000	-.934	72	-.223	.123	.280	-.693

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.545	.035	-.429	-.742	37	-.259	.243	.556	-1.102
2	-0.000	-0.000	-0.000	-0.000	38	-.389	.213	.499	-1.103
3	-1.466	.117	-.978	-1.798	39	-.013	.158	.607	-.595
4	-.416	.060	-.238	-.744	40	.474	.155	1.027	-.274
5	-.371	.082	-.145	-.660	41	-.376	.083	-.099	-.685
6	-.598	.124	-.138	-1.113	42	-.309	.096	.035	-.663
7	-.853	.133	-.428	-1.348	43	-.160	.164	.342	-.688
8	.340	.110	.652	-.142	44	-.080	.189	.595	-.696
9	.704	.095	1.012	.279	45	-.338	.127	.220	-.834
10	-.009	.093	.299	-.309	46	-.322	.130	.113	-1.074
11	-.784	.085	-.511	-1.154	47	-.134	.157	.459	-.668
12	-.535	.091	-.190	-.781	48	-.152	.094	.114	-.542
13	-.475	.139	.128	-.827	49	-.156	.112	.190	-.691
14	-.410	.173	.386	-.785	50	-.029	.218	.784	-.776
15	-.453	.100	-.118	-.823	51	-.466	.090	-.170	-.965
16	-.558	.077	-.324	-.828	52	-.305	.076	-.053	-.641
17	-.816	.255	.203	-1.661	53	-.194	.089	.111	-.531
18	.029	.148	.518	-.534	54	-.105	.123	.457	-.518
19	.704	.119	1.058	.263	55	-.338	.111	.014	-.806
20	.258	.090	.549	-.106	56	-.309	.108	.025	-.931
21	-.715	.100	-.399	-1.035	57	.162	.164	.698	-.354
22	-.496	.151	-.064	-.995	58	-.052	.102	.345	-.496
23	-.335	.231	.442	-1.113	59	-.139	.090	.260	-.542
24	-.169	.271	.788	-.959	60	-.192	.202	.662	-.806
25	-.449	.164	.228	-.976	61	-.564	.104	-.199	-1.106
26	-.583	.177	.036	-1.833	62	-0.000	-0.000	-0.000	-0.000
27	-.721	.256	.297	-1.543	63	-.238	.082	.024	-.555
28	-.545	.191	.222	-1.138	64	-.188	.097	.254	-.485
29	.165	.119	.478	-.439	65	-.359	.081	-.108	-.749
30	.518	.129	.946	-.142	66	-.061	.050	.082	-.360
31	-.430	.076	-.136	-.724	67	-0.000	-0.000	-0.000	-0.000
32	-.329	.096	-.014	-.687	68	-.326	.065	-.100	-.744
33	-.199	.156	.263	-.712	69	-0.000	-0.000	-0.000	-0.000
34	-.087	.201	.700	-.684	70	-.534	.106	-.192	-.958
35	-.357	.139	.153	-.889	71	-0.000	-0.000	-0.000	-0.000
36	-.379	.134	.089	-1.229	72	.028	.167	.659	-.581

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.524	.029	-.408	-.642	37	-.216	.157	.349	-.690
2	-0.000	-0.000	-0.000	-0.000	38	-.113	.207	.739	-.704
3	-1.495	.119	-1.065	-1.947	39	-.444	.153	.042	-1.202
4	-.395	.077	-.183	-.727	40	-.463	.209	.094	-1.869
5	-.409	.101	-.038	-.722	41	-.427	.134	.080	-1.037
6	-.420	.066	-.214	-.677	42	-.306	.110	.048	-1.030
7	-.303	.120	.040	-.758	43	-.211	.137	.249	-.791
8	.658	.097	.981	.287	44	-.164	.161	.487	-.713
9	.551	.096	.841	.153	45	-.353	.116	.084	-1.013
10	-.445	.099	-.057	-.754	46	-.340	.147	.092	-1.476
11	-.951	.118	-.571	-1.388	47	.204	.250	.927	-.499
12	-.604	.133	-.125	-1.121	48	-.075	.128	.342	-.592
13	-.539	.162	.067	-.986	49	-.210	.155	.207	-.869
14	-.502	.189	.440	-.939	50	-.275	.181	.510	-1.028
15	-.525	.121	-.125	-.959	51	-.566	.113	-.077	-1.128
16	-.539	.100	-.222	-1.065	52	-.316	.079	-.065	-.953
17	-.055	.214	.666	-.879	53	-.260	.090	.197	-.597
18	.305	.163	.807	-.375	54	-.191	.114	.554	-.544
19	.428	.190	.889	-.426	55	-.316	.102	.071	-.815
20	-.096	.167	.446	-1.016	56	-.322	.117	.107	-1.077
21	-.873	.166	-.165	-1.479	57	.249	.159	.781	-.290
22	-.558	.231	-.023	-1.344	58	.067	.111	.437	-.331
23	-.149	.215	.442	-1.145	59	-.116	.108	.374	-.636
24	.049	.237	.994	-.767	60	-.284	.167	.646	-.882
25	-.594	.190	.264	-1.470	61	-.655	.151	-.160	-1.268
26	-.652	.284	.072	-2.470	62	-0.000	-0.000	-0.000	-0.000
27	.195	.268	1.135	-.570	63	-.255	.094	.136	-.606
28	-.031	.143	.429	-.592	64	-.181	.120	.376	-.523
29	-.579	.178	.107	-1.345	65	-.333	.084	-.021	-.736
30	-.623	.264	.034	-2.735	66	-.047	.055	.121	-.612
31	.174	.268	1.148	-.572	67	-0.000	-0.000	-0.000	-0.000
32	-.034	.147	.511	-.528	68	-.312	.063	-.085	-.719
33	-.185	.147	.435	-.795	69	-0.000	-0.000	-0.000	-0.000
34	-.199	.261	.832	-.876	70	-.559	.103	-.261	-1.067
35	-.408	.226	.364	-1.145	71	-0.000	-0.000	-0.000	-0.000
36	-.341	.111	-.017	-.787	72	.171	.158	.798	-.330

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.486	.033	-.380	-.606	37	.546	.138	1.072	-.031
2	-0.000	-0.000	-0.000	-0.000	38	.069	.132	.439	-.546
3	-1.483	.118	-.996	-1.931	39	-.524	.189	.102	-1.247
4	-.443	.097	-.175	-.792	40	-.564	.229	.232	-1.598
5	-.363	.070	-.098	-.599	41	-.660	.172	.060	-1.373
6	-.342	.061	-.159	-.543	42	-.302	.094	-.006	-.715
7	.120	.101	.449	-.263	43	-.166	.147	.444	-.491
8	.769	.102	1.122	.371	44	-.100	.170	.577	-.647
9	.216	.099	.543	-.230	45	-.369	.144	.112	-1.146
10	-.931	.115	-.546	-1.370	46	-.370	.202	.209	-2.037
11	-1.155	.131	-.732	-1.734	47	.491	.130	1.001	.075
12	-.766	.198	-.263	-1.415	48	.078	.106	.405	-.585
13	-.598	.165	-.027	-1.124	49	-.364	.142	.098	-.976
14	-.537	.169	.061	-1.062	50	-.363	.195	.114	-1.475
15	-.489	.135	-.034	-.981	51	.488	.129	.899	.082
16	-.501	.109	-.201	-1.003	52	.092	.088	.430	-.323
17	.339	.103	.686	-.151	53	-.535	.168	-.016	-1.126
18	.633	.128	.977	.128	54	-.648	.193	.031	-1.247
19	.018	.181	.748	-.678	55	-.696	.118	-.216	-1.134
20	-.700	.213	.202	-1.476	56	-.309	.088	-.043	-.751
21	-1.141	.208	-.360	-1.859	57	.282	.136	.778	-.216
22	-.595	.204	-.044	-1.387	58	.143	.094	.545	-.239
23	-.351	.251	.469	-1.259	59	-.195	.144	.313	-.781
24	-.206	.286	.777	-1.345	60	-.355	.175	.422	-1.072
25	-.469	.164	.172	-1.178	61	-.667	.136	-.175	-1.168
26	-.563	.191	-.094	-2.131	62	-0.000	-0.000	-0.000	-0.000
27	.616	.139	1.050	-.040	63	-.242	.093	.098	-.604
28	.101	.116	.442	-.346	64	-.169	.114	.398	-.545
29	-.646	.188	-.023	-1.247	65	-.287	.087	.041	-.627
30	-.793	.222	-.053	-1.641	66	-.028	.059	.152	-.602
31	-.767	.176	-.250	-1.515	67	-0.000	-0.000	-0.000	-0.000
32	-.329	.112	.001	-1.078	68	-.273	.059	-.084	-.671
33	-.279	.137	.314	-1.233	69	-0.000	-0.000	-0.000	-0.000
34	-.197	.169	.796	-.777	70	-.534	.096	-.219	-.924
35	-.414	.147	.202	-1.360	71	-0.000	-0.000	-0.000	-0.000
36	-.466	.179	.135	-1.624	72	.227	.131	.705	-.169



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.473	.029	-.384	-.591	37	.556	.121	.969	.140
2	-0.000	-0.000	-0.000	-0.000	38	.081	.049	.443	-.235
3	-1.503	.110	-1.015	-1.839	39	-.822	.219	.011	-1.603
4	-.543	.098	-.264	-.959	40	-.923	.305	.208	-2.021
5	-.243	.055	-.037	-.429	41	-.825	.218	.092	-1.433
6	-.332	.058	-.146	-.546	42	-.320	.105	.072	-.760
7	.451	.102	.744	.052	43	-.194	.201	.513	-.930
8	.698	.109	.983	.300	44	-.142	.222	.856	-.853
9	-.285	.104	.037	-.688	45	-.361	.171	.168	-1.145
10	-1.354	.153	-.863	-1.809	46	-.379	.240	.272	-1.974
11	-1.288	.190	-.540	-1.861	47	.528	.120	.999	.154
12	-.789	.222	-.222	-1.633	48	.018	.094	.371	-.364
13	-.613	.168	.049	-1.240	49	-.841	.213	-.186	-1.657
14	-.505	.175	.136	-1.144	50	-.957	.251	.034	-1.819
15	-.455	.176	.106	-1.206	51	-.777	.173	-.192	-1.541
16	-.480	.141	-.153	-1.074	52	-.320	.099	.022	-.727
17	.506	.112	.909	.113	53	-.264	.140	.240	-.743
18	.575	.112	.976	.232	54	-.209	.164	.619	-.892
19	-.460	.153	.086	-.949	55	-.253	.117	.224	-.829
20	-1.391	.209	-.638	-2.066	56	-.278	.133	.249	-1.022
21	-1.365	.179	-.728	-2.083	57	.326	.119	.764	-.024
22	-.617	.212	-.077	-1.489	58	.033	.098	.391	-.387
23	-.534	.199	.183	-1.300	59	-.510	.208	.029	-1.346
24	-.499	.215	.391	-1.337	60	-.646	.227	.056	-1.653
25	-.474	.182	.116	-1.489	61	-.681	.123	-.228	-1.134
26	-.488	.184	.110	-1.432	62	-0.000	-0.000	-0.000	-0.000
27	.630	.122	.991	.247	63	-.225	.102	.122	-.645
28	.127	.085	.446	-.201	64	-.184	.118	.274	-.561
29	-.883	.177	-.351	-1.482	65	-.258	.086	.039	-.652
30	-1.101	.236	-.252	-1.876	66	-.019	.062	.138	-.565
31	-.983	.200	-.338	-1.724	67	-0.000	-0.000	-0.000	-0.000
32	-.377	.108	-.059	-.995	68	-.252	.058	-.050	-.606
33	-.299	.177	.426	-.834	69	-0.000	-0.000	-0.000	-0.000
34	-.202	.230	.665	-.890	70	-.523	.084	-.280	-.450
35	-.349	.166	.226	-1.059	71	-0.000	-0.000	-0.000	-0.000
36	-.441	.236	.294	-1.888	72	.277	.119	.712	-.099

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 320

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.480	.032	-.385	-.598	37	.550	.132	1.016	.156
2	-0.000	-0.000	-0.000	-0.000	38	-.107	.104	.369	-.439
3	-1.493	.117	-1.080	-1.894	39	-1.180	.243	-.167	-2.076
4	-.660	.111	-.298	-1.010	40	-1.316	.335	.067	-2.385
5	-.241	.058	-.066	-.478	41	-.932	.253	-.023	-1.970
6	-.362	.070	-.167	-.604	42	-.376	.155	.245	-1.087
7	.687	.099	1.022	.248	43	-.280	.226	.516	-.943
8	.444	.099	.727	.033	44	-.256	.263	.728	-1.047
9	-.797	.117	-.376	-1.222	45	-.351	.200	.315	-1.155
10	-1.419	.259	-.552	-2.099	46	-.383	.256	.316	-2.003
11	-.973	.280	-.200	-2.007	47	.544	.119	.904	.226
12	-.713	.260	-.046	-2.253	48	-.214	.105	.182	-.648
13	-.582	.183	.003	-1.478	49	-1.253	.211	-.524	-1.929
14	-.531	.169	.242	-1.605	50	-1.274	.237	-.455	-1.983
15	-.519	.171	.023	-1.322	51	-.608	.209	-.104	-1.446
16	-.468	.142	-.113	-1.097	52	-.351	.129	.134	-.893
17	.658	.111	1.026	.229	53	-.332	.141	.202	-.900
18	.248	.110	.561	-.186	54	-.309	.165	.445	-.943
19	-1.074	.158	-.496	-1.579	55	-.297	.163	.246	-.994
20	-1.654	.228	-.911	-2.343	56	-.276	.127	.173	-.997
21	-.997	.290	-.229	-2.022	57	.340	.118	.843	.017
22	-.594	.204	-.040	-1.874	58	-.234	.106	.179	-.604
23	-.548	.164	-.053	-1.408	59	-.994	.205	-.413	-1.820
24	-.573	.175	-.036	-1.966	60	-.939	.212	-.308	-1.828
25	-.603	.196	-.020	-1.506	61	-.513	.162	-.080	-1.086
26	-.535	.179	.001	-1.252	62	-0.000	-0.000	-0.000	-0.000
27	.665	.127	1.062	.216	63	-.280	.119	.182	-.714
28	-.091	.087	.236	-.352	64	-.294	.130	.183	-.791
29	-1.307	.219	-.363	-2.037	65	-.288	.129	.134	-.804
30	-1.485	.267	-.485	-2.361	66	-.018	.064	.225	-.359
31	-1.104	.223	-.392	-1.921	67	-0.000	-0.000	-0.000	-0.000
32	-.467	.132	-.117	-.989	68	-.251	.070	.053	-.642
33	-.362	.220	.361	-1.049	69	-0.000	-0.000	-0.000	-0.000
34	-.280	.291	.794	-1.206	70	-.509	.097	-.195	-.890
35	-.371	.198	.232	-1.175	71	-0.000	-0.000	-0.000	-0.000
36	-.487	.280	.223	-2.079	72	.255	.110	.714	-.036

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 330

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.492	.035	-.369	-.615	37	.583	.128	1.043	.167
2	-0.000	-0.000	-0.000	-0.000	38	-.195	.096	.147	-.594
3	-1.472	.115	-1.088	-1.853	39	-1.308	.225	-.479	-2.054
4	-.741	.134	-.295	-1.250	40	-1.216	.350	-.145	-2.336
5	-.286	.066	-.057	-.524	41	-.458	.193	.031	-1.495
6	-.394	.091	-.167	-.779	42	-.357	.174	.265	-1.538
7	.749	.102	1.068	.218	43	-.324	.144	.182	-.879
8	.126	.099	.413	-.225	44	-.360	.154	.245	-1.182
9	-1.067	.139	-.665	-1.514	45	-.380	.184	.503	-1.374
10	-1.100	.229	-.362	-1.890	46	-.299	.143	.241	-1.097
11	-.567	.174	-.085	-1.557	47	.519	.122	.892	.204
12	-.515	.177	-.081	-1.629	48	-.267	.096	.088	-.607
13	-.477	.128	-.162	-1.260	49	-1.287	.179	-.688	-1.954
14	-.457	.129	-.075	-1.095	50	-1.067	.248	-.262	-1.854
15	-.482	.134	-.073	-1.232	51	-.342	.113	-.060	-1.035
16	-.436	.112	-.125	-1.050	52	-.314	.115	.027	-.903
17	.677	.125	.983	.216	53	-.331	.112	.091	-.892
18	-.051	.103	.326	-.496	54	-.309	.124	.137	-.914
19	-1.292	.178	-.704	-1.833	55	-.335	.149	.155	-1.243
20	-1.310	.269	-.322	-2.111	56	-.282	.109	.090	-.833
21	-.585	.174	-.117	-1.302	57	.344	.115	.715	.021
22	-.486	.162	0.000	-1.490	58	-.293	.097	.087	-.605
23	-.463	.127	.074	-1.054	59	-1.061	.163	-.476	-1.615
24	-.487	.134	.063	-1.164	60	-.669	.226	-.164	-1.535
25	-.521	.153	-.179	-1.319	61	-.289	.073	-.078	-.565
26	-.456	.131	-.130	-1.270	62	-0.000	-0.000	-0.000	-0.000
27	.653	.121	.993	.303	63	-.263	.075	.006	-.584
28	-.236	.084	.093	-.527	64	-.285	.078	-.054	-.688
29	-1.434	.228	-.407	-2.094	65	-.337	.110	0.000	-.850
30	-1.331	.357	-.097	-2.290	66	-.016	.058	.214	-.426
31	-.586	.256	0.000	-1.665	67	-0.000	-0.000	-0.000	-0.000
32	-.460	.181	.201	-1.323	68	-.308	.081	-.083	-.665
33	-.412	.155	.175	-1.137	69	-0.000	-0.000	-0.000	-0.000
34	-.404	.193	.400	-1.315	70	-.590	.108	-.219	-1.007
35	-.407	.212	.355	-1.248	71	-0.000	-0.000	-0.000	-0.000
36	-.380	.196	.199	-1.676	72	.268	.112	.695	-.020

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.494	.031	-.377	-.638	37	.565	.123	1.052	.164
2	-0.000	-0.000	-0.000	-0.000	38	-.232	.102	.111	-.698
3	-1.521	.109	-1.091	-1.905	39	-1.031	.252	-.171	-1.820
4	-.784	.121	-.344	-1.188	40	-.592	.263	-.017	-1.600
5	-.365	.069	-.091	-.752	41	-.364	.149	.029	-1.090
6	-.377	.077	-.184	-.764	42	-.288	.119	.085	-.831
7	.705	.103	1.047	.295	43	-.258	.104	.163	-.754
8	-0.000	-0.000	-0.000	-0.000	44	-.284	.105	.145	-.756
9	-1.204	.168	-.645	-1.771	45	-.373	.168	.180	-1.474
10	-.892	.261	-.134	-1.618	46	-.358	.189	.204	-1.451
11	-.451	.129	-.095	-1.444	47	.531	.121	.907	.171
12	-.417	.104	-.150	-1.109	48	-.304	.107	.053	-.705
13	-.399	.089	-.086	-.828	49	-1.120	.180	-.357	-1.661
14	-.374	.093	-.062	-.816	50	-.583	.234	-.050	-1.461
15	-.401	.102	-.108	-.946	51	-.301	.123	-.009	-1.035
16	-0.000	-0.000	-0.000	-0.000	52	-.294	.115	.007	-.942
17	.665	.113	.992	.176	53	-.268	.090	.079	-.978
18	-.275	.109	.121	-.677	54	-.250	.095	.042	-1.111
19	-1.191	.251	-.304	-1.915	55	-.278	.115	.085	-1.137
20	-.824	.284	-.125	-1.767	56	-.272	.112	.135	-.880
21	-.487	.167	-.096	-1.333	57	.347	.109	.764	.052
22	-.404	.116	-.030	-1.145	58	-.295	.091	.043	-.602
23	-.382	.087	-.058	-.887	59	-1.005	.151	-.566	-1.569
24	-.399	.068	-.206	-.741	60	-.562	.197	-.138	-1.415
25	-.459	.108	-.130	-1.109	61	-.285	.070	-.095	-.782
26	-.477	.145	-.088	-1.352	62	-0.000	-0.000	-0.000	-0.000
27	.645	.123	1.057	.272	63	-.244	.077	-.013	-.700
28	-.310	.105	.053	-.728	64	-.266	.080	-.030	-.704
29	-1.137	.264	-.288	-1.768	65	-.292	.087	-.017	-1.061
30	-.563	.255	.003	-1.559	66	-.001	.053	.167	-.343
31	-.393	.165	.033	-1.386	67	-0.000	-0.000	-0.000	-0.000
32	-.369	.139	.194	-1.149	68	-.381	.099	-.124	-.824
33	-.350	.118	.068	-1.052	69	-0.000	-0.000	-0.000	-0.000
34	-.320	.126	.153	-1.015	70	-.569	.128	-.127	-1.050
35	-.422	.187	.184	-1.497	71	-0.000	-0.000	-0.000	-0.000
36	-.452	.200	.167	-1.519	72	.280	.110	.783	-.065

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CENTER BUILDING  
 WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.485	.030	-.381	-.604	37	.518	.122	.864	.107
2	-0.000	-0.000	-0.000	-0.000	38	-.336	.115	.043	-.714
3	-1.532	.115	-.943	-1.879	39	-1.031	.243	-.295	-1.886
4	-.750	.088	-.447	-1.066	40	-.513	.210	-.046	-1.440
5	-.511	.084	-.210	-.811	41	-.390	.160	.033	-1.212
6	-.338	.057	-.189	-.597	42	-.289	.118	.102	-.965
7	.510	.098	.780	.136	43	-.267	.103	.180	-.823
8	-.614	.108	-.276	-.940	44	-.292	.104	.079	-.824
9	-1.216	.205	-.514	-1.737	45	-.373	.163	.119	-1.438
10	-.543	.174	-.042	-1.351	46	-.344	.175	.179	-1.573
11	-.387	.108	-.123	-1.070	47	.493	.120	.863	.182
12	-.373	.084	-.153	-.837	48	-.402	.108	-.006	-.750
13	-.380	.074	-.175	-.724	49	-1.072	.202	-.302	-1.736
14	-.339	.075	-.112	-.703	50	-.458	.182	-.017	-1.288
15	-.372	.093	-.112	-.826	51	-.292	.122	.029	-1.083
16	-.418	.122	-.052	-1.237	52	-.275	.104	.072	-1.211
17	-.449	.148	-.040	-1.309	53	-.243	.081	.070	-.683
18	-.357	.082	-.137	-.697	54	-.215	.083	.082	-.736
19	-.358	.078	-.147	-.737	55	-.262	.123	.116	-.975
20	-.369	.080	-.163	-.771	56	-.296	.144	.163	-1.168
21	-.449	.143	-.080	-1.171	57	.323	.123	.757	.001
22	-.360	.087	-.074	-.777	58	-.335	.090	-.049	-.654
23	-.362	.083	-.129	-.734	59	-.955	.147	-.572	-1.433
24	-.374	.084	-.086	-.784	60	-.449	.134	-.126	-1.108
25	-.446	.115	-.170	-1.133	61	-.270	.064	-.070	-.721
26	-.440	.141	-.116	-1.277	62	-0.000	-0.000	-0.000	-0.000
27	.596	.115	1.025	.225	63	-.201	.057	.073	-.595
28	-.460	.115	-.089	-.892	64	-.224	.057	.004	-.578
29	-1.087	.274	-.328	-1.766	65	-.268	.091	.157	-.829
30	-.461	.187	-.027	-1.520	66	-.012	.080	.210	-.530
31	-.388	.138	.082	-1.255	67	-0.000	-0.000	-0.000	-0.000
32	-.358	.109	.004	-.970	68	-.449	.194	.353	-.933
33	-.338	.101	.079	-.869	69	-0.000	-0.000	-0.000	-0.000
34	-.294	.106	.229	-.830	70	-.277	.156	.173	-.787
35	-.391	.168	.416	-1.315	71	-0.000	-0.000	-0.000	-0.000
36	-.417	.166	.043	-1.458	72	.258	.108	.641	-.064

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 CENTER BUILDING  
 WIND DIRECTION 96

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.489	.079	-.180	-.734	37	-.134	.089	.174	-1.097
2	-0.000	-0.000	-0.000	-0.000	38	-.047	.086	.209	-.662
3	-.288	.086	-.017	-.653	39	-.114	.094	.185	-.656
4	-.938	.119	-.300	-1.252	40	-.180	.109	.114	-.672
5	-.924	.111	-.213	-1.264	41	-.343	.146	.075	-.904
6	-.589	.200	-.157	-1.376	42	-.133	.169	.532	-.842
7	-.433	.179	.070	-1.186	43	-.238	.164	.559	-.870
8	-0.000	-0.000	-0.000	-0.000	44	-.269	.137	.275	-.811
9	-.377	.102	-.108	-.790	45	-.360	.177	.177	-2.138
10	-.375	.128	.052	-1.078	46	-.315	.186	.409	-1.249
11	-.511	.175	-.008	-1.451	47	-.066	.057	.125	-.386
12	-.565	.189	-.112	-1.575	48	-.087	.052	.075	-.336
13	-.531	.131	-.189	-1.273	49	-.106	.057	.086	-.411
14	-.434	.122	-.121	-1.165	50	-.056	.064	.168	-.368
15	-.465	.134	-.110	-1.273	51	-0.000	-0.000	-0.000	-0.000
16	-.656	.210	-.125	-2.134	52	-.097	.088	.217	-.371
17	-.521	.252	.114	-1.753	53	-0.000	-0.000	-0.000	-0.000
18	-.378	.209	.086	-1.465	54	-.048	.083	.289	-.439
19	-.369	.131	-.032	-1.125	55	-.117	.092	.340	-.521
20	-.491	.179	-.003	-1.173	56	-.106	.127	.318	-.567
21	-.642	.243	.095	-1.668	57	-.101	.062	.094	-.696
22	-.624	.226	.230	-1.950	58	-.011	.043	.146	-.251
23	-.623	.198	-.129	-1.598	59	-.063	.044	.092	-.230
24	-.645	.194	-.140	-1.442	60	-0.000	-0.000	-0.000	-0.000
25	-.646	.215	-.091	-1.439	61	-.239	.078	-.033	-.604
26	-.804	.341	-.014	-2.359	62	.070	.068	.365	-.302
27	-.298	.243	.318	-2.017	63	.045	.072	.367	-.207
28	-.262	.186	.339	-1.203	64	.010	.066	.272	-.203
29	-.310	.161	.300	-1.259	65	-.015	.077	.324	-.252
30	-.319	.198	.317	-1.385	66	.248	.066	.537	.003
31	-.526	.202	.095	-1.307	67	-0.000	-0.000	-0.000	-0.000
32	-.333	.294	.598	-1.500	68	-0.000	-0.000	-0.000	-0.000
33	-.553	.234	.522	-1.397	69	.096	.110	.474	-.202
34	-.466	.198	.130	-1.213	70	-.075	.056	.148	-.254
35	-.575	.203	-.100	-1.656	71	-.080	.063	.084	-.364
36	-.798	.313	.197	-1.970	72	-.058	.063	.110	-.465

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 CENTER BUILDING  
 WIND DIRECTION 106

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.462	.064	-.248	-.688	37	-.092	.090	.194	-.445
2	-0.000	-0.000	-0.000	-0.000	38	-.019	.101	.271	-.590
3	-.158	.074	-.084	-.438	39	-.080	.092	.212	-.774
4	-.946	.124	-.201	-1.295	40	-.120	.105	.178	-.599
5	-.996	.106	-.473	-1.483	41	-.395	.149	.062	-.924
6	-1.106	.221	-.334	-1.766	42	.008	.129	.390	-.524
7	-.335	.161	.123	-1.263	43	-.047	.141	.448	-.777
8	-0.000	-0.000	-0.000	-0.000	44	-.096	.122	.260	-.732
9	-.327	.113	.004	-.727	45	-.171	.143	.229	-.904
10	-.312	.159	.181	-1.141	46	.047	.236	.647	-1.014
11	-.502	.197	.151	-1.134	47	-.052	.062	.157	-.335
12	-.843	.215	-0.030	-1.490	48	-.073	.055	.156	-.345
13	-.825	.184	-.238	-1.359	49	-.098	.055	.116	-.533
14	-.695	.183	-.180	-1.173	50	-.038	.060	.152	-.381
15	-.749	.196	-.109	-1.365	51	-0.000	-0.000	-0.000	-0.000
16	-.884	.334	-.168	-2.638	52	-.035	.097	.271	-.366
17	-.437	.262	.414	-1.716	53	-0.000	-0.000	-0.000	-0.000
18	-.289	.174	.146	-1.106	54	.002	.090	.318	-.446
19	-.338	.156	.097	-1.582	55	-.079	.103	.249	-.659
20	-.469	.231	.270	-1.354	56	-.033	.154	.422	-.612
21	-.586	.215	.251	-1.371	57	-.085	.057	.119	-.755
22	-.586	.271	.399	-1.486	58	.007	.041	.133	-.206
23	-.760	.234	-.087	-1.634	59	-.043	.044	.108	-.329
24	-.776	.218	-.133	-1.568	60	-0.000	-0.000	-0.000	-0.000
25	-.858	.278	-.175	-1.985	61	-.235	.075	-.029	-.504
26	-1.027	.430	-.136	-2.657	62	.059	.072	.497	-.168
27	-.243	.259	.373	-1.269	63	.001	.074	.322	-.268
28	-.230	.206	.325	-1.316	64	-.025	.070	.254	-.258
29	-.220	.173	.261	-.977	65	-.065	.072	.166	-.372
30	-.168	.190	.380	-1.109	66	.202	.077	.443	-.099
31	-.643	.200	.005	-1.276	67	-0.000	-0.000	-0.000	-0.000
32	-.066	.139	.379	-.959	68	-0.000	-0.000	-0.000	-0.000
33	-.251	.185	.429	-1.052	69	.042	.082	.410	-.166
34	-.187	.167	.278	-.957	70	-.053	.066	.187	-.285
35	-.377	.175	.131	-1.246	71	-.066	.067	.131	-.290
36	-.236	.289	.568	-1.315	72	-.046	.055	.094	-.478

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 CENTER BUILDING  
 WIND DIRECTION 116

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.439	.053	-.290	-.681	37	-.133	.118	.206	-1.325
2	-0.000	-0.000	-0.000	-0.000	38	-.021	.103	.336	-.803
3	-.147	.056	.025	-.461	39	-.065	.090	.304	-.475
4	-.940	.106	-.232	-1.213	40	-.105	.096	.246	-.532
5	-.956	.083	-.620	-1.274	41	-.504	.135	-.142	-.944
6	-1.220	.150	-.604	-1.670	42	.105	.096	.451	-.276
7	-.285	.136	.065	-.980	43	-.008	.094	.376	-.301
8	-0.000	-0.000	-0.000	-0.000	44	-.031	.081	.267	-.366
9	-.293	.091	-.067	-.743	45	-.045	.098	.252	-.579
10	-.218	.105	.097	-.718	46	.237	.142	.732	-.265
11	-.488	.141	-.005	-1.017	47	-.031	.059	.142	-.518
12	-.816	.200	.164	-1.250	48	-.046	.049	.138	-.363
13	-.887	.111	-.451	-1.269	49	-.076	.050	.106	-.340
14	-.776	.110	-.358	-1.133	50	-.004	.056	.214	-.315
15	-.851	.113	-.451	-1.334	51	-0.000	-0.000	-0.000	-0.000
16	-1.066	.217	-.284	-2.089	52	.040	.069	.249	-.434
17	-.414	.244	.176	-1.405	53	-0.000	-0.000	-0.000	-0.000
18	-.251	.150	.145	-1.060	54	.070	.067	.307	-.189
19	-.273	.134	.045	-1.020	55	-.004	.070	.265	-.306
20	-.326	.152	.047	-1.100	56	.129	.122	.536	-.308
21	-.812	.181	-.076	-1.335	57	-.059	.049	.146	-.255
22	-.330	.307	.561	-1.618	58	.041	.042	.229	-.190
23	-.796	.218	-.141	-1.563	59	-.012	.037	.122	-.141
24	-.789	.211	-.147	-1.729	60	-0.000	-0.000	-0.000	-0.000
25	-.893	.245	-.273	-2.002	61	-.265	.075	-.063	-.623
26	-.900	.326	.006	-2.112	62	.120	.053	.294	-.060
27	-.248	.248	.347	-1.420	63	.078	.061	.383	-.075
28	-.214	.183	.269	-1.131	64	.050	.057	.281	-.106
29	-.167	.155	.331	-.918	65	.015	.064	.220	-.397
30	-.092	.153	.356	-1.060	66	.311	.057	.526	-.047
31	-.705	.187	-.154	-1.334	67	-0.000	-0.000	-0.000	-0.000
32	.047	.108	.369	-.412	68	-0.000	-0.000	-0.000	-0.000
33	-.222	.113	.410	-.853	69	.015	.074	.331	-.232
34	-.110	.107	.313	-.974	70	-.021	.056	.217	-.212
35	-.250	.137	.220	-.866	71	-.026	.057	.145	-.214
36	.044	.155	.554	-.730	72	-.022	.051	.161	-.385



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
CENTER BUILDING  
WIND DIRECTION 126

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.474	.072	-.240	-.709	37	-.146	.131	.249	-1.069
2	-0.000	-0.000	-0.000	-0.000	38	-.014	.102	.290	-.565
3	-.237	.089	.033	-.513	39	-.056	.089	.285	-.513
4	-.823	.076	-.535	-1.082	40	-.158	.143	.141	-.872
5	-.804	.081	-.430	-1.031	41	-.589	.159	-.183	-1.435
6	-.996	.129	-.065	-1.342	42	.173	.089	.573	-.182
7	-.242	.095	.053	-.712	43	.003	.094	.351	-.327
8	-0.000	-0.000	-0.000	-0.000	44	-.003	.088	.347	-.297
9	-.262	.063	-.069	-.502	45	-.023	.105	.338	-.601
10	-.220	.089	-.023	-.657	46	.336	.127	.752	-.147
11	-.865	.122	-.486	-1.355	47	-.041	.075	.168	-.579
12	-.250	.219	.432	-.872	48	-.051	.053	.119	-.348
13	-.622	.117	-.064	-.996	49	-.079	.054	.110	-.309
14	-.495	.113	-.081	-.814	50	-.036	.079	.170	-.318
15	-.563	.110	-.210	-.991	51	-0.000	-0.000	-0.000	-0.000
16	-.402	.175	.109	-1.104	52	.059	.070	.418	-.323
17	-.375	.195	.145	-1.520	53	-0.000	-0.000	-0.000	-0.000
18	-.227	.123	.060	-.817	54	.098	.066	.360	-.114
19	-.257	.114	.038	-.742	55	.029	.072	.254	-.344
20	-.456	.206	-.012	-1.518	56	.187	.094	.548	-.153
21	-1.057	.171	-.449	-1.762	57	-.057	.046	.101	-.314
22	.024	.212	.519	-.744	58	.038	.039	.168	-.127
23	-.466	.193	.251	-1.124	59	-.014	.041	.181	-.164
24	-.462	.183	.032	-1.251	60	-0.000	-0.000	-0.000	-0.000
25	-.538	.204	.048	-1.400	61	-.291	.071	-.057	-.541
26	-.188	.220	.502	-1.019	62	.136	.055	.342	-.027
27	-.257	.241	.508	-1.392	63	.095	.063	.350	-.133
28	-.203	.172	.245	-1.084	64	.070	.061	.322	-.116
29	-.178	.135	.385	-.715	65	.028	.066	.221	-.329
30	-.249	.231	.232	-1.251	66	.336	.054	.496	.141
31	-.736	.176	-.263	-1.409	67	-0.000	-0.000	-0.000	-0.000
32	.114	.107	.483	-.258	68	-0.000	-0.000	-0.000	-0.000
33	-.125	.117	.408	-.649	69	-.095	.077	.146	-.370
34	-0.000	.109	.516	-.876	70	-.023	.049	.180	-.205
35	-.079	.128	.503	-.965	71	-.006	.046	.148	-.250
36	.211	.152	.811	-.355	72	-.023	.043	.138	-.347

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
CENTER BUILDING  
WIND DIRECTION 286

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.529	.038	-.404	-.692	37	-.341	.156	.249	-1.058
2	-0.000	-0.000	-0.000	-0.000	38	-0.000	-0.000	-0.000	-0.000
3	-1.448	.143	-.796	-1.867	39	-.049	.128	.413	-.527
4	-0.000	-0.000	-0.000	-0.000	40	-0.000	-0.000	-0.000	-0.000
5	.649	.140	1.083	-.048	41	-.327	.143	.052	-2.964
6	-0.000	-0.000	-0.000	-0.000	42	-0.000	-0.000	-0.000	-0.000
7	-1.134	.143	-.689	-1.683	43	.084	.160	.771	-.447
8	-0.000	-0.000	-0.000	-0.000	44	-0.000	-0.000	-0.000	-0.000
9	-.499	.231	.110	-1.150	45	-.162	.103	.181	-.723
10	-0.000	-0.000	-0.000	-0.000	46	-0.000	-0.000	-0.000	-0.000
11	-.383	.133	.063	-.900	47	-0.000	-0.000	-0.000	-0.000
12	-0.000	-0.000	-0.000	-0.000	48	-0.000	-0.000	-0.000	-0.000
13	-.363	.228	.409	-1.346	49	-0.000	-0.000	-0.000	-0.000
14	-1.466	.173	-.952	-2.110	50	-0.000	-0.000	-0.000	-0.000
15	.674	.170	1.148	.009	51	-.151	.076	.155	-.466
16	-0.000	-0.000	-0.000	-0.000	52	-0.000	-0.000	-0.000	-0.000
17	-1.105	.173	-.584	-1.660	53	-.374	.097	.043	-.751
18	-0.000	-0.000	-0.000	-0.000	54	-0.000	-0.000	-0.000	-0.000
19	-.352	.270	.407	-1.228	55	-.081	.069	.259	-.391
20	-0.000	-0.000	-0.000	-0.000	56	-0.000	-0.000	-0.000	-0.000
21	-.510	.167	.141	-1.150	57	-.263	.065	-.023	-.560
22	-0.000	-0.000	-0.000	-0.000	58	-0.000	-0.000	-0.000	-0.000
23	.163	.234	.921	-.573	59	-0.000	-0.000	-0.000	-0.000
24	-0.000	-0.000	-0.000	-0.000	60	-0.000	-0.000	-0.000	-0.000
25	-.047	.137	.546	-.518	61	-.327	.066	-.129	-.589
26	-0.000	-0.000	-0.000	-0.000	62	-0.000	-0.000	-0.000	-0.000
27	-.441	.132	.034	-.992	63	-.101	.080	.254	-.374
28	-0.000	-0.000	-0.000	-0.000	64	-0.000	-0.000	-0.000	-0.000
29	-.079	.149	.476	-.742	65	-.572	.076	-.436	-2.964
30	-0.000	-0.000	-0.000	-0.000	66	-0.000	-0.000	-0.000	-0.000
31	-.375	.206	.496	-1.120	67	-1.407	.139	-.729	-2.296
32	-0.000	-0.000	-0.000	-0.000	68	-0.000	-0.000	-0.000	-0.000
33	.022	.252	1.056	-.820	69	-.333	.109	.003	-.806
34	-2.099	.156	-1.482	-2.827	70	-0.000	-0.000	-0.000	-0.000
35	-.080	.151	.485	-.748	71	-.905	.169	-.362	-1.526
36	-0.000	-0.000	-0.000	-0.000	72	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
CENTER BUILDING  
WIND DIRECTION 296

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-0.000	-0.000	-0.000	-0.000	37	-0.000	-0.000	-0.000	-0.000
2	-0.000	-0.000	-0.000	-0.000	38	-0.000	-0.000	-0.000	-0.000
3	-1.508	.139	-.749	-1.958	39	-.355	.200	.158	-1.205
4	-0.000	-0.000	-0.000	-0.000	40	-0.000	-0.000	-0.000	-0.000
5	-.404	.100	-.020	-.746	41	-.537	.136	-.013	-1.286
6	-0.000	-0.000	-0.000	-0.000	42	-0.000	-0.000	-0.000	-0.000
7	.156	.144	.771	-.345	43	-.115	.118	.337	-.562
8	-0.000	-0.000	-0.000	-0.000	44	-0.000	-0.000	-0.000	-0.000
9	.305	.133	.821	-.266	45	-.317	.127	.109	-.955
10	-0.000	-0.000	-0.000	-0.000	46	-0.000	-0.000	-0.000	-0.000
11	-1.338	.169	-.625	-1.873	47	.306	.163	.906	-.212
12	-.702	.269	-.139	-1.435	48	-0.000	-0.000	-0.000	-0.000
13	-.587	.187	-.002	-2.964	49	-.321	.147	.059	-2.026
14	-0.000	-0.000	-0.000	-0.000	50	-0.000	-0.000	-0.000	-0.000
15	-.384	.150	.152	-1.156	51	-0.000	-0.000	-0.000	-0.000
16	-0.000	-0.000	-0.000	-0.000	52	-0.000	-0.000	-0.000	-0.000
17	.115	.170	.625	-.518	53	-0.000	-0.000	-0.000	-0.000
18	-1.302	.163	-.823	-1.956	54	-0.000	-0.000	-0.000	-0.000
19	.282	.181	.862	-.414	55	-.133	.079	.135	-.544
20	-0.000	-0.000	-0.000	-0.000	56	-0.000	-0.000	-0.000	-0.000
21	-1.350	.215	-.743	-2.010	57	.077	.109	.617	-.224
22	-0.000	-0.000	-0.000	-0.000	58	-0.000	-0.000	-0.000	-0.000
23	-.428	.268	.288	-1.364	59	-.032	.105	.324	-.469
24	-0.000	-0.000	-0.000	-0.000	60	-0.000	-0.000	-0.000	-0.000
25	-.522	.198	.197	-1.379	61	-.395	.092	-.016	-.810
26	-0.000	-0.000	-0.000	-0.000	62	-0.000	-0.000	-0.000	-0.000
27	.553	.173	1.169	-.160	63	-.077	.063	.173	-.281
28	-0.000	-0.000	-0.000	-0.000	64	-0.000	-0.000	-0.000	-0.000
29	-0.000	-0.000	-0.000	-0.000	65	-.218	.068	-.006	-.441
30	-0.000	-0.000	-0.000	-0.000	66	-0.000	-0.000	-0.000	-0.000
31	-.690	.220	-.047	-1.404	67	-0.000	-0.000	-0.000	-0.000
32	-0.000	-0.000	-0.000	-0.000	68	-0.000	-0.000	-0.000	-0.000
33	-.166	.149	.382	-.764	69	-.318	.064	-.126	-.550
34	-0.000	-0.000	-0.000	-0.000	70	-0.000	-0.000	-0.000	-0.000
35	-.373	.207	.433	-1.164	71	-.023	.076	.361	-.556
36	-0.000	-0.000	-0.000	-0.000	72	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 CENTER BUILDING  
 WIND DIRECTION 306

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.553	.070	-.427	-2.964	37	.411	.170	1.003	-.173
2	-0.000	-0.000	-0.000	-0.000	38	-0.000	-0.000	-0.000	-0.000
3	-0.000	-0.000	-0.000	-0.000	39	-.662	.270	.210	-1.542
4	-0.000	-0.000	-0.000	-0.000	40	-0.000	-0.000	-0.000	-0.000
5	-.277	.065	-.044	-.497	41	-.648	.173	.006	-1.373
6	-0.000	-0.000	-0.000	-0.000	42	-0.000	-0.000	-0.000	-0.000
7	.590	.122	.972	.090	43	-.131	.155	.410	-.721
8	.261	.116	.824	-.699	44	-0.000	-0.000	-0.000	-0.000
9	-.323	.145	.197	-.836	45	-.285	.145	.204	-.885
10	-0.000	-0.000	-0.000	-0.000	46	-0.000	-0.000	-0.000	-0.000
11	-1.571	.201	-.550	-2.131	47	.366	.137	.832	-.004
12	-.758	.278	-.098	-3.003	48	-0.000	-0.000	-0.000	-0.000
13	-.655	.187	-.099	-1.463	49	-.624	.219	-.050	-1.391
14	-0.000	-0.000	-0.000	-0.000	50	-0.000	-0.000	-0.000	-0.000
15	-.405	.157	.014	-1.273	51	-0.000	-0.000	-0.000	-0.000
16	-.490	.188	.017	-1.279	52	-0.000	-0.000	-0.000	-0.000
17	.494	.157	.952	.017	53	-0.000	-0.000	-0.000	-0.000
18	-1.378	.156	-.919	-1.970	54	-0.000	-0.000	-0.000	-0.000
19	-.353	.191	.187	-.913	55	-.130	.103	.257	-.566
20	-1.503	.231	-.572	-2.243	56	-0.000	-0.000	-0.000	-0.000
21	-1.571	.265	-.645	-2.404	57	.136	.113	.617	-.229
22	-0.000	-0.000	-0.000	-0.000	58	-0.000	-0.000	-0.000	-0.000
23	-.508	.231	.187	-1.446	59	-.299	.152	.080	-.891
24	-.464	.250	.407	-1.465	60	-0.000	-0.000	-0.000	-0.000
25	-.513	.215	.038	-1.350	61	-.430	.093	-.157	-.861
26	-0.000	-0.000	-0.000	-0.000	62	-0.000	-0.000	-0.000	-0.000
27	.613	.167	1.138	-.007	63	-.098	.066	.242	-.439
28	-0.000	-0.000	-0.000	-0.000	64	-.083	.079	.337	-.422
29	-.825	.193	-.247	-1.457	65	-.181	.068	.040	-.511
30	-0.000	-0.000	-0.000	-0.000	66	-0.000	-0.000	-0.000	-0.000
31	-.919	.224	-.024	-1.628	67	-0.000	-0.000	-0.000	-0.000
32	-.279	.124	.105	-2.408	68	-0.000	-0.000	-0.000	-0.000
33	-0.000	-0.000	-0.000	-0.000	69	-.300	.080	-.096	-2.964
34	-0.000	-0.000	-0.000	-0.000	70	-0.000	-0.000	-0.000	-0.000
35	-.301	.212	.403	-1.096	71	.012	.068	.314	-.194
36	-0.000	-0.000	-0.000	-0.000	72	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.541	.152	-.071	-1.107	35	-.281	.254	.683	-1.055
2	-.602	.143	-.097	-1.232	36	-.719	.299	.632	-1.602
3	-.437	.103	-.057	-.813	37	-.485	.274	.448	-1.323
4	-.471	.123	-.041	-.961	38	-.382	.231	.384	-1.293
5	-.653	.152	-.003	-1.238	39	-.417	.213	.239	-1.307
6	-.613	.113	-.157	-1.269	40	-.516	.174	-.078	-1.155
7	-.429	.122	-.095	-.910	41	-.631	.145	-.129	-1.262
8	-.395	.116	-.049	-.852	42	-.670	.175	-.239	-1.508
9	-.649	.133	-.194	-1.227	43	-.608	.170	-.209	-1.573
10	-.554	.119	-.112	-1.221	44	-.536	.152	-.021	-1.321
11	-.314	.125	.259	-.790	45	-.470	.110	-.064	-1.129
12	-.354	.130	.215	-.981	46	-.456	.092	-.074	-1.053
13	-.338	.049	-.180	-.537	47	-.446	.074	-.165	-.818
14	-.321	.051	-.156	-.558	48	-.439	.067	-.203	-.727
15	-.340	.071	-.060	-.701	49	-.433	.063	-.219	-.670
16	-.361	.078	-.071	-.814	50	-.434	.063	-.223	-.691
17	-.352	.069	-.147	-.641	51	-.441	.061	-.220	-.693
18	-.470	.081	-.118	-.830	52	-.314	.038	-.174	-.474
19	-.503	.089	-.169	-1.102	53	-.319	.046	-.174	-.585
20	-.522	.084	-.169	-1.051	54	-.348	.068	-.164	-.730
21	-.440	.076	-.110	-.859	55	-.353	.074	-.190	-.877
22	-.477	.073	-.228	-.857	56	-.327	.060	-.179	-.767
23	-.491	.068	-.263	-.777	57	-.439	.089	-.184	-1.037
24	-.502	.068	-.281	-.796	58	-.449	.085	-.209	-.937
25	-.424	.062	-.203	-.655	59	-.370	.078	-.138	-.837
26	-.290	.073	-.073	-.647	60	-.415	.074	-.231	-.836
27	-.712	.140	-.218	-1.282	61	-.433	.072	-.254	-.788
28	-.097	.105	.368	-.519	62	-.450	.072	-.252	-.829
29	.304	.098	.611	-.149	63	-.414	.068	-.232	-.705
30	.384	.110	.710	-.042	64	-.320	.094	-.002	-.921
31	.473	.128	1.079	.016	65	-.755	.144	-.361	-1.401
32	.479	.147	1.187	-.286	66	-.120	.104	.311	-.539
33	.517	.166	1.070	-.257	67	.357	.095	.727	.020
34	.087	.181	.850	-.755	68	.508	.102	.857	.167

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.590	.116	1.003	.232	103	.290	.086	.596	.017
70	.599	.125	1.061	.164	104	.425	.102	.781	.039
71	.622	.134	1.311	.111	105	.504	.116	.966	.109
72	-.587	.158	-.033	-1.338	106	.532	.125	1.042	.115
73	-.484	.162	.162	-1.202	107	.624	.125	1.091	.233
74	-.447	.155	.246	-1.145	108	.552	.124	1.004	.255
75	-.425	.134	.097	-1.023	109	.420	.170	.988	-.224
76	-.448	.103	-.090	-.895	110	.186	.270	1.040	-.644
77	-.484	.107	-.169	-.956	111				
78	-.477	.117	-.230	-1.220	112	-.509	.291	.338	-1.527
79	-.445	.117	-.105	-1.146	113	-.373	.151	.142	-.978
80	-.430	.100	-.064	-.994	114	-.237	.148	.440	-.770
81	-.405	.072	-.105	-.839	115	-.347	.221	.536	-1.109
82	-.407	.065	-.178	-.792	116	-.185	.278	.900	-1.172
83	-.402	.055	-.219	-.771	117	-.209	.173	.535	-.989
84	-.394	.050	-.212	-.586	118	-.246	.148	.324	-.848
85	-.374	.045	-.222	-.550	119	-.306	.116	.061	-.849
86	-.364	.047	-.191	-.573	120	-.394	.092	-.051	-.893
87	-.335	.044	-.198	-.574	121	-.498	.097	-.077	-.962
88	-.344	.047	-.217	-.565	122	-.525	.136	-.226	-1.242
89	-.323	.057	-.161	-.638	123	-.476	.106	-.205	-.996
90	-.321	.061	-.177	-.701	124	-.434	.094	-.090	-.944
91	-.335	.053	-.201	-.650	125	-.395	.070	-.159	-.704
92	-.407	.078	-.113	-.784	126	-.396	.063	-.186	-.754
93	-.425	.087	-.161	-.963	127	-.392	.050	-.242	-.664
94	-.438	.084	-.209	-.921	128	-.387	.051	-.215	-.714
95	-.359	.078	-.148	-.778	129	-.375	.046	-.228	-.647
96	-.404	.070	-.207	-.825	130	-.371	.047	-.174	-.614
97	-.422	.069	-.252	-.808	131	-.384	.046	-.211	-.562
98	-.442	.070	-.266	-.819	132	-.336	.055	-.067	-.539
99	-.397	.067	-.203	-.727	133	-.348	.057	-.163	-.577
100	-.352	.099	-.064	-.816	134	-.323	.055	-.147	-.592
101	-.737	.146	-.335	-1.261	135	-.353	.074	-.004	-.716
102	-.150	.101	.193	-.526	136	-.334	.068	-.094	-.753

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.437	.056	.013	-1.008	171	-.421	.059	-.225	-.640
138	-.448	.093	-.161	-1.056	172	-.419	.055	-.247	-.620
139	-.367	.089	-.135	-1.199	173	-.285	.059	-.027	-.499
140	-.407	.076	-.214	-.784	174	-0.000	-0.000	-0.000	-0.000
141	-.429	.073	-.235	-.777	175	-0.000	-0.000	-0.000	-0.000
142	-.447	.075	-.239	-.809	176	-.365	.059	-.195	-.652
143	-.394	.070	-.204	-.712	177	-.358	.070	-.168	-.649
144	-.361	.096	-.090	-.794	178	-.436	.095	-.084	-.870
145	-.699	.153	-.319	-1.328	179	-.465	.094	-.221	-.873
146	-.229	.111	.246	-.670	180	.044	.073	.451	-.208
147	.192	.080	.528	-.069	181	.425	.091	.830	.169
148	.326	.091	.639	.097	182	.384	.147	.834	-.100
149	.400	.102	.699	.122	183	.298	.195	.818	-.399
150	.433	.112	.829	.118	184	-0.000	-0.000	-0.000	-0.000
151	.539	.117	.979	.235	185	-.529	.244	.266	-1.350
152	.370	.168	.848	-.165	186	-.293	.120	.076	-1.111
153	.195	.248	.915	-.721	187	-.264	.109	.078	-.769
154	-.129	.242	.596	-1.095	188	-.227	.106	.335	-.634
155	-.212	.395	.804	-1.544	189	-0.000	-0.000	-0.000	-0.000
156	-.300	.171	.181	-1.085	190	-.257	.114	.169	-.781
157	-.142	.154	.415	-.877	191	-0.000	-0.000	-0.000	-0.000
158	-.053	.276	.711	-1.148	192	-0.000	-0.000	-0.000	-0.000
159	-.055	.172	.568	-.768	193	-.358	.066	-.114	-.667
160	-.131	.130	.515	-.644	194	-.376	.077	-.078	-.627
161	-.217	.119	.212	-.808	195	-0.000	-0.000	-0.000	-0.000
162	-.377	.102	0.000	-.836	196	-.398	.092	-.090	-.737
163	-.554	.108	-.169	-1.055	197	-.443	.072	-.224	-.687
164	-.683	.173	-.294	-1.488	198	-.518	.089	-.258	-.850
165	-.594	.148	-.242	-1.252	199	-.535	.085	-.284	-.890
166	-.515	.118	-.149	-1.007	200	-.404	.071	-.160	-.665
167	-.465	.096	-.159	-.916	201	-.350	.067	-.120	-.628
168	-.465	.095	-.179	-.946	202	-.374	.056	-.175	-.576
169	-.456	.082	-.226	-.794	203	-.340	.076	-.118	-.656
170	-.439	.069	-.216	-.693	204	-.287	.061	-.027	-.467

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.685	.103	-.227	-1.120	35	-.436	.220	.628	-.975
2	-.652	.094	-.281	-1.051	36	-.960	.241	.295	-1.706
3	-.612	.095	-.297	-.947	37	-.742	.265	.247	-1.575
4	-.605	.098	-.238	-1.060	38	-.592	.243	.329	-1.368
5	-.664	.089	-.398	-1.007	39	-.565	.192	.225	-1.204
6	-.639	.093	-.364	-1.092	40	-.630	.159	-.127	-1.471
7	-.602	.104	-.267	-1.117	41	-.696	.154	-.151	-1.378
8	-.652	.111	-.288	-1.123	42	-.701	.200	-.262	-1.801
9	-.640	.079	-.384	-.882	43	-.643	.182	-.204	-1.589
10	-.601	.084	-.340	-.923	44	-.586	.155	.013	-1.300
11	-.592	.137	-.002	-1.134	45	-.524	.114	-.181	-1.082
12	-.624	.130	-.027	-1.153	46	-.513	.101	-.228	-1.053
13	-.399	.076	-.103	-.753	47	-.499	.076	-.266	-.812
14	-.361	.085	-.052	-.812	48	-.490	.067	-.278	-.774
15	-.437	.135	-.031	-1.186	49	-.480	.064	-.252	-.748
16	-.493	.153	.109	-1.153	50	-.482	.067	-.248	-.774
17	-.569	.153	.230	-1.133	51	-.483	.074	-.255	-.826
18	-.514	.126	.136	-.920	52	-.356	.066	-.128	-.697
19	-.679	.154	-.058	-1.434	53	-.371	.073	-.149	-.733
20	-.694	.129	-.232	-1.339	54	-.476	.144	-.029	-1.113
21	-.608	.105	-.227	-1.184	55	-.518	.162	.056	-1.366
22	-.649	.090	-.388	-1.120	56	-.542	.135	-.030	-1.223
23	-.672	.085	-.395	-1.103	57	-.606	.136	-.157	-1.344
24	-.687	.085	-.417	-1.083	58	-.616	.114	-.209	-1.144
25	-.511	.071	-.265	-.778	59	-.534	.100	-.202	-1.027
26	-.239	.083	-.036	-.523	60	-.573	.097	-.260	-.991
27	-.549	.154	-.062	-1.157	61	-.596	.095	-.288	-.972
28	.049	.128	.541	-.489	62	-.616	.097	-.289	-.960
29	.384	.110	.757	-.177	63	-.523	.087	-.224	-.834
30	.435	.120	.767	.044	64	-.273	.108	.080	-.784
31	.482	.123	.863	.103	65	-.637	.180	-.104	-1.403
32	.465	.125	.884	.019	66	-.007	.143	.471	-.576
33	.484	.130	.922	.029	67	.412	.116	.786	.031
34	.009	.144	.555	-.613	68	.546	.119	.923	.085



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTEK BUILDING  
 WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.401	.127	.953	.156	103	.358	.109	.739	.081
70	.588	.131	1.043	.201	104	.462	.112	.838	.119
71	.595	.141	1.143	.175	105	.523	.120	.893	.173
72	-.795	.203	.081	-1.697	106	.540	.125	.903	.196
73	-.604	.214	.211	-1.418	107	.630	.124	1.029	.312
74	-.493	.200	.191	-1.463	108	.567	.118	.982	.249
75	-.442	.166	.256	-1.317	109	.546	.129	.966	.180
76	-.480	.117	.066	-1.285	110	.565	.134	1.041	.129
77	-.553	.125	-.188	-1.070	111	.011	.173	.719	-.686
78	-.559	.155	-.221	-1.301	112	-.882	.253	-.056	-2.031
79	-.503	.153	-.061	-1.329	113	-.775	.242	-.102	-2.033
80	-.485	.145	.048	-1.392	114	-.619	.216	.231	-1.512
81	-.455	.104	-.078	-.970	115	-.483	.297	.782	-1.456
82	-.457	.092	-.158	-.922	116	-.168	.407	1.190	-1.395
83	-.451	.079	-.218	-.970	117	-.183	.221	.437	-1.404
84	-.443	.069	-.262	-.889	118	-.204	.167	.373	-.878
85	-.426	.063	-.214	-.789	119	-.282	.121	.171	-.851
86	-.418	.061	-.187	-.785	120	-.390	.092	-.084	-.932
87	-.360	.061	-.152	-.788	121	-.533	.108	-.145	-1.049
88	-.381	.074	-.153	-.750	122	-.569	.148	-.241	-1.302
89	-.432	.125	-.061	-.912	123	-.507	.122	-.224	-1.163
90	-.451	.130	.075	-.969	124	-.464	.107	-.142	-1.042
91	-.514	.121	.090	-1.041	125	-.425	.083	-.168	-.916
92	-.507	.105	-.115	-.955	126	-.425	.075	-.197	-.862
93	-.577	.151	-.269	-1.483	127	-.413	.061	-.239	-.772
94	-.587	.129	-.286	-1.174	128	-.410	.063	-.219	-.851
95	-.507	.120	-.209	-1.122	129	-.396	.056	-.207	-.761
96	-.548	.106	-.197	-1.060	130	-.390	.055	-.167	-.693
97	-.569	.106	-.229	-1.079	131	-.388	.051	-.228	-.591
98	-.590	.108	-.238	-1.036	132	-.341	.062	-.141	-.718
99	-.493	.092	-.189	-.882	133	-.366	.077	-.154	-.936
100	-.311	.111	-.001	-.892	134	-.401	.106	-.122	-.863
101	-.651	.175	-.181	-1.295	135	-.464	.133	.061	-1.121
102	-.049	.136	.383	-.556	136	-.475	.133	.301	-1.164

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.554	.145	.068	-1.394	171	-.428	.056	-.265	-.647
138	-.570	.131	-.054	-1.253	172	-.425	.055	-.221	-.631
139	-.498	.125	-.162	-1.184	173	-.348	.057	-.186	-.545
140	-.541	.116	-.274	-1.112	174	-.311	.065	-.100	-.674
141	-.567	.116	-.298	-1.107	175	-.367	.091	-.086	-.820
142	-.589	.121	-.312	-1.108	176	-.419	.104	-.006	-.960
143	-.492	.099	-.235	-.871	177	-.443	.110	.221	-.986
144	-.357	.099	-.042	-.856	178	-.510	.113	-.076	-1.025
145	-.664	.165	-.219	-1.446	179	-.582	.121	-.311	-1.275
146	-.174	.125	.246	-.710	180	.070	.084	.479	-.154
147	.230	.095	.598	-.061	181	.434	.100	.845	.191
148	.351	.100	.719	.077	182	.439	.101	.784	.173
149	.412	.107	.750	.139	183	.396	.114	.781	.049
150	.434	.111	.834	.158	184	-0.000	-0.000	-0.000	-0.000
151	.535	.115	.949	.249	185	-.765	.184	-.294	-1.577
152	.494	.106	.800	.190	186	-.586	.176	-.194	-1.404
153	.487	.121	.821	.024	187	-.531	.137	-.205	-1.123
154	-.071	.149	.562	-.636	188	-.531	.131	-.187	-1.142
155	-.671	.183	.026	-1.568	189	-0.000	-0.000	-0.000	-0.000
156	-.557	.142	-.171	-1.591	190	-.139	.139	.275	-.647
157	-.540	.132	.002	-1.195	191	-0.000	-0.000	-0.000	-0.000
158	-.427	.255	.544	-1.398	192	-0.000	-0.000	-0.000	-0.000
159	-.313	.244	.476	-1.137	193	-.334	.064	-.073	-.573
160	-.254	.192	.389	-.946	194	-.470	.077	-.223	-.731
161	-.272	.130	.141	-.809	195	-0.000	-0.000	-0.000	-0.000
162	-.386	.091	-.077	-.814	196	-.461	.100	-.126	-1.031
163	-.504	.101	-.081	-1.000	197	-.427	.078	-.212	-.750
164	-.586	.137	-.286	-1.404	198	-.435	.075	-.249	-.703
165	-.533	.124	-.205	-1.235	199	-.499	.081	-.255	-.855
166	-.484	.106	-.205	-1.052	200	-.391	.063	-.216	-.625
167	-.449	.084	-.211	-.852	201	-.367	.060	-.206	-.598
168	-.452	.080	-.192	-.881	202	-.425	.055	-.232	-.636
169	-.448	.071	-.217	-.806	203	-.360	.057	-.183	-.574
170	-.443	.062	-.281	-.702	204	-.352	.052	-.169	-.517

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.627	.103	-.219	-1.061	35	-.596	.104	-.037	-.945
2	-.594	.084	-.257	-.946	36	-1.046	.151	-.539	-1.862
3	-.528	.097	-.211	-.917	37	-.912	.128	-.289	-1.441
4	-.508	.088	-.226	-.950	38	-.829	.147	-.152	-1.294
5	-.607	.071	-.402	-.848	39	-.738	.162	-.077	-1.284
6	-.577	.069	-.363	-.835	40	-.667	.147	-.121	-1.251
7	-.533	.096	.022	-.876	41	-.624	.128	-.144	-1.206
8	-.561	.100	-.187	-.906	42	-.617	.135	-.262	-1.502
9	-.592	.062	-.364	-.795	43	-.559	.132	-.224	-1.354
10	-.573	.063	-.320	-.764	44	-.547	.126	-.083	-1.248
11	-.510	.157	.142	-1.074	45	-.513	.099	-.232	-1.108
12	-.495	.145	.129	-.926	46	-.511	.089	-.249	-.921
13	-.371	.058	-.174	-.628	47	-.493	.076	-.276	-.971
14	-.358	.075	-.146	-.871	48	-.483	.073	-.266	-.941
15	-.582	.153	-.182	-1.134	49	-.472	.074	-.247	-.901
16	-.713	.179	-.196	-1.324	50	-.472	.078	-.237	-.872
17	-.080	.265	.751	-1.083	51	-.465	.084	-.210	-.782
18	-.104	.199	.543	-.821	52	-.290	.049	-.131	-.532
19	-.463	.242	.190	-1.431	53	-.331	.073	-.100	-.730
20	-.575	.207	.027	-1.431	54	-.404	.109	-.059	-.828
21	-.651	.155	-.127	-1.377	55	-.450	.147	.044	-1.285
22	-.710	.110	-.308	-1.100	56	-.357	.219	.393	-.928
23	-.780	.099	-.490	-1.202	57	-.528	.225	.206	-1.596
24	-.842	.109	-.488	-1.341	58	-.567	.181	.156	-1.129
25	-.525	.076	.002	-.818	59	-.587	.141	-.005	-1.091
26	-.092	.088	.205	-.418	60	-.671	.116	-.245	-1.150
27	-.201	.139	.187	-.787	61	-.714	.101	-.379	-1.127
28	.305	.139	.696	-.259	62	-.762	.102	-.436	-1.193
29	.484	.126	.839	-.048	63	-.573	.086	-.271	-.903
30	.523	.121	.848	.119	64	-.109	.098	.239	-.464
31	.520	.121	.961	.105	65	-.272	.165	.159	-.949
32	.457	.115	.922	.043	66	.278	.138	.745	-.175
33	.359	.118	.863	-.055	67	.551	.120	.914	.139
34	-.179	.123	.220	-.620	68	.616	.125	.963	.113

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.621	.127	.974	.140	103	.447	.114	.812	.085
70	.524	.122	.886	.105	104	.508	.121	.861	.191
71	.394	.127	.799	-.039	105	.539	.124	.947	.219
72	-1.063	.205	-.226	-1.948	106	.523	.123	.912	.176
73	-.852	.239	.166	-1.658	107	.578	.120	.949	.252
74	-.706	.255	.212	-1.407	108	.530	.113	.907	.208
75	-.604	.245	.153	-1.528	109	.448	.107	.764	.190
76	-.565	.180	.037	-1.348	110	.437	.121	.816	-2.291
77	-.591	.155	-.094	-1.245	111	-.186	.163	.375	-.792
78	-.592	.179	-.169	-1.501	112	-.703	.146	-.343	-1.586
79	-.511	.170	.014	-1.588	113	-.643	.120	-.294	-1.420
80	-.494	.159	-.066	-1.438	114	-.591	.108	-.084	-1.061
81	-.461	.116	-.081	-1.191	115	-.636	.255	.698	-1.655
82	-.458	.101	-.110	-1.188	116	-.469	.404	.849	-1.336
83	-.450	.084	-.176	-.968	117	-.393	.284	.455	-1.299
84	-.436	.069	-.167	-.780	118	-.319	.224	.317	-1.266
85	-.415	.059	-.230	-.685	119	-.338	.162	.433	-1.306
86	-.409	.057	-.170	-.668	120	-.420	.118	-.097	-1.023
87	-.297	.042	-.146	-.489	121	-.540	.121	-.133	-1.068
88	-.324	.058	-.135	-.620	122	-.598	.159	-.236	-1.494
89	-.365	.094	-.093	-1.039	123	-.531	.138	-.134	-1.309
90	-.390	.117	.027	-1.106	124	-.470	.116	-.101	-.902
91	-.370	.159	.447	-.883	125	-.428	.089	-.147	-.855
92	-.383	.186	.307	-.958	126	-.427	.080	-.182	-.816
93	-.536	.204	.029	-1.542	127	-.419	.060	-.242	-.690
94	-.565	.161	-.035	-1.492	128	-.415	.063	-.229	-.812
95	-.556	.132	-.101	-1.284	129	-.402	.055	-.224	-.726
96	-.634	.108	-.231	-1.085	130	-.401	.052	-.204	-.662
97	-.676	.103	-.394	-1.187	131	-.393	.052	-.227	-.630
98	-.715	.110	-.428	-1.355	132	-.274	.038	-.166	-.419
99	-.535	.088	-.255	-.917	133	-.306	.059	-.142	-.854
100	-.197	.098	.221	-.627	134	-.342	.074	-.125	-.808
101	-.383	.177	.266	-1.089	135	-.391	.100	-.005	-.865
102	.148	.139	.599	-.407	136	-.301	.197	.389	-.919

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.517	.196	.152	-1.282	171	-.402	.050	-.219	-.606
138	-.540	.164	.037	-1.144	172	-.405	.050	-.214	-.586
139	-.537	.142	-.022	-1.123	173	-.289	.035	-.170	-.427
140	-.604	.123	-.228	-1.128	174	-.269	.052	-.135	-.563
141	-.653	.117	-.334	-1.369	175	-.317	.064	-.124	-.613
142	-.692	.126	-.354	-1.680	176	-.379	.083	-.151	-.789
143	-.529	.198	-.169	-.982	177	-.337	.143	.269	-.876
144	-.263	.101	-.116	-.632	178	-.473	.132	-.017	-1.000
145	-.433	.184	.167	-1.112	179	-.627	.121	-.295	-1.070
146	.025	.143	.649	-.405	180	.127	.085	.574	-.082
147	.335	.115	.816	.009	181	.420	.089	.778	.187
148	.479	.106	.734	.138	182	.367	.085	.721	.165
149	.451	.111	.774	.158	183	.311	.102	.748	.014
150	.458	.113	.829	.152	184	-0.000	-0.000	-0.000	-0.000
151	.532	.114	.885	.232	185	-.935	.209	-.403	-1.684
152	.389	.188	.790	.144	186	-.723	.212	-.225	-1.827
153	.347	.109	.791	-.020	187	-.618	.161	-.142	-1.536
154	-.244	.149	.320	-.783	188	-.576	.141	.295	-1.114
155	-.703	.178	-.353	-1.496	189	-0.000	-0.000	-0.000	-0.000
156	-.605	.133	-.253	-1.198	190	-.082	.111	.256	-.595
157	-.576	.114	-.177	-1.048	191	-0.000	-0.000	-0.000	-0.000
158	-.627	.196	.154	-1.447	192	-0.000	-0.000	-0.000	-0.000
159	-.545	.215	.422	-1.311	193	-.340	.062	-.057	-.592
160	-.448	.211	.276	-1.308	194	-.407	.073	-.134	-.671
161	-.378	.176	.403	-1.175	195	-0.000	-0.000	-0.000	-0.000
162	-.413	.113	.051	-.991	196	-.353	.090	-.083	-.691
163	-.479	.196	-.054	-.901	197	-.349	.053	-.174	-.565
164	-.573	.117	-.243	-1.152	198	-.346	.049	-.192	-.525
165	-.494	.095	-.229	-1.083	199	-.463	.073	-.269	-.730
166	-.445	.082	-.196	-.870	200	-.315	.043	-.195	-.592
167	-.418	.068	-.236	-1.059	201	-.285	.040	-.182	-.493
168	-.422	.066	-.226	-.922	202	-.422	.052	-.260	-.648
169	-.414	.057	-.259	-.645	203	-.288	.037	-.160	-.472
170	-.412	.054	-.272	-.619	204	-.299	.037	-.169	-.451

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.656	.088	-.334	-1.035	35	-.570	.079	-.316	-.905
2	-.635	.073	-.340	-1.005	36	-.858	.125	-.513	-1.422
3	-.560	.113	-.048	-.978	37	-.794	.107	-.493	-1.210
4	-.510	.082	-.244	-.769	38	-.767	.105	-.393	-1.149
5	-.674	.081	-.435	-1.068	39	-.677	.115	-.215	-1.087
6	-.652	.071	-.389	-.913	40	-.590	.121	-.210	-1.176
7	-.507	.107	-.043	-.939	41	-.547	.111	-.112	-1.025
8	-.565	.112	-.043	-.902	42	-.546	.098	-.215	-.974
9	-.610	.077	-.334	-.898	43	-.494	.098	-.158	-1.168
10	-.640	.072	-.403	-.889	44	-.472	.083	-.164	-.857
11	-.570	.142	.175	-1.101	45	-.468	.065	-.219	-.820
12	-.430	.141	.071	-.856	46	-.482	.063	-.280	-.738
13	-.450	.056	-.256	-.705	47	-.472	.062	-.285	-.707
14	-.424	.067	-.219	-.734	48	-.471	.060	-.274	-.685
15	-.640	.144	-.249	-1.165	49	-.494	.059	-.294	-.700
16	-.937	.174	-.444	-1.662	50	-.515	.059	-.311	-.723
17	.080	.174	.894	-.712	51	-.497	.061	-.299	-.738
18	.136	.104	.551	-.262	52	-.361	.048	-.191	-.544
19	.014	.098	.304	-.762	53	-.403	.061	-.221	-.679
20	-.084	.090	.140	-.822	54	-.545	.134	-.223	-1.295
21	-.147	.106	.091	-.717	55	-.826	.173	-.359	-1.544
22	-.320	.121	-.050	-.822	56	.006	.207	.609	-.682
23	-.540	.117	-.205	-.978	57	-.050	.138	.337	-.906
24	-.770	.126	-.378	-1.165	58	-.120	.136	.189	-.867
25	-.277	.091	.191	-.599	59	-.161	.146	.166	-.879
26	.128	.094	.458	-.146	60	-.304	.142	.003	-.835
27	.145	.130	.613	-.332	61	-.461	.123	-.133	-.873
28	.465	.122	.835	.033	62	-.638	.118	-.270	-1.098
29	.569	.116	.922	.124	63	-.300	.109	.044	-.701
30	.500	.114	.881	.034	64	.133	.102	.480	-.183
31	.452	.116	.871	.023	65	.121	.150	.597	-.517
32	.346	.111	.754	-.074	66	.482	.134	.961	.015
33	.207	.121	.839	-.220	67	.640	.125	1.060	.243
34	-.397	.133	-.005	-.876	68	.615	.118	.960	.263

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 30

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.569	.116	.934	.206	103	.533	.116	.867	.160
70	.415	.108	.799	.056	104	.526	.125	.943	.163
71	.221	.118	.745	-.189	105	.521	.127	.901	.180
72	-.781	.127	-.433	-1.317	106	.481	.124	.849	.164
73	-.734	.113	-.400	-1.189	107	.531	.120	.883	.221
74	-.728	.111	-.370	-1.202	108	.457	.112	.799	.050
75	-.680	.135	-.053	-1.374	109	.531	.122	.971	.172
76	-.614	.158	.154	-1.258	110	.410	.154	.879	-.096
77	-.572	.148	-.038	-1.165	111	-.544	.218	.070	-1.342
78	-.531	.129	-.085	-1.134	112	-.920	.219	-.447	-1.812
79	-.487	.125	-.089	-1.028	113	-.831	.154	-.450	-1.552
80	-.509	.118	-.174	-1.069	114	-.760	.126	-.340	-1.251
81	-.488	.080	-.200	-.805	115	-.775	.128	.034	-1.402
82	-.481	.064	-.233	-.755	116	-.710	.190	.459	-1.555
83	-.440	.057	-.239	-.703	117	-.650	.171	.032	-1.298
84	-.420	.053	-.244	-.648	118	-.595	.173	.100	-1.279
85	-.425	.050	-.264	-.604	119	-.537	.158	.110	-1.265
86	-.435	.049	-.260	-.627	120	-.518	.134	.059	-1.056
87	-.366	.041	-.163	-.507	121	-.532	.123	-.021	-1.000
88	-.395	.049	-.235	-.642	122	-.577	.124	-.143	-1.189
89	-.491	.109	-.221	-1.079	123	-.513	.113	-.130	-1.029
90	-.651	.150	-.272	-1.191	124	-.482	.100	-.131	-.871
91	-.092	.186	.456	-.732	125	-.462	.074	-.219	-.737
92	-.028	.149	.439	-.628	126	-.463	.061	-.257	-.671
93	-.138	.172	.237	-1.002	127	-.438	.048	-.268	-.607
94	-.202	.165	.141	-.817	128	-.423	.050	-.246	-.649
95	-.232	.164	.163	-.905	129	-.430	.045	-.254	-.587
96	-.348	.142	-.002	-.832	130	.269	.008	.299	.233
97	-.463	.117	-.147	-.913	131	-.414	.044	-.273	-.596
98	-.584	.111	-.267	-1.141	132	-.340	.041	-.215	-.506
99	-.294	.100	-.011	-.604	133	-.372	.060	-.209	-.812
100	.033	.107	.415	-.393	134	-.416	.067	-.179	-.861
101	-.001	.173	.503	-.628	135	-.540	.114	-.200	-1.041
102	.349	.133	.791	-.179	136	-.123	.195	.495	-.798

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 30

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.225	.172	.202	-.891	171	-.431	.036	-.321	-.562
138	-.278	.159	.096	-.815	172	-.439	.037	-.325	-.594
139	-.278	.145	.097	-.750	173	-.355	.038	-.221	-.477
140	-.364	.131	.022	-.969	174	-.322	.053	-.165	-.556
141	-.450	.108	-.085	-.891	175	-.380	.065	-.202	-.724
142	-.541	.107	-.246	-1.049	176	-.483	.090	-.247	-.824
143	-.303	.101	.082	-.726	177	-.251	.142	-.301	-.684
144	-.064	.107	.329	-.412	178	-.253	.118	.077	-.702
145	-.120	.177	.454	-.659	179	-.394	.107	-.068	-.774
146	.197	.134	.697	-.185	180	.232	.096	.632	.019
147	.409	.110	.790	.141	181	.429	.092	.859	.213
148	.447	.113	.811	.125	182	.431	.088	.733	.224
149	.458	.114	.820	.173	183	.307	.129	.717	-.163
150	.447	.112	.808	.163	184	-0.000	-0.000	-0.000	-0.000
151	.518	.111	.895	.256	185	-1.220	.263	-.577	-2.345
152	.474	.110	.853	.168	186	-.930	.223	-.426	-1.901
153	.360	.146	.850	-.218	187	-.822	.156	-.411	-1.410
154	-.545	.208	-.009	-1.226	188	-.790	.161	.073	-1.442
155	-.841	.240	-.403	-1.972	189	-0.000	-0.000	-0.000	-0.000
156	-.728	.152	-.353	-1.757	190	-.195	.144	.282	-.868
157	-.679	.112	-.313	-1.223	191	-0.000	-0.000	-0.000	-0.000
158	-.774	.147	-.014	-1.416	192	-0.000	-0.000	-0.000	-0.000
159	-.744	.158	.244	-1.361	193	-.376	.060	-.143	-.590
160	-.675	.176	-.027	-1.336	194	-.494	.075	-.146	-.730
161	-.572	.162	.065	-1.211	195	-0.000	-0.000	-0.000	-0.000
162	-.510	.129	-.032	-1.060	196	-.433	.088	-.153	-.818
163	-.513	.109	-.049	-.970	197	-.408	.054	-.232	-.626
164	-.570	.091	-.246	-1.028	198	-.403	.045	-.259	-.600
165	-.498	.078	-.247	-.895	199	-.425	.045	-.270	-.597
166	-.453	.066	-.240	-.762	200	-.384	.045	-.240	-.604
167	-.455	.056	-.289	-.870	201	-.341	.043	-.199	-.587
168	-.465	.053	-.302	-.716	202	-.414	.033	-.292	-.532
169	-.436	.045	-.287	-.601	203	-.342	.036	-.209	-.447
170	-.425	.040	-.299	-.568	204	-.355	.036	-.213	-.481



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.602	.088	-.169	-.872	35	-.567	.076	-.330	-.858
2	-.598	.074	-.159	-.870	36	-.736	.113	-.416	-1.206
3	-.474	.104	-.036	-.811	37	-.697	.102	-.401	-1.130
4	-.460	.071	-.153	-.746	38	-.691	.103	-.369	-1.126
5	-.614	.068	-.368	-.908	39	-.623	.110	-.205	-1.142
6	-.593	.054	-.402	-.895	40	-.554	.114	-.071	-1.016
7	-.452	.096	-.060	-.910	41	-.524	.104	-.073	-1.021
8	-.439	.096	.018	-.712	42	-.553	.102	-.221	-1.063
9	-.529	.067	-.247	-.937	43	-.515	.106	-.140	-1.100
10	-.569	.058	-.349	-.760	44	-.487	.090	-.084	-.844
11	-.536	.089	-.110	-.853	45	-.501	.085	-.261	-.915
12	-.285	.104	-.166	-.609	46	-.511	.075	-.300	-.820
13	-.464	.049	-.299	-.650	47	-.481	.057	-.285	-.778
14	-.430	.057	-.212	-.694	48	-.482	.052	-.305	-.689
15	-.614	.116	-.305	-1.144	49	-.509	.049	-.340	-.711
16	-.854	.142	-.434	-1.376	50	-.529	.050	-.355	-.746
17	.143	.096	.485	-.359	51	-.512	.067	-.330	-1.000
18	.237	.093	.546	-.172	52	-.370	.048	-.237	-.547
19	.141	.076	.400	-.197	53	-.413	.059	-.235	-.650
20	.058	.063	.265	-.229	54	-.547	.122	-.208	-1.073
21	.055	.057	.253	-.230	55	-.825	.150	-.355	-1.508
22	-.054	.061	.127	-.390	56	.094	.106	.488	-.339
23	-.227	.085	.049	-.567	57	.143	.082	.426	-.241
24	-.433	.112	-.082	-.846	58	.092	.075	.338	-.277
25	.034	.101	.371	-.297	59	.111	.079	.373	-.354
26	.338	.103	.657	.013	60	.006	.090	.231	-.460
27	.421	.131	.809	.007	61	-.131	.112	.242	-.536
28	.522	.119	.851	.107	62	-.369	.118	.036	-.782
29	.567	.114	.874	.172	63	.039	.124	.498	-.370
30	.450	.105	.755	.104	64	.355	.114	.682	-.143
31	.368	.100	.684	.051	65	.417	.153	.809	-.193
32	.220	.091	.535	-.057	66	.570	.122	.961	.133
33	.011	.101	.419	-.321	67	.645	.115	.974	.305
34	-.573	.144	-.016	-1.156	68	.558	.113	.919	.177

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.479	.108	.812	-.139	103	.575	.117	.930	-.293
70	.288	.101	.648	-.057	104	.524	.114	.896	-.141
71	.050	.116	.467	-.337	105	.496	.114	.873	-.125
72	-.669	.116	-.398	-1.206	106	.440	.110	.809	-.101
73	-.658	.105	-.327	-1.203	107	.497	.105	.812	-.162
74	-.665	.106	-.351	-1.188	108	.464	.114	.823	-.111
75	-.633	.133	-.180	-1.543	109	.528	.130	1.019	-.171
76	-.595	.162	-.050	-1.401	110	.343	.150	.838	-.273
77	-.581	.158	-.067	-1.309	111	-.686	.209	-.134	-1.494
78	-.541	.130	-.094	-1.189	112	-.915	.215	-.507	-2.138
79	-.513	.113	-.119	-1.076	113	-.826	.147	-.408	-1.639
80	-.536	.106	-.122	-.933	114	-.749	.116	-.359	-1.363
81	-.510	.071	-.207	-.781	115	-.786	.116	-.485	-1.320
82	-.501	.059	-.275	-.724	116	-.730	.151	.004	-1.445
83	-.461	.054	-.264	-.679	117	-.708	.135	-.222	-1.404
84	-.438	.051	-.254	-.641	118	-.687	.145	-.129	-1.288
85	-.444	.048	-.272	-.630	119	-.613	.146	-.109	-1.230
86	-.455	.047	-.296	-.641	120	-.564	.143	-.045	-1.217
87	-.352	.040	-.200	-.469	121	-.550	.137	-.070	-1.214
88	-.320	.046	-.208	-.592	122	-.565	.133	-.112	-1.186
89	-.480	.097	-.200	-.957	123	-.520	.118	-.129	-1.174
90	-.683	.133	-.330	-1.258	124	-.501	.104	-.156	-.935
91	.012	.109	.386	-.558	125	-.473	.076	-.210	-.827
92	.169	.087	.538	-.227	126	-.466	.062	-.183	-.767
93	.105	.084	.383	-.258	127	-.426	.048	-.228	-.594
94	.056	.079	.307	-.312	128	-.405	.050	-.172	-.567
95	.070	.090	.308	-.398	129	-.410	.046	-.226	-.563
96	-.037	.112	.215	-.627	130	.268	.008	.293	.236
97	-.165	.127	.131	-.655	131	-.392	.043	-.233	-.587
98	-.367	.128	-.019	-.839	132	-.329	.035	-.226	-.475
99	-.004	.131	.346	-.441	133	-.353	.045	-.170	-.568
100	.248	.117	.615	-.078	134	-.399	.050	-.250	-.840
101	.289	.160	.784	-.164	135	-.605	.105	-.320	-1.163
102	.469	.130	.879	-.093	136	.044	.119	.465	-.484

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.047	.098	.308	-.610	171	-.424	.037	-.298	-.557
138	-.004	.096	.231	-.649	172	-.430	.035	-.317	-.555
139	.004	.110	.261	-.694	173	-.363	.036	-.263	-.503
140	-.114	.132	.194	-.617	174	-.327	.046	-.200	-.578
141	-.228	.135	.163	-.661	175	-.383	.050	-.242	-.650
142	-.369	.127	.025	-.872	176	-.541	.094	-.246	-.922
143	-.073	.130	.457	-.462	177	-0.000	-0.000	-0.000	-0.000
144	.137	.119	.639	-.227	178	-.052	.095	.215	-.439
145	.158	.167	.713	-.400	179	-.162	.097	.162	-.531
146	.348	.130	.759	-.032	180	.299	.087	.724	.061
147	.483	.109	.866	.179	181	.425	.077	.726	.194
148	.469	.110	.862	.194	182	-0.000	-0.000	-0.000	-0.000
149	.462	.112	.843	.175	183	.260	.110	.573	-.069
150	.444	.110	.765	.146	184	-0.000	-0.000	-0.000	-0.000
151	.515	.108	.833	.206	185	-1.107	.267	-.523	-2.097
152	.487	.106	.912	.212	186	-.848	.214	-.349	-2.067
153	.298	.150	.833	-.133	187	-.773	.143	-.413	-1.393
154	-.669	.203	-.059	-1.432	188	-.762	.145	-.017	-1.286
155	-.797	.191	-.411	-1.754	189	-0.000	-0.000	-0.000	-0.000
156	-.705	.126	-.345	-1.679	190	-.357	.206	.388	-1.202
157	-.666	.096	-.327	-1.078	191	-0.000	-0.000	-0.000	-0.000
158	-.758	.120	-.398	-1.406	192	-0.000	-0.000	-0.000	-0.000
159	-.743	.122	-.229	-1.285	193	-.434	.066	-.131	-.708
160	-.696	.130	-.172	-1.312	194	-.480	.070	-.189	-.761
161	-.617	.126	-.007	-1.079	195	-0.000	-0.000	-0.000	-0.000
162	-.543	.114	-.122	-.939	196	-.409	.065	-.221	-.656
163	-.522	.104	-.035	-.921	197	-.401	.053	-.253	-.623
164	-.522	.081	-.214	-.879	198	-.409	.049	-.268	-.590
165	-.474	.078	-.187	-.915	199	-.435	.049	-.302	-.625
166	-.442	.066	-.261	-.847	200	-0.000	-0.000	-0.000	-0.000
167	-.442	.054	-.293	-.827	201	-0.000	-0.000	-0.000	-0.000
168	-.453	.048	-.317	-.689	202	-.421	.038	-.289	-.583
169	-.430	.042	-.291	-.597	203	-.342	.035	-.222	-.442
170	-.418	.040	-.285	-.590	204	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
ALTER BUILDING  
WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.718	.107	-.296	-1.036	35	-.554	.080	-.266	-.825
2	-.737	.088	-.347	-1.096	36	-.638	.095	-.334	-1.139
3	-.473	.101	-.126	-.868	37	-.588	.084	-.326	-.969
4	-.542	.080	-.240	-.847	38	-.581	.092	-.252	-.988
5	-.781	.077	-.488	-1.044	39	-.528	.102	-.177	-1.046
6	-.706	.069	-.482	-.925	40	-.493	.104	-.104	-.940
7	-.643	.089	-.282	-.983	41	-.443	.099	-.041	-.839
8	-.415	.103	.012	-.773	42	-.538	.131	-.197	-1.057
9	-.673	.076	-.382	-.984	43	-.466	.113	.026	-1.034
10	-.673	.067	-.418	-.898	44	-.551	.124	-.134	-1.178
11	-.624	.084	-.257	-.995	45	-.563	.115	-.256	-1.238
12	-.181	.113	.278	-.555	46	-.526	.090	-.288	-.942
13	-.639	.049	-.479	-.837	47	-.470	.062	-.255	-.729
14	-.544	.063	-.334	-.849	48	-.484	.050	-.291	-.673
15	-.704	.118	-.401	-1.182	49	-.473	.045	-.324	-.614
16	-.822	.134	-.399	-1.472	50	-.480	.045	-.334	-.639
17	.118	.095	.497	-.191	51	-.464	.046	-.303	-.624
18	.334	.099	.633	.017	52	-.491	.056	-.295	-.723
19	.245	.084	.512	-.019	53	-.553	.067	-.364	-.845
20	.174	.073	.413	-.058	54	-.654	.136	-.220	-1.249
21	.203	.069	.446	-.016	55	-.939	.168	-.491	-1.620
22	.136	.063	.326	-.072	56	.134	.098	.440	-.208
23	.079	.081	.310	-.202	57	.300	.086	.580	.014
24	-.031	.108	.276	-.417	58	.254	.077	.457	-.031
25	.355	.110	.702	-.011	59	.300	.074	.512	.038
26	.486	.108	.821	.148	60	.217	.078	.439	-.041
27	.535	.109	.898	.147	61	.176	.100	.448	-.166
28	.424	.108	.749	.071	62	.027	.132	.384	-.395
29	.462	.092	.736	.189	63	.363	.128	.806	-.016
30	.347	.092	.617	-.039	64	.534	.119	.967	.205
31	.249	.086	.518	-.104	65	.597	.126	.949	.214
32	.080	.079	.369	-.233	66	.542	.114	.854	.162
33	-.166	.090	.164	-.468	67	.588	.101	.859	.245
34	-.725	.129	-.281	-1.149	68	.467	.103	.813	.140

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION = 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.358	.097	.669	.030	103	.555	.108	.887	.289
70	.123	.089	.419	-.177	104	.494	.105	.813	.169
71	-.160	.104	.289	-.468	105	.453	.105	.780	.144
72	-.643	.133	-.330	-1.164	106	.402	.101	.750	.106
73	-.610	.126	-.295	-1.128	107	.468	.093	.791	.199
74	-.593	.117	-.212	-1.065	108	.439	.104	.778	.092
75	-.554	.139	.014	-1.168	109	.511	.151	1.116	.104
76	-.543	.150	-.029	-1.397	110	.110	.157	.604	-.590
77	-.516	.136	-.040	-1.183	111	-.855	.218	-.258	-1.929
78	-.493	.111	-.114	-1.005	112	-.830	.193	-.447	-2.089
79	-.462	.093	-.152	-.886	113	-.745	.136	-.393	-1.449
80	-.503	.084	-.219	-.868	114	-.804	.125	-.496	-1.398
81	-.458	.063	-.230	-.703	115	-.613	.101	-.317	-1.060
82	-.450	.056	-.259	-.628	116	-.644	.108	-.310	-1.178
83	-.420	.051	-.241	-.628	117	-.632	.109	-.293	-1.154
84	-.428	.049	-.206	-.621	118	-.630	.125	-.085	-1.365
85	-.414	.046	-.212	-.615	119	-.569	.132	-.154	-1.205
86	-.418	.046	-.210	-.606	120	-.546	.143	-.029	-1.193
87	-.450	.051	-.249	-.628	121	-.514	.146	-.037	-1.132
88	-.458	.060	-.272	-.789	122	-.485	.127	-.077	-1.061
89	-.627	.114	-.351	-1.220	123	-.448	.095	-.159	-.880
90	-.715	.139	-.341	-1.287	124	-.486	.095	-.145	-.924
91	.027	.103	.444	-.263	125	-.411	.069	-.154	-.706
92	.304	.085	.660	.025	126	-.390	.057	-.217	-.581
93	.252	.079	.552	.003	127	-.353	.045	-.202	-.526
94	.211	.073	.472	-.023	128	-.362	.046	-.138	-.555
95	.255	.075	.534	-.065	129	-.350	.045	-.147	-.547
96	.202	.080	.440	-.075	130	-0.000	-0.000	-0.000	-0.000
97	.148	.106	.459	-.219	131	-.343	.039	-.217	-.491
98	.001	.138	.427	-.493	132	-.391	.043	-.237	-.587
99	.324	.131	.712	-.069	133	-.447	.051	-.305	-.894
100	.459	.127	.821	.053	134	-.455	.054	-.294	-.853
101	.508	.137	.864	.133	135	-.729	.110	-.447	-1.207
102	.493	.120	.851	.117	136	.078	.103	.377	-.353

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION = 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.204	.079	.538	-.038	171	-.351	.034	-.232	-.473
138	.167	.072	.430	-.098	172	-.353	.035	-.221	-.476
139	.213	.074	.460	-.130	173	-.505	.040	-.394	-.642
140	.110	.092	.389	-.292	174	-.404	.046	-.251	-.756
141	.042	.123	.403	-.368	175	-.477	.047	-.328	-.921
142	-.095	.144	.406	-.509	176	-.617	.097	-.391	-1.011
143	.197	.142	.827	-.223	177	-.137	.096	.186	-.791
144	.350	.121	.813	.048	178	.098	.080	.351	-.228
145	.395	.138	.892	-.015	179	.033	.096	.310	-.290
146	.425	.119	.831	.090	180	.335	.082	.679	.110
147	.500	.109	.871	.226	181	.423	.081	.789	.206
148	.421	.103	.791	.170	182	.404	.092	.844	.169
149	.403	.103	.766	.172	183	.125	.155	.710	-.312
150	.385	.100	.773	.167	184	-0.000	-0.000	-0.000	-0.000
151	.459	.099	.838	.226	185	-1.097	.279	-.583	-2.395
152	.448	.124	.900	.093	186	-.827	.211	-.412	-2.194
153	.142	.158	.775	-.357	187	-.822	.156	-.386	-1.736
154	-.887	.209	-.355	-1.873	188	-.788	.153	-.170	-1.464
155	-.734	.180	-.371	-1.795	189	-0.000	-0.000	-0.000	-0.000
156	-.72	.131	-.341	-1.785	190	-.437	.198	.380	-1.105
157	-.661	.101	-.353	-1.058	191	-0.000	-0.000	-0.000	-0.000
158	-.659	.116	-.363	-1.273	192	-0.000	-0.000	-0.000	-0.000
159	-.644	.111	-.354	-1.199	193	-.425	.070	-.089	-.706
160	-.623	.112	-.274	-1.134	194	-.528	.077	-.161	-.840
161	-.566	.110	-.122	-1.032	195	-0.000	-0.000	-0.000	-0.000
162	-.537	.106	-.137	-1.083	196	-.452	.067	-.239	-.741
163	-.500	.107	-.099	-1.090	197	-.492	.058	-.315	-.732
164	-.458	.085	-.164	-.992	198	-.472	.051	-.303	-.668
165	-.411	.072	-.154	-1.031	199	-.369	.041	-.244	-.532
166	-.427	.066	-.215	-.831	200	-.517	.045	-.379	-.682
167	-.395	.053	-.249	-.620	201	-.399	.042	-.259	-.541
168	-.388	.047	-.251	-.606	202	-.358	.034	-.249	-.481
169	-.364	.041	-.188	-.495	203	-.447	.040	-.343	-.594
170	-.369	.038	-.206	-.489	204	-.430	.040	-.325	-.569

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 60

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.557	.090	-.192	-.970	35	-.565	.082	-.304	-.867
2	-.576	.099	-.166	-.900	36	-.584	.092	-.318	-.920
3	-.380	.080	-.126	-.732	37	-.560	.086	-.290	-.836
4	-.562	.085	-.222	-.820	38	-.558	.097	-.199	-1.005
5	-.685	.088	-.349	-.957	39	-.497	.111	-.128	-1.014
6	-.573	.073	-.329	-.811	40	-.435	.115	-.060	-.924
7	-.609	.083	-.325	-.863	41	-.391	.113	.031	-.975
8	-.392	.104	.071	-.808	42	-.605	.160	-.182	-1.377
9	-.607	.077	-.354	-.997	43	-.484	.122	-.084	-1.130
10	-.553	.066	-.285	-.747	44	-.579	.128	-.189	-1.083
11	-.562	.072	-.317	-.815	45	-.581	.114	-.254	-1.127
12	-.106	.113	.307	-.521	46	-.538	.094	-.234	-1.029
13	-.580	.056	-.407	-.802	47	-.485	.066	-.288	-.792
14	-.463	.064	-.269	-.863	48	-.476	.054	-.294	-.750
15	-.585	.098	-.326	-1.057	49	-.468	.048	-.294	-.642
16	-.626	.101	-.255	-1.020	50	-.474	.048	-.307	-.623
17	.220	.098	.630	-.163	51	-.456	.050	-.290	-.647
18	.375	.103	.711	-.004	52	-.426	.053	-.261	-.661
19	.306	.090	.573	-.038	53	-.503	.068	-.286	-.878
20	.259	.082	.492	-.057	54	-.570	.124	-.234	-1.163
21	.314	.081	.551	.025	55	-.739	.131	-.424	-1.389
22	.269	.081	.510	.007	56	.249	.107	.565	-.169
23	.267	.092	.550	-.031	57	.393	.101	.703	.102
24	.237	.112	.591	-.123	58	.357	.093	.658	.090
25	.535	.116	.894	.154	59	.422	.093	.713	.156
26	.556	.119	.886	.054	60	.376	.094	.705	.124
27	.510	.121	.870	.039	61	.379	.107	.757	.047
28	.261	.106	.596	-.237	62	.319	.131	.726	-.105
29	.350	.088	.625	.004	63	.581	.128	.951	.211
30	.241	.076	.568	.007	64	.597	.114	.976	.269
31	.140	.071	.400	-.122	65	.568	.121	.936	.194
32	-.031	.065	.216	-.265	66	.362	.129	.720	-.099
33	-.275	.075	.003	-.587	67	.464	.100	.770	.139
34	-.696	.108	-.315	-1.137	68	.337	.085	.646	.096

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 60

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.227	.077	.496	-.011	103	.491	.101	.824	.213
70	-.009	.073	.228	-.238	104	.409	.089	.701	.180
71	-.281	.095	.039	-.589	105	.365	.086	.639	.133
72	-.633	.150	-.212	-1.312	106	.327	.082	.575	.121
73	-.612	.144	-.241	-1.208	107	.412	.082	.647	.193
74	-.568	.117	-.213	-1.107	108	.406	.094	.739	.107
75	-.512	.145	.159	-1.305	109	.507	.159	.985	.012
76	-.486	.138	.007	-1.180	110	.005	.139	.490	-.462
77	-.472	.123	-.054	-1.075	111	-.677	.175	-.291	-1.613
78	-.457	.099	-.089	-.882	112	-.616	.126	-.319	-1.223
79	-.443	.088	-.129	-.877	113	-.566	.103	-.292	-1.139
80	-.467	.077	-.213	-.775	114	-.619	.093	-.343	-1.031
81	-.437	.061	-.214	-.679	115	-.537	.086	-.309	-.955
82	-.436	.056	-.213	-.627	116	-.556	.093	-.315	-1.015
83	-.416	.055	-.213	-.606	117	-.557	.097	-.216	-1.060
84	-.413	.053	-.216	-.591	118	-.570	.112	-.275	-1.357
85	-.407	.050	-.244	-.574	119	-.533	.121	-.173	-1.312
86	-.413	.050	-.217	-.583	120	-.510	.125	-.045	-1.077
87	-.405	.049	-.239	-.598	121	-.498	.136	.047	-1.058
88	-.421	.063	-.249	-.783	122	-.461	.113	-.092	-1.056
89	-.579	.126	-.256	-1.214	123	-.435	.086	-.143	-.989
90	-.587	.141	-.250	-1.119	124	-.465	.088	-.158	-.847
91	.125	.102	.496	.213	125	-.389	.066	-.133	-.759
92	.400	.095	.737	.120	126	-.367	.053	-.165	-.554
93	.353	.088	.635	.108	127	-.345	.045	-.156	-.495
94	.328	.083	.577	.080	128	-.345	.046	-.148	-.517
95	.386	.083	.655	.126	129	-.344	.044	-.183	-.512
96	.378	.090	.642	.076	130	-.351	.044	-.183	-.532
97	.317	.106	.658	-.048	131	-.331	.044	-.175	-.488
98	.749	.134	.668	-.307	132	-.324	.042	-.179	-.534
99	.496	.131	.911	-.002	133	-.392	.052	-.230	-.736
100	.545	.118	.922	.198	134	-.403	.056	-.249	-.692
101	.534	.117	.895	.244	135	-.571	.093	-.296	-1.005
102	.400	.126	.813	-.074	136	.157	.095	.512	-.127



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.287	.084	.587	.068	171	-.331	.036	-.206	-.456
138	.258	.079	.551	.059	172	-.337	.036	-.216	-.461
139	.321	.081	.622	.104	173	-.444	.044	-.311	-.610
140	.268	.082	.510	.017	174	-.343	.047	-.188	-.556
141	.253	.100	.536	-.076	175	-.414	.051	-.256	-.776
142	.184	.131	.533	-.231	176	-.514	.092	-.216	-.887
143	.412	.121	.815	.074	177	-.035	.085	.259	-.386
144	.474	.116	.791	.146	178	.233	.077	.513	-.068
145	.448	.117	.870	.139	179	.206	.098	.537	-.076
146	.397	.113	.777	-.017	180	.357	.084	.688	.123
147	.483	.097	.821	.228	181	.422	.078	.743	.239
148	.410	.097	.739	.149	182	.403	.106	.777	.153
149	.391	.096	.740	.132	183	.036	.140	.457	-.406
150	.375	.093	.716	.119	184	-0.000	-0.000	-0.000	-0.000
151	.456	.094	.787	.192	185	-.824	.225	-.410	-2.093
152	.397	.122	.908	.078	186	-.613	.155	-.278	-1.460
153	.060	.138	.560	-.373	187	-.642	.129	-.358	-1.248
154	-.794	.189	-.299	-1.767	188	-.622	.136	.018	-1.294
155	-.555	.139	-.215	-1.453	189	-0.000	-0.000	-0.000	-0.000
156	-.574	.105	-.263	-1.130	190	-.506	.161	.114	-1.133
157	-.533	.087	-.273	-.893	191	-0.000	-0.000	-0.000	-0.000
158	-.583	.113	-.312	-1.205	192	-0.000	-0.000	-0.000	-0.000
159	-.580	.109	-.291	-1.130	193	-.413	.074	-.155	-.690
160	-.570	.108	-.177	-1.107	194	-.470	.071	-.158	-.783
161	-.535	.101	-.142	-.970	195	-0.000	-0.000	-0.000	-0.000
162	-.507	.096	-.152	-.937	196	-.371	.056	-.205	-.594
163	-.493	.100	-.176	-.911	197	-.430	.052	-.289	-.685
164	-.448	.080	-.200	-.988	198	-.409	.050	-.191	-.589
165	-.410	.065	-.169	-.822	199	-.347	.043	-.221	-.544
166	-.418	.065	-.197	-.762	200	-.446	.045	-.308	-.616
167	-.386	.055	-.214	-.689	201	-.332	.042	-.178	-.483
168	-.375	.048	-.176	-.650	202	-.341	.038	-.213	-.493
169	-.345	.041	-.199	-.495	203	-.388	.040	-.257	-.544
170	-.338	.038	-.196	-.476	204	-.372	.041	-.217	-.522

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-0.000	-0.000	-0.000	-0.000	35	-.536	.085	-.243	-.847
2	-0.000	-0.000	-0.000	-0.000	36	-.527	.091	-.216	-.921
3	-0.000	-0.000	-0.000	-0.000	37	-.528	.097	-.199	-.930
4	-0.000	-0.000	-0.000	-0.000	38	-.496	.109	-.122	-.975
5	-0.000	-0.000	-0.000	-0.000	39	-.385	.118	.162	-.837
6	-0.000	-0.000	-0.000	-0.000	40	-.307	.116	.105	-.803
7	-0.000	-0.000	-0.000	-0.000	41	-.300	.145	.162	-.988
8	-0.000	-0.000	-0.000	-0.000	42	-.749	.179	-.148	-1.491
9	-0.000	-0.000	-0.000	-0.000	43	-.563	.166	-.045	-1.309
10	-0.000	-0.000	-0.000	-0.000	44	-.547	.132	-.107	-1.510
11	-0.000	-0.000	-0.000	-0.000	45	-.518	.109	-.219	-1.513
12	-0.000	-0.000	-0.000	-0.000	46	-.500	.093	-.222	-.978
13	-0.000	-0.000	-0.000	-0.000	47	-.469	.078	-.243	-.988
14	-0.000	-0.000	-0.000	-0.000	48	-.460	.066	-.243	-.921
15	-0.000	-0.000	-0.000	-0.000	49	-.449	.054	-.289	-.822
16	-0.000	-0.000	-0.000	-0.000	50	-.450	.052	-.267	-.678
17	-0.000	-0.000	-0.000	-0.000	51	-.435	.056	-.273	-.635
18	.438	.102	.769	.079	52	-0.000	-0.000	-0.000	-0.000
19	.385	.093	.704	.048	53	-0.000	-0.000	-0.000	-0.000
20	.351	.088	.634	.030	54	-0.000	-0.000	-0.000	-0.000
21	.429	.089	.698	.099	55	-0.000	-0.000	-0.000	-0.000
22	.387	.093	.656	0.000	56	-0.000	-0.000	-0.000	-0.000
23	.414	.102	.701	-.005	57	.466	.097	.783	.207
24	.428	.117	.783	.005	58	.442	.093	.741	.193
25	.604	.115	.938	.131	59	.522	.094	.831	.272
26	.543	.108	.865	.188	60	.487	.106	.790	.156
27	.357	.104	.708	.003	61	.511	.117	.834	.166
28	.047	.098	.342	-.277	62	.505	.131	.884	.042
29	.194	.076	.440	-.043	63	.656	.123	.995	.274
30	.130	.067	.348	-.123	64	.588	.111	.927	.218
31	.046	.060	.277	-.135	65	.433	.109	.803	.062
32	-.099	.052	.081	-.287	66	.106	.129	.482	-.439
33	-.285	.058	-.098	-.489	67	.305	.088	.596	-.026
34	-.521	.088	-.265	-.828	68	.235	.076	.473	-.005

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.126	.067	.334	-.076	103	.376	.096	.700	.026
70	-.090	.060	.140	-.309	104	.344	.077	.626	.121
71	-.327	.070	-.089	-.554	105	.310	.073	.563	.105
72	-.615	.143	-.280	-1.314	106	.290	.069	.543	.094
73	-.562	.123	-.135	-1.052	107	.391	.068	.627	.186
74	-.495	.125	.011	-1.146	108	.379	.090	.688	.073
75	-.436	.142	.006	-1.218	109	-0.000	-0.000	-0.000	-0.000
76	-.413	.125	.054	-1.146	110	-0.000	-0.000	-0.000	-0.000
77	-.399	.101	-.064	-.998	111	-0.000	-0.000	-0.000	-0.000
78	-.390	.080	-.127	-.824	112	-0.000	-0.000	-0.000	-0.000
79	-.373	.063	-.169	-.594	113	-0.000	-0.000	-0.000	-0.000
80	-.387	.069	-.124	-.687	114	-0.000	-0.000	-0.000	-0.000
81	-.374	.062	-.142	-.645	115	-.428	.068	-.263	-.715
82	-.384	.061	-.149	-.672	116	-.440	.072	-.264	-.729
83	-.372	.058	-.190	-.647	117	-.443	.075	-.272	-.805
84	-.375	.056	-.145	-.627	118	-.457	.083	-.250	-.792
85	-.374	.052	-.189	-.587	119	-.454	.092	-.181	-.985
86	-.379	.053	-.215	-.600	120	-.456	.093	-.151	-.988
87	-0.000	-0.000	-0.000	-0.000	121	-.466	.102	-.134	-.900
88	-0.000	-0.000	-0.000	-0.000	122	-.429	.084	-.117	-.785
89	-0.000	-0.000	-0.000	-0.000	123	-.377	.066	-.154	-.665
90	-0.000	-0.000	-0.000	-0.000	124	-.393	.074	-.171	-.667
91	-0.000	-0.000	-0.000	-0.000	125	-.324	.057	-.132	-.553
92	.448	.102	.868	.135	126	-.317	.049	-.139	-.506
93	.408	.097	.795	.113	127	-.309	.044	-.142	-.458
94	.384	.093	.763	.113	128	-.316	.047	-.138	-.547
95	.462	.095	.827	.200	129	-.318	.045	-.178	-.503
96	.434	.101	.721	.174	130	-.325	.047	-.172	-.525
97	.448	.112	.758	.142	131	-.308	.046	-.158	-.461
98	.435	.128	.788	.005	132	-0.000	-0.000	-0.000	-0.000
99	.586	.121	.943	.264	133	-0.000	-0.000	-0.000	-0.000
100	.538	.113	.867	.238	134	-0.000	-0.000	-0.000	-0.000
101	.439	.114	.862	.133	135	-0.000	-0.000	-0.000	-0.000
102	.220	.137	.617	-.250	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.336	.095	.648	.065	171	-.298	.036	-.171	-.449
138	.313	.092	.623	.061	172	-.303	.038	-.169	-.468
139	.390	.095	.711	.134	173	-0.000	-0.000	-0.000	-0.000
140	.353	.093	.674	.112	174	-0.000	-0.000	-0.000	-0.000
141	.357	.104	.710	.040	175	-0.000	-0.000	-0.000	-0.000
142	.333	.124	.755	-.096	176	-0.000	-0.000	-0.000	-0.000
143	.497	.114	.861	.170	177	-0.000	-0.000	-0.000	-0.000
144	.475	.110	.875	.214	178	.293	.075	.540	.052
145	.415	.116	.837	.127	179	.286	.093	.584	.017
146	.272	.132	.652	-.194	180	.328	.087	.654	.089
147	.405	.101	.746	.081	181	.397	.076	.681	.216
148	.326	.074	.576	.080	182	-0.000	-0.000	-0.000	-0.000
149	.314	.072	.560	.118	183	-0.000	-0.000	-0.000	-0.000
150	.311	.071	.551	.129	184	-0.000	-0.000	-0.000	-0.000
151	.399	.074	.652	.213	185	-0.000	-0.000	-0.000	-0.000
152	-0.000	-0.000	-0.000	-0.000	186	-0.000	-0.000	-0.000	-0.000
153	-0.000	-0.000	-0.000	-0.000	187	-0.000	-0.000	-0.000	-0.000
154	-0.000	-0.000	-0.000	-0.000	188	-0.000	-0.000	-0.000	-0.000
155	-0.000	-0.000	-0.000	-0.000	189	-0.000	-0.000	-0.000	-0.000
156	-0.000	-0.000	-0.000	-0.000	190	-.476	.123	.014	-.974
157	-0.000	-0.000	-0.000	-0.000	191	-0.000	-0.000	-0.000	-0.000
158	-.461	.093	-.156	-.996	192	-0.000	-0.000	-0.000	-0.000
159	-.465	.092	-.148	-.864	193	-.380	.073	-.145	-.780
160	-.469	.090	-.156	-.914	194	-0.000	-0.000	-0.000	-0.000
161	-.444	.079	-.202	-.761	195	-0.000	-0.000	-0.000	-0.000
162	-.437	.074	-.169	-.732	196	-0.000	-0.000	-0.000	-0.000
163	-.439	.081	-.145	-.766	197	-0.000	-0.000	-0.000	-0.000
164	-.404	.067	-.108	-.662	198	-0.000	-0.000	-0.000	-0.000
165	-.369	.055	-.188	-.628	199	-.301	.042	-.151	-.456
166	-.376	.060	-.168	-.637	200	-0.000	-0.000	-0.000	-0.000
167	-.329	.049	-.077	-.556	201	-0.000	-0.000	-0.000	-0.000
168	-.327	.043	-.181	-.475	202	-.301	.040	-.163	-.479
169	-.300	.039	-.165	-.458	203	-0.000	-0.000	-0.000	-0.000
170	-.299	.037	-.173	-.431	204	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.538	.081	-.207	-.824	35	-.492	.083	-.130	-.763
2	-.442	.075	-.155	-.688	36	-.499	.093	-.149	-.822
3	-.467	.092	-.189	-.939	37	-.485	.098	-.146	-.928
4					38	-.390	.107	-.050	-.796
5	-.515	.095	-.179	-.936	39	-.253	.127	.140	-.749
6	-.463	.068	-.230	-.825	40	-.313	.164	.163	-.945
7	-.504	.074	-.278	-.872	41	-.389	.178	.156	-1.108
8	-.437	.109	-.033	-.857	42	-.635	.187	-.096	-1.426
9	-.499	.079	-.201	-.823	43	-.504	.168	-.072	-1.456
10	-.446	.058	-.260	-.658	44	-.458	.125	-.112	-1.074
11	-.464	.065	-.237	-.830	45	-.441	.096	-.089	-.932
12	-.302	.109	.204	-.726	46	-.448	.083	-.137	-.896
13	-.448	.069	-.193	-.772	47	-.433	.066	-.157	-.756
14	-.352	.078	-.118	-.868	48	-.441	.060	-.210	-.772
15	-.462	.097	-.188	-.932	49	-.436	.056	-.226	-.719
16	-.188	.114	.200	-.607	50	-.442	.056	-.255	-.644
17	.378	.104	.770	.039	51	-.414	.056	-.216	-.641
18	.464	.102	.778	.113	52	-.318	.076	-.058	-1.239
19	.450	.100	.765	.097	53	-.359	.086	-.022	-1.096
20	.422	.100	.762	.088	54	-.404	.120	-.092	-1.041
21	.468	.102	.803	.128	55				
22	.488	.100	.787	.144	56				
23	.536	.107	.856	.170	57	.553	.111	.979	.152
24	.545	.113	.889	.164	58	.528	.110	.947	.157
25	.529	.118	.888	.121	59	.592	.112	1.001	.236
26	.458	.105	.822	.135	60	.587	.115	.929	.271
27	.156	.110	.639	-.244	61	.618	.122	.972	.293
28	-.215	.121	.165	-.678	62	.605	.126	.950	.265
29	-.022	.091	.253	-.439	63	.598	.123	1.021	-.003
30	.006	.054	.171	-.277	64	.523	.102	.929	.210
31	-.038	.046	.141	-.206	65	.243	.111	.664	-.097
32	-.166	.042	.002	-.325	66	-.177	.134	.308	-.640
33	-.314	.055	-.159	-.544	67	.073	.113	.366	-.286
34	-.416	.077	-.146	-.707	68	.086	.076	.318	-.294

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 (UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.020	.057	.208	-.283	103	.216	.110	.522	-.163
70	-.167	.055	.011	-.366	104	.238	.079	.502	-1.506
71	-.353	.076	-.102	-.621	105	.239	.062	.469	.009
72	-.532	.118	-.216	-1.137	106	.230	.059	.440	.025
73	-.452	.095	-.052	-.873	107	.325	.061	.513	.131
74	-.409	.106	-.104	-1.284	108	.341	.086	.673	.107
75	-.379	.106	.056	-.948	109	.395	.124	.891	.012
76	-.377	.088	-.110	-.896	110	-.101	.077	.236	-.391
77	-.367	.076	-.142	-.720	111	-.420	.132	-.050	-1.105
78	-.367	.075	-.076	-.741	112	-.324	.076	-.111	-.705
79	-.340	.078	-.079	-.772	113	-.308	.059	-.126	-.496
80	-.355	.082	-.074	-.784	114	-.354	.059	-.086	-.585
81	-.366	.080	-.125	-.817	115	-.355	.061	-.165	-.594
82	-.372	.079	-.133	-.892	116	-.368	.063	-.175	-.630
83	-.365	.070	-.125	-.719	117	-.369	.063	-.188	-.637
84	-.368	.063	.084	-.624	118	-.383	.067	-.188	-.763
85	-.359	.060	-.090	-.749	119	-.369	.067	-.163	-.668
86	-.365	.061	-.142	-.762	120	-.376	.069	-.066	-.694
87	-.324	.017	-.116	-.558	121	-.383	.079	-.016	-.689
88	-.291	.015	-.129	-.477	122	-.348	.071	.026	-.661
89	-.474	.137	-.011	-1.360	123	-.322	.064	-.073	-.598
90	-.279	.128	.147	-.980	124	-.324	.065	-.050	-.557
91	.322	.117	.729	-.019	125	-.321	.060	-.080	-.591
92	.512	.105	.923	.216	126	-.331	.054	-.079	-.548
93	.488	.102	.884	.188	127	-.319	.043	-.155	-.459
94	.462	.101	.854	.189	128	-.327	.047	-.155	-.512
95	.530	.103	.929	.267	129	-.323	.048	-.157	-.488
96	.525	.116	.886	.183	130	-.329	.050	-.157	-.517
97	.547	.123	.959	.211	131	-.316	.054	-.156	-.540
98	.529	.126	.958	.069	132	-0.000	-0.000	-0.000	-0.000
99	.546	.118	.902	.211	133	-0.000	-0.000	-0.000	-0.000
100	.497	.110	.865	.228	134	-0.000	-0.000	-0.000	-0.000
101	.308	.112	.739	-.038	135	-0.000	-0.000	-0.000	-0.000
102	.011	.142	.424	-.443	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION #0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.423	.107	.792	.123	171	-.288	.040	-.152	-.495
138	.397	.106	.781	.110	172	-.292	.042	-.136	-.537
139	.469	.109	.857	.202	173	-.316	.087	-.018	-.963
140	.446	.106	.807	.199	174	-.223	.095	.057	-.969
141	.465	.112	.845	.199	175	-0.000	-0.000	-0.000	-0.000
142	.449	.117	.879	.088	176	-.290	.094	.046	-.732
143	.507	.108	.962	.204	177	-0.000	-0.000	-0.000	-0.000
144	.454	.105	.857	.202	178	.355	.087	.655	.106
145	.334	.110	.754	.010	179	.366	.092	.727	.100
146	.137	.126	.543	-.325	180	.256	.085	.597	-.106
147	.298	.100	.613	-.074	181	.339	.064	.587	.085
148	.280	.073	.549	-.001	182	-0.000	-0.000	-0.000	-0.000
149	.291	.064	.557	-.027	183	-0.000	-0.000	-0.000	-0.000
150	.292	.063	.553	.008	184	-0.000	-0.000	-0.000	-0.000
151	.373	.067	.667	.060	185	-.439	.103	-.157	-.932
152	.320	.090	.653	.039	186	-0.000	-0.000	-0.000	-0.000
153	-.062	.077	.274	-.327	187	-.347	.093	-.049	-.896
154	-.529	.145	-.169	-1.114	188	-.357	.090	-.109	-.866
155	-.247	.082	.040	-.683	189	-.431	.087	-.187	-.839
156	-.295	.067	-.091	-.519	190	-.413	.098	.003	-.817
157	-.268	.062	-.098	-.470	191	-.264	.076	-.017	-.546
158	-.387	.072	-.167	-.681	192	-0.000	-0.000	-0.000	-0.000
159	-.391	.072	-.172	-.689	193	-.299	.070	-.093	-.581
160	-.398	.072	-.192	-.746	194	-.210	.054	-.022	-.365
161	-.371	.067	-.173	-.631	195	-0.000	-0.000	-0.000	-0.000
162	-.364	.068	-.140	-.661	196	-0.000	-0.000	-0.000	-0.000
163	-.367	.077	-.103	-.789	197	-.217	.070	.037	-.606
164	-.315	.063	.031	-.573	198	-.258	.087	-.008	-.735
165	-.285	.054	-.080	-.474	199	-.256	.051	-.074	-.474
166	-.281	.051	-.042	-.501	200	-0.000	-0.000	-0.000	-0.000
167	-.288	.052	-.102	-.561	201	-0.000	-0.000	-0.000	-0.000
168	-.292	.048	-.129	-.478	202	-.260	.054	-.120	-.617
169	-.288	.041	-.160	-.444	203	-0.000	-0.000	-0.000	-0.000
170	-.293	.040	-.150	-.435	204	-.234	.071	-.045	-.664

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.445	.074	-.222	-.835	35	-.357	.076	-.124	-.630
2	-.322	.072	-.088	-.696	36	-.360	.087	-.059	-.694
3	-.379	.088	-.023	-.860	37	-.334	.090	-.015	-.682
4	-.389	.066	-.133	-.664	38	-.299	.110	.075	-.737
5	-.415	.086	-.077	-.768	39	-.297	.142	.166	-.967
6	-.325	.062	-.069	-.552	40	-.342	.157	.153	-1.076
7	-.387	.066	-.125	-.632	41	-.353	.162	.172	-1.188
8	-.384	.080	-.115	-.721	42	-.375	.182	.177	-1.237
9	-.371	.109	-.103	-.770	43	-.330	.160	.212	-.981
10	-.315	.059	-.081	-.552	44	-.319	.144	.312	-.864
11	-.362	.064	-.133	-.595	45	-.376	.124	.048	-.933
12	-.326	.075	-.058	-.601	46	-.366	.098	.020	-.756
13	-.360	.071	-.119	-.824	47	-.359	.085	.046	-.787
14	-.238	.078	-.003	-.777	48	-.364	.076	-.127	-.787
15	-.319	.089	-.071	-.733	49	-.354	.068	-.149	-.816
16	.111	.110	.422	-.263	50	-.345	.068	-.097	-.660
17	.482	.109	.815	.148	51	-.324	.068	-.124	-.625
18	.503	.108	.899	.169	52	-.208	.078	.070	-.729
19	.504	.111	.841	.165	53	-.265	.087	.022	-.784
20	.482	.111	.853	.142	54	-.349	.107	-.031	-.866
21	.565	.113	.913	.203	55	-0.000	-0.000	-0.000	-0.000
22	.550	.106	.858	.216	56	-0.000	-0.000	-0.000	-0.000
23	.561	.107	.878	.195	57	.595	.111	.921	.229
24	.520	.110	.864	.143	58	.577	.111	.907	.236
25	.366	.117	.752	-.058	59	.656	.113	1.006	.323
26	.311	.089	.603	-.075	60	.624	.114	1.000	.237
27	-.089	.084	.195	-.365	61	.619	.116	.967	.245
28	-.475	.116	-.111	-.900	62	.548	.114	.913	.150
29	-.230	.102	.056	-.645	63	.380	.119	.805	-.175
30	-.122	.074	.077	-.483	64	.356	.086	.665	.055
31	-.105	.049	.072	-.335	65	-.023	.103	.330	-.356
32	-.168	.042	-.018	-.339	66	-.392	.110	.039	-.786
33	-.192	.056	.020	-.381	67	-.179	.119	.203	-.544
34	-.239	.069	-.010	-.560	68	-.116	.112	.179	-.549



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 (UNIFORM UPSTREAM ROUGHNESS)  
 OLTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.095	.083	.135	-.452	103	-.023	.131	.354	-.578
70	-.178	.058	.031	-.486	104	.042	.119	.319	-.509
71	-.228	.066	.006	-.513	105	.114	.090	.333	-.500
72	-.371	.099	-.070	-.799	106	.152	.071	.347	-.412
73	-.327	.090	-.039	-.850	107	.261	.067	.455	-.200
74	-.303	.092	.075	-.954	108	.288	.082	.603	.002
75	-.297	.088	.001	-.673	109	.296	.129	.918	-.095
76	-.307	.088	-.028	-.727	110	-.086	.078	.288	-.363
77	-.309	.092	-.030	-.653	111	-.324	.124	.006	-.743
78	-.323	.102	.007	-.908	112	-.226	.076	-.012	-.603
79	-.297	.103	.228	-.764	113	-.212	.059	-.049	-.410
80	-.330	.111	.288	-1.155	114	-.255	.049	-.081	-.455
81	-.358	.113	.260	-1.144	115	-.256	.055	-.094	-.450
82	-.344	.106	.156	-.948	116	-.270	.056	-.097	-.454
83	-.322	.096	.035	-.868	117	-.274	.056	-.098	-.476
84	-.321	.088	-.004	-.789	118	-.278	.060	.068	-.500
85	-.311	.081	-.021	-.788	119	-.267	.065	.003	-.546
86	-.305	.077	.001	-.795	120	-.269	.066	.162	-.568
87	-0.000	-0.000	-0.000	-0.000	121	-.275	.075	.063	-.670
88	-0.000	-0.000	-0.000	-0.000	122	-.245	.076	.167	-.606
89	-.429	.123	-.062	-1.092	123	-.227	.074	.176	-.633
90	-.060	.129	.433	-.503	124	-.244	.074	.111	-.568
91	.379	.114	.795	.072	125	-.269	.082	.046	-.666
92	.532	.107	.848	.211	126	-.265	.069	.001	-.577
93	.513	.107	.834	.196	127	-.255	.057	-.038	-.588
94	.496	.107	.821	.190	128	-.264	.060	-.037	-.553
95	.573	.109	.905	.280	129	-.263	.059	-.063	-.561
96	.574	.109	.922	.280	130	-.261	.059	-.058	-.543
97	.574	.110	.901	.264	131	-.253	.061	-.049	-.747
98	.521	.111	.896	.148	132	-0.000	-0.000	-0.000	-0.000
99	.401	.125	.838	-.077	133	-0.000	-0.000	-0.000	-0.000
100	.354	.087	.657	.075	134	-0.000	-0.000	-0.000	-0.000
101	.069	.104	.470	-.309	135	-0.000	-0.000	-0.000	-0.000
102	-.223	.131	.208	-.663	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.429	.106	.756	.169	171	-.249	.062	-.070	-.539
138	.411	.105	.719	.150	172	-.248	.063	-.066	-.595
139	.489	.107	.834	.242	173	-.368	.109	.031	-1.073
140	.466	.111	.847	.180	174	-.262	.104	.065	-.859
141	.464	.113	.831	.172	175	-0.000	-0.000	-0.000	-0.000
142	.424	.111	.801	.080	176	-.237	.127	.355	-.692
143	.362	.115	.788	-.028	177	-0.000	-0.000	-0.000	-0.000
144	.356	.091	.671	.084	178	.391	.092	.708	.163
145	.171	.105	.534	-.167	179	.386	.092	.755	.175
146	-.012	.107	.339	-.438	180	.145	.090	.406	-.289
147	.150	.106	.425	-.287	181	.274	.062	.477	-.019
148	.158	.096	.421	-.240	182	-0.000	-0.000	-0.000	-0.000
149	.195	.083	.404	-.187	183	-0.000	-0.000	-0.000	-0.000
150	.213	.076	.436	-.161	184	-0.000	-0.000	-0.000	-0.000
151	.301	.080	.536	-.098	185	-0.000	-0.000	-0.000	-0.000
152	.235	.107	.712	-.212	186	-0.000	-0.000	-0.000	-0.000
153	-.041	.074	.244	-.368	187	-.205	.083	.078	-.474
154	-.408	.118	-.111	-.955	188	-.214	.076	.028	-.467
155	-.132	.067	.059	-.567	189	-.287	.079	.107	-.712
156	-.188	.054	-.044	-.406	190	-.310	.081	-.011	-.791
157	-.171	.045	-.008	-.339	191	-.091	.075	.137	-.421
158	-.247	.059	-.090	-.476	192	-0.000	-0.000	-0.000	-0.000
159	-.253	.059	-.094	-.466	193	-.186	.054	.006	-.436
160	-.248	.059	-.007	-.460	194	-.180	.055	.139	-.393
161	-.225	.054	-.045	-.509	195	-0.000	-0.000	-0.000	-0.000
162	-.219	.053	0.000	-.512	196	-0.000	-0.000	-0.000	-0.000
163	-.218	.055	.069	-.615	197	-0.000	-0.000	-0.000	-0.000
164	-.217	.053	.082	-.453	198	-0.000	-0.000	-0.000	-0.000
165	-.205	.054	.061	-.478	199	-.220	.063	-.049	-.594
166	-.232	.064	.208	-.557	200	-0.000	-0.000	-0.000	-0.000
167	-.262	.077	.075	-.840	201	-0.000	-0.000	-0.000	-0.000
168	-.255	.070	-.044	-.794	202	-.240	.083	.187	-.689
169	-.244	.062	-.103	-.533	203	-0.000	-0.000	-0.000	-0.000
170	-.251	.063	-.080	-.538	204	-.287	.097	-.051	-.839

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.400	.069	-.165	-.669	35	-.217	.067	-.004	-.472
2	-.289	.070	-.003	-.636	36	-.207	.075	.050	-.504
3	-.324	.074	-.026	-.643	37	-.198	.081	.122	-.572
4	-.342	.061	-.134	-.563	38	-.188	.097	.193	-.596
5	-.374	.082	-.062	-.774	39	-.195	.109	.363	-.582
6	-.276	.064	-.052	-.527	40	-.218	.117	.240	-.670
7	-.328	.061	-.084	-.582	41	-.245	.122	.226	-.681
8	-.318	.068	.022	-.587	42	-.317	.142	.243	-1.003
9	-.358	.101	.001	-.824	43	-.269	.128	.340	-.914
10	-.264	.061	-.066	-.505	44	-.307	.128	.279	-.871
11	-.301	.058	-.113	-.487	45	-.385	.137	.128	-.918
12	-.300	.066	-.092	-.591	46	-.353	.108	.140	-.786
13	-.310	.076	-.086	-1.062	47	-.335	.097	.357	-.789
14	-.193	.079	.055	-.748	48	-.333	.086	.281	-.775
15	-.112	.107	.267	-.499	49	-.326	.077	-.009	-.827
16	.339	.125	.712	-.146	50	-.314	.073	-.125	-.882
17	.479	.106	.796	.095	51	-.287	.069	-.057	-.626
18	.539	.103	.815	.218	52	-.166	.081	.065	-.672
19	.550	.109	.850	.225	53	-.228	.087	-.006	-1.085
20	.530	.109	.816	.209	54	-.199	.127	.270	-.732
21	.605	.111	.918	.292	55	.136	.138	.552	-.481
22	.560	.103	.864	.239	56	.584	.125	.890	.141
23	.529	.105	.854	.199	57	.613	.104	.965	.323
24	.423	.109	.786	-.001	58	.595	.103	.936	.312
25	.137	.109	.452	-.359	59	.664	.102	1.030	.406
26	.181	.076	.452	-.138	60	.615	.114	.959	.303
27	-.227	.073	.082	-.447	61	.559	.111	.899	.243
28	-.480	.108	-.145	-.850	62	.411	.108	.781	.067
29	-.328	.091	-.038	-.597	63	.098	.124	.548	-.333
30	-.283	.084	.027	-.630	64	.189	.082	.460	-.146
31	-.240	.083	.085	-.664	65	-.189	.083	.099	-.501
32	-.207	.080	.141	-.610	66	-.410	.111	-.060	-.757
33	-.128	.078	.209	-.557	67	-.293	.107	.072	-.662
34	-.148	.068	.094	-.519	68	-.270	.109	.072	-.724

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
OUTER BUILDING  
WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.234	.115	.156	-.672	103	-.187	.121	.135	-.765
70	-.202	.108	.282	-.680	104	-.154	.143	.274	-.766
71	-.134	.093	.209	-.598	105	-.068	.157	.303	-.767
72	-.212	.079	.072	-.671	106	.021	.148	.393	-.777
73	-.204	.072	.052	-.749	107	.145	.137	.493	-.691
74	-.202	.075	.116	-.628	108	.225	.127	.647	-.273
75	-.208	.079	.105	-.613	109	.168	.190	.941	-.476
76	-.209	.086	.228	-.611	110	-.024	.132	.466	-.519
77	-.217	.090	.196	-.678	111	-.180	.110	.141	-.593
78	-.268	.114	.098	-.725	112	-.128	.074	.105	-.682
79	-.227	.111	.287	-.668	113	-.107	.052	.174	-.302
80	-.268	.133	.323	-.953	114	-.163	.051	.091	-.359
81	-.325	.162	.270	-1.068	115	-.167	.057	.085	-.380
82	-.299	.143	.401	-.892	116	-.174	.056	.074	-.397
83	-.287	.129	.458	-1.013	117	-.176	.056	.074	-.441
84	-.292	.120	.316	-.915	118	-.176	.058	.071	-.435
85	-.288	.111	.167	-.987	119	-.169	.057	.021	-.435
86	-.277	.104	.048	-1.176	120	-.175	.061	.075	-.577
87	-.229	.087	-.039	-1.156	121	-.183	.067	.136	-.665
88	-0.000	-0.000	-0.000	-0.000	122	-.191	.074	.040	-.594
89	-.337	.131	.115	-.783	123	-.185	.073	.146	-.584
90	-.166	.133	.673	-.331	124	-.216	.085	.177	-.854
91	.475	.105	.822	.157	125	-.251	.110	.163	-.952
92	.558	.108	.893	.246	126	-.249	.099	.095	-.923
93	.548	.111	.897	.206	127	-.238	.079	.013	-.606
94	.533	.111	.874	.185	128	-.247	.084	.003	-.739
95	.600	.110	.968	.220	129	-.247	.079	.064	-.935
96	.544	.107	.878	.179	130	-.241	.073	-.007	-.695
97	.501	.110	.882	.145	131	-.227	.071	-.013	-.617
98	.385	.115	.866	.067	132	-.179	.070	.016	-.508
99	.146	.122	.511	-.258	133	-.259	.075	-.054	-.702
100	.200	.084	.497	-.112	134	-.563	.181	-.058	-1.233
101	-.106	.088	.185	-.459	135	-.045	.176	.459	-.647
102	-.320	.118	.019	-.782	136	.417	.121	.773	.083

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.479	.102	.854	.218	171	-.238	.071	-.033	-.742
138	.461	.102	.820	.195	172	-.234	.070	-.027	-.667
139	.531	.102	.897	.259	173	-.349	.099	-.035	-.884
140	.457	.105	.862	-.077	174	-.257	.098	.063	-.714
141	.424	.104	.840	.165	175	-.451	.163	.005	-1.063
142	.335	.109	.734	-.202	176	-.028	.175	.523	-.729
143	.172	.134	.619	-.415	177	.199	.103	.642	-.092
144	.206	.090	.525	-.094	178	.385	.084	.756	.193
145	-.016	.097	.296	-.265	179	.350	.085	.709	.154
146	-.142	.096	.151	-.564	180	.040	.098	.262	-.471
147	-.020	.102	.264	-.429	181	.201	.072	.394	-.133
148	-.017	.101	.339	-.440	182	.183	.086	.518	-.137
149	.030	.108	.336	-.436	183	-.006	.076	.379	-.311
150	.067	.111	.417	-.465	184	-.259	.087	-.066	-.531
151	.161	.114	.580	-.352	185	-.197	.071	.055	-.612
152	.108	.144	.605	-.361	186	-.079	.073	.162	-.582
153	-.009	.103	.409	-.465	187	-.065	.053	.172	-.437
154	-.269	.107	-.005	-.800	188				
155	-.054	.067	.160	-.437	189	-.129	.066	.096	-.495
156	-.097	.047	.087	-.282	190	-.156	.083	.160	-.448
157	-.092	.046	.110	-.237	191	.005	.054	.211	-.237
158	-.152	.048	-.010	-.390	192	-.104	.058	.067	-.358
159	-.158	.047	-.009	-.401	193	-.124	.048	.041	-.369
160	-.158	.047	.007	-.372	194	-.145	.061	.036	-.356
161	-.144	.044	.014	-.315	195	-.205	.069	.001	-.518
162	-.155	.046	.017	-.443	196	-.097	.069	.092	-.423
163	-.167	.049	.009	-.383	197	-.202	.083	.016	-.540
164	-.192	.060	.011	-.424	198	-.146	.070	.137	-.399
165	-.191	.060	-.017	-.440	199	-.151	.064	.050	-.453
166	-.214	.067	-.010	-.609	200	-.181	.112	.189	-.591
167	-.234	.079	.021	-.688	201	-.112	.121	.380	-.466
168	-.231	.076	.029	-.813	202	-.176	.106	.251	-.606
169	-.223	.076	.070	-.753	203	-.288	.102	.371	-.744
170	-.275	.073	.006	-.716	204	-.278	.089	-.049	-.631

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.402	.075	-.149	-.745	35	-.294	.145	.154	-1.176
2	-.284	.086	-.016	-.770	36	-.282	.151	.208	-1.251
3	-.280	.070	-.001	-.575	37	-.253	.138	.211	-1.086
4	-.351	.064	-.146	-.651	38	-.201	.135	.430	-.948
5	-.344	.093	-.065	-.715	39	-.155	.126	.324	-.890
6	-.262	.075	-.047	-.593	40	-.147	.116	.374	-.942
7	-.322	.062	-.147	-.511	41	-.159	.108	.299	-.965
8	-.297	.073	-.086	-.638	42	-.214	.107	.164	-.877
9	-.338	.105	.031	-.816	43	-.212	.091	.144	-.555
10	-.244	.068	-.044	-.459	44	-.259	.102	.155	-.657
11	-.301	.055	-.075	-.444	45	-.299	.121	.185	-.782
12	-.300	.096	-.079	-.723	46	-.305	.106	.221	-.730
13	-.400	.073	-.104	-.644	47	-.324	.099	.162	-.774
14	-.283	.072	-.058	-.644	48	-.340	.089	.045	-.723
15	.080	.125	.408	-.520	49	-.341	.082	-.086	-.811
16	.483	.125	.830	-.053	50	-.338	.080	-.068	-.696
17	.486	.102	.820	.080	51	-.327	.076	-.072	-.715
18	.551	.100	.893	.213	52	-.268	.073	.023	-.598
19	.562	.106	.903	.212	53	-.332	.074	-.089	-.789
20	.537	.104	.856	.184	54	-.060	.143	.429	-.786
21	.597	.104	.931	.252	55	.306	.141	.722	-.293
22	.523	.106	.849	.079	56	.625	.113	.976	.260
23	.452	.105	.788	.043	57	.626	.117	.960	.261
24	.289	.105	.715	-.133	58	.606	.116	.937	.256
25	-.152	.111	.313	-.483	59	.656	.114	1.004	.311
26	.078	.070	.302	-.208	60	.599	.103	.962	.007
27	-.154	.060	.028	-.384	61	.503	.100	.868	-.003
28	-.198	.078	.039	-.611	62	.294	.106	.729	-.088
29	-.133	.075	.125	-.492	63	-.074	.119	.286	-.544
30	-.174	.079	.084	-.581	64	.103	.075	.334	-.231
31	-.194	.092	.116	-.621	65	-.092	.060	.100	-.436
32	-.204	.110	.256	-.700	66	-.123	.075	.139	-.591
33	-.146	.124	.387	-.693	67	-.058	.073	.162	-.526
34	-.165	.112	.190	-.868	68	-.108	.096	.132	-.678

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.130	.108	.265	-.790	103	-.055	.066	.125	-.475
70	-.135	.114	.626	-.856	104	-.083	.069	.163	-.681
71	-.083	.127	.384	-.737	105	-.098	.073	.146	-.611
72	-.131	.135	.348	-.811	106	-.099	.076	.281	-.520
73	-.098	.120	.368	-.621	107	-.033	.079	.318	-.496
74	-.070	.127	.486	-.611	108	-.015	.092	.435	-.313
75	-.068	.126	.726	-.625	109	-.127	.090	.368	-.489
76	-.089	.122	.585	-.592	110	-.171	.114	.302	-.689
77	-.118	.117	.345	-.559	111	-.060	.088	.284	-.595
78	-.199	.134	.221	-.956	112	-.090	.069	.194	-.406
79	-.171	.111	.279	-.733	113	-.081	.057	.156	-.361
80	-.227	.125	.200	-.768	114	-.141	.056	.148	-.378
81	-.281	.155	.152	-.991	115	-.026	.076	.336	-.395
82	-.284	.137	.187	-.837	116	-.054	.076	.249	-.475
83	-.304	.123	.178	-.772	117	-.062	.071	.226	-.436
84	-.339	.119	.232	-.801	118	-.064	.078	.318	-.387
85	-.352	.119	.303	-.991	119	-.058	.075	.377	-.430
86	-.348	.115	-.063	-.971	120	-.077	.075	.371	-.472
87	-.383	.122	-.080	-1.006	121	-.095	.078	.155	-.532
88	-0.000	-0.000	-0.000	-0.000	122	-.130	.100	.165	-.789
89	-.179	.165	.379	-.789	123	-.122	.096	.391	-.644
90	.358	.147	.782	-.317	124	-.167	.108	.185	-.804
91	.507	.120	.881	.095	125	-.199	.137	.223	-1.055
92	.572	.113	.968	.254	126	-.207	.134	.262	-.764
93	.563	.117	.950	.228	127	-.256	.120	.259	-.663
94	.544	.116	.934	.222	128	-.307	.139	.283	-.871
95	.596	.115	.994	.291	129	-.344	.141	.138	-.880
96	.513	.111	.871	.217	130	-.353	.141	.039	-.979
97	.432	.106	.777	.135	131	-.316	.129	-.010	-1.117
98	.262	.108	.641	-.065	132	-.272	.112	.087	-.887
99	-.032	.124	.316	-.493	133	-.393	.122	-.066	-.827
100	.098	.075	.391	-.235	134	-.382	.195	.184	-1.051
101	-.083	.056	.112	-.330	135	.165	.144	.619	-.295
102	-.122	.068	.079	-.548	136	.472	.103	.804	.104

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.468	.116	.897	.198	171	-.323	.138	.236	-.935
138	.452	.115	.872	.173	172	-.331	.130	.016	-1.186
139	.508	.112	.890	.191	173	-.349	.148	-.065	-1.132
140	.451	.100	.789	.184	174	-.291	.142	.032	-.895
141	.378	.098	.782	.123	175	-.248	.170	.199	-.882
142	.237	.168	.658	-.109	176	.147	.148	.671	-.342
143	-.015	.127	.345	-.496	177	.216	.096	.553	-.021
144	.090	.083	.310	-.251	178	.395	.088	.724	.184
145	-.095	.062	.109	-.351	179	.304	.081	.669	.080
146	-.138	.071	.053	-.603	180	-.082	.081	.149	-.467
147	-.059	.068	.137	-.474	181	.088	.085	.341	-.276
148	-.080	.077	.214	-.486	182	.099	.098	.501	-.162
149	-.084	.086	.274	-.525	183	.032	.089	.394	-.237
150	-.071	.095	.299	-.500	184	-.118	.041	-.006	-.248
151	.005	.110	.444	-.532	185	-.129	.062	.044	-.491
152	-.107	.094	.508	-.415	186	.002	.059	.163	-.222
153	-.077	.120	.429	-.457	187	-.009	.052	.210	-.189
154	-.153	.086	.131	-.552	188	.003	.050	.170	-.166
155	-.008	.071	.283	-.396	189	-.055	.049	.197	-.217
156	-.073	.054	.126	-.311	190	.006	.057	.295	-.308
157	-.078	.051	.156	-.315	191	.048	.053	.254	-.194
158	-.037	.048	.266	-.194	192	-.068	.065	.119	-.360
159	-.045	.049	.285	-.232	193	-.036	.044	.115	-.210
160	-.047	.053	.306	-.249	194	-.129	.074	.110	-.436
161	-.046	.054	.184	-.259	195	-.204	.077	.023	-.556
162	-.062	.058	.158	-.324	196	-.119	.091	.095	-.576
163	-.078	.063	.197	-.349	197	-.265	.114	-.005	-.815
164	-.100	.076	.255	-.480	198	-.150	.073	.137	-.410
165	-.101	.080	.160	-.440	199	-.051	.048	.134	-.244
166	-.159	.101	.151	-.674	200				
167	-.153	.111	.216	-.697	201	.085	.125	.580	-.413
168	-.160	.130	.259	-.676	202	.015	.137	.590	-.477
169	-.206	.145	.446	-.709	203	-.208	.168	.413	-.837
170	-.274	.145	.371	-.769	204	-.255	.132	.110	-.840



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.427	.071	.009	-.688	35	-.262	.111	.118	-1.255
2	-.306	.081	-.012	-.624	36	-.236	.095	.066	-.997
3	-.266	.077	-.057	-.529	37	-.194	.080	.036	-.684
4	-.382	.054	-.201	-.547	38	-.152	.078	.111	-.473
5	-.354	.083	-.055	-.661	39	-.124	.077	.139	-.418
6	-.317	.075	-.052	-.784	40	-.127	.070	.181	-.467
7	-.387	.054	-.184	-.580	41	-.137	.064	.096	-.396
8	-.265	.089	.011	-.601	42	-.148	.062	.047	-.468
9	-.244	.071	.201	-.571	43	-.170	.069	.089	-.521
10	-.251	.073	-.043	-.609	44	-.266	.090	.037	-.636
11	-.365	.053	-.189	-.550	45	-.183	.080	.329	-.473
12	-.145	.112	.287	-.517	46	-.161	.085	.184	-.514
13	-.382	.073	-.187	-.680	47	-.183	.110	.431	-.575
14	-.254	.068	-.069	-.546	48	-.293	.102	.283	-.697
15	.341	.119	.701	-.178	49	-.393	.088	.022	-.728
16	.574	.120	.930	.156	50	-.422	.085	-.151	-.770
17	.424	.094	.709	.140	51	-.389	.083	-.129	-.675
18	.555	.108	1.161	.162	52	-.250	.072	-.012	-.664
19	.561	.111	1.150	.157	53	-.303	.070	-.080	-.609
20	.521	.106	1.193	.144	54	.255	.139	.639	-.240
21	.564	.101	.886	.202	55	.472	.127	.847	.012
22	.469	.098	.753	.122	56	.624	.111	.901	.263
23	.354	.093	.630	.052	57	.625	.113	.925	.244
24	.122	.090	.535	-.168	58	.590	.110	.870	.220
25	-.307	.114	.062	-.763	59	.614	.106	.924	.275
26	-.075	.079	.151	-.414	60	.517	.102	.804	.223
27	-.186	.045	-.047	-.388	61	.367	.096	.665	.112
28	-.174	.048	-.027	-.450	62	.082	.101	.427	-.285
29	-.112	.051	.044	-.405	63	-.335	.124	.044	-.783
30	-.149	.056	.046	-.435	64	-.097	.092	.168	-.538
31	-.166	.062	.033	-.514	65	-.153	.040	-.041	-.352
32	-.177	.065	.178	-.711	66	-.135	.036	-.024	-.301
33	-.123	.070	.129	-.558	67	-.070	.036	.052	-.241
34	-.151	.063	.065	-.534	68	-.105	.041	.019	-.386

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.128	.046	.014	-.511	103	-.083	.042	.048	-.550
70	-.147	.048	.011	-.527	104	-.117	.045	.043	-.483
71	-.096	.057	.068	-.466	105	-.138	.049	.078	-.794
72	-.131	.054	.070	-.363	106	-.149	.053	.126	-.584
73	-.133	.053	.037	-.382	107	-.089	.049	.194	-.422
74	-.130	.054	.121	-.388	108	-.114	.050	.215	-.340
75	-.114	.050	.095	-.307	109	-.192	.054	.008	-.426
76	-.123	.052	.095	-.335	110	-.274	.077	.112	-.744
77	-.136	.057	.079	-.376	111	-.130	.077	.117	-.456
78	-.155	.072	.115	-.572	112	-.164	.068	.091	-.605
79	-.163	.085	.149	-.583	113	-.175	.072	.112	-.544
80	-.251	.100	.070	-.655	114	-.233	.064	-.029	-.478
81	-.198	.108	.190	-.760	115	-.108	.045	.042	-.264
82	-.196	.143	.384	-.738	116	-.127	.051	.040	-.417
83	-.237	.152	.289	-.836	117	-.136	.050	.016	-.391
84	-.326	.132	.333	-.764	118	-.136	.052	.022	-.440
85	-.384	.106	.115	-.787	119	-.129	.054	.036	-.369
86	-.394	.093	-.073	-.888	120	-.140	.056	.043	-.471
87	-.325	.119	-.012	-.963	121	-.153	.060	.052	-.530
88	-.000	-.000	-.000	-.000	122	-.173	.070	.053	-.618
89	.108	.148	.598	-.367	123	-.181	.075	.099	-.585
90	.494	.125	.864	.048	124	-.271	.095	.019	-.812
91	.484	.111	.778	.158	125	-.173	.080	.195	-.636
92	.542	.110	.904	.281	126	-.109	.109	.332	-.725
93	.529	.112	.894	.261	127	-.097	.140	.277	-.527
94	.501	.108	.854	.249	128	-.185	.179	.448	-.830
95	.532	.105	.882	.275	129	-.307	.175	.623	-.856
96	.447	.098	.821	.171	130	-.380	.156	.414	-1.024
97	.313	.095	.662	.049	131	-.376	.125	-.039	-.962
98	.059	.108	.493	-.264	132	-.145	.111	.149	-.576
99	-.295	.130	.017	-.801	133	-.333	.127	.065	-.896
100	-.090	.095	.191	-.475	134	-.020	.163	.565	-.604
101	-.157	.045	-.010	-.378	135	.294	.118	.660	-.099
102	-.149	.042	-.021	-.460	136	.460	.107	.760	.166

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.473	.107	.851	.203	171	-.265	.172	.315	-.883
138	.444	.104	.814	.187	172	-.314	.153	.271	-1.142
139	.476	.101	.859	.208	173	-.207	.131	.072	-.862
140	.385	.092	.690	.116	174	-.175	.138	.144	-.734
141	.256	.090	.589	-.018	175	-.015	.152	.458	-.544
142	.041	.109	.497	-.290	176	.238	.106	.607	-.042
143	-.275	.134	.167	-.720	177	.239	.101	.621	.020
144	-.096	.097	.174	-.483	178	.376	.084	.735	.155
145	-.175	.053	.023	-.431	179	.217	.081	.604	.011
146	-.164	.057	.005	-.466	180	-.172	.073	.061	-.441
147	-.098	.058	.070	-.407	181	-.048	.086	.230	-.467
148	-.126	.062	.088	-.480	182	-.058	.077	.263	-.306
149	-.146	.068	.162	-.613	183	-.094	.107	.334	-.523
150	-.155	.075	.159	-.550	184	-.089	.020	-.031	-.167
151	-.085	.079	.284	-.477	185	-.127	.062	.112	-.478
152	-.193	.071	.129	-.485	186	.009	.055	.193	-.293
153	-.204	.110	.335	-.711	187	.001	.062	.281	-.204
154	-.198	.111	.172	-.665	188	.013	.049	.193	-.152
155	-.066	.103	.215	-.505	189	-0.000	-0.000	-0.000	-0.000
156	-.134	.079	.109	-.494	190	-.024	.079	.327	-.297
157	-.153	.066	.068	-.393	191	.011	.064	.211	-.237
158	-.115	.056	.056	-.363	192	-.120	.071	.068	-.427
159	-.133	.055	.019	-.369	193	-.065	.052	.132	-.279
160	-.144	.058	.001	-.411	194	-.245	.105	.045	-.635
161	-.136	.061	.020	-.399	195	-.295	.094	-.081	-.691
162	-.145	.065	.036	-.444	196	-.197	.114	.051	-.743
163	-.151	.066	.042	-.471	197	-.370	.121	-.098	-.833
164	-.166	.072	.043	-.445	198	-.206	.074	.053	-.474
165	-.186	.082	.062	-.540	199	-.071	.043	.125	-.246
166	-.286	.103	-.033	-.745	200	-.027	.056	.229	-.447
167	-.190	.079	.169	-.452	201	.117	.086	.433	-.183
168	-.102	.100	.391	-.603	202	.073	.098	.662	-.388
169	-.083	.156	.363	-.797	203	-.086	.162	.394	-.733
170	-.155	.181	.434	-.814	204	-.127	.131	.234	-.625

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.457	.081	-.090	-.704	35	-.312	.094	.030	-.750
2	-.345	.072	-.048	-.582	36	-.311	.101	.026	-.735
3	-.288	.089	.002	-.670	37	-.279	.098	.036	-.677
4	-.350	.077	-.016	-.649	38	-.224	.098	.103	-.700
5	-.325	.086	.088	-.580	39	-.194	.080	.052	-.579
6	-.342	.061	-.143	-.587	40	-.208	.066	.028	-.551
7	-.428	.067	-.175	-.649	41	-.221	.061	-.026	-.523
8	-.299	.108	.097	-.605	42	-.250	.065	-.033	-.499
9	-.181	.082	.180	-.439	43	-.274	.073	-.029	-.577
10	-.294	.062	-.093	-.745	44	-.380	.088	-.075	-.751
11	-.463	.067	-.237	-.699	45	-.233	.068	.199	-.497
12	-.324	.077	-.029	-.558	46	-.029	.064	.248	-.371
13	-.252	.071	.044	-.538	47	.113	.132	.522	-.509
14	-.133	.061	.055	-.377	48	.040	.199	.641	-.497
15	.536	.116	.850	.156	49	-.237	.163	.439	-.660
16	.522	.109	.833	.157	50	-.324	.090	.222	-.663
17	.315	.089	.541	.020	51	-.281	.059	-.072	-.521
18	.456	.105	.835	.152	52	-.049	.091	.183	-.818
19	.55	.114	.905	.194	53	-.117	.079	.092	-.612
20	.468	.099	.714	.154	54	.497	.134	.858	.042
21	.472	.092	.718	.185	55	.459	.113	.763	.099
22	.365	.083	.633	.093	56	.525	.099	.785	.216
23	.198	.076	.461	-.113	57	.577	.117	.964	.245
24	-.114	.071	.197	-.528	58	.509	.104	.820	.202
25	-.614	.105	-.256	-.960	59	.501	.096	.802	.206
26	-.343	.095	-.058	-.673	60	.389	.087	.670	.110
27	-.273	.053	-.094	-.536	61	.182	.075	.475	-.049
28	-.233	.054	-.042	-.611	62	-.190	.082	.119	-.443
29	-.167	.054	.068	-.545	63	-.581	.124	-.197	-.932
30	-.200	.054	.019	-.499	64	-.345	.097	-.033	-.710
31	-.214	.056	-.026	-.536	65	-.228	.058	.072	-.496
32	-.224	.055	-.050	-.516	66	-.183	.050	.031	-.405
33	-.166	.055	.011	-.594	67	-.122	.049	.089	-.402
34	-.202	.059	-.008	-.474	68	-.159	.047	.004	-.550

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.180	.047	-.028	-.504	103	-.113	.054	.057	-.445
70	-.188	.046	-.044	-.441	104	-.146	.054	.050	-.465
71	-.132	.050	.055	-.364	105	-.167	.056	.013	-.504
72	-.221	.063	-.038	-.542	106	-.178	.057	.005	-.525
73	-.219	.059	-.041	-.457	107	-.114	.050	.039	-.403
74	-.220	.059	-.041	-.438	108	-.150	.055	.067	-.479
75	-.207	.054	-.035	-.516	109	-.241	.070	-.004	-.573
76	-.215	.053	-.035	-.506	110	-.318	.086	.028	-.900
77	-.224	.055	-.051	-.532	111	-.159	.083	.177	-.702
78	-.256	.067	-.035	-.596	112	-.223	.093	.056	-1.113
79	-.271	.078	.119	-.565	113	-.261	.112	.068	-.826
80	-.364	.090	-.046	-.705	114	-.310	.086	-.059	-.824
81	-.237	.067	.126	-.513	115	-.180	.054	.043	-.447
82	-.023	.078	.284	-.503	116	-.207	.067	.043	-.615
83	.083	.138	.523	-.405	117	-.220	.065	-.003	-.594
84	.009	.182	.734	-.567	118	-.230	.069	-.023	-.623
85	-.171	.165	.463	-.718	119	-.220	.066	-.038	-.552
86	-.234	.121	.394	-.748	120	-.233	.070	-.023	-.637
87	-.048	.096	.227	-.561	121	-.244	.074	-.045	-.599
88	-0.000	-0.000	-0.000	-0.000	122	-.285	.084	-.016	-.703
89	.354	.125	.676	.009	123	-.315	.090	-.057	-.710
90	.527	.108	.830	.230	124	-.416	.104	-.125	-.825
91	.431	.093	.686	.165	125	-.241	.064	.032	-.490
92	.496	.113	.855	.201	126	-.044	.063	.226	-.338
93	.514	.120	.898	.173	127	.081	.098	.393	-.542
94	.456	.108	.827	.154	128	.066	.136	.476	-.468
95	.457	.101	.799	.183	129	-.061	.162	.534	-.703
96	.341	.084	.653	.121	130	-.151	.143	.490	-.754
97	.154	.075	.452	-.081	131	-.183	.133	.200	-.702
98	-.181	.086	.248	-.466	132	.053	.080	.316	-.241
99	-.577	.124	-.139	-.917	133	-.153	.106	.247	-.564
100	-.320	.102	-.037	-.683	134	.283	.136	.736	-.112
101	-.214	.061	-.012	-.539	135	.289	.110	.654	.009
102	-.175	.056	.003	-.479	136	.388	.095	.717	.104

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.435	.111	.809	.150	171	-.008	.138	.509	-.497
138	.384	.101	.704	.111	172	-.066	.131	.355	-.623
139	.393	.093	.724	.153	173	-.032	.088	.183	-.413
140	.275	.081	.554	.068	174	.005	.115	.332	-.408
141	.109	.072	.412	-.113	175	.212	.116	.723	-.218
142	-.149	.084	.351	-.484	176	.264	.101	.622	.013
143	-.421	.125	-.086	-.885	177	.199	.091	.545	-.013
144	-.264	.100	.036	-.650	178	.335	.085	.619	.130
145	-.205	.064	.031	-.481	179	.098	.060	.399	-.098
146	-.172	.063	.071	-.577	180	-.173	.075	.094	-.559
147	-.111	.064	.089	-.590	181	-.116	.081	.131	-.536
148	-.149	.069	.181	-.718	182	-.153	.077	.076	-.505
149	-.171	.073	.080	-.711	183	-.239	.105	.227	-.789
150	-.186	.080	.132	-.663	184	-.208	.044	-.109	-.341
151	-.114	.077	.217	-.589	185	-.263	.140	.146	-.938
152	-.238	.086	.089	-.623	186	-.055	.093	.204	-.470
153	-.268	.116	.241	-.763	187	-.120	.101	.284	-.505
154	-.292	.121	.099	-.966	188	-.053	.077	.190	-.388
155	-.182	.121	.110	-.748	189	-0.000	-0.000	-0.000	-0.000
156	-.252	.107	.123	-.713	190	-.071	.058	.174	-.348
157	-.251	.091	.059	-.624	191	-.123	.089	.128	-.530
158	-.192	.079	.057	-.579	192	-.268	.096	-.020	-.626
159	-.222	.073	.016	-.570	193	-.156	.078	.106	-.567
160	-.269	.076	-.051	-.612	194	-.404	.113	-.160	-.914
161	-.283	.089	-.054	-.721	195	-.397	.086	-.167	-.745
162	-.291	.093	-.030	-.764	196	-.243	.108	.005	-.702
163	-.297	.095	-.029	-.728	197	-.436	.112	-.139	-.863
164	-.320	.094	.013	-.764	198	-.236	.074	-.006	-.482
165	-.339	.094	-.110	-.761	199	-.084	.041	.087	-.245
166	-.456	.100	-.173	-.922	200	-.007	.041	.170	-.247
167	-.300	.068	-.062	-.599	201	.162	.055	.406	-.143
168	-.104	.051	.333	-.381	202	.105	.075	.436	-.215
169	.041	.048	.355	-.367	203	.112	.102	.465	-.367
170	.057	.113	.394	-.487	204	.075	.085	.325	-.294

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 140

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.291	.098	.021	-.643	35	-.432	.142	-.059	-1.100
2	-.374	.107	.021	-.765	36	-.398	.146	.332	-1.169
3	-.389	.095	-.098	-.765	37	-.356	.120	.078	-.871
4	-.264	.116	.167	-.601	38	-.343	.104	-.004	-.838
5	-.253	.138	.301	-.765	39	-.363	.102	-.059	-.801
6	-.422	.071	-.167	-.692	40	-.398	.095	-.121	-.883
7	-.415	.102	.148	-.864	41	-.401	.090	-.115	-.774
8	-.423	.090	-.093	-.787	42	-.431	.086	-.132	-.778
9	.084	.121	.306	-.306	43	-.456	.095	-.170	-.821
10	-.348	.068	-.115	-.590	44	-.594	.124	-.226	-1.199
11	-.516	.078	-.288	-.762	45	-.374	.069	-.155	-.654
12	-.349	.074	-.087	-.581	46	-.088	.046	.073	-.332
13	.088	.077	.338	-.262	47	.120	.058	.407	-.121
14	.081	.090	.396	-.256	48	.269	.098	.726	-.137
15	.658	.114	.985	-.198	49	.331	.183	.808	-.434
16	.374	.120	.696	-.077	50	-.010	.240	.738	-.670
17	.311	.084	.552	-.006	51	-.169	.085	.196	-.440
18	.235	.087	.509	-.061	52	.214	.085	.453	-.197
19	.557	.125	.963	.064	53	.143	.092	.434	-.174
20	.400	.089	.677	.042	54	.626	.119	1.008	.243
21	.381	.083	.617	.090	55	.463	.124	.784	.047
22	.250	.076	.518	-.011	56	.447	.102	.714	.083
23	.075	.066	.319	-.148	57	.551	.130	.928	.159
24	-.214	.060	.008	-.440	58	.486	.098	.777	.138
25	-.438	.106	-.206	-.931	59	.440	.084	.693	.159
26	-.377	.083	-.116	-.770	60	.291	.072	.523	.050
27	-.336	.068	-.063	-.598	61	.069	.063	.281	-.177
28	-.320	.070	-.036	-.590	62	-.267	.071	-.043	-.544
29	-.261	.068	-.003	-.589	63	-.389	.124	-.106	-.909
30	-.298	.058	-.084	-.585	64	-.341	.097	-.051	-.730
31	-.318	.056	-.110	-.588	65	-.309	.082	-.013	-.633
32	-.326	.058	-.121	-.636	66	-.282	.076	.005	-.633
33	-.271	.064	.014	-.505	67	-.223	.074	.039	-.667
34	-.329	.076	-.107	-.652	68	-.257	.064	-.024	-.588

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 (UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 140

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.277	.062	-.039	-.650	103	-.201	.071	.110	-.576
70	-.282	.058	-.022	-.666	104	-.240	.072	-.039	-.730
71	-.222	.062	-.022	-.606	105	-.261	.071	-.064	-.731
72	-.392	.137	-.019	-1.044	106	-.264	.067	-.079	-.621
73	-.371	.118	-.046	-.916	107	-.191	.058	-.028	-.440
74	-.377	.121	-.070	-.946	108	-.232	.060	-.041	-.575
75	-.349	.103	-.046	-.805	109	-.271	.064	-.096	-.649
76	-.363	.095	-.089	-.857	110	-.278	.078	-.003	-.935
77	-.364	.088	-.104	-.745	111	-.229	.102	.223	-.795
78	-.420	.097	-.037	-.950	112	-.315	.141	.092	-1.015
79	-.436	.110	-.118	-1.025	113	-.373	.162	.165	-1.033
80	-.524	.124	-.204	-1.119	114	-.328	.132	.175	-.933
81	-.342	.075	-.129	-.650	115	-.309	.101	.022	-.797
82	-.034	.053	.354	-.262	116	-.349	.126	.001	-1.216
83	.189	.072	.446	-.175	117	-.359	.117	-.012	-.915
84	.292	.112	.677	-.296	118	-.375	.118	-.049	-.961
85	.225	.151	.699	-.522	119	-.359	.116	-.032	-1.122
86	.065	.134	.756	-.498	120	-.378	.106	-.096	-.961
87	.213	.092	.482	-.168	121	-.380	.099	-.059	-.906
88	.175	.106	.527	-.216	122	-.439	.110	-.049	-1.017
89	.527	.132	.902	.034	123	-.482	.115	-.141	-1.116
90	.412	.121	.799	.027	124	-.600	.131	-.256	-1.229
91	.361	.101	.693	.039	125	-.339	.074	-.109	-.664
92	.371	.104	.687	.037	126	-.058	.052	.102	-.295
93	.444	.132	.908	.090	127	.152	.056	.348	-.088
94	.403	.108	.700	.068	128	.228	.088	.499	-.150
95	.378	.090	.679	.107	129	.206	.121	.614	-.221
96	.226	.073	.469	.016	130	.126	.119	.689	-.336
97	.039	.066	.278	-.186	131	.104	.095	.380	-.332
98	-.248	.076	-.007	-.552	132	.268	.080	.584	-.002
99	-.362	.135	-.073	-.945	133	.178	.131	.598	-.255
100	-.319	.098	-.086	-.710	134	.489	.113	.931	.188
101	-.288	.078	-0.000	-.595	135	.284	.139	.717	-.212
102	-.262	.074	-.021	-.561	136	.312	.104	.677	-.037



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 140

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.361	.115	.763	.049	171	.209	.094	.541	-.096
138	.319	.095	.599	.068	172	.182	.109	.601	-.200
139	.307	.078	.571	.087	173	.252	.070	.501	.024
140	.181	.072	.502	0.000	174	.248	.107	.561	-.151
141	-.005	.061	.264	-.183	175	.373	.098	.813	.138
142	-.250	.073	-.041	-.518	176	.191	.115	.617	-.195
143	-.360	.133	-.104	-.906	177	.226	.091	.517	-.079
144	-.334	.100	-.076	-.754	178	.273	.092	.605	-.024
145	-.299	.086	-.060	-.726	179	-.009	.055	.220	-.198
146	-.275	.085	.025	-.722	180	-.273	.079	.025	-.720
147	-.214	.088	.169	-.774	181	-.213	.087	.076	-.909
148	-.242	.085	-.013	-.896	182	-.212	.079	.051	-.651
149	-.264	.086	-.050	-.987	183	-.287	.105	.018	-.888
150	-.269	.081	.050	-.849	184	-0.000	-0.000	-0.000	-0.000
151	-.202	.077	.066	-.673	185	-.375	.181	.102	-1.172
152	-.265	.071	-.026	-.613	186	-.180	.089	.174	-.619
153	-.304	.100	.003	-.955	187	-.184	.137	.526	-.526
154	-.279	.121	.100	-.987	188	-.131	.088	.206	-.389
155	-.280	.139	.052	-1.149	189	-0.000	-0.000	-0.000	-0.000
156	-.344	.139	.079	-1.130	190	-.188	.080	.098	-.473
157	-.365	.124	.060	-.874	191	-.296	.115	.144	-1.036
158	-.380	.116	.036	-.861	192	-.429	.121	.280	-1.362
159	-.405	.118	-.035	-.916	193	-.436	.128	-.081	-.927
160	-.439	.125	-.050	-.973	194	-.546	.142	.093	-1.198
161	-.435	.124	-.118	-1.067	195	-.383	.097	-.111	-.818
162	-.458	.121	-.148	-1.055	196	-.260	.125	.025	-.944
163	-.464	.118	-.135	-.958	197	-.489	.139	-.153	-1.082
164	-.491	.116	-.152	-1.061	198	-.235	.099	.078	-.635
165	-.515	.122	-.141	-.998	199	-.102	.053	.073	-.290
166	-.664	.130	-.311	-1.142	200	.185	.058	.486	.012
167	-.411	.083	-.145	-.748	201	.273	.063	.585	.098
168	-.118	.051	.053	-.288	202	.161	.064	.381	-.055
169	.092	.050	.269	-.092	203	.292	.085	.644	.013
170	.174	.067	.390	-.043	204	.259	.078	.585	-.008

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 150

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.245	.073	-.041	-.689	35	-.505	.120	-.148	-1.051
2	-.238	.061	-.038	-.520	36	-.475	.109	-.010	-.934
3	-.509	.088	-.159	-.945	37	-.464	.090	-.183	-.840
4	-.138	.112	.259	-.565	38	-.490	.091	-.228	-.885
5	-0.000	-0.000	-0.000	-0.000	39	-.487	.093	-.170	-.917
6	-0.000	-0.000	-0.000	-0.000	40	-.512	.089	-.238	-1.021
7	-0.000	-0.000	-0.000	-0.000	41	-.523	.090	-.226	-1.152
8	-0.000	-0.000	-0.000	-0.000	42	-.535	.080	-.292	-.885
9	.051	.139	.615	-.375	43	-.575	.108	-.154	-.940
10	-.370	.068	-.144	-.635	44	-.893	.135	-.455	-1.450
11	-.582	.073	-.309	-.888	45	-.462	.077	-.177	-.703
12	-.421	.065	-.160	-.663	46	-.094	.051	-.133	-.265
13	.255	.075	.480	-.037	47	.125	.055	.357	-.102
14	.336	.105	.624	-.016	48	.244	.066	.466	.025
15	.434	.130	.776	-.050	49	.395	.107	.859	.064
16	.024	.110	.364	-.340	50	.440	.157	.893	-.168
17	.073	.084	.332	-.213	51	.012	.071	.408	-.265
18	-0.000	-0.000	-0.000	-0.000	52	.412	.083	.634	.114
19	-0.000	-0.000	-0.000	-0.000	53	.390	.105	.685	.046
20	-0.000	-0.000	-0.000	-0.000	54	.397	.149	.860	-.182
21	-0.000	-0.000	-0.000	-0.000	55	.188	.114	.533	-.219
22	.128	.065	.325	-.096	56	.235	.096	.490	-.134
23	-.049	.057	.144	-.248	57	.273	.159	.798	-.148
24	-.298	.052	-.128	-.481	58	.401	.135	.905	.017
25	-.445	.063	-.264	-1.045	59	.333	.084	.605	.047
26	-.424	.056	-.228	-.685	60	.168	.067	.383	-.027
27	-.429	.059	-.194	-.672	61	-.043	.054	.166	-.204
28	-.409	.058	-.181	-.643	62	-.298	.056	-.136	-.493
29	-.392	.055	-.176	-.601	63	-.360	.073	-.165	-.690
30	-.417	.047	-.228	-.571	64	-.352	.070	.025	-.737
31	-.478	.050	-.216	-.652	65	-.378	.075	-.071	-.831
32	-.417	.057	-.203	-.656	66	-.336	.068	.140	-.770
33	-.402	.060	-.185	-.630	67	-.310	.061	.097	-.721
34	-.432	.067	-.228	-.697	68	-.340	.059	-.189	-.641

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 150

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.358	.056	-.166	-.648	103	-.257	.059	.006	-.682
70	-.332	.055	-.132	-.525	104	-0.000	-0.000	-0.000	-0.000
71	-.306	.059	-.071	-.540	105	-0.000	-0.000	-0.000	-0.000
72	-.507	.163	-.080	-1.278	106	-0.000	-0.000	-0.000	-0.000
73	-.479	.134	-.104	-1.189	107	-0.000	-0.000	-0.000	-0.000
74	-.487	.133	-.126	-1.371	108	-.273	.045	-.007	-.583
75	-.473	.123	-.115	-1.107	109	-.305	.045	-.157	-.468
76	-.487	.107	-.178	-1.157	110	-.275	.047	-.101	-.465
77	-.487	.096	-.219	-1.008	111	-.298	.093	.009	-.722
78	-.564	.112	-.241	-1.017	112	-.377	.120	-.050	-.943
79	-.635	.133	-.249	-1.175	113	-.418	.135	.166	-1.075
80	-.827	.152	-.386	-1.424	114	-.387	.121	-.058	-.922
81	-.466	.087	-.213	-.843	115	-.422	.121	.064	-.960
82	-.057	.059	.145	-.241	116	-.471	.147	-.049	-1.563
83	.201	.062	.402	-.009	117	-.473	.130	-.133	-1.175
84	.327	.077	.577	.075	118	-.486	.127	-.151	-1.217
85	.452	.114	.866	.059	119	-.464	.122	-.062	-1.108
86	.371	.121	.814	-.104	120	-.487	.112	-.173	-.980
87	.367	.089	.644	.100	121	-.492	.105	-.194	-.977
88	.374	.113	.703	.017	122	-.555	.123	-.239	-1.076
89	.374	.143	.810	-.090	123	-.636	.141	-.171	-1.195
90	.192	.105	.524	-.175	124	-.842	.147	-.435	-1.368
91	.177	.091	.433	-.189	125	-.427	.086	-.171	-.728
92	.172	.100	.453	-.182	126	-.059	.061	.175	-.249
93	.213	.133	.796	-.222	127	.172	.057	.380	.016
94	.304	.125	.710	-.136	128	.277	.074	.524	.068
95	.293	.088	.548	-.037	129	.365	.103	.714	.055
96	.148	.072	.724	-.441	130	.330	.109	.738	.010
97	-.042	.057	.324	-.539	131	.241	.207	.657	-.853
98	-.251	.057	.267	-.764	132	.375	.078	.632	.133
99	-.298	.066	.136	-.790	133	.359	.097	.660	.062
100	-.307	.066	.040	-.793	134	.429	.138	.848	.017
101	-.334	.067	-.012	-.797	135	.008	.142	.381	-.466
102	-.289	.063	-.001	-.824	136	.134	.091	.410	-.183

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 150

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.215	.143	.722	-.331	171	.306	.092	.629	.032
138	.266	.114	.612	-.225	172	.309	.104	.776	.049
139	.228	.082	.483	-.142	173	.323	.081	.628	.079
140	.094	.061	.326	-.161	174	.366	.099	.745	-.078
141	-.089	.048	.100	-.303	175	.318	.130	.755	-.077
142	-.258	.046	-.122	-.499	176	-.030	.120	.342	-.442
143	-.306	.054	-.160	-.601	177	.078	.090	.356	-.312
144	-.321	.053	.022	-.813	178	.153	.099	.504	-.182
145	-.336	.051	.010	-.691	179	-.096	.045	.079	-.269
146	-.298	.050	.058	-.684	180	-.307	.047	-.169	-.608
147	-.263	.047	.031	-.676	181	-.264	.041	-.139	-.480
148	-.292	.042	-.165	-.475	182	-.254	.047	-.142	-.481
149	-.313	.041	-.198	-.475	183	-.315	.058	-.178	-.591
150	-.288	.041	-.169	-.480	184	-0.000	-0.000	-0.000	-0.000
151	-.256	.042	-.131	-.440	185	-.479	.158	-.144	-1.401
152	-.304	.045	-.172	-.516	186	-.226	.077	.075	-.543
153	-.344	.060	-.184	-.992	187	-.181	.138	.562	-.752
154	-.345	.088	-.069	-.980	188	-.111	.091	.229	-.466
155	-.331	.100	-.022	-.802	189	-0.000	-0.000	-0.000	-0.000
156	-.417	.119	-.031	-1.016	190	-.294	.079	-.038	-.555
157	-.446	.108	.137	-.976	191	-.363	.100	-.068	-.660
158	-.471	.214	.506	-1.067	192	-.518	.097	-.276	-.879
159	-.527	.114	-.173	-.953	193	-.631	.122	-.242	-1.102
160	-.539	.111	-.236	-.985	194	-.643	.112	-.361	-1.100
161	-.534	.112	-.248	-1.014	195	-.455	.079	-.168	-.834
162	-.562	.107	-.286	-.979	196	-.278	.111	.041	-.694
163	-.571	.108	-.309	-.989	197	-.512	.131	-.140	-.950
164	-.593	.109	-.339	-.979	198	-.233	.101	.113	-.537
165	-.587	.148	-.203	-1.170	199	-.099	.070	.177	-.302
166	-.846	.145	-.450	-1.405	200	.197	.069	.501	.013
167	-.466	.102	-.035	-.796	201	.289	.073	.603	.125
168	-.108	.066	.136	-.307	202	.208	.087	.577	.001
169	.126	.063	.339	-.046	203	.307	.089	.631	.098
170	.225	.073	.476	.019	204	.288	.086	.592	.080

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTEK BUILDING  
 WIND DIRECTION 160

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.710	.105	-.244	-1.088	35	-.495	.074	-.259	-.890
2	-.522	.093	-.234	-.908	36	-.518	.082	-.246	-.971
3	-.692	.066	-.492	-1.020	37	-.518	.078	-.284	-.974
4	-.511	.103	-.145	-.853	38	-.528	.082	-.247	-1.107
5	-.512	.109	-.042	-.883	39	-.517	.080	-.255	-.948
6	-.456	.125	-.027	-.815	40	-.543	.075	-.304	-.942
7	-.662	.090	-.311	-1.014	41	-.555	.071	-.360	-.903
8	-.667	.069	-.446	-.886	42	-.545	.065	-.330	-.813
9	-.321	.119	.247	-.665	43	-.460	.103	-.103	-.880
10	-.460	.090	.004	-.761	44	-.949	.141	-.464	-1.382
11	-.771	.075	-.481	-1.048	45	-.367	.082	.022	-.647
12	-.600	.068	-.386	-.860	46	.010	.065	.301	-.213
13	.323	.081	.584	.071	47	.208	.067	.421	-.039
14	.615	.104	.966	.291	48	.300	.075	.519	.061
15	-.040	.147	.428	-.607	49	.384	.087	.618	.103
16	-.432	.084	-.153	-.789	50	.522	.125	.883	.106
17	-.400	.091	-.040	-.976	51	.177	.086	.582	-.119
18	-.291	.084	.039	-.689	52	.558	.103	.846	.200
19	-.205	.245	.726	-.865	53	.574	.119	.945	.112
20	.285	.224	.850	-.715	54	-.087	.183	.454	-.603
21	.288	.101	.760	-.175	55	-.336	.095	-.005	-.810
22	.068	.064	.691	-.377	56	-.180	.105	.193	-.618
23	-.131	.049	.360	-.481	57	-.138	.134	.497	-.653
24	-.324	.052	.275	-.707	58	.046	.182	.668	-.615
25	-.382	.055	.076	-.681	59	.226	.134	.631	-.360
26	-.394	.050	-.071	-.827	60	.090	.078	.474	-.206
27	-.414	.050	-.186	-.785	61	-.123	.049	.068	-.360
28	-.387	.051	.009	-.798	62	-.328	.054	-.150	-.654
29	-.353	.049	-.024	-.748	63	-.338	.066	-.166	-.658
30	-.398	.047	-.251	-.596	64	-.358	.070	.040	-.939
31	-.427	.050	-.275	-.633	65	-.384	.072	-0.000	-.719
32	-.412	.055	-.245	-.620	66	-.341	.064	.045	-.612
33	-.384	.055	-.229	-.614	67	-.303	.058	-.052	-.514
34	-.426	.061	-.249	-.688	68	-.329	.050	-.110	-.571

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 160

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.349	.050	-.118	-.560	103	-.258	.044	-.144	-.492
70	-.322	.052	-.074	-.504	104	-.287	.039	-.130	-.431
71	-.289	.055	-.076	-.512	105	-.304	.037	-.142	-.433
72	-.534	.128	-.159	-1.327	106	-.283	.038	-.120	-.435
73	-.513	.106	-.162	-1.263	107	-.245	.034	-.074	-.392
74	-.515	.100	-.232	-1.181	108	-.283	.038	-.168	-.407
75	-.485	.085	-.201	-1.062	109	-.405	.041	-.251	-.555
76	-.502	.075	-.269	-1.032	110	-.470	.053	-.305	-.705
77	-.509	.069	-.288	-.901	111	-.390	.088	-.105	-.779
78	-.552	.083	-.304	-.993	112	-.464	.105	-.138	-1.002
79	-.608	.144	-.054	-1.137	113	-.507	.116	-.034	-1.069
80	-.953	.126	-.294	-1.375	114	-.581	.103	-.143	-1.203
81	-.424	.097	.227	-.751	115	-.447	.089	-.107	-.842
82	.028	.072	.368	-.198	116	-.488	.107	-.192	-1.165
83	.289	.069	.566	.055	117	-.484	.090	-.227	-1.022
84	.397	.075	.644	.155	118	-.495	.090	-.211	-1.058
85	.499	.088	.742	.237	119	-.471	.079	-.271	-.938
86	.569	.112	.920	.269	120	-.496	.076	-.289	-.912
87	.487	.098	.796	.182	121	-.508	.075	-.311	-.956
88	.540	.118	.932	.157	122	-.536	.089	-.327	-1.000
89	-.239	.182	.272	-.964	123	-.573	.163	-.143	-1.171
90	-.207	.111	.106	-1.005	124	-.898	.143	-.443	-1.402
91	-.234	.112	.112	-.795	125	-.371	.104	.033	-.676
92	-.127	.101	.193	-.591	126	.021	.079	.295	-.213
93	-.146	.122	.403	-.650	127	.259	.068	.528	.077
94	-.026	.149	.488	-.552	128	.354	.081	.648	.129
95	.126	.133	.667	-.309	129	.438	.093	.751	.191
96	.049	.081	.497	-.358	130	.492	.113	.903	.216
97	-.121	.054	.223	-.455	131	.449	.103	.780	.130
98	-.288	.056	.139	-.775	132	.448	.105	.851	.193
99	-.307	.064	.072	-.669	133	.419	.124	.884	.036
100	-.317	.055	-.152	-.655	134	.146	.199	.747	-.540
101	-.337	.056	-.169	-.633	135	-.523	.164	-.068	-1.111
102	-.298	.049	-.144	-.570	136	-.192	.123	.142	-.601

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 160

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.106	.165	.486	-.593	171	.367	.100	.721	.106
138	.041	.163	.539	-.504	172	.417	.119	.859	.109
139	.119	.103	.466	-.364	173	.219	.097	.633	-.018
140	.007	.062	.193	-.310	174	.328	.135	.809	-.154
141	-.160	.042	.014	-.334	175	.028	.207	.597	-.650
142	-.291	.046	.090	-.487	176	-.357	.112	-.004	-.747
143	-.299	.047	-.150	-.589	177	-.332	.119	.027	-.889
144	-.310	.041	-.200	-.535	178	-.071	.121	.345	-.608
145	-.329	.042	-.202	-.568	179	-.181	.051	.008	-.534
146	-.296	.039	-.175	-.501	180	-.313	.054	-.084	-.795
147	-.259	.037	-.150	-.442	181	-.262	.045	-.063	-.700
148	-.301	.036	-.155	-.422	182	-.354	.045	-.232	-.555
149	-.320	.036	-.192	-.441	183	-.430	.055	-.284	-.713
150	-.295	.037	-.177	-.435	184	-0.000	-0.000	-0.000	-0.000
151	-.261	.038	-.130	-.401	185	-.862	.180	-.457	-1.673
152	-.402	.039	-.257	-.549	186	-.344	.086	-.082	-.682
153	-.426	.049	-.245	-.630	187	-.205	.152	.402	-.588
154	-.516	.074	-.281	-.806	188	-.097	.085	.291	-.394
155	-.402	.087	-.136	-.754	189	-0.000	-0.000	-0.000	-0.000
156	-.498	.106	-.013	-.904	190	-.290	.082	-.051	-.587
157	-.527	.096	-.121	-1.026	191	-.389	.111	-.093	-.731
158	-.550	.101	-.110	-1.006	192	-.589	.110	-.270	-.974
159	-.557	.092	-.182	-.927	193	-.719	.112	-.369	-1.181
160	-.577	.088	-.317	-1.027	194	-.794	.108	-.543	-1.229
161	-.547	.083	-.328	-.948	195	-.625	.080	-.388	-.990
162	-.576	.080	-.376	-.946	196	-.279	.105	.020	-.747
163	-.590	.083	-.388	-.967	197	-.490	.138	-.132	-1.008
164	-.585	.083	-.381	-.952	198	-.183	.113	.267	-.534
165	-.522	.150	-.191	-1.111	199	-.056	.081	.249	-.415
166	-.853	.168	-.396	-1.430	200	.143	.091	.493	-.106
167	-.402	.125	-.004	-.781	201	.333	.094	.718	.097
168	-.030	.084	.330	-.259	202	.283	.097	.605	.019
169	.207	.080	.489	-.006	203	.332	.104	.761	.106
170	.297	.089	.606	.056	204	.332	.103	.752	.105

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.843	.094	-.451	-1.254	35	-.532	.074	-.295	-1.056
2	-.632	.123	-.206	-1.155	36	-.560	.087	-.271	-1.049
3	-.808	.088	-.498	-1.125	37	-.559	.079	-.312	-1.036
4	-.844	.087	-.486	-1.130	38	-.570	.080	-.311	-1.104
5	-.644	.123	-.099	-1.148	39	-.543	.075	-.289	-1.182
6	-.357	.100	.016	-.763	40	-.569	.069	-.356	-1.089
7	-.916	.084	-.643	-1.287	41	-.575	.065	-.386	-1.005
8	-.800	.087	-.518	-1.271	42	-.533	.058	-.330	-.846
9	-.407	.122	.121	-.831	43	-.315	.082	-.067	-.712
10	-.353	.116	.094	-.829	44	-.767	.159	-.285	-1.396
11	-.836	.084	-.541	-1.172	45	-.200	.098	.175	-.531
12	-.711	.091	-.458	-1.345	46	.129	.082	.420	-.161
13	.386	.110	.678	-.096	47	.315	.082	.573	.043
14	.657	.141	.982	-.016	48	.381	.088	.628	.098
15	-.552	.148	.029	-1.030	49	.434	.094	.705	.114
16	-.649	.096	-.322	-1.142	50	.505	.112	.838	.133
17	-.724	.113	-.311	-1.381	51	.384	.106	.819	.035
18	-.537	.090	-.260	-.952	52	.617	.115	.917	.180
19	-.593	.112	-.009	-1.108	53	.564	.139	.937	.106
20	-.451	.167	.472	-.883	54	-.673	.155	-.099	-1.203
21	-.044	.204	.650	-.611	55	-.694	.106	-.368	-1.274
22	.001	.133	.408	-.501	56	-.558	.102	-.236	-1.132
23	-.197	.071	.008	-.548	57	-.541	.107	-0.000	-1.086
24	-.365	.072	-.078	-.725	58	-.491	.146	.306	-1.134
25	-.448	.088	-.192	-.871	59	-.260	.191	.386	-.888
26	-.440	.068	-.221	-.728	60	-.149	.186	.396	-.824
27	-.436	.061	-.257	-.704	61	-.251	.104	.077	-.777
28	-.405	.057	-.209	-.639	62	-.402	.088	-.010	-.886
29	-.365	.054	-.206	-.558	63	-.432	.107	-.187	-1.000
30	-.418	.055	-.250	-.621	64	-.414	.086	-.156	-.833
31	-.450	.056	-.279	-.648	65	-.410	.082	-.069	-.825
32	-.439	.061	-.238	-.695	66	-.369	.066	-.143	-.754
33	-.405	.063	-.212	-.690	67	-.328	.058	-.132	-.670
34	-.444	.064	-.238	-.841	68	-.362	.051	-.223	-.638



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 (UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.382	.050	-.222	-.606	103	-.268	.044	-.126	-.503
70	-.352	.051	-.120	-.600	104	-.305	.040	-.164	-.555
71	-.309	.052	-.074	-.514	105	-.323	.037	-.164	-.480
72	-.541	.113	-.114	-1.191	106	-.299	.035	-.159	-.454
73	-.517	.088	-.216	-1.160	107	-.259	.032	-.145	-.352
74	-.525	.083	-.301	-1.188	108	-.289	.036	-.142	-.412
75	-.494	.073	-.243	-.946	109	-.409	.038	-.267	-.588
76	-.512	.065	-.333	-.901	110	-.476	.048	-.311	-.711
77	-.521	.065	-.346	-.924	111	-.383	.090	-.121	-.883
78	-.527	.061	-.343	-.829	112	-.461	.100	-.165	-1.027
79	-.376	.122	-.020	-.897	113	-.492	.116	.011	-1.307
80	-.787	.148	-.363	-1.241	114	-.574	.103	-.031	-.940
81	-.213	.110	.137	-.545	115	-.452	.076	-.233	-.819
82	.184	.088	.501	-.091	116	-.492	.084	-.259	-1.128
83	.405	.091	.667	.126	117	-.490	.070	-.295	-.943
84	.492	.100	.771	.184	118	-.504	.069	-.262	-.910
85	.557	.109	.868	.230	119	-.493	.068	-.190	-.948
86	.616	.123	1.008	.249	120	-.519	.066	-.357	-.946
87	.506	.114	.829	.073	121	-.533	.068	-.352	-.971
88	.474	.146	.907	-.067	122	-.522	.063	-.346	-.843
89	-.800	.166	-.195	-1.434	123	-.380	.122	-.033	-.994
90	-.607	.131	-.221	-1.207	124	-.750	.151	-.292	-1.280
91	-.643	.117	-.246	-1.109	125	-.195	.111	.246	-.587
92	-.489	.111	-.113	-.982	126	.160	.089	.446	-.093
93	-.530	.136	-.330	-1.073	127	.347	.089	.637	.114
94	-.445	.172	.329	-.919	128	.427	.101	.735	.163
95	-.235	.206	.463	-.842	129	.482	.108	.794	.182
96	-.232	.173	.267	-.804	130	.535	.121	.906	.194
97	-.268	.109	.057	-.720	131	.524	.109	.869	.230
98	-.349	.085	.046	-.671	132	.462	.111	.813	.100
99	-.395	.084	-.122	-.774	133	.331	.148	.857	-.220
100	-.351	.063	-.183	-.632	134	-.322	.256	.358	-1.310
101	-.353	.063	-.135	-.621	135	-.873	.157	-.427	-1.506
102	-.311	.053	-.150	-.629	136	-.542	.123	-.161	-.900

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.536	.132	.205	-1.125	171	.423	.104	.781	.169
138	-.426	.187	.469	-1.201	172	.465	.115	.843	.182
139	-.210	.188	.520	-.791	173	.231	.110	.610	-.088
140	-.180	.143	.171	-.700	174	.227	.159	.698	-.343
141	-.265	.074	-.052	-.611	175	-.363	.209	.289	-1.051
142	-.346	.066	-.084	-.638	176	-.652	.128	-.326	-1.212
143	-.353	.067	-.184	-.663	177	-.619	.126	-.259	-1.147
144	-.349	.056	-.147	-.610	178	-.375	.146	.219	-.857
145	-.356	.050	-.151	-.650	179	-.284	.075	.015	-.661
146	-.325	.044	-.170	-.537	180	-.318	.041	-.190	-.511
147	-.282	.040	-.143	-.443	181	-.270	.033	-.126	-.396
148	-.305	.033	-.212	-.441	182	-.350	.037	-.247	-.482
149	-.323	.032	-.220	-.425	183	-.430	.050	-.292	-.631
150	-.303	.033	-.184	-.414	184	-0.000	-0.000	-0.000	-0.000
151	-.265	.033	-.159	-.379	185	-.861	.179	-.397	-1.654
152	-.406	.036	-.273	-.524	186	-.377	.094	.014	-.677
153	-.426	.046	-.264	-.607	187	-.113	.146	.502	-.510
154	-.503	.069	-.274	-1.097	188	-.083	.075	.223	-.318
155	-.417	.093	-.130	-.852	189	-0.000	-0.000	-0.000	-0.000
156	-.455	.124	.079	-.859	190	-.211	.071	.030	-.485
157	-.501	.120	.382	-.884	191	-.326	.091	-.072	-.737
158	-.539	.107	-.009	-.998	192	-.529	.106	-.243	-.924
159	-.554	.095	-.046	-.962	193	-.688	.118	-.237	-1.180
160	-.584	.088	-.259	-1.104	194	-.795	.116	-.413	-1.326
161	-.574	.079	-.337	-.945	195	-.571	.085	-.294	-.901
162	-.607	.073	-.395	-.969	196	-.192	.090	.143	-.465
163	-.627	.076	-.402	-.994	197	-.358	.129	.064	-.841
164	-.583	.067	-.395	-.867	198	-.072	.118	.468	-.386
165	-.384	.098	-.103	-.875	199	.033	.080	.386	-.195
166	-.711	.157	-.262	-1.311	200	.203	.094	.533	-.048
167	-.238	.116	.244	-.639	201	.379	.098	.764	.111
168	.108	.091	.467	-.182	202	.337	.099	.813	.103
169	.305	.090	.618	.056	203	.349	.102	.736	.115
170	.376	.097	.696	.130	204	.359	.105	.745	.131

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.815	.105	-.430	-1.214	35	-.547	.097	-.162	-1.040
2	-.787	.134	-.261	-1.387	36	-.597	.126	-.155	-1.249
3	-.825	.096	-.489	-1.251	37	-.596	.108	-.178	-1.216
4	-.835	.079	-.432	-1.156	38	-.622	.108	-.225	-1.223
5	-.639	.151	.071	-1.257	39	-.597	.092	-.217	-1.172
6	-.622	.141	-.039	-1.182	40	-.624	.083	-.409	-1.174
7	-.779	.073	-.530	-1.021	41	-.628	.082	-.432	-1.158
8	-.797	.099	-.454	-1.204	42	-.542	.060	-.314	-.833
9	-.511	.172	.203	-1.207	43	-.236	.071	.006	-.545
10	-.300	.202	.491	-1.052	44	-.592	.129	-.138	-1.178
11	-.758	.072	-.457	-1.019	45	-.032	.101	.564	-.426
12	-.724	.086	-.448	-1.187	46	.251	.093	.587	-.075
13	-.591	.110	.863	.157	47	.392	.098	.703	.090
14	.592	.139	.929	.124	48	.440	.104	.783	.146
15	-.992	.131	-.507	-1.422	49	.467	.106	.791	.167
16	-.931	.109	-.576	-1.270	50	.498	.114	.843	.145
17	-.934	.111	-.522	-1.455	51	.460	.113	.806	.052
18	-.885	.116	-.418	-1.381	52	.658	.109	.998	.299
19	-.900	.128	-.430	-1.495	53	.473	.145	.996	-.013
20	-.746	.134	.183	-1.238	54	-.905	.126	-.548	-1.585
21	-.377	.163	.445	-.862	55	-.806	.113	-.496	-1.801
22	-.243	.133	.220	-.748	56	-.764	.102	-.459	-1.885
23	-.368	.077	-.070	-.673	57	-.766	.109	-.309	-1.441
24	-.471	.098	.028	-.817	58	-.740	.127	-.205	-1.405
25	-.579	.113	-.259	-1.162	59	-.645	.152	.075	-1.281
26	-.537	.097	-.275	-.917	60	-.621	.175	.190	-1.248
27	-.493	.085	-.234	-.874	61	-.556	.176	.030	-1.156
28	-.429	.082	-.156	-.821	62	-.495	.164	.183	-1.132
29	-.377	.076	-.113	-.715	63	-.448	.135	-.036	-.954
30	-.417	.075	-.162	-.783	64	-.440	.122	-.006	-1.025
31	-.445	.075	-.185	-.813	65	-.449	.113	-.088	-.969
32	-.434	.075	-.189	-.740	66	-.410	.093	-.056	-.795
33	-.403	.074	-.121	-.740	67	-.364	.080	-.098	-.701
34	-.441	.078	-.122	-.787	68	-.375	.065	-.179	-.606

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.394	.062	-.219	-.598	103	-.315	.074	-.069	-.758
70	-.362	.059	-.168	-.573	104	-.343	.054	-.162	-.586
71	-.326	.062	-.118	-.579	105	-.361	.048	-.194	-.554
72	-.549	.124	-.136	-1.222	106	-.331	.043	-.158	-.507
73	-.529	.100	-.228	-1.209	107	-.291	.039	-.139	-.421
74	-.542	.096	-.294	-1.075	108	-.337	.123	-.199	-2.406
75	-.527	.095	-.185	-1.178	109	-.364	.049	-.175	-.517
76	-.546	.091	-.322	-1.201	110	-.362	.058	-.179	-.698
77	-.556	.093	-.333	-1.196	111	-.356	.091	-.063	-.824
78	-.536	.077	-.183	-.897	112	-.418	.101	-.136	-.900
79	-.255	.090	.086	-.664	113	-.413	.131	.138	-.927
80	-.638	.132	-.155	-1.068	114	-.430	.134	.469	-1.064
81	-.043	.106	.426	-.500	115	-.441	.098	.096	-.814
82	.318	.098	.642	-.209	116	-.505	.104	-.006	-1.004
83	.498	.101	.864	.220	117	-.512	.088	-.203	-.984
84	.566	.109	.919	.248	118	-.540	.094	-.262	-1.083
85	.603	.113	.945	.258	119	-.524	.084	-.285	-1.001
86	.636	.120	1.029	.262	120	-.554	.082	-.341	-.985
87	.573	.122	.919	.222	121	-.571	.086	-.354	-.991
88	.349	.177	.848	-.312	122	-.525	.069	-.333	-.854
89	-.947	.167	-.564	-1.938	123	-.263	.078	.058	-.564
90	-.805	.134	-.492	-1.592	124	-.591	.130	-.080	-1.062
91	-.784	.108	-.474	-1.406	125	-.046	.099	.404	-.355
92	-.741	.114	-.388	-1.226	126	.264	.095	.600	-.043
93	-.791	.129	-.245	-1.493	127	.429	.098	.835	.138
94	-.757	.149	.084	-1.365	128	.486	.111	.978	.143
95	-.650	.179	.143	-1.261	129	.516	.116	.938	.158
96	-.597	.177	.036	-1.149	130	.540	.123	.948	.154
97	-.527	.165	.077	-1.121	131	.551	.120	.917	.229
98	-.459	.152	.140	-1.042	132	.475	.124	.829	-.020
99	-.424	.124	-.058	-.868	133	.188	.189	.664	-.454
100	-.407	.109	-.052	-.934	134	-.748	.223	.061	-1.582
101	-.411	.110	-.101	-1.049	135	-.903	.155	-.484	-1.633
102	-.361	.089	-.125	-.893	136	-.741	.108	-.420	-1.121

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.792	.150	.051	-2.618	171	.429	.109	.771	.103
138	-.735	.170	.111	-2.127	172	.447	.115	.832	.123
139	-.575	.183	.227	-1.789	173	.319	.122	.717	-.054
140	-.471	.167	.062	-.967	174	.043	.196	.641	-.669
141	-.437	.127	-.012	-.899	175	-.695	.197	-.097	-1.365
142	-.416	.110	.039	-.807	176	-.763	.127	-.434	-1.325
143	-.405	.096	-.135	-.815	177	-.707	.118	-.344	-1.149
144	-.399	.091	-.153	-.773	178	-.678	.127	-.213	-1.152
145	-.395	.082	-.159	-.839	179	-.447	.115	-.032	-.836
146	-.352	.067	-.162	-.666	180	-.348	.053	-.171	-.562
147	-.308	.058	-.121	-.566	181	-.286	.041	-.185	-.463
148	-.343	.043	-.207	-.538	182	-.317	.044	-.178	-.513
149	-.361	.041	-.214	-.525	183	-.384	.064	-.208	-.769
150	-.336	.041	-.211	-.553	184	-0.000	-0.000	-0.000	-0.000
151	-.299	.041	-.174	-.510	185	-.772	.232	-.250	-1.672
152	-.359	.047	-.230	-.572	186	-.390	.092	-.108	-.736
153	-.388	.056	-.240	-.643	187	-.038	.140	.648	-.359
154	-.392	.070	-.187	-.709	188	-.035	.073	.273	-.246
155	-.425	.107	-.150	-1.064	189	-0.000	-0.000	-0.000	-0.000
156	-.375	.135	.116	-.931	190	-.182	.065	.065	-.438
157	-.436	.153	.486	-.903	191	-.255	.070	-.043	-.514
158	-.512	.134	.051	-.981	192	-.428	.099	-.168	-.756
159	-.537	.115	-.075	-.952	193	-.642	.138	-.271	-1.214
160	-.585	.103	-.135	-1.012	194	-.734	.127	-.392	-1.253
161	-.593	.094	-.217	-.965	195	-.412	.089	-.048	-.795
162	-.639	.086	-.385	-1.052	196	-.095	.083	.158	-.473
163	-.674	.091	-.428	-1.104	197	-.194	.120	.136	-.683
164	-.579	.069	-.372	-.843	198	.072	.104	.412	-.272
165	-.279	.072	-.045	-.594	199	.137	.080	.445	-.093
166	-.502	.136	-.114	-.985	200	.348	.093	.783	.076
167	-.052	.113	.349	-.414	201	.416	.094	.850	.170
168	.224	.103	.606	-.113	202	.368	.108	.797	.100
169	.367	.102	.726	.057	203	.388	.097	.748	.135
170	.412	.106	.742	.080	204	.394	.100	.751	.126

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.666	.105	-.302	-1.220	35	-.560	.125	-.140	-1.078
2	-.637	.132	-.239	-1.250	36	-.589	.159	-.135	-1.318
3	-.653	.097	-.338	-1.119	37	-.602	.132	-.107	-1.160
4	-.674	.088	-.393	-1.030	38	-.632	.129	-.207	-1.208
5	-.596	.123	-.217	-1.127	39	-.615	.112	-.282	-1.133
6	-.569	.096	-.250	-.968	40	-.609	.109	-.278	-1.201
7	-.631	.090	-.356	-.933	41	-.632	.116	-.320	-1.237
8	-.651	.097	-.370	-1.035	42	-.517	.083	-.279	-.887
9	-.582	.154	-.034	-1.238	43	-.147	.076	.099	-.490
10	-.551	.126	-.092	-1.074	44	-.375	.111	.058	-.854
11	-.600	.084	-.368	-.937	45	.185	.114	.594	-.230
12	-.622	.091	-.347	-.976	46	.396	.114	.746	-.010
13	-.609	.116	.907	.191	47	.481	.115	.777	.003
14	.458	.139	.865	-.081	48	.529	.118	.852	.035
15	-.684	.161	-.323	-1.719	49	.508	.117	.807	.025
16	-.659	.145	-.352	-1.621	50	.509	.120	.887	-.001
17	-.618	.121	-.293	-1.108	51	.478	.113	.955	.079
18	-.674	.115	-.267	-1.140	52	.655	.118	1.005	.239
19	-.645	.122	-.267	-1.368	53	.305	.154	.719	-.256
20	-.630	.125	-.249	-1.323	54	-.650	.160	-.262	-1.490
21	-.578	.121	-.069	-1.108	55	-.590	.122	-.276	-1.190
22	-.582	.124	.021	-1.210	56	-.527	.110	-.220	-1.022
23	-.562	.125	-.031	-1.077	57	-.636	.130	-.269	-1.316
24	-.513	.138	.028	-1.204	58	-.629	.140	-.220	-1.421
25	-.437	.126	-.041	-1.058	59	-.588	.148	.086	-1.404
26	-.459	.110	-.083	-.992	60	-.606	.157	.141	-1.346
27	-.491	.110	-.132	-.961	61	-.613	.161	.043	-1.378
28	-.447	.095	-.157	-.960	62	-.591	.180	.036	-1.378
29	-.398	.085	-.105	-.801	63	-.485	.150	.045	-1.054
30	-.425	.081	-.198	-.754	64	-.473	.120	-.063	-1.035
31	-.444	.084	-.136	-.777	65	-.526	.141	-.067	-1.302
32	-.425	.088	-.097	-.808	66	-.437	.105	-.106	-.990
33	-.392	.092	-.027	-.817	67	-.363	.082	-.027	-.685
34	-.473	.101	-.159	-.913	68	-.376	.066	-.086	-.608

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
OUTER BUILDING  
WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.393	.062	-.122	-.624	103	-.359	.076	-.107	-.706
70	-.376	.065	-.079	-.692	104	-.380	.059	-.162	-.613
71	-.349	.073	-.117	-.752	105	-.401	.057	-.204	-.603
72	-.554	.162	.014	-1.477	106	-.381	.059	-.213	-.592
73	-.555	.138	-.032	-1.493	107	-.342	.056	-.166	-.525
74	-.581	.136	-.087	-1.432	108	-.362	.063	-.131	-.567
75	-.553	.116	-.251	-1.329	109	-.389	.066	-.183	-.659
76	-.544	.108	-.274	-1.196	110	-.397	.075	-.144	-.818
77	-.567	.108	-.308	-1.144	111	-.378	.094	-.113	-.768
78	-.539	.090	-.291	-.978	112	-.439	.111	-.156	-1.018
79	-.186	.081	.168	-.512	113	-.449	.131	-.141	-.896
80	-.451	.114	.010	-.866	114	-.483	.147	.374	-1.047
81	.133	.104	.633	-.306	115	-.496	.127	.130	-1.006
82	.427	.107	.777	.041	116	-.538	.132	.034	-1.220
83	.556	.117	.954	.109	117	-.564	.113	-.145	-1.119
84	.629	.121	1.045	.169	118	-.604	.115	-.045	-1.229
85	.617	.121	1.044	.198	119	-.599	.112	-.317	-1.478
86	.626	.125	1.031	.221	120	-.603	.112	-.337	-1.343
87	.547	.131	.933	-.048	121	-.638	.118	-.357	-1.456
88	.197	.182	.761	-.470	122	-.564	.090	-.253	-1.105
89	-.706	.206	-.261	-1.835	123	-.224	.074	.082	-.535
90	-.600	.158	-.236	-1.373	124	-.427	.122	.087	-.899
91	-.591	.137	-.225	-1.341	125	.119	.112	.543	-.247
92	-.602	.128	-.307	-1.097	126	.386	.109	.736	.086
93	-.657	.143	-.350	-1.406	127	.505	.105	.866	.240
94	-.643	.147	-.309	-1.274	128	.569	.114	.990	.275
95	-.594	.152	-.088	-1.349	129	.552	.115	.971	.261
96	-.605	.160	.019	-1.273	130	-0.000	-0.000	-0.000	-0.000
97	-.596	.164	-.009	-1.388	131	.563	.123	1.023	.210
98	-.559	.175	-.021	-1.482	132	.488	.128	.872	.018
99	-.456	.147	-.025	-1.114	133	.040	.183	.536	-.645
100	-.464	.122	-.089	-1.083	134	-.914	.214	-.296	-1.671
101	-.506	.137	-.125	-1.429	135	-.693	.151	-.268	-1.747
102	-.425	.098	-.109	-.949	136	-.598	.132	-.242	-1.200

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLIVER BUILDING  
 WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.664	.120	-.389	-1.258	171	.461	.112	.800	.099
138	-.653	.127	-.051	-1.169	172	.462	.115	.810	.097
139	-.584	.128	-.030	-1.150	173	.286	.113	.720	-.081
140	-.584	.138	.006	-1.208	174	-.077	.201	.593	-.861
141	-.559	.141	.023	-1.218	175	-.789	.204	-.208	-1.542
142	-.513	.152	.080	-1.153	176	-.647	.116	-.349	-1.074
143	-.432	.120	-.052	-.923	177	-.622	.104	-.339	-1.029
144	-.429	.104	-.077	-.940	178	-.617	.125	-.341	-1.218
145	-.462	.110	-.145	-1.080	179	-.517	.109	.002	-1.048
146	-.410	.084	-.148	-.877	180	-.387	.072	-.135	-.698
147	-.350	.069	-.107	-.774	181	-.313	.054	-.135	-.500
148	-.368	.058	-.208	-.570	182	-.319	.063	-.058	-.542
149	-.387	.056	-.228	-.586	183	-.386	.085	-.155	-.794
150	-.366	.058	-.197	-.577	184	-0.000	-0.000	-0.000	-0.000
151	-.323	.059	-.156	-.524	185	-.576	.199	-.122	-1.685
152	-.372	.065	-.092	-.628	186	-.370	.113	.026	-.815
153	-.416	.078	-.180	-.933	187	-.020	.150	.642	-.351
154	-.404	.085	-.136	-.886	188	-.038	.087	.363	-.265
155	-.449	.123	-.149	-1.115	189	-0.000	-0.000	-0.000	-0.000
156	-.372	.143	.115	-.986	190	-.214	.071	.021	-.512
157	-.428	.177	.522	-.925	191	-.244	.065	-.028	-.528
158	-.495	.172	.086	-1.113	192	-.403	.103	-.118	-.826
159	-.554	.151	-.041	-1.061	193	-.622	.150	-.250	-1.110
160	-.631	.140	-.104	-1.205	194	-.735	.151	-.367	-1.360
161	-.665	.123	-.277	-1.117	195	-.420	.089	-.122	-.734
162	-.691	.116	-.387	-1.186	196	-.074	.074	.170	-.380
163	-.752	.123	-.447	-1.354	197	-.146	.105	.145	-.547
164	-.613	.086	-.357	-.947	198	.123	.110	.626	-.191
165	-.254	.066	-.023	-.495	199	.200	.096	.708	-.161
166	-.352	.115	.034	-.686	200	.350	.097	.730	.124
167	.078	.117	.593	-.265	201	.418	.098	.776	.203
168	.298	.117	.876	-.028	202	.366	.108	.820	.093
169	.423	.112	.797	.048	203	.383	.100	.754	.159
170	.480	.114	.817	.097	204	.387	.103	.750	.150



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1					35	-.587	.137	-.159	-1.152
2	-.582	.127	-.217	-1.338	36	-.653	.173	.010	-1.532
3	-.607	.094	-.384	-1.162	37	-.673	.152	-.143	-1.411
4	-.624	.792	-.421	-1.114	38	-.722	.155	-.175	-1.724
5	-.593	.112	.072	-1.152	39	-.743	.169	-.190	-1.650
6	-.534	.085	-.213	-.986	40	-.814	.216	-.284	-1.747
7	-.574	.077	-.328	-.931	41	-.854	.253	-.372	-1.969
8	-.603	.088	-.395	-1.060	42	-.644	.149	-.241	-1.352
9	-.572	.139	-.070	-1.190	43	-.187	.093	.325	-.652
10	-.574	.108	-.218	-.994	44	-.429	.134	.209	-1.047
11	-.581	.081	-.335	-.976	45	.202	.123	.792	-.218
12	-.598	.095	-.330	-1.105	46	.414	.121	.896	-.004
13	.560	.125	.934	.134	47	.515	.113	.857	.075
14	.276	.144	.759	-.329	48	.526	.115	.995	.111
15	-.522	.110	-.259	-1.457	49	.515	.113	.811	.123
16	-.531	.094	-.220	-1.362	50	.516	.114	.850	.127
17	-.521	.080	-.266	-.953	51	.454	.115	.767	.066
18	-.519	.076	-.277	-.840	52	.643	.121	1.056	.166
19	-.554	.083	-.318	-1.016	53	.140	.156	.644	-.601
20	-.542	.088	-.325	-1.048	54	-.554	.135	-.209	-1.510
21	-.504	.092	-.230	-.942	55	-.515	.108	-.242	-1.474
22	-.537	.096	-.228	-1.016	56	-.448	.092	-.207	-1.085
23	-.572	.102	-.258	-1.159	57	-.532	.114	-.131	-1.402
24	-.567	.119	-.200	-1.033	58	-.520	.119	-.206	-1.507
25	-.482	.102	-.168	-.904	59	-.480	.116	-.098	-1.173
26	-.495	.095	-.194	-.904	60	-.517	.111	.029	-1.061
27	-.531	.105	-.208	-1.018	61	-.555	.117	-.076	-1.118
28	-.487	.083	-.122	-.903	62	-.557	.135	-.001	-1.147
29	-.447	.076	-.199	-.892	63	-.470	.112	-.112	-1.050
30	-.481	.070	-.265	-.769	64	-.459	.083	-.160	-.862
31	-.514	.078	-.281	-.839	65	-.484	.090	-.212	-.932
32	-.503	.091	-.225	-.900	66	-.447	.070	-.182	-.802
33	-.470	.104	-.161	-.963	67	-.396	.066	-.126	-.699
34	-.527	.122	-.112	-1.053	68	-.446	.075	-.201	-.877

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.479	.089	-.248	-1.084	103	-.362	.061	-.016	-.616
70	-.477	.108	-.167	-1.139	104	-.390	.056	-.217	-.635
71	-.451	.124	-.136	-1.101	105	-.419	.064	-.181	-.693
72	-.677	.213	-.043	-1.656	106	-.404	.072	-.206	-.815
73	-.682	.208	-.012	-1.578	107	-.363	.067	-.176	-.732
74	-.741	.229	-.065	-1.826	108	-.389	.074	-.198	-.696
75	-.720	.214	.065	-1.636	109	-.401	.076	-.174	-.788
76	-.779	.230	.203	-1.839	110	-.407	.084	-.148	-.820
77	-.826	.258	.499	-1.898	111	-.386	.112	-.062	-.951
78	-.715	.192	.545	-1.435	112	-.525	.169	-.162	-1.394
79	-.250	.128	.751	-.705	113	-.407	.187	.369	-1.570
80	-.526	.168	.469	-1.124	114	-.337	.267	.634	-1.316
81	.144	.123	.705	-.231	115	-.416	.227	.400	-1.154
82	.449	.120	.899	.079	116	-.575	.246	.186	-1.921
83	.564	.123	.979	.192	117	-.620	.201	-.035	-1.481
84	.599	.123	.975	.239	118	-.704	.212	-.043	-1.709
85	.596	.121	.948	.234	119	-.750	.211	.095	-1.680
86	.605	.124	.966	.245	120	-.818	.203	-.196	-1.793
87	.535	.123	.867	.141	121	-.866	.212	-.385	-2.021
88	.018	.166	.695	-.894	122	-.721	.158	.136	-1.395
89	-.618	.203	-.210	-1.810	123	-.272	.103	.268	-.759
90	-.490	.156	-.165	-1.489	124	-.479	.150	.134	-1.080
91	-.480	.129	-.164	-1.510	125	.131	.127	.691	-.215
92	-.471	.104	-.180	-1.152	126	.404	.127	1.000	-.019
93	-.512	.120	-.160	-1.327	127	.533	.111	.851	.208
94	-.502	.125	-.143	-1.186	128	.563	.118	.890	.198
95	-.458	.129	-.033	-1.101	129	.557	.115	.868	.189
96	-.489	.120	-.079	-1.189	130	.564	.117	.871	.175
97	-.523	.121	-.093	-1.095	131	.577	.122	.978	.140
98	-.523	.139	-.102	-1.189	132	.448	.112	.772	.112
99	-.442	.113	-.097	-.926	133	-.105	.175	.567	-.679
100	-.447	.094	-.171	-.916	134	-.945	.182	-.328	-1.635
101	-.484	.108	-.166	-1.049	135	-.463	.088	-.218	-.921
102	-.419	.074	-.130	-.730	136	-.392	.081	-.165	-.718

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.479	.099	-.203	-1.115	171	.451	.111	.860	.143
138	-.471	.109	-.108	-1.140	172	.455	.113	.855	.143
139	-.436	.115	.081	-1.182	173	.274	.113	.694	-.062
140	-.484	.128	-.104	-1.187	174	-.190	.176	.366	-.800
141	-.517	.133	-.155	-1.341	175	-.827	.189	-.224	-1.587
142	-.516	.155	-.086	-1.496	176	-.499	.099	-.223	-1.228
143	-.430	.126	-.050	-1.126	177	-.482	.095	-.271	-1.028
144	-.424	.088	-.163	-.931	178	-.348	-0.000	-0.000	-0.000
145	-.457	.096	-.241	-1.027	179	-.305	-0.000	-0.000	-0.000
146	-.379	.071	-.180	-.816	180	-.490	-0.000	-0.000	-0.000
147	-.319	.058	-.136	-.585	181	-.487	-0.000	-0.000	-0.000
148	-.351	.052	-.146	-.561	182	-.299	.055	-.126	-.553
149	-.375	.052	-.216	-.594	183	-.359	.072	-.167	-.726
150	-.362	.054	-.199	-.582	184	-0.000	-0.000	-0.000	-0.000
151	-.317	.055	-.141	-.544	185	-.517	.147	-.219	-1.364
152	-.326	.053	-.132	-.610	186	-.332	.100	.028	-.760
153	-.374	.066	-.173	-.745	187	-.059	.172	.600	-.662
154	-.381	.086	-.120	-.913	188	-.047	.092	.316	-.325
155	-.412	.124	-.091	-1.165	189	-0.000	-0.000	-0.000	-0.000
156	-.388	.159	.308	-1.146	190	-.251	.080	-.001	-.687
157	-.369	.217	.622	-1.349	191	-.310	.088	-.042	-.718
158	-.498	.223	.146	-1.409	192	-.514	.115	-.184	-.894
159	-.554	.201	.065	-1.385	193	-.714	.170	-.212	-1.416
160	-.652	.193	-.052	-1.402	194	-.789	.153	-.416	-1.407
161	-.700	.165	-.025	-1.489	195	-.481	.093	-.185	-.806
162	-.782	.147	-.353	-1.471	196	-.109	.068	.177	-.352
163	-.842	.157	-.379	-1.608	197	-.182	.092	.166	-.549
164	-.683	.105	-.336	-1.092	198	.144	.118	.667	-.181
165	-.271	.082	.159	-.662	199	.231	.106	.596	-.026
166	-.376	.123	.154	-.793	200	.381	.107	.838	.138
167	.116	.125	.617	-.229	201	.447	.103	.899	.203
168	.345	.126	.861	-.115	202	.383	.110	.763	.110
169	.446	.116	.845	.125	203	.402	.097	.753	.183
170	.462	.115	.880	.151	204	.408	.102	.786	.180

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.619	.155	-.102	-1.210	35	-.640	.142	-.258	-1.411
2	-.539	.148	-.043	-1.212	36	-.698	.144	-.202	-1.307
3	-.583	.171	.273	-1.150	37	-.685	.130	-.147	-1.243
4	-.631	.136	-.074	-1.117	38	-.696	.157	.084	-1.383
5	-.435	.180	.070	-1.100	39	-.718	.185	.238	-1.478
6	-.529	.146	.031	-1.039	40	-.861	.221	.225	-1.511
7	-.617	.130	-.081	-1.141	41	-1.010	.253	.408	-1.872
8	-.633	.187	.377	-1.239	42	-.635	.219	.653	-1.340
9	-.255	.204	.461	-.960	43	-.221	.171	.710	-1.059
10	-.412	.146	.274	-.893	44	-.450	.241	.581	-1.428
11	-.586	.117	-.135	-1.097	45	.175	.231	1.001	-.705
12	-.634	.170	-.049	-1.474	46	.393	.205	1.268	-.638
13					47	.501	.171	1.004	-.395
14					48	.518	.158	1.114	-.360
15	-.585	.192	-.131	-1.566	49	.503	.144	1.065	-.346
16					50	.506	.139	.980	-.448
17	-.514	.116	-.212	-1.259	51	.474	.129	.971	-.232
18	-0.000	-0.000	-0.000	-0.000	52	.495	.259	1.353	-.677
19	-0.000	-0.000	-0.000	-0.000	53	.060	.252	.739	-1.397
20	-0.000	-0.000	-0.000	-0.000	54	-.703	.255	-.133	-1.957
21	-0.000	-0.000	-0.000	-0.000	55				
22	-0.000	-0.000	-0.000	-0.000	56	-.468	.153	-.108	-1.977
23	-0.000	-0.000	-0.000	-0.000	57	-0.000	-0.000	-0.000	-0.000
24	-0.000	-0.000	-0.000	-0.000	58	-0.000	-0.000	-0.000	-0.000
25	-0.000	-0.000	-0.000	-0.000	59	-0.000	-0.000	-0.000	-0.000
26	-0.000	-0.000	-0.000	-0.000	60	-0.000	-0.000	-0.000	-0.000
27	-0.000	-0.000	-0.000	-0.000	61	-0.000	-0.000	-0.000	-0.000
28	-0.000	-0.000	-0.000	-0.000	62	-0.000	-0.000	-0.000	-0.000
29	-0.000	-0.000	-0.000	-0.000	63	-0.000	-0.000	-0.000	-0.000
30	-0.000	-0.000	-0.000	-0.000	64	-0.000	-0.000	-0.000	-0.000
31	-0.000	-0.000	-0.000	-0.000	65	-0.000	-0.000	-0.000	-0.000
32	-0.000	-0.000	-0.000	-0.000	66	-0.000	-0.000	-0.000	-0.000
33	-0.000	-0.000	-0.000	-0.000	67	-0.000	-0.000	-0.000	-0.000
34	-0.000	-0.000	-0.000	-0.000	68	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-0.000	-0.000	-0.000	-0.000	103	-0.000	-0.000	-0.000	-0.000
70	-0.000	-0.000	-0.000	-0.000	104	-0.000	-0.000	-0.000	-0.000
71	-0.000	-0.000	-0.000	-0.000	105	-0.000	-0.000	-0.000	-0.000
72	-.794	.161	-.065	-1.575	106	-0.000	-0.000	-0.000	-0.000
73	-.643	.142	-.156	-1.465	107	-0.000	-0.000	-0.000	-0.000
74	-.577	.190	.336	-1.545	108	-0.000	-0.000	-0.000	-0.000
75	-.570	.255	.419	-1.668	109	-.361	.052	-.164	-.543
76	-.708	.338	.261	-2.016	110	-.370	.051	-.220	-.624
77	-.952	.430	1.046	-2.370	111	-.349	.080	-.114	-.855
78	-.520	.435	1.029	-1.586	112	-.440	.115	-.091	-.961
79	-.149	.302	1.156	-1.043	113	-.418	.119	.171	-1.096
80	-.435	.247	.784	-1.635	114	-.260	.175	.583	-1.132
81	.039	.222	.850	-.618	115	-.332	.178	.243	-1.023
82	.337	.189	1.091	-.308	116	-.487	.186	.048	-1.578
83	.501	.179	1.304	-.193	117	-.543	.167	-.112	-1.362
84	.565	.171	1.251	-.029	118	-.632	.198	-.036	-1.519
85	.580	.157	1.194	-.072	119	-.694	.198	-.062	-1.536
86	.596	.154	1.238	-.062	120	-.792	.193	-.183	-1.673
87	.476	.186	1.052	-.431	121	-.850	.196	-.246	-1.689
88	.029	.201	.655	-1.107	122	-.737	.157	-.097	-1.295
89	-.634	.254	-.156	-2.052	123	-.371	.145	.164	-1.052
90	-.452	.195	-.069	-1.571	124	-.641	.201	.049	-1.367
91	-.432	.140	-.131	-1.587	125	.014	.175	.733	-.719
92	-0.000	-0.000	-0.000	-0.000	126	.339	.169	.869	-.376
93	-0.000	-0.000	-0.000	-0.000	127	.527	.134	.964	-.020
94	-0.000	-0.000	-0.000	-0.000	128	.569	.140	1.130	-.023
95	-0.000	-0.000	-0.000	-0.000	129	.565	.131	.985	.027
96	-0.000	-0.000	-0.000	-0.000	130	.573	.129	1.040	.088
97	-0.000	-0.000	-0.000	-0.000	131	.575	.128	.958	-.016
98	-0.000	-0.000	-0.000	-0.000	132	.472	.154	.941	-.279
99	-0.000	-0.000	-0.000	-0.000	133	-.038	.165	.540	-.650
100	-0.000	-0.000	-0.000	-0.000	134	-.900	.170	-.053	-1.440
101	-0.000	-0.000	-0.000	-0.000	135	-.406	.098	-.113	-1.075
102	-0.000	-0.000	-0.000	-0.000	136	-.334	.088	-.058	-.838

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-0.000	-0.000	-0.000	-0.000	171	.474	.113	.840	-.056
138	-0.000	-0.000	-0.000	-0.000	172	.477	.114	.915	.009
139	-0.000	-0.000	-0.000	-0.000	173	.285	.130	.751	-.220
140	-0.000	-0.000	-0.000	-0.000	174	-.097	.162	.547	-.669
141	-0.000	-0.000	-0.000	-0.000	175	-.745	.160	-.177	-1.411
142	-0.000	-0.000	-0.000	-0.000	176	-.409	.088	-.167	-.863
143	-0.000	-0.000	-0.000	-0.000	177	-.387	.090	-.118	-1.019
144	-0.000	-0.000	-0.000	-0.000	178	-0.000	-0.000	-0.000	-0.000
145	-0.000	-0.000	-0.000	-0.000	179	-0.000	-0.000	-0.000	-0.000
146	-0.000	-0.000	-0.000	-0.000	180	-0.000	-0.000	-0.000	-0.000
147	-0.000	-0.000	-0.000	-0.000	181	-0.000	-0.000	-0.000	-0.000
148	-0.000	-0.000	-0.000	-0.000	182	-.265	.047	-.137	-.454
149	-0.000	-0.000	-0.000	-0.000	183	-.322	.054	-.164	-.597
150	-0.000	-0.000	-0.000	-0.000	184	-0.000	-0.000	-0.000	-0.000
151	-0.000	-0.000	-0.000	-0.000	185	-.442	.118	-.201	-1.168
152	-.308	.044	-.166	-.579	186	-.307	.086	.002	-.696
153	-.357	.053	-.224	-.673	187	-.211	.115	.374	-.608
154	-.361	.061	-.164	-.754	188	-.144	.091	.317	-.383
155	-.359	.086	-.164	-.796	189	-0.000	-0.000	-0.000	-0.000
156	-.358	.101	.080	-.833	190	-.291	.087	-.017	-.644
157	-.254	.164	.450	-.848	191	-.338	.113	-.048	-.797
158	-.450	.189	.071	-1.163	192	-.448	.141	-.077	-.990
159	-.492	.176	.022	-1.209	193	-.708	.168	-.154	-1.513
160	-.572	.183	-.010	-1.334	194	-.606	.152	-.210	-1.273
161	-.622	.169	-.075	-1.354	195	-.459	.113	-.094	-.849
162	-.692	.144	-.220	-1.475	196	-.189	.087	.106	-.726
163	-.722	.146	-.337	-1.465	197	-.374	.141	.013	-1.202
164	-.654	.110	-.272	-1.078	198	-.022	.143	.498	-.720
165	-.344	.105	.016	-.937	199	.192	.109	.604	-.238
166	-.543	.160	-.121	-1.294	200	.295	.141	.831	-.123
167	-.010	.150	.522	-.615	201	.392	.134	.852	-.012
168	.290	.139	.742	-.277	202	.365	.104	.693	.105
169	.451	.123	.890	.030	203	.373	.122	.807	-.043
170	.483	.119	.885	-.019	204	.383	.122	.844	-.054

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 220

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.227	.097	.053	-.091	35	-.659	.200	-.020	-1.717
2	-.187	.102	.122	-.689	36	-.734	.186	.249	-1.504
3	.278	.278	1.119	-.704	37	-.642	.147	-.009	-1.138
4	-.307	.198	.218	-1.169	38	-.506	.166	.210	-1.201
5	-.160	.118	.187	-.783	39	-.344	.198	.546	-1.501
6	-.123	.150	.426	-.766	40	-.210	.263	.758	-1.463
7	-.334	.207	.318	-1.244	41	-.091	.406	.958	-1.512
8	-.046	.253	.603	-.956	42	.163	.412	1.137	-1.161
9	-.089	.180	.573	-.699	43	.172	.328	1.140	-1.064
10	-.055	.171	.793	-.602	44	-.040	.242	.989	-.915
11	-.273	.160	.387	-.917	45	-.046	.301	.955	-1.343
12	-.578	.177	-.065	-1.546	46	.028	.275	.988	-1.252
13	.097	.267	1.271	-1.321	47	.111	.289	1.084	-.710
14	-.077	.418	1.109	-1.514	48	.156	.325	1.121	-.819
15	-.610	.234	-.049	-1.620	49	.206	.335	1.085	-1.124
16	-.483	.160	-.088	-1.477	50	.271	.335	1.266	-.843
17					51	.323	.302	1.273	-.813
18	-.443	.105	-.136	-.847	52	-.037	.282	1.081	-1.091
19	-.461	.114	-.144	-1.053	53	-.426	.417	.799	-2.269
20	-.449	.112	-.122	-1.023	54	-.518	.192	.051	-1.579
21	-.428	.107	-.060	-.927	55	-.466	.171	.088	-1.681
22	-.426	.100	-.144	-.950	56	-.367	.138	-.010	-1.210
23	-.433	.094	-.126	-.888	57	-.429	.078	-.240	-.807
24	-.418	.094	-.116	-.795	58	-.407	.112	-.093	-1.039
25	-.384	.078	-.151	-.733	59	-0.000	-0.000	-0.000	-0.000
26	-.391	.076	-.179	-.922	60	-.399	.101	-.026	-.950
27	-.420	.081	-.158	-.942	61	-.415	.093	-.050	-.961
28	-.427	.086	-.109	-.888	62	-.399	.098	-.084	-1.115
29	-.417	.088	-.054	-.927	63	-.354	.071	-.097	-.795
30	-.429	.071	-.113	-.827	64	-.375	.053	-.196	-.597
31	-.463	.082	-.079	-.927	65	-.408	.055	-.235	-.651
32	-.469	.100	-.047	-1.083	66	-.392	.053	-.192	-.662
33	-.467	.117	.018	-1.148	67	-.368	.055	-.142	-.659
34	-.544	.129	.049	-1.249	68	-.417	.059	-.231	-.766

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 220

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.458	.074	-.192	-.889	103	-.312	.045	-.131	-.458
70	-.478	.107	-.183	-.575	104	-.348	.044	-.191	-.515
71	-.506	.134	-.165	-1.091	105	-.370	.044	-.196	-.578
72	-.701	.148	-.112	-1.302	106	-.341	.044	-.145	-.514
73	-.555	.121	-.080	-1.065	107	-0.000	-0.000	-0.000	-0.000
74	-.465	.130	.007	-1.239	108	-.347	.044	-.189	-.630
75	-.363	.176	.710	-1.363	109	-.364	.047	-.202	-.599
76	-.308	.217	.331	-1.539	110	-.384	.047	-.244	-.618
77	-.249	.315	.729	-1.373	111	-.325	.061	.017	-.619
78	-.028	.322	.795	-1.552	112	-.370	.080	.061	-.721
79	-.003	.249	.778	-1.052	113	-.393	.076	-.098	-.824
80	-.132	.199	.713	-.992	114	-.339	.088	.088	-.653
81	-.158	.254	.563	-1.015	115	-.354	.086	-.014	-.659
82	-.053	.228	.849	-.931	116	-.429	.083	-.176	-1.121
83	.045	.204	.849	-.747	117	-.448	.075	-.196	-.904
84	.074	.213	.746	-.749	118	-.475	.088	-.060	-.975
85	.099	.233	.855	-.705	119	-.467	.094	-.036	-1.004
86	.125	.261	.994	-.646	120	-.517	.114	-.120	-1.227
87	.017	.266	.932	-.888	121	-.559	.141	-.119	-1.363
88	-.291	.339	.817	-1.681	122	-.482	.137	-.130	-1.220
89	-.572	.187	-.102	-1.427	123	-.352	.142	.225	-1.174
90	-.377	.129	.012	-1.134	124	-.443	.202	.176	-1.356
91	-.363	.109	-.057	-.840	125	-.242	.158	.561	-.918
92	-.357	.098	-.020	-.889	126	-.090	.172	.676	-.631
93	-.387	.106	-.088	-1.177	127	.079	.189	.788	-.397
94	-.366	.105	-.110	-1.097	128	.144	.250	.972	-.589
95	-.344	.102	-.069	-1.004	129	.200	.264	1.058	-.654
96	-.388	.090	-.147	-.920	130	.246	.275	.967	-.796
97	-.415	.086	-.180	-.851	131	.297	.259	1.197	-.563
98	-.401	.094	-.170	-.888	132	.209	.222	.903	-.549
99	-.346	.070	-.145	-.682	133	.050	.215	.804	-.722
100	-.350	.055	-.134	-.610	134	-.646	.174	-.096	-1.269
101	-.379	.061	-.183	-.676	135	-.403	.093	-.024	-.897
102	-.345	.051	-.112	-.543	136	-.315	.083	.004	-1.517



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
OLIVER BUILDING  
WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.374	.077	-.111	-1.224	171	.239	.192	.849	-.397
138	-.357	.079	-.026	-1.193	172	.288	.196	.848	-.579
139	-.327	.076	-.074	-1.032	173	.011	.200	.642	-.634
140	-.365	.076	-.127	-.799	174	-.018	.190	.576	-.618
141	-.392	.075	-.088	-.735	175	-.467	.141	-.064	-.981
142	-.378	.084	-.067	-.843	176	-.407	.070	-.225	-.720
143	-.318	.062	-.131	-.597	177	-.384	.075	-.179	-1.056
144	-.331	.047	-.205	-.549	178	-.360	.069	-.214	-.841
145	-.357	.045	-.215	-.518	179	-.373	.060	-.188	-.801
146	-.318	.039	-.186	-.476	180	-.301	.031	-.195	-.401
147	-.284	.035	-.165	-.412	181	-.277	.032	-.184	-.410
148	-.321	.032	-.214	-.442	182	-.280	.033	-.174	-.432
149	-.346	.032	-.220	-.455	183	-.326	.036	-.232	-.496
150	-.321	.032	-.218	-.425	184	-0.000	-0.000	-0.000	-0.000
151	-.289	.032	-.183	-.402	185	-.404	.060	-.145	-.677
152	-.327	.034	-.167	-.510	186	-.320	.052	-.062	-.560
153	-.372	.045	-.203	-.641	187	-.221	.065	.105	-.405
154	-.376	.060	-.169	-.721	188	-.242	.042	-.089	-.380
155	-.343	.086	.110	-.762	189	-0.000	-0.000	-0.000	-0.000
156	-.353	.069	-.046	-.696	190	-.300	.048	-.135	-.584
157	-.277	.105	.272	-.602	191	-.245	.048	-.068	-.530
158	-.367	.076	-.086	-.705	192	-.283	.056	-.070	-.563
159	-.378	.075	-.110	-.792	193	-.400	.104	-.158	-.989
160	-.390	.085	-.196	-.912	194	-.369	.093	.061	-.821
161	-.389	.088	-.162	-.922	195	-.294	.089	.324	-.616
162	-.441	.097	-.160	-.931	196	-.194	.089	.365	-.567
163	-.493	.109	-.096	-.977	197	-.304	.131	.030	-.935
164	-.445	.109	.014	-.928	198	-.214	.109	.255	-.579
165	-.356	.127	.145	-.985	199	-.072	.140	.507	-.478
166	-.526	.175	-.024	-1.161	200	-.060	.116	.565	-.451
167	-.304	.144	.316	-.805	201	.041	.133	.764	-.352
168	-.117	.157	.610	-.624	202	.152	.166	.709	-.311
169	.088	.180	.780	-.487	203	.075	.156	.648	-.460
170	.171	.191	.832	-.454	204	.106	.164	.806	-.416

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.237	.152	.418	-1.148	35	-.605	.224	.684	-1.622
2	-.261	.149	.418	-1.023	36	-.676	.233	.792	-1.470
3	-.032	.389	1.255	-1.390	37	-.642	.192	.528	-1.231
4	-.219	.167	.527	-1.006	38	-.601	.165	.417	-1.095
5	-.430	.205	.599	-1.337	39	-.509	.147	.545	-1.300
6	-.411	.202	1.291	-.793	40	-.253	.131	.417	-.950
7	-.110	.187	1.211	-1.119	41	-.111	.210	1.016	-1.233
8	-.559	.240	.604	-1.438	42	.685	.153	1.279	-.036
9	-.347	.177	.569	-1.038	43	.666	.162	1.159	-.309
10	.255	.215	.921	-.539	44	.257	.220	.971	-.792
11	-.131	.188	.649	-1.163	45	-.684	.335	.822	-1.658
12	-.667	.169	-.144	-1.529	46	-.198	.227	.637	-1.049
13	-.779	.238	.811	-1.220	47	-.112	.198	.810	-.967
14	-.759	.456	.760	-2.436	48	-.087	.198	.773	-.764
15	-.527	.196	.128	-1.411	49	-.090	.188	.842	-.807
16	-.439	.146	.082	-1.056	50	-.042	.194	.792	-.747
17	-.375	.117	-.032	-1.035	51	.060	.211	.989	-.594
18	-.359	.091	-.099	-.702	52	-.026	.172	.712	-.867
19	-.384	.097	-.088	-.807	53	-.795	.302	.159	-2.380
20	-.358	.098	-.099	-.824	54	-.468	.172	-.029	-1.481
21	-.322	.096	-.028	-.802	55	-.424	.157	.023	-1.529
22	-.358	.087	-.056	-.857	56	-.343	.096	-.031	-1.221
23	-.376	.083	-.114	-.724	57	-.382	.076	-.094	-.730
24	-.349	.081	-.107	-.717	58	-.350	.071	-.093	-.695
25	-.320	.075	-.075	-.660	59	-.318	.064	-.113	-.588
26	-.361	.079	-.132	-.724	60	-.360	.053	-.189	-.565
27	-.406	.101	-.131	-.952	61	-.385	.052	-.211	-.620
28	-.368	.093	-.062	-.773	62	-.359	.054	-.198	-.583
29	-.335	.093	-.053	-.805	63	-.332	.056	-.163	-.555
30	-.376	.089	-.019	-.788	64	-.367	.059	-.184	-.649
31	-.413	.098	-.037	-.875	65	-.408	.068	-.202	-.699
32	-.421	.106	-.024	-.992	66	-.369	.064	-.167	-.686
33	-.428	.114	-.049	-.981	67	-.330	.063	-.138	-.632
34	-.509	.161	.295	-1.172	68	-.368	.069	-.115	-.646

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.406	.081	-.104	-.776	103	-.305	.054	-.122	-.528
70	-.405	.099	-.116	-.906	104	-.330	.055	-.126	-.506
71	-.427	.125	-.060	-1.074	105	-.347	.060	-.137	-.574
72	-.503	.212	.732	-1.242	106	-.316	.071	-.011	-.643
73	-.472	.166	.336	-.984	107	-0.000	-0.000	-0.000	-0.000
74	-.471	.146	.321	-1.512	108	-.343	.067	-.070	-.635
75	-.440	.147	.224	-.879	109	-.356	.093	.022	-.925
76	-.378	.164	.300	-.981	110	-.391	.083	-.090	-.886
77	-.336	.282	.615	-1.207	111	-.338	.142	.224	-1.014
78	.157	.282	.995	-1.009	112	-.287	.193	.652	-.867
79	.163	.273	.999	-.751	113				
80	-.218	.175	.415	-.843	114	-.257	.105	.491	-.706
81	-.542	.173	.046	-1.224	115	-.333	.083	.343	-.778
82	-.401	.157	.093	-1.286	116	-.343	.088	.144	-.753
83	-.302	.160	.159	-1.038	117	-.372	.081	-.098	-.736
84	-.225	.151	.268	-.911	118	-.392	.093	-.004	-.785
85	-.170	.135	.283	-.918	119	-.382	.092	-.074	-.807
86	-.123	.138	.367	-.764	120	-.350	.106	.153	-.786
87	-.127	.142	-.500	-.701	121	-.337	.157	.489	-1.130
88	-.292	.204	.493	-.990	122	-.197	.198	.723	-.693
89	-.500	.175	.243	-1.386	123	-.176	.164	.683	-.616
90	-.381	.138	.139	-1.202	124	-.229	.103	.297	-.585
91	-.371	.116	.125	-.970	125	-.293	.111	.151	-.839
92	-.350	.075	-.121	-.688	126	-.262	.087	.121	-.672
93	-.382	.081	-.152	-.837	127	-.216	.079	.117	-.475
94	-.352	.079	-.100	-.869	128	-.182	.110	.414	-.560
95	-.316	.072	-.064	-.734	129	-.176	.125	.360	-.691
96	-.361	.067	-.119	-.688	130	-0.000	-0.000	-0.000	-0.000
97	-.387	.065	-.195	-.642	131	-.098	.143	.654	-.606
98	-.363	.068	-.152	-.663	132	-.152	.114	.403	-.661
99	-.331	.061	-.146	-.597	133	-.312	.170	.407	-.828
100	-.379	.066	-.202	-.710	134	-.469	.113	.057	-.990
101	-.425	.077	-.225	-.768	135	-.378	.089	-.134	-.907
102	-.362	.064	-.169	-.638	136	-.322	.075	-.102	-.737

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.372	.067	-.182	-.653	171	-.211	.083	.251	-.495
138	-.341	.067	-.126	-.618	172	-.215	.093	.222	-.562
139	-.303	.064	-.108	-.586	173	-.177	.097	.341	-.513
140	-.335	.057	-.098	-.590	174	-.253	.126	.400	-.618
141	-.361	.056	-.118	-.593	175	-.407	.089	-.060	-.854
142	-.337	.059	-.097	-.533	176	-.366	.065	-.189	-.668
143	-.303	.056	-.045	-.550	177	-.336	.064	-.145	-.661
144	-.354	.064	-.095	-.596	178	-.323	.056	-.129	-.520
145	-.401	.076	-.211	-.848	179	-.342	.054	-.171	-.563
146	-.348	.064	-.167	-.598	180	-.299	.045	-.141	-.547
147	-.289	.052	-.124	-.528	181	-.230	.043	.021	-.426
148	-.309	.045	-.126	-.469	182	-.275	.046	-.118	-.468
149	-.322	.050	-.155	-.505	183	-.350	.057	-.175	-.687
150	-.288	.063	-.048	-.535	184	-0.000	-0.000	-0.000	-0.000
151	-.260	.078	-.198	-.654	185	-.190	.127	.560	-.578
152	-.329	.069	-.055	-.619	186	-.263	.078	.010	-.911
153	-.397	.087	-.110	-.870	187	-.254	.056	-.053	-.501
154	-.357	.134	-.134	-1.043	188	-.232	.068	.162	-.431
155	-.209	.176	.707	-.598	189	-0.000	-0.000	-0.000	-0.000
156	-.336	.115	.057	-.960	190	-.263	.055	.053	-.450
157	-.272	.098	.265	-.696	191	-.198	.050	.065	-.406
158	-.296	.092	.269	-.704	192	-.239	.050	-.053	-.446
159	-.331	.075	-.026	-.719	193	-.270	.058	-.075	-.627
160	-.352	.080	-.029	-.665	194	-.262	.071	.031	-.728
161	-.343	.081	-.064	-.747	195	-.193	.101	.401	-.542
162	-.325	.084	.043	-.693	196	-.135	.108	.497	-.432
163	-.338	.121	.220	-.914	197	-.169	.092	.363	-.408
164	-.219	.143	.372	-.674	198	-.219	.076	.002	-.716
165	-.176	.138	.452	-.589	199	-.223	.068	.109	-.482
166	-.198	.094	.302	-.563	200	-.170	.071	.195	-.499
167	-.296	.099	-.064	-.744	201	-.126	.074	.224	-.426
168	-.254	.077	-.011	-.556	202	-.209	.086	.262	-.478
169	-.224	.072	.144	-.557	203	-.147	.085	.253	-.447
170	-.201	.077	.156	-.584	204	-.138	.090	.271	-.428

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.442	.184	.211	-1.236	35	-.469	.269	.835	-1.537
2	-.357	.165	.238	-1.001	36	-.537	.265	.661	-1.458
3	-.632	.149	.110	-1.159	37	-.533	.230	.403	-1.102
4	-.283	.152	.171	-.914	38	-.554	.224	.498	-1.285
5	-.464	.151	.207	-1.019	39	-.538	.193	.366	-1.393
6	-.179	.155	.384	-.812	40	-.412	.168	.584	-1.166
7	-.191	.190	.472	-.863	41	-.317	.268	1.084	-1.501
8	-.673	.118	-.197	-1.154	42	.617	.184	1.145	-.792
9	-.398	.122	.008	-.896	43	.664	.152	1.139	.030
10	.091	.170	.766	-.416	44	.189	.154	.835	-.312
11	-.192	.222	.636	-.858	45	-.737	.217	.389	-1.555
12	-.632	.099	-.250	-1.046	46	-.205	.149	.436	-.816
13	.058	.143	.625	-.635	47	-.099	.129	.494	-.531
14	-.844	.344	.183	-2.365	48	-.077	.134	.590	-.558
15	-.488	.206	.101	-1.328	49	-.043	.130	.531	-.585
16	-.426	.163	-0.000	-1.164	50	.044	.136	.637	-.688
17	-.345	.104	-.079	-.797	51	.229	.156	.748	-.409
18	-.348	.081	-.050	-.667	52	-.014	.121	.539	-.478
19	-.373	.080	-.094	-.740	53	-.712	.187	.051	-1.711
20	-.346	.078	-.045	-.684	54	-.408	.121	-.106	-1.091
21	-.312	.075	-.014	-.686	55	-.382	.104	-.071	-1.086
22	-.349	.073	-.115	-.727	56	-.302	.060	-.082	-.549
23	-.374	.074	-.136	-.703	57	-.365	.048	-.171	-.540
24	-.382	.081	-.096	-.756	58	-.333	.045	-.158	-.494
25	-.314	.077	-.031	-.735	59	-.302	.042	-.114	-.461
26	-.363	.079	-.077	-.779	60	-.348	.042	-.214	-.499
27	-.422	.105	-.132	-.896	61	-.373	.043	-.259	-.569
28	-.350	.081	-.076	-.766	62	-.347	.045	-.228	-.569
29	-.294	.078	-.017	-.740	63	-.312	.045	-.168	-.549
30	-.332	.084	-.045	-.849	64	-.363	.048	-.227	-.598
31	-.352	.092	.006	-.751	65	-.405	.056	-.240	-.666
32	-.359	.113	.014	-.934	66	-.356	.052	-.176	-.647
33	-.391	.146	.009	-1.159	67	-.303	.047	-.160	-.583
34	-.353	.165	.387	-1.026	68	-.326	.045	-.123	-.561

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.350	.052	-.151	-.698	103	-.283	.041	-.116	-.464
70	-.330	.063	-.076	-.743	104	-.322	.043	-.171	-.488
71	-.324	.090	.087	-.936	105	-.340	.047	-.176	-.535
72	-.395	.177	.642	-1.306	106	-.309	.055	-.056	-.552
73	-.380	.152	.451	-1.139	107	-0.000	-0.000	-0.000	-0.000
74	-.400	.145	.216	-.987	108	-.331	.052	-.143	-.558
75	-.400	.146	-.256	-.903	109	-.355	.055	-.198	-.629
76	-.450	.152	.469	-1.041	110	-.356	.062	-.157	-.663
77	-.500	.240	.450	-1.515	111	-.356	.120	-.017	-1.052
78	.044	.308	1.124	-.930	112	-.279	.132	.418	-.756
79	.181	.290	1.065	-.911	113	-.332	.102	.272	-.739
80	-.150	.185	.476	-.929	114	-.265	.086	.154	-.622
81	-.630	.155	-.125	-1.218	115	-.288	.129	.712	-.671
82	-.429	.128	.084	-.987	116	-.340	.107	.366	-.783
83	-.301	.120	.111	-.843	117	-.363	.083	.194	-.669
84	-.254	.113	.197	-.721	118	-.383	.084	.006	-.782
85	-.190	.105	.313	-.635	119	-.360	.084	-.074	-.722
86	-.140	.110	.340	-.634	120	-.384	.100	-.057	-.825
87	-.201	.104	.339	-.654	121	-.401	.154	.255	-1.117
88	-.475	.162	.300	-1.152	122	-.242	.191	.543	-.863
89	-.375	.093	-.101	-.743	123	-.162	.196	.622	-.698
90	-.313	.090	-.033	-.917	124	-.263	.132	.342	-.685
91	-.340	.067	-.127	-.619	125	-.426	.118	.004	-.926
92	-.327	.053	-.179	-.521	126	-.340	.084	-.037	-.672
93	-.355	.054	-.205	-.587	127	-.271	.062	-.061	-.483
94	-.325	.051	-.186	-.563	128	-.264	.081	.047	-.573
95	-.294	.046	-.151	-.483	129	-.247	.088	.093	-.637
96	-.342	.046	-.162	-.488	130	-0.000	-0.000	-0.000	-0.000
97	-.368	.047	-.200	-.560	131	-.170	.100	.400	-.496
98	-.344	.048	-.200	-.538	132	-.166	.086	.248	-.484
99	-.310	.050	-.140	-.510	133	-.391	.100	-.019	-.938
100	-.344	.046	-.216	-.555	134	-.383	.075	-.189	-.761
101	-.382	.053	-.213	-.614	135	-.336	.063	-.137	-.664
102	-.333	.047	-.149	-.547	136	-.280	.053	-.115	-.661

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLIVER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.34	.046	-.173	-.586	171	-.261	.073	-.010	-.530
138	-.312	.044	-.152	-.518	172	-.253	.081	.004	-.607
139	-.278	.043	-.138	-.423	173	-.230	.075	.199	-.492
140	-.323	.043	-.202	-.495	174	-.300	.080	.178	-.742
141	-.348	.046	-.213	-.486	175	-.369	.067	-.196	-.758
142	-.324	.049	-.194	-.509	176	-.352	.055	-.169	-.600
143	-.29	.048	-.160	-.447	177	-.325	.046	-.185	-.524
144	-.33	.054	-.160	-.572	178	-.314	.045	-.154	-.476
145	-.37	.064	-.159	-.629	179	-.338	.047	-.200	-.505
146	-.317	.057	-.124	-.571	180	-.298	.037	-.142	-.411
147	-.265	.049	-.034	-.521	181	-.237	.037	-.083	-.423
148	-.302	.045	-.146	-.448	182	-.266	.037	-.140	-.447
149	-.315	.047	-.099	-.503	183	-.331	.045	-.215	-.511
150	-.281	.055	-.087	-.512	184	-0.000	-0.000	-0.000	-0.000
151	-.256	.064	.001	-.506	185	-.213	.105	.488	-.584
152	-.321	.055	-.055	-.561	186	-.271	.065	.033	-.696
153	-.371	.067	-.142	-.851	187	-.272	.048	-.096	-.432
154	-0.000	-0.000	-0.000	-0.000	188	-.258	.060	.191	-.458
155	-0.000	-0.000	-0.000	-0.000	189	-0.000	-0.000	-0.000	-0.000
156	-0.000	-0.000	-0.000	-0.000	190	-.303	.046	-.088	-.437
157	-0.000	-0.000	-0.000	-0.000	191	-.239	.037	-.088	-.368
158	-.324	.087	.248	-.634	192	-.283	.036	-.141	-.426
159	-.349	.062	-.057	-.568	193	-.340	.050	-.134	-.625
160	-.363	.058	-.073	-.601	194	-.304	.049	-.177	-.671
161	-.348	.061	-.148	-.668	195	-.283	.057	.124	-.468
162	-.373	.069	-.150	-.695	196	-.238	.074	.218	-.539
163	-.392	.105	.006	-.924	197	-.258	.083	.212	-.515
164	-.300	.140	.469	-.652	198	-.284	.064	-.020	-.507
165	-.236	.147	.507	-.597	199	-.301	.071	-.033	-.553
166	-.263	.116	.390	-.567	200	-.247	.070	.040	-.537
167	-.389	.100	-.100	-.929	201	-.201	.066	.062	-.465
168	-.323	.074	-.027	-.628	202	-.272	.075	.026	-.510
169	-.269	.070	-.014	-.570	203	-.221	.074	.159	-.510
170	-.272	.072	-.034	-.558	204	-.212	.077	.158	-.500

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTFR BUILDING  
 WIND DIRECTION 250

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.637	.175	-.026	-1.644	35	-.365	.242	.799	-1.172
2	-.466	.146	.080	-1.252	36	-.435	.225	.691	-1.216
3	-.715	.148	-.025	-1.477	37	-.468	.179	.383	-1.008
4	-.544	.141	-.013	-1.050	38	-.517	.183	.344	-1.081
5	-.643	.112	-.183	-1.100	39	-.543	.179	.423	-1.105
6	-.381	.132	.123	-.987	40	-.563	.155	.413	-1.205
7	-.507	.200	.320	-1.251	41	-.652	.259	.632	-1.622
8	-.715	.135	-.159	-1.473	42	.470	.270	1.389	-.580
9	-.616	.107	-.162	-1.150	43	.586	.191	1.124	-.518
10	-.225	.136	.454	-.664	44	.097	.117	.697	-.617
11	-.509	.240	.367	-1.380	45	-.745	.154	-.109	-1.257
12	-.670	.108	-.286	-1.049	46	-.290	.107	.118	-.672
13	.033	.125	.496	-.456	47	-.125	.078	.204	-.407
14	-.732	.226	-.036	-1.577	48	-.047	.080	.332	-.340
15	-.514	.146	-.096	-1.345	49	.046	.083	.348	-.236
16	-.493	.118	-.174	-1.341	50	.160	.096	.499	-.197
17	-.525	.069	-.222	-.809	51	.356	.130	.829	-.081
18	-.329	.059	-.096	-.595	52	-.170	.137	.320	-.640
19	-.350	.059	-.164	-.708	53	-.827	.170	-.332	-1.655
20	-.323	.057	-.142	-.577	54	-.492	.101	-.202	-1.658
21	-.288	.058	-.114	-.518	55	-.536	.083	-.325	-1.073
22	-.337	.062	-.119	-.629	56	-.389	.052	-.221	-.705
23	-.364	.067	-.123	-.799	57	-.343	.041	-.188	-.487
24	-.341	.076	-.087	-.839	58	-.314	.038	-.165	-.453
25	-.294	.066	-.060	-.648	59	-.283	.036	-.156	-.438
26	-.331	.059	-.071	-.586	60	-.325	.035	-.223	-.453
27	-.371	.070	-.138	-.724	61	-.350	.035	-.241	-.490
28	-.320	.068	-.085	-.935	62	-.326	.037	-.210	-.492
29	-.276	.071	-.028	-.717	63	-.286	.037	-.150	-.456
30	-.319	.082	-.017	-.939	64	-.328	.039	-.178	-.549
31	-.340	.092	.009	-1.119	65	-.359	.046	-.230	-.566
32	-.327	.108	.055	-1.427	66	-.318	.042	-.148	-.543
33	-.323	.134	.070	-1.307	67	-.273	.037	-.089	-.508
34	-.319	.156	.363	-.993	68	-.309	.039	-.141	-.531



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTEK BUILDING  
 WIND DIRECTION 250

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.329	.041	-.142	-.557	103	-.267	.033	-.125	-.402
70	-.301	.044	-.105	-.543	104	-.302	.030	-.177	-.432
71	-.277	.051	-.057	-.502	105	-.323	.032	-.189	-.451
72	-.375	.095	.225	-1.101	106	-.294	.036	-.137	-.478
73	-.385	.088	.248	-.783	107	-0.000	-0.000	-0.000	-0.000
74	-.400	.100	.016	-.913	108	-.305	.039	-.171	-.471
75	-.409	.115	.145	-.864	109	-.438	.048	-.257	-.686
76	-.467	.136	-.033	-.983	110	-.511	.049	-.308	-.913
77	-.548	.206	.148	-1.340	111	-.410	.095	-.155	-1.160
78	-.116	.293	-.969	-.944	112	-.397	.101	.288	-.851
79	-.048	.323	1.048	-.858	113	-.441	.071	-.083	-.828
80	-.138	.219	.766	-1.064	114	-.486	.067	-.036	-.696
81	-.709	.164	-.233	-1.367	115	-.302	.106	.543	-.554
82	-.466	.128	.023	-.973	116	-.342	.090	.371	-.656
83	-.332	.112	.007	-.786	117	-.361	.067	.107	-.672
84	-.284	.104	.121	-.957	118	-.381	.068	-.012	-.723
85	-.227	.102	.140	-.803	119	-.370	.073	-.121	-.849
86	-.181	.111	.240	-.655	120	-.403	.098	-.130	-1.041
87	-.353	.108	.159	-.627	121	-.440	.156	.111	-1.419
88	-.622	.144	-.029	-1.241	122	-.315	.201	.774	-.838
89	-.524	.081	-.213	-.882	123	-.228	.214	.767	-.787
90	-.391	.068	-.146	-.714	124	-.308	.184	.587	-.868
91	-.440	.052	-.246	-.799	125	-.562	.136	.003	-1.182
92	-.315	.042	-.178	-.490	126	-.440	.101	.016	-.953
93	-.341	.042	-.201	-.500	127	-.335	.071	.063	-.580
94	-.312	.041	-.185	-.462	128	-.316	.091	.099	-.698
95	-.285	.038	-.164	-.407	129	-.286	.091	.053	-.596
96	-.323	.035	-.218	-.442	130	-0.000	-0.000	-0.000	-0.000
97	-.348	.036	-.235	-.468	131	-.200	.100	.209	-.482
98	-.324	.038	-.202	-.444	132	-.316	.098	.158	-.753
99	-.285	.038	-.146	-.427	133	-.524	.095	-.171	-.992
100	-.319	.042	-.172	-.494	134	-.464	.059	-.311	-.801
101	-.348	.046	-.187	-.560	135	-.505	.053	-.308	-.827
102	-.311	.039	-.134	-.469	136	-.379	.041	-.250	-.565

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 250

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.324	.037	-.192	-.445	171	-.302	.075	-.062	-.561
138	-.297	.037	-.176	-.444	172	-.290	.083	-.009	-.606
139	-.264	.036	-.150	-.413	173	-.422	.080	.066	-.658
140	-.317	.033	-.187	-.432	174	-.420	.067	-.175	-.781
141	-.334	.034	-.204	-.460	175	-.450	.049	-.305	-.676
142	-.314	.037	-.174	-.441	176	-.438	.047	-.280	-.683
143	-.270	.036	-.152	-.442	177	-.489	.043	-.337	-.680
144	-.321	.038	-.198	-.439	178	-.301	.042	-.178	-.442
145	-.353	.045	-.225	-.500	179	-.331	.049	-.215	-.566
146	-.311	.038	-.168	-.421	180	-.287	.038	-.165	-.417
147	-.262	.033	-.157	-.383	181	-.248	.037	-.075	-.371
148	-0.000	-0.000	-0.000	-0.000	182	-.372	.036	-.241	-.518
149	-0.000	-0.000	-0.000	-0.000	183	-.444	.043	-.315	-.624
150	-0.000	-0.000	-0.000	-0.000	184	-0.000	-0.000	-0.000	-0.000
151	-0.000	-0.000	-0.000	-0.000	185	-.438	.082	.008	-.692
152	-.437	.044	-.232	-.638	186	-.374	.056	-.013	-.628
153	-.453	.053	-.218	-.712	187	-.407	.051	-.165	-.611
154	-.516	.093	-.204	-1.054	188	-.388	.066	.291	-.556
155	-.318	.101	-.519	-.661	189	-0.000	-0.000	-0.000	-0.000
156	-.437	.065	-.160	-.771	190	-.332	.043	-.102	-.456
157	-.413	.062	-.129	-.602	191	-.367	.037	-.241	-.518
158	-.336	.066	-.186	-.556	192	-.429	.036	-.317	-.576
159	-.368	.052	.207	-.596	193	-.370	.039	-.242	-.564
160	-.378	.049	-.111	-.638	194	-.447	.046	-.306	-.782
161	-.358	.048	-.095	-.616	195	-.509	.054	-.241	-.798
162	-.384	.057	-.173	-.882	196	-.374	.062	-.001	-.649
163	-.401	.087	-.102	-1.107	197	-.419	.077	.045	-.722
164	-.370	.112	.348	-.684	198	-.450	.064	-.187	-.785
165	-.318	.139	.448	-.730	199	-.382	.072	-.135	-.714
166	-.341	.134	.262	-.766	200	-.453	.071	-.210	-.720
167	-.470	.094	-.237	-.963	201	-.317	.068	-.063	-.613
168	-.402	.078	-.085	-.707	202	-.327	.064	-.083	-.556
169	-.326	.077	-.047	-.653	203	-.347	.072	-.013	-.707
170	-.321	.075	-.078	-.612	204	-.321	.077	.024	-.534

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.561	.140	-.077	-1.522	35	-.303	.281	1.063	-1.453
2	-.461	.119	-.037	-1.096	36	-.399	.254	.709	-1.670
3	-.569	.166	-.296	-1.342	37	-.415	.164	.433	-1.156
4	-.481	.154	.082	-1.135	38	-.437	.132	.126	-1.087
5	-.658	.118	-.217	-1.143	39	-.428	.140	.333	-1.297
6	-.398	.109	.032	-.852	40	-.507	.161	.198	-1.248
7	-.452	.200	.123	-1.336	41	-.662	.252	.257	-1.799
8	-.617	.156	-.101	-1.331	42	-.002	.308	1.116	-.974
9	-.637	.127	-.126	-1.221	43	.288	.292	1.096	-.690
10	-.322	.117	.227	-.888	44	.072	.171	.704	-.775
11	-.428	.254	.265	-1.302	45	-.724	.135	-.287	-1.294
12	-.683	.125	-.176	-1.273	46	-.373	.074	-.115	-.640
13	-.116	.166	.383	-.737	47	-.217	.069	.034	-.624
14	-.780	.189	-.234	-1.629	48	-.135	.072	.125	-.526
15	-.499	.109	-.174	-1.115	49	-.035	.082	.294	-.429
16	-.482	.077	-.229	-.881	50	.068	.100	.412	-.406
17	-.518	.056	-.314	-.740	51	.227	.132	.706	-.224
18	-.332	.051	-.165	-.521	52	-.238	.161	.355	-.692
19	-.354	.056	-.180	-.601	53	-.740	.168	-.331	-1.623
20	-.326	.057	-.132	-.569	54	-.474	.083	-.213	-1.302
21	-.289	.057	-.094	-.581	55	-.526	.062	-.334	-.901
22	-.336	.057	-.168	-.575	56	-.390	.044	-.240	-.574
23	-.360	.055	-.189	-.592	57	-.345	.035	-.208	-.471
24	-.333	.056	-.163	-.640	58	-.316	.034	-.183	-.432
25	-.298	.059	-.105	-.596	59	-.283	.034	-.150	-.415
26	-.356	.064	-.142	-.860	60	-.341	.036	-.236	-.501
27	-.408	.073	-.153	-.805	61	-.367	.038	-.263	-.529
28	-.360	.077	-.037	-.766	62	-.344	.042	-.236	-.532
29	-.308	.081	.028	-.788	63	-.303	.042	-.193	-.521
30	-.357	.098	-.017	-.871	64	-.344	.045	-.182	-.683
31	-.375	.109	.042	-.888	65	-.378	.052	-.222	-.637
32	-.371	.127	.063	-.999	66	-.338	.045	-.194	-.632
33	-.395	.181	.161	-1.446	67	-.289	.040	-.152	-.470
34	-.316	.168	.319	-1.019	68	-.314	.040	-.162	-.481

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.334	.043	-.156	-.573	103	-.274	.033	-.109	-.461
70	-.307	.047	-.094	-.660	104	-.311	.030	-.196	-.453
71	-.284	.059	-.017	-.604	105	-.331	.032	-.214	-.474
72	-.389	.073	.133	-.742	106	-.302	.036	-.146	-.460
73	-.381	.060	.047	-.658	107	-0.000	-0.000	-0.000	-0.000
74	-.391	.059	-.077	-.757	108	-.322	.036	-.193	-.481
75	-.374	.075	.092	-.866	109	-.452	.042	-.307	-.719
76	-.413	.104	-.062	-.973	110	-.525	.046	-.378	-.777
77	-.463	.172	-.076	-1.321	111	-.417	.082	-.144	-.872
78	-.303	.206	.055	-.800	112	-.389	.099	.076	-.696
79	-.113	.283	.981	-.832	113	-.416	.073	-.082	-.833
80	-.182	.249	.752	-.958	114	-.455	.068	-.114	-.722
81	-.722	.166	-.234	-1.403	115	-.331	.075	.161	-.521
82	-.487	.122	-.075	-.912	116	-.359	.067	.139	-.572
83	-.366	.111	-.014	-.800	117	-.370	.054	.007	-.580
84	-.326	.108	-.017	-.792	118	-.384	.054	-.115	-.627
85	-.274	.106	.039	-.786	119	-.361	.055	-.161	-.656
86	-.237	.119	.146	-.658	120	-.388	.076	-.116	-.861
87	-.373	.124	.188	-.735	121	-.414	.124	.034	-1.234
88	-.612	.135	-.227	-1.337	122	-.368	.162	.509	-.800
89	-.523	.063	-.313	-.904	123	-.296	.185	.654	-.809
90	-.389	.051	-.237	-.644	124	-.352	.186	.423	-.858
91	-.441	.042	-.310	-.724	125	-.603	.122	-.208	-1.153
92	-.314	.033	-.196	-.416	126	-.484	.100	-.145	-.871
93	-.343	.032	-.240	-.436	127	-.387	.069	-.135	-.635
94	-.315	.031	-.212	-.406	128	-.364	.098	-.029	-.724
95	-.283	.029	-.177	-.369	129	-.329	.096	.046	-.637
96	-.321	.034	-.210	-.455	130	-0.000	-0.000	-0.000	-0.000
97	-.346	.037	-.234	-.517	131	-.228	.114	.251	-.571
98	-.321	.042	-.203	-.566	132	-.337	.100	.131	-.689
99	-.280	.039	-.134	-.438	133	-.500	.084	-.285	-.959
100	-.333	.042	-.142	-.541	134	-.457	.053	-.297	-.725
101	-.365	.049	-.182	-.555	135	-.520	.044	-.384	-.746
102	-.320	.039	-.146	-.512	136	-.385	.037	-.236	-.513

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 260

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.336	.032	-.217	-.420	171	-.357	.082	-.063	-.650
138	-.309	.031	-.192	-.392	172	-.344	.091	.047	-.710
139	-.273	.030	-.173	-.365	173	-.492	.063	-.140	-.726
140	-.329	.034	-.216	-.491	174	-.415	.054	-.258	-.692
141	-.353	.035	-.240	-.485	175	-.452	.040	-.304	-.608
142	-.335	.037	-.214	-.483	176	-.451	.039	-.288	-.574
143	-.286	.035	-.157	-.432	177	-.509	.039	-.334	-.647
144	-.322	.042	-.145	-.497	178	-.316	.030	-.219	-.413
145	-.350	.049	-.196	-.575	179	-.344	.030	-.250	-.436
146	-.316	.040	-.157	-.499	180	-.305	.027	-.212	-.400
147	-.268	.033	-.151	-.390	181	-.268	.032	-.102	-.372
148	-.307	.030	-.185	-.427	182	-.382	.044	-.177	-.511
149	-.325	.032	-.193	-.448	183	-.461	.048	-.257	-.631
150	-.297	.037	-.163	-.423	184	-0.000	-0.000	-0.000	-0.000
151	-.268	.040	-.140	-.407	185	-.416	.077	-.038	-.680
152	-.455	.040	-.290	-.617	186	-.331	.052	-.116	-.513
153	-.485	.047	-.310	-.650	187	-.373	.047	-.158	-.554
154	-.545	.086	-.226	-.929	188	-.350	.062	-.096	-.513
155	-.297	.088	-.210	-.551	189	-0.000	-0.000	-0.000	-0.000
156	-.394	.063	-.137	-.647	190	-.318	.042	-.088	-.453
157	-.379	.062	-.123	-.588	191	-.333	.039	-.147	-.471
158	-.342	.056	-.020	-.504	192	-.411	.037	-.242	-.548
159	-.358	.046	-.020	-.551	193	-.376	.036	-.258	-.515
160	-.374	.044	-.161	-.539	194	-.472	.044	-.329	-.641
161	-.363	.039	-.109	-.506	195	-.548	.052	-.350	-.764
162	-.390	.044	-.235	-.641	196	-.402	.051	-.189	-.626
163	-.404	.062	-.152	-.838	197	-.469	.056	.036	-.674
164	-.419	.086	.129	-.743	198	-.505	.057	-.297	-.853
165	-.358	.107	.339	-.795	199	-.442	.063	-.215	-.687
166	-.391	.119	.387	-.766	200	-.532	.062	-.283	-.744
167	-.504	.090	-.227	-1.057	201	-.389	.060	-.156	-.605
168	-.444	.080	-.204	-.737	202	-.367	.055	-.146	-.611
169	-.383	.083	-.075	-.684	203	-.422	.062	-.165	-.661
170	-.378	.081	-.089	-.658	204	-.404	.066	-.144	-.625

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLIVER BUILDING  
 WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.562	.151	.014	-1.151	35	.070	.391	1.180	-1.460
2	-.458	.177	.233	-1.309	36	-.052	.400	1.231	-1.572
3	-.549	.153	.095	-1.095	37	-.230	.265	.934	-1.277
4	-.427	.113	-.064	-1.149	38	-.350	.197	.751	-1.157
5	-.747	.180	-.120	-1.610	39	-.367	.147	.289	-1.121
6	-.366	.134	.254	-.899	40	-.370	.140	.307	-1.025
7	-.390	.131	.046	-1.149	41	-.376	.192	.462	-1.294
8	-.581	.144	-.130	-1.170	42	-.291	.265	.816	-1.206
9	-.719	.154	-.232	-1.453	43	-.125	.341	1.051	-1.173
10	-.306	.144	.393	-.806	44	-.191	.296	.741	-1.392
11	-.314	.178	.349	-1.372	45	-.704	.157	-.242	-1.362
12	-.613	.159	-.023	-1.343	46	-.478	.119	-.147	-1.175
13	-.281	.217	.442	-1.078	47	-.353	.112	-.029	-.937
14	-.724	.212	-.225	-1.930	48	-.292	.110	.053	-.939
15	-.489	.094	-.210	-.908	49	-.224	.112	.068	-.927
16	-.480	.071	-.273	-.784	50	-.156	.136	.220	-.836
17	-.518	.053	-.353	-.713	51	-.022	.165	.489	-.560
18	-.406	.047	-.244	-.585	52	-.288	.172	.420	-.840
19	-.397	.048	-.243	-.594	53	-.668	.155	-.335	-1.444
20	-.522	.047	-.360	-.707	54	-.475	.075	-.246	-.917
21	-.338	.045	-.187	-.518	55	-.532	.062	-.335	-.865
22	-.413	.043	-.258	-.573	56	-.383	.044	-.240	-.551
23	-.410	.044	-.227	-.570	57	-0.000	-0.000	-0.000	-0.000
24	-.535	.048	-.341	-.740	58	-0.000	-0.000	-0.000	-0.000
25	-.366	.060	-.145	-.682	59	-0.000	-0.000	-0.000	-0.000
26	-.416	.059	-.226	-.716	60	-.397	.032	-.287	-.601
27	-.437	.067	-.222	-.790	61	-.399	.035	-.299	-.661
28	-.590	.080	-.325	-.987	62	-.526	.038	-.421	-.787
29	-.418	.081	-.159	-.938	63	-.353	.044	-.230	-.682
30	-.531	.085	-.220	-.969	64	-.430	.051	-.278	-.692
31	-.530	.098	-.234	-.999	65	-.436	.056	-.253	-.732
32	-.789	.155	-.357	-1.475	66	-.581	.062	-.382	-.862
33	-.896	.236	-.182	-1.773	67	-.404	.061	-.177	-.645
34	-0.000	-0.000	-0.000	-0.000	68	-.459	.060	-.220	-.689

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.487	.273	-.209	-.830	103	-.363	.049	-.165	-.629
70	-.654	.100	-.282	-1.086	104	-.428	.051	-.223	-.640
71	-.615	.160	-.143	-1.278	105	-.422	.058	-.212	-.670
72	-.228	.157	.523	-.690	106	-.535	.079	-.203	-.888
73	-.252	.117	.312	-.569	107	.209	.021	.283	.129
74	-.291	.095	.289	-.632	108	-.485	.088	-.114	-.851
75	-.287	.085	.125	-.616	109	-.588	.106	-.326	-1.077
76	-.314	.086	.069	-.820	110	-.720	.140	-.314	-1.337
77	-.337	.111	.174	-1.000	111	-.668	.209	-.170	-1.555
78	-.346	.169	.417	-.962	112	-.244	.222	.625	-.980
79	-.266	.241	1.036	-1.028	113	-.288	.140	.465	-.838
80	-.365	.246	.819	-1.245	114	-.271	.133	.329	-.761
81	-.707	.160	.406	-1.349	115	-.201	.112	.321	-.492
82	-.555	.128	-.153	-1.274	116	-.224	.117	.384	-.582
83	-.434	.119	-.056	-.885	117	-.252	.090	.164	-.534
84	-.398	.120	-.030	-.838	118	-.278	.080	.122	-.531
85	-.351	.114	.013	-.713	119	-.281	.067	.082	-.564
86	-.319	.127	.167	-.724	120	-.325	.067	.014	-.677
87	-.412	.125	.171	-.764	121	-.363	.089	.079	-.930
88	-.559	.117	-.266	-1.227	122	-.434	.137	.366	-1.013
89	-.508	.064	-.298	-.888	123	-.349	.137	.436	-.861
90	-.369	.052	-.242	-.655	124	-.451	.149	.622	-.826
91	-.422	.039	-.315	-.579	125	-.627	.116	-.189	-1.221
92	-.376	.033	-.284	-.475	126	-.542	.096	-.145	-.927
93	-.376	.033	-.283	-.497	127	-.458	.067	-.213	-.764
94	-.500	.034	-.398	-.629	128	-.443	.094	-.078	-.868
95	-.325	.035	-.227	-.487	129	-.409	.094	-.023	-.733
96	-.389	.036	-.235	-.533	130	-0.000	-0.000	-0.000	-0.000
97	-.390	.039	-.244	-.542	131	-.303	.108	.194	-.625
98	-.518	.042	-.366	-.713	132	-.399	.082	.027	-.716
99	-.344	.048	-.156	-.741	133	-.471	.072	-.273	-.808
100	-.404	.046	-.267	-.614	134	-.451	.057	-.261	-.743
101	-.409	.054	-.236	-.714	135	-.499	.041	-.366	-.673
102	-.541	.053	-.311	-.807	136	-.358	.034	-.255	-.464

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.364	.036	-.259	-.473	171	-.427	.061	-.193	-.635
138	-.492	.038	-.382	-.627	172	-.419	.061	-.141	-.639
139	-.314	.040	-.204	-.543	173	-.493	.070	-.028	-.710
140	-.374	.041	-.238	-.621	174	-.395	.055	-.226	-.667
141	-.375	.041	-.234	-.572	175	-.430	.041	-.296	-.633
142	-.508	.044	-.366	-.706	176	-.433	.039	-.328	-.598
143	-.334	.048	-.170	-.563	177	-.476	.034	-.362	-.586
144	-.406	.050	-.267	-.628	178	-.368	.027	-.275	-.455
145	-.413	.057	-.244	-.691	179	-.369	.034	-.256	-.514
146	-.540	.059	-.319	-.787	180	-.527	.044	-.366	-.676
147	-.366	.057	-.125	-.634	181	-.388	.066	-.117	-.617
148	-.417	.056	-.105	-.703	182	-.473	.099	-.243	-.922
149	-.418	.065	-.083	-.702	183	-.579	.125	-.295	-1.136
150	-.566	.087	-.273	-1.019	184	-0.000	-0.000	-0.000	-0.000
151	-.423	.095	-.047	-.840	185	-.373	.197	-.376	-1.021
152	-.567	.093	-.293	-1.214	186	-.275	.104	-.022	-.782
153	-.652	.116	-.328	-1.508	187	-.279	.102	-.037	-.654
154	-.836	.211	-.273	-1.973	188	-.272	.091	-.159	-.546
155	-.113	.214	-.784	-.782	189	-0.000	-0.000	-0.000	-0.000
156	-.272	.130	-.267	-.808	190	-.206	.091	-.238	-.462
157	-.207	.129	-.339	-.686	191	-0.000	-0.000	-0.000	-0.000
158	-.174	.131	-.370	-.487	192	-0.000	-0.000	-0.000	-0.000
159	-.214	.103	-.249	-.494	193	-.329	.050	-.102	-.478
160	-.240	.089	-.194	-.525	194	-.500	.073	-.288	-.803
161	-.253	.071	-.099	-.469	195	-0.000	-0.000	-0.000	-0.000
162	-.339	.060	-.001	-.548	196	-.427	.083	-.116	-.767
163	-.422	.083	-.024	-.749	197	-.506	.070	-.188	-.808
164	-.555	.121	-.138	-1.166	198	-.576	.075	-.340	-.876
165	-.433	.099	-.066	-.901	199	-.504	.072	-.276	-.856
166	-.474	.074	-.192	-.820	200	-.585	.069	-.307	-.839
167	-.509	.076	-.250	-.954	201	-.431	.065	-.201	-.737
168	-.486	.075	-.124	-.787	202	-.417	.051	-.245	-.622
169	-.445	.072	-.104	-.734	203	-.451	.057	-.220	-.730
170	-.446	.064	-.161	-.740	204	-.419	.054	-.190	-.630



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLIVER BUILDING  
 WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.493	.153	.054	-1.133	35	-0.000	-0.000	-0.000	-0.000
2	-.374	.177	.304	-1.076	36	.121	.313	1.257	-1.192
3	-.474	.152	.067	-1.290	37	-.049	.228	.843	-.944
4	-.372	.108	-.050	-.978	38	-.207	.187	.726	-.932
5	-.717	.222	.147	-1.661	39	-.286	.144	.322	-.902
6	-.297	.159	.202	-.947	40	-.342	.141	.373	-.918
7	-.347	.112	.041	-.907	41	-.356	.185	.489	-1.061
8	-.515	.160	.129	-1.231	42	-.402	.273	.767	-1.495
9	-.712	.214	.047	-1.706	43	-.284	.303	.871	-1.373
10	-.298	.156	.208	-.904	44	-.377	.273	.836	-1.646
11	-.343	.107	-.010	-.771	45	-.715	.178	-.257	-2.001
12	-.517	.150	.012	-1.108	46	-.531	.133	-.125	-1.328
13	-.335	.190	.360	-.990	47	-0.000	-0.000	-0.000	-0.000
14	-.556	.176	-.150	-1.333	48	-.364	.133	-.007	-1.050
15	-.417	.079	-.171	-.819	49	-.309	.130	.077	-1.005
16	-.407	.062	-.212	-.686	50	-.257	.148	.228	-.881
17	-.481	.047	-.316	-.700	51	-.142	.160	.373	-.694
18	-.292	.043	-.114	-.464	52	-.256	.179	.591	-.801
19	-.301	.044	-.147	-.482	53	-.592	.153	-.216	-1.376
20	-.332	.305	.353	-2.778	54	-.434	.076	-.217	-.902
21	-.284	.108	-.118	-2.847	55	-.489	.065	-.290	-.956
22	-.288	.045	-.144	-.476	56	-.330	.045	-.209	-.514
23	-.302	.049	-.145	-.526	57	-.282	.031	-.171	-.391
24	-.295	.053	-.127	-.529	58	-.266	.031	-.177	-.366
25	-.292	.063	-.071	-.561	59	-.251	.030	-.150	-.357
26	-.307	.067	-.059	-.703	60	-.279	.036	-.160	-.472
27	-.339	.072	-.131	-.832	61	-.297	.039	-.183	-.488
28	-.362	.086	-.072	-.701	62	-.286	.042	-.155	-.555
29	-.362	.084	-.085	-.711	63	-.276	.048	-.139	-.557
30	-.427	.089	-.076	-.764	64	-.285	.049	-.094	-.612
31	-.439	.095	-.124	-.888	65	-.307	.057	-.133	-.739
32	-.565	.136	-.093	-1.193	66	-.318	.073	-.070	-.789
33	-.867	.228	.140	-1.652	67	-.315	.078	-.047	-.720
34	-.354	.221	.658	-.940	68	-.371	.086	-.004	-.756

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 280

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.442	.107	-.073	-.952	103	-.290	.067	-.069	-.751
70	-.527	.148	-.127	-1.183	104	-.322	.074	-.085	-.640
71	-.700	.198	-.214	-1.493	105	-.350	.093	.032	-.778
72	.045	.257	1.291	-.807	106	-.323	.135	.353	-1.068
73	-.041	.187	.785	-.697	107	-0.000	-0.000	-0.000	-0.000
74	-.157	.146	.494	-.624	108				
75	-.210	.122	.452	-.573	109	-.747	.217	-.197	-1.744
76	-.287	.112	.199	-.695	110	-.991	.248	-.434	-2.230
77	-.353	.157	.334	-.934	111	-1.040	.352	-.016	-2.460
78	-.436	.229	.759	-1.202	112	-.012	.302	.973	-1.008
79	-.300	.246	.720	-1.079	113	-.023	.194	.720	-.670
80	-.447	.224	.568	-1.193	114				
81	-.765	.170	-.286	-1.581	115	.095	.205	.923	-.472
82	-.601	.135	-.177	-1.206	116	.080	.215	.989	-.465
83	-.468	.130	.071	-.951	117	-.015	.162	.708	-.460
84	-.423	.125	.045	-.934	118	-.112	.127	.466	-.463
85	-.362	.116	.045	-.861	119	-.184	.099	.322	-.491
86	-.326	.124	.187	-.722	120	-.312	.098	.192	-.691
87	-.375	.145	.337	-.856	121	-.464	.159	.075	-1.204
88	-.505	.120	-.196	-1.248	122	-.659	.225	.048	-1.629
89	-.480	.079	-.238	-1.158	123	-.457	.211	.425	-1.282
90	-.330	.061	-.122	-.748	124	-.536	.146	.337	-1.190
91	-.383	.043	-.261	-.558	125	-.683	.152	-.318	-1.445
92	-.251	.032	-.149	-.369	126	-.600	.126	-.231	-1.296
93	-.268	.033	-.142	-.371	127	-.499	.084	-.213	-.960
94	-.248	.033	-.139	-.362	128	-.475	.110	-.033	-.925
95	-.230	.034	-.115	-.380	129	-.433	.105	-.015	-.931
96	-.259	.031	-.140	-.366	130	-0.000	-0.000	-0.000	-0.000
97	-.282	.037	-.136	-.437	131	-.319	.103	.167	-.614
98	-.270	.042	-.140	-.489	132	-1.045	.365	-.085	-2.485
99	-.260	.051	-.111	-.572	133	.004	.298	.897	-1.095
100	-.277	.052	-.123	-.560	134	-.017	.201	.801	-.694
101	-.304	.058	-.109	-.585	135	-.458	.044	-.322	-.645
102	-.306	.066	-.108	-.710	136	-.306	.032	-.206	-.412

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 280

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137					171	-.434	.081	-.089	-.730
138					172	-.416	.077	-.038	-.710
139	-.212	.029	-.116	-.312	173	-.501	.073	-.161	-.850
140	-.241	.030	-.140	-.343	174	-.352	.057	-.138	-.673
141	-.264	.036	-.153	-.416	175	-.397	.043	-.258	-.575
142	-.251	.042	-.130	-.449	176	-.392	.035	-.240	-.517
143	-.238	.052	-.084	-.479	177	-.446	.036	-.291	-.613
144	-.273	.052	-.105	-.522	178	-.251	.032	-.152	-.376
145	-.304	.062	-.106	-.606	179	-.277	.038	-.171	-.447
146	-.304	.070	-.080	-.593	180	-.308	.060	-.110	-.608
147	-.284	.080	.028	-.657	181	-.305	.134	.152	-1.026
148	-.320	.100	.092	-.786	182	-.646	.145	-.160	-1.504
149	-.354	.130	-.011	-.967	183	-.834	.196	-.422	-1.735
150	-.402	.167	.134	-1.135	184	-0.000	-0.000	-0.000	-0.000
151	-.452	.169	.227	-1.309	185	-.448	.035	-.330	-.580
152	-.693	.152	-.252	-1.463	186	-.650	.158	-.253	-1.361
153	-.794	.180	-.371	-1.595	187	-.851	.201	-.422	-1.923
154	-1.197	.278	-.336	-2.264	188	-0.000	-0.000	-0.000	-0.000
155	.099	.233	.834	-.739	189	-.020	.233	.678	-.953
156	.063	.165	.726	-.523	190	.032	.122	.481	-.325
157	.114	.158	.731	-.390	191	-.047	.130	.454	-.533
158	.184	.168	.767	-.295	192	-.022	.121	.388	-.539
159	.066	.120	.508	-.296	193	-.296	.071	.116	-.526
160	-.049	.096	.382	-.327	194	-.068	.123	.538	-.452
161	-.134	.083	.270	-.393	195	-0.000	-0.000	-0.000	-0.000
162	-.333	.076	.068	-.610	196	-.564	.134	-.103	-1.283
163	-.549	.122	-.074	-.986	197	-.576	.102	-.152	-1.164
164	-.763	.157	-.192	-1.386	198	-.631	.109	-.329	-1.205
165	-.617	.170	.049	-1.357	199	-.548	.108	-.224	-1.044
166	-.562	.123	-.105	-1.132	200	-.623	.098	-.302	-1.195
167	-.550	.112	-.160	-1.114	201	-.461	.096	-.188	-1.003
168	-.530	.120	-.138	-1.131	202	-.437	.073	-.221	-.990
169	-.474	.113	-.103	-1.108	203	-.465	.079	-.207	-.875
170	-.466	.095	-.106	-.855	204	-.412	.063	-.176	-.644

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.453	.230	.195	-1.363	35	.236	.291	1.247	-.786
2	-.477	.246	.303	-1.321	36	.300	.282	1.275	-.661
3	-.547	.174	.020	-1.219	37	.151	.209	.852	-.550
4	-.291	.110	.100	-.781	38	-.001	.173	.619	-.664
5	-.597	.192	.236	-1.461	39	-.109	.144	.605	-.602
6	-.331	.211	.430	-1.126	40	-.264	.153	.657	-.803
7	-.257	.135	.426	-.837	41	-.407	.234	.684	-1.108
8	-.582	.187	.162	-1.385	42	-.676	.344	.644	-1.788
9	-.519	.132	.003	-1.153	43	-.443	.322	.609	-1.884
10	-.223	.209	.471	-.930	44	-.509	.208	.550	-1.422
11	-.139	.144	.614	-.614	45	-.701	.187	-.247	-1.696
12	-.562	.216	.054	-1.516	46	-.566	.158	-.085	-1.398
13	-.199	.139	.341	-.758	47	-.438	.133	-.072	-1.071
14	-.375	.142	-.048	-1.173	48	-.384	.122	.052	-1.108
15	-.273	.068	-.081	-.688	49	-.329	.111	-.010	-.916
16	-.276	.057	-.112	-.702	50	-.290	.123	.223	-.848
17	-.256	.054	-.043	-.509	51	-.195	.126	.310	-.608
18	-.228	.049	-.087	-.461	52	-.276	.133	.343	-.875
19	-.243	.050	-.098	-.521	53	-.335	.115	.059	-.921
20	-.221	.051	-.075	-.481	54	-.289	.073	-.065	-.700
21	-.191	.053	-.022	-.442	55	-.252	.051	-.077	-.613
22	-.237	.058	-.054	-.501	56	-.222	.038	-.078	-.355
23	-.259	.065	-.076	-.546	57	-.233	.031	-.138	-.352
24	-.243	.070	-.046	-.551	58	-.211	.030	-.104	-.306
25	-.227	.082	-.031	-.635	59	-.184	.030	-.098	-.292
26	-.267	.083	-.041	-.702	60	-.231	.036	-.111	-.364
27	-.317	.093	-.064	-.734	61	-.251	.041	-.140	-.402
28	-.316	.116	.103	-.893	62	-.237	.049	-.097	-.478
29	-.307	.124	.095	-.936	63	-.226	.068	-.020	-.653
30	-.405	.136	-.030	-1.371	64	-.255	.063	-.030	-.579
31	-.493	.168	-.012	-1.342	65	-.293	.087	-.018	-.656
32	-.659	.216	-.003	-1.468	66	-.306	.117	.062	-.909
33	-.847	.251	.006	-1.716	67	-.305	.136	.101	-.959
34	-.490	.179	.148	-1.256	68	-.414	.173	.048	-1.181

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.521	.217	.043	-1.384	103	-.261	.103	.157	-.824
70	-.614	.240	.019	-1.494	104	-.323	.129	.139	-1.076
71	-.707	.232	-.087	-1.474	105	-.374	.159	.149	-1.024
72	.328	.274	1.223	-.503	106	-.382	.208	.221	-1.410
73	.225	.227	1.118	-.476	107	-0.000	-0.000	-0.000	-0.000
74	.062	.179	.609	-.527	108	-.495	.216	.159	-1.474
75	-.078	.131	.476	-.535	109	-.626	.253	-.044	-1.823
76	-.284	.126	.450	-.829	110	-.671	.299	.116	-2.080
77	-.525	.225	.284	-1.379	111	-.811	.330	-.064	-2.735
78	-.750	.305	.297	-2.143	112	.228	.181	.932	-.726
79	-.568	.324	.634	-1.869	113	.343	.155	.772	-.284
80	-.563	.200	.273	-1.606	114	.362	.144	.761	-.147
81	-.660	.171	-.194	-1.438	115	.299	.192	1.039	-.350
82	-.585	.159	-.093	-1.509	116	.344	.221	.956	-.336
83	-.484	.144	.080	-1.266	117	.198	.174	.655	-.379
84	-.445	.136	.093	-1.238	118	.039	.137	.495	-.402
85	-.391	.123	.025	-.877	119	-.114	.099	.278	-.427
86	-.358	.124	.117	-.877	120	-.311	.104	.100	-.670
87	-.318	.135	.317	-.947	121	-.566	.175	.211	-1.162
88	-.330	.097	.040	-.714	122	-.787	.225	.148	-1.762
89	-.263	.073	-.047	-.634	123	-.616	.249	.360	-1.560
90	-.230	.058	-.070	-.481	124	-.551	.174	.103	-1.347
91	-.234	.039	-.125	-.420	125	-.575	.156	-.051	-1.139
92	-.207	.026	-.127	-.298	126	-.539	.154	-.065	-1.269
93	-.224	.027	-.153	-.323	127	-.475	.104	-.136	-.936
94	-.203	.026	-.126	-.299	128	-.462	.135	-.058	-1.156
95	-.176	.026	-.078	-.260	129	-.423	.120	.001	-1.133
96	-.218	.031	-.128	-.373	130	-0.000	-0.000	-0.000	-0.000
97	-.240	.036	-.124	-.523	131	-.318	.097	.146	-.663
98	-.225	.044	-.068	-.570	132	-.301	.119	.251	-.814
99	-.215	.061	-.048	-.573	133	-.305	.097	-.008	-.800
100	-.242	.062	-.050	-.521	134	-.285	.075	-.068	-.620
101	-.276	.076	-.070	-.615	135	-.238	.059	-.071	-.540
102	-.282	.101	.097	-.875	136	-.196	.036	-.088	-.387

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.216	.029	-.085	-.311	171	-.417	.061	-.226	-.687
138	-.196	.029	-.078	-.302	172	-0.000	-0.000	-0.000	-0.000
139	-.167	.030	-.062	-.295	173	-.264	.095	.171	-.672
140	-.205	.029	-.074	-.303	174	-.249	.074	-.018	-.630
141	-.227	.036	-.088	-.337	175	-.245	.050	-.059	-.490
142	-.214	.045	-.091	-.376	176	-.246	.042	-.122	-.448
143	-.210	.063	-.032	-.564	177	-.216	.036	-.100	-.357
144	-.246	.058	-.010	-.464	178	-.208	.031	-.091	-.318
145	-.288	.075	-.070	-.663	179	-.231	.037	-.085	-.392
146	-.293	.096	.081	-.655	180	-.271	.072	-.036	-.601
147	-.270	.109	.095	-.752	181	-.296	.165	.285	-.959
148	-.337	.140	.101	-1.179	182	-.522	.186	-.105	-1.229
149	-.394	.166	.101	-1.161	183	-.654	.239	-.147	-1.642
150	-.432	.184	.331	-1.200	184	-0.000	-0.000	-0.000	-0.000
151	-.44	.186	.168	-1.309	185	.122	.176	.874	-.632
152	-.507	.162	-.073	-1.293	186	.134	.112	.504	-.333
153	-.567	.186	-.080	-1.357	187	.155	.106	.503	-.293
154	-.699	.244	-.009	-1.591	188	.101	.104	.526	-.353
155	.235	.149	.682	-.444	189	-0.000	-0.000	-0.000	-0.000
156	.300	.125	.713	-.219	190	.072	.111	.522	-.255
157	.319	.121	.708	-.183	191	-0.000	-0.000	-0.000	-0.000
158	.331	.147	.867	-.246	192	-0.000	-0.000	-0.000	-0.000
159	.188	.113	.624	-.233	193	-.284	.065	.014	-.509
160	.042	.094	.431	-.282	194	-.465	.100	-.122	-.882
161	-.078	.076	.211	-.344	195	-0.000	-0.000	-0.000	-0.000
162	-.319	.069	-.067	-.647	196	-.479	.140	.076	-1.067
163	-.591	.129	-.098	-1.315	197	-.445	.114	-.112	-.858
164	-.784	.172	-.294	-1.628	198	-.522	.126	-.139	-1.004
165	-.667	.184	-.069	-1.610	199	-.542	.148	-.148	-1.399
166	-.574	.157	-.084	-1.207	200	-.403	.117	-.034	-.929
167	-.538	.140	-.162	-1.159	201	-.352	.113	-.041	-.900
168	-.521	.154	-.072	-1.421	202	-.398	.078	-.182	-.752
169	-.463	.135	-.039	-1.069	203	-.309	.085	-.059	-.659
170	-.450	.101	-.130	-.966	204	-.262	.066	-.020	-.506

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.439	.207	.271	-1.276	35	.476	.195	1.064	-.667
2	-.474	.209	.273	-1.369	36	.495	.230	1.094	-.914
3	-.476	.161	.175	-1.109	37	.269	.195	.739	-.695
4	-.241	.100	.089	-.614	38	.027	.181	.477	-.650
5	-.512	.130	-.083	-1.317	39	-.160	.165	.404	-.872
6	-.349	.177	.344	-.983	40	-.342	.169	.435	-1.056
7	-.232	.120	.178	-.628	41	-.520	.242	.743	-1.383
8	-.508	.165	.214	-1.065	42	-.782	.320	.491	-2.316
9	-.454	.103	-.055	-.917	43	-.558	.360	.910	-1.796
10	-.263	.205	.534	-1.270	44	-.550	.211	.347	-1.424
11	-.107	.138	.647	-.699	45	-.689	.187	-.191	-1.554
12	-.516	.186	.034	-1.215	46	-.571	.158	-.136	-1.343
13	-.164	.132	.432	-.596	47	-.437	.146	-.020	-1.349
14	-.361	.134	-.050	-1.314	48	-.379	.124	.077	-1.183
15	-.246	.058	-.077	-.528	49	-.327	.107	-.007	-.851
16	-.249	.050	-.094	-.520	50	-.290	.114	.107	-.828
17	-.217	.050	-.047	-.485	51	-.201	.114	.496	-.583
18	-.208	.045	-.010	-.453	52	-.187	.133	.352	-.600
19	-.224	.048	-.004	-.511	53	-.337	.124	-.027	-1.072
20	-.202	.049	.016	-.470	54	-.257	.072	-.050	-.909
21	-.172	.050	.044	-.391	55	-.221	.052	-.047	-.569
22	-.218	.057	-.030	-.474	56	-.195	.039	-.083	-.369
23	-.241	.063	-.047	-.494	57	-.247	.057	-.072	-.599
24	-.224	.071	-.004	-.577	58	-.238	.073	-.011	-.619
25	-.220	.095	.062	-.672	59	-.237	.101	.025	-.827
26	-.271	.096	.055	-.821	60	-.262	.109	.080	-.850
27	-.334	.100	-.079	-.896	61	-.315	.115	-.004	-.979
28	-.335	.103	.038	-.979	62	-.311	.129	.170	-.854
29	-.295	.108	.035	-.878	63	-.286	.161	.231	-1.010
30	-.377	.114	-.021	-.913	64	-.369	.207	.243	-1.134
31	-.441	.148	.034	-1.089	65	-.495	.236	.241	-1.500
32	-.620	.188	.008	-1.366	66	-.622	.222	.313	-1.622
33	-.856	.208	-.186	-1.801	67	-.766	.202	-.073	-1.519
34	-.231	.042	-.093	-.453	68	-.199	.031	-.090	-.300

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.214	.032	-.103	-.321	103	-0.000	-0.000	-0.000	-0.000
70	-.193	.033	-.086	-.315	104	-.494	.181	.166	-1.218
71	-.174	.036	-.059	-.326	105	-.187	.030	-.103	-.314
72	.553	.205	1.117	-.790	106	-.168	.030	-.081	-.304
73	.391	.184	.901	-.603	107	-.142	.033	-.037	-.287
74	.150	.181	.695	-.702	108	-.176	.034	-.056	-.323
75	-.052	.157	.483	-.704	109	-.567	.214	.024	-1.544
76	-.297	.165	.358	-.972	110	-.586	.220	.036	-1.754
77	-.587	.259	.515	-1.469	111	-.688	.223	-.095	-1.872
78	-.829	.320	.347	-2.053	112	.263	.147	.758	-.447
79	-.600	.365	.622	-1.989	113	.380	.111	.775	-.024
80	-.573	.206	.223	-1.523	114	.406	.113	.784	-.311
81	-.684	.183	-.197	-1.459	115	.382	.123	.908	-.096
82	-.676	.173	-.066	-1.345	116	.470	.147	.924	-.231
83	-.486	.171	.009	-1.383	117	.313	.121	.731	-.256
84	-.438	.160	.127	-1.441	118	.130	.122	.545	-.477
85	-.376	.136	.102	-1.053	119	-.036	.127	.336	-.628
86	-.345	.133	.107	-.997	120	-.275	.143	.299	-.844
87	-.254	.131	.301	-.831	121	-.595	.214	.226	-1.393
88	-.303	.114	-.019	-.892	122	-.850	.266	.016	-1.958
89	-.217	.072	-.034	-.671	123	-.655	.289	.238	-1.742
90	-.194	.058	-.047	-.611	124	-.558	.196	.174	-1.402
91	-.212	.041	-.095	-.429	125	-.591	.175	-.039	-1.292
92	-.207	.044	-.059	-.397	126	-.550	.177	-.039	-1.269
93	-.225	.053	-.044	-.435	127	-.476	.130	-.082	-1.019
94	-.211	.063	-.014	-.484	128	-.449	.168	.034	-1.139
95	-.206	.083	.008	-.675	129	-.401	.147	.074	-1.120
96	-.246	.085	-.028	-.781	130	-0.000	-0.000	-0.000	-0.000
97	-.296	.101	.043	-.816	131	-.288	.113	.267	-.742
98	-.277	.118	.130	-.980	132	-.241	.088	.222	-.678
99	-.257	.133	.318	-.858	133	-.263	.089	.012	-.631
100	-.300	.162	.162	-1.011	134	-.228	.063	-.016	-.696
101	-.362	.190	.282	-1.035	135	-.170	.046	-.026	-.509
102	-.390	.215	.368	-1.287	136	-.153	.037	-.045	-.397



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.195	.041	-.047	-.356	171	-.383	.105	-.016	-.823
138	-.179	.050	-.006	-.404	172	-.360	.098	.025	-.810
139	-.166	.063	.025	-.473	173	-.243	.081	.056	-.689
140	-.216	.066	.006	-.530	174	-.211	.074	.087	-.605
141	-.268	.084	.020	-.791	175	-.202	.053	-.044	-.409
142	-.267	.110	.070	-.804	176	-.190	.033	-.082	-.328
143	-.253	.124	.194	-.748	177	-.156	.033	-.043	-.295
144	-.335	.135	.261	-.799	178	-0.000	-0.000	-0.000	-0.000
145	-.403	.135	.126	-.867	179	-0.000	-0.000	-0.000	-0.000
146	-.439	.132	.170	-1.011	180	-0.000	-0.000	-0.000	-0.000
147	-.428	.123	-.020	-1.006	181	-0.000	-0.000	-0.000	-0.000
148	-.167	.023	-.090	-.240	182	-.480	.171	.065	-1.221
149	-.184	.032	-.085	-.307	183	-.636	.216	-.133	-1.593
150	-.205	.067	.005	-.586	184	-0.000	-0.000	-0.000	-0.000
151	-.227	.160	.281	-.914	185	-0.000	-0.000	-0.000	-0.000
152	-.438	.121	-.108	-1.047	186	-0.000	-0.000	-0.000	-0.000
153	-.492	.141	-.107	-1.242	187	-0.000	-0.000	-0.000	-0.000
154	-.598	.169	-.129	-1.211	188	-0.000	-0.000	-0.000	-0.000
155	-.280	.122	.698	-.324	189	-0.000	-0.000	-0.000	-0.000
156	.369	.094	.707	.049	190	.106	.094	.540	-.147
157	.373	.095	.704	.032	191	-0.000	-0.000	-0.000	-0.000
158	.377	.122	.825	.019	192	-0.000	-0.000	-0.000	-0.000
159	.239	.094	.574	-.042	193	-.262	.063	.031	-.489
160	.090	.086	.393	-.304	194	-.406	.104	.146	-.903
161	-.037	.081	.223	-.374	195	-0.000	-0.000	-0.000	-0.000
162	-.292	.086	.067	-.740	196	-.390	.139	.054	-1.027
163	-.574	.134	-.019	-1.165	197	-.356	.127	.043	-.873
164	-.768	.198	-.130	-1.602	198	-.365	.119	-.050	-.890
165	-.650	.195	.118	-1.410	199	-.514	.153	-.115	-1.126
166	-.553	.174	-.022	-1.190	200	-.299	.118	.026	-.865
167	-.506	.147	-.053	-1.094	201	-.268	.113	.007	-.972
168	-.494	.163	-.041	-1.137	202	-.367	.082	-.114	-.914
169	-.437	.156	-.019	-1.115	203	-.268	.087	-.018	-.851
170	-.420	.125	-.080	-.952	204	-.245	.069	.001	-.512

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM LPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.425	.165	.214	-1.091	35	.469	.192	1.149	-.570
2	-.438	.153	.363	-1.086	36	.389	.281	1.042	-1.083
3	-.455	.134	.124	-1.243	37	.182	.229	.740	-.649
4	-.248	.097	.122	-.604	38	-.044	.205	.526	-.667
5	-.467	.094	-.154	-.941	39	-.177	.179	.538	-.814
6	-.322	.142	.423	-.829	40	-.317	.179	.566	-1.002
7	-.236	.115	.233	-.655	41	-.443	.252	.633	-1.269
8	-.505	.140	.007	-1.107	42	-.647	.339	.683	-1.970
9	-.424	.086	-.147	-.790	43	-.399	.364	.786	-1.754
10	-.246	.165	.448	-.927	44	-.467	.224	.620	-1.309
11	-.088	.137	.488	-.578	45	-.728	.197	-.250	-1.541
12	-.498	.150	.004	-1.313	46	-.554	.146	-.128	-1.274
13	-.138	.137	.414	-.600	47	-.408	.129	.065	-1.027
14	-.337	.142	.022	-1.538	48	-.344	.113	.085	-1.072
15	-.236	.069	-.064	-.907	49	-.286	.098	.013	-.793
16	-.241	.054	-.095	-.571	50	-.238	.111	.207	-.705
17	-.200	.049	-.042	-.405	51	-.133	.124	.383	-.516
18	-.322	.054	-.146	-.545	52	-.188	.109	.283	-.622
19	-.327	.058	-.128	-.605	53	-.282	.100	-.021	-.821
20	-.473	.059	-.273	-.757	54	-.243	.057	-.068	-.553
21	-.264	.060	-.076	-.609	55	-.198	.045	-.041	-.407
22	-.337	.058	-.114	-.587	56	-.170	.038	-.046	-.347
23	-.349	.067	-.122	-.684	57	-.325	.043	-.164	-.499
24	-.508	.083	-.225	-1.021	58	-.473	.047	-.316	-.674
25	-.336	.113	-.013	-.829	59	-.268	.057	-.095	-.543
26	-.435	.122	-.110	-.977	60	-.335	.068	-.114	-.648
27	-.515	.136	-.190	-1.109	61	-.342	.089	-.070	-.766
28	-.634	.117	-.212	-1.108	62	-.500	.108	-.182	-1.046
29	-.346	.103	.031	-.744	63	-.320	.142	.062	-1.051
30	-.407	.109	.205	-.855	64	-.420	.161	.128	-1.248
31	-.416	.149	.140	-1.138	65	-.519	.171	-.096	-1.337
32	-.762	.202	-.088	-1.707	66	-.599	.148	.026	-1.295
33	-.847	.215	-.083	-1.700	67	-.298	.159	.286	-.973
34	-.406	.166	.241	-1.001	68	-.362	.206	.360	-1.048

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLTER BUILDING  
 WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.462	.258	.342	-1.279	103	-.281	.116	.286	-.826
70	-.774	.258	.025	-1.691	104	-.339	.140	.117	-1.013
71	-.749	.226	.106	-1.557	105	-.369	.175	.128	-1.079
72	.515	.228	.112	-.999	106	-.549	.225	.104	-1.606
73	.354	.197	.927	-.732	107	-0.000	-0.000	-0.000	-0.000
74	.127	.196	.686	-.770	108	-.605	.230	.238	-1.506
75	-.034	.174	.688	-.698	109	-.495	.227	.155	-1.360
76	-.250	.181	.668	-1.164	110	-.663	.267	.210	-2.113
77	-.529	.267	.626	-1.673	111	-.827	.283	.017	-1.877
78	-.766	.313	.381	-2.373	112	.142	.203	.738	-.776
79	-.531	.255	.958	-1.926	113	.421	.121	.801	-.112
80	-.535	.205	.320	-1.657	114	.430	.104	.815	.031
81	-.653	.174	-.172	-1.466	115	.407	.127	.908	-.041
82	-.572	.164	-.063	-1.252	116	.483	.145	.953	-.116
83	-.470	.166	-.098	-1.330	117	.324	.123	.693	-.231
84	-.427	.155	.128	-1.387	118	.137	.131	.548	-.410
85	-.374	.131	.043	-1.008	119	-.017	.130	.510	-.765
86	-.347	.129	.081	-1.001	120	-.247	.150	.372	-1.033
87	-.244	.096	.124	-.732	121	-.555	.222	.356	-1.459
88	-.262	.080	-.003	-.670	122	-.802	.261	.003	-1.970
89	-.202	.052	-.050	-.626	123	-.633	.292	.354	-1.612
90	-.177	.041	-.064	-.465	124	-.542	.204	.072	-1.491
91	-.208	.034	-.101	-.354	125	-.564	.178	.059	-1.337
92	-.313	.033	-.191	-.423	126	-.522	.175	.016	-1.366
93	-.309	.034	-.181	-.429	127	-.415	.160	.311	-.956
94	-.465	.037	-.326	-.586	128	-.412	.165	.060	-1.316
95	-.253	.042	-.105	-.442	129	-.375	.141	.066	-1.434
96	-.321	.055	-.144	-.578	130	-0.000	-0.000	-0.000	-0.000
97	-.327	.067	-.079	-.635	131	-.262	.136	.284	-.632
98	-.487	.078	-.231	-.951	132	-.211	.080	.084	-.598
99	-.295	.097	.037	-.807	133	-.250	.085	-.006	-.616
100	-.374	.094	-.133	-.874	134	-.210	.048	-.073	-.554
101	-.434	.107	-.197	-.896	135	-0.000	-0.000	-0.000	-0.000
102	-.534	.109	-.104	-.954	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.275	.032	-.177	-.400	171	-.373	.105	.006	-.956
138	-.424	.032	-.331	-.521	172	-.349	.094	.056	-.742
139	-.213	.034	-.098	-.328	173	-.219	.061	-.033	-.489
141	-.286	.043	-.144	-.455	174	-.206	.070	-.009	-.518
141	-.281	.047	-.127	-.475	175	-.165	.040	-.060	-.412
142	-.434	.053	-.246	-.681	176	-.183	.033	-.065	-.307
143	-.232	.063	-.021	-.546	177	-.157	.030	-.064	-.267
144	-.306	.066	-.094	-.576	178	-.273	.031	-.173	-.426
145	-.346	.079	-.104	-.730	179	-.275	.039	-.135	-.413
146	-.484	.093	-.163	-.932	180	-.436	.073	-.186	-.805
147	-.279	.113	.152	-.749	181	-.263	.186	.393	-.854
148	-.382	.134	.138	-.942	182	-.384	.122	.007	-.951
149	-.441	.142	.243	-1.068	183	-.515	.157	-.158	-1.201
150	-.660	.143	.130	-1.407	184	-0.000	-0.000	-0.000	-0.000
151	-.477	.132	.040	-1.095	185	.208	.115	.645	-.220
152	-.372	.053	-.235	-.582	186	.300	.081	.602	.071
153	-.442	.063	-.285	-.718	187	.283	.081	.593	.058
154	-.593	.198	-.078	-1.476	188	.249	.083	.581	-.004
155	.228	.135	.620	-.403	189	-0.000	-0.000	-0.000	-0.000
156	.390	.102	.773	.107	190	.145	.089	.511	-.107
157	.392	.101	.793	.040	191	-0.000	-0.000	-0.000	-0.000
158	.355	.197	.824	-.486	192	-0.000	-0.000	-0.000	-0.000
159	.268	.102	.707	-.053	193	-.246	.061	.016	-.461
160	.121	.094	.480	-.223	194	-0.000	-0.000	-0.000	-0.000
161	-.014	.082	.336	-.338	195	-0.000	-0.000	-0.000	-0.000
162	-.265	.089	.109	-.630	196	-.275	.115	.021	-.894
163	-.551	.133	-.035	-1.065	197	-.287	.108	.018	-.853
164	-.756	.196	-.156	-1.538	198	-.280	.103	-.010	-.722
165	-.623	.197	.060	-1.474	199	-.454	.139	-.132	-1.175
166	-.522	.180	.063	-1.322	200	-.237	.098	.035	-.733
167	-.467	.156	-.041	-1.239	201	-.212	.091	.031	-.740
168	-.460	.177	.010	-1.353	202	-.361	.088	-.084	-.808
169	-.417	.159	.104	-1.162	203	-.225	.069	-.026	-.592
170	-.405	.127	-.024	-.964	204	-.234	.061	-.043	-.499

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
OLYER BUILDING  
WIND DIRECTION 320

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.437	.157	.374	-1.022	35	.486	.213	1.140	-.442
2	-.417	.149	.162	-1.092	36	.461	.226	1.102	-.752
3	-.506	.127	.255	-.972	37	.269	.190	.808	-.593
4	-.294	.122	.043	-.798	38	.049	.198	.569	-.723
5	-.535	.112	-.012	-1.048	39	-.133	.190	.587	-.800
6	-.247	.148	.321	-.859	40	-.311	.191	.617	-.980
7	-.239	.118	.275	-.707	41	-.485	.255	.744	-1.349
8	-.514	.132	.159	-1.091	42	-.725	.323	.666	-1.815
9	-.492	.101	-.195	-.864	43	-.539	.348	.582	-1.845
10	-.215	.155	.343	-.736	44	-.511	.207	.326	-1.370
11	-.117	.130	.581	-.524	45	-.642	.181	-.077	-1.570
12	-.466	.147	.225	-1.411	46	-.530	.154	.026	-1.194
13	-.182	.120	.448	-.703	47	-.400	.145	.057	-1.328
14	-.249	.112	.097	-.851	48	-.352	.125	.004	-1.165
15	-.227	.066	-.045	-.616	49	-.305	.108	.065	-1.210
16	-.233	.057	-.057	-.567	50	-.271	.112	.253	-.868
17	-.213	.057	-.054	-.489	51	-.187	.108	.369	-.515
18	-.325	.062	-.101	-.595	52	-.195	.098	.322	-.617
19	-.335	.067	-.124	-.697	53	-.257	.082	.029	-.726
20	-.479	.063	-.299	-.740	54	-.243	.050	-.096	-.588
21	-.265	.063	-.077	-.523	55	-.204	.046	-.073	-.452
22	-.343	.072	-.134	-.747	56	-.174	.041	-.049	-.326
23	-.351	.082	-.126	-.792	57	-0.000	-0.000	-0.000	-0.000
24	-.517	.094	-.232	-1.018	58	-0.000	-0.000	-0.000	-0.000
25	-.339	.114	.102	-.869	59	-0.000	-0.000	-0.000	-0.000
26	-.264	.042	-.103	-.393	60	-.327	.064	-.117	-.745
27	-0.000	-0.000	-0.000	-0.000	61	-.332	.077	-.086	-.735
28	-0.000	-0.000	-0.000	-0.000	62	-.487	.088	-.168	-.960
29	-0.000	-0.000	-0.000	-0.000	63	-.293	.103	.088	-.915
30	-.263	.098	.132	-.687	64	-.387	.116	-.004	-.855
31	-.214	.125	.242	-.707	65	-.476	.135	-.140	-1.073
32	-.567	.210	.128	-1.429	66	-.557	.123	.003	-.987
33	-.702	.229	.317	-1.422	67	-.282	.132	.300	-.805
34	-0.000	-0.000	-0.000	-0.000	68	-.346	.149	.124	-.902

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 320

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.405	.181	.252	-1.158	103	-.242	.086	.165	-.707
70	-.649	.196	-.082	-1.656	104	-.298	.089	.219	-.668
71	-.533	.191	-.029	-1.320	105	-.305	.106	.199	-.891
72	.501	.188	1.031	-.500	106	-.453	.144	.141	-1.201
73	.406	.154	.925	-.307	107	-0.000	-0.000	-0.000	-0.000
74	.217	.155	.742	-.441	108	-.414	.187	.352	-1.177
75	.016	.171	.816	-.608	109	-.330	.146	.056	-1.035
76	-.243	.187	.665	-.925	110	-.407	.183	.004	-1.806
77	-.555	.262	.644	-1.448	111	-.638	.293	.349	-1.764
78	-.813	.294	.515	-1.818	112	-.090	.244	.612	-1.002
79	-.666	.237	.688	-2.028	113	.334	.171	.875	-.462
80	-.531	.228	.118	-1.575	114	.371	.137	.872	-.294
81	-.554	.184	-.006	-1.267	115	.399	.143	.999	-.074
82	-.526	.183	.028	-1.303	116	.433	.144	.872	-.150
83	-.429	.169	.143	-1.197	117	.335	.116	.710	-.097
84	-.401	.148	.113	-1.034	118	.192	.117	.666	-.356
85	-.361	.122	.003	-.968	119	.033	.123	.503	-.628
86	-.337	.116	.026	-.899	120	-.214	.138	.417	-.894
87	-.247	.083	.285	-.637	121	-.534	.201	.243	-1.377
88	-.262	.070	-.004	-.671	122	-.764	.263	-.064	-1.709
89	-.208	.046	-.051	-.464	123	-.596	.257	.368	-1.736
90	-.181	.043	-.033	-.417	124	-.493	.210	.116	-1.472
91	-.215	.040	-.070	-.390	125	-.467	.185	.052	-1.134
92	-0.000	-0.000	-0.000	-0.000	126	-.444	.182	.084	-1.125
93	-0.000	-0.000	-0.000	-0.000	127	-.400	.130	-.060	-1.006
94	-0.000	-0.000	-0.000	-0.000	128	-.392	.156	.054	-1.089
95	-0.000	-0.000	-0.000	-0.000	129	-.360	.130	.103	-1.192
96	-.316	.055	-.127	-.577	130	-0.000	-0.000	-0.000	-0.000
97	-.321	.062	-.150	-.615	131	-.286	.088	.115	-.744
98	-.475	.067	-.219	-.893	132	-.195	.057	-.022	-.680
99	-.273	.071	-.031	-.574	133	-.238	.061	-.059	-.614
100	-.344	.078	-.066	-.946	134	-.206	.040	-.079	-.375
101	-.394	.093	-.172	-1.117	135	-.194	.045	-.051	-.388
102	-.487	.094	.183	-1.001	136	-.168	.038	-.043	-.310

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 320

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.288	.039	-.139	-.447	171	-.352	.111	.041	-.888
138	-.437	.039	-.278	-.628	172	-.332	.099	.071	-.874
139	-.223	.042	-.039	-.430	173	-.212	.068	-.022	-.503
140	-.288	.042	-.143	-.496	174	-.190	.073	-.046	-.558
141	-.284	.047	-.144	-.526	175	-.169	.037	-.064	-.338
142	-.434	.050	-.263	-.671	176	-.222	.048	-.107	-.425
143	-.228	.057	-.064	-.520	177	-.194	.050	-.046	-.558
144					178	-.279	.039	-.153	-.444
145	-.339	.067	-.181	-.690	179	-.276	.043	-.139	-.482
146	-.460	.066	-.132	-.700	180	-.418	.061	-.198	-.704
147	-.222	.072	.050	-.531	181	-.155	.158	.449	-.852
148	-.291	.091	.093	-.752	182	-.293	.139	.203	-.788
149	-.312	.117	.078	-.861	183	-.477	.165	-.021	-1.271
150	-.518	.146	.012	-1.091	184	-0.000	-0.000	-0.000	-0.000
151	-.351	.163	.352	-1.102	185	.255	.114	.669	-.123
152	-.312	.104	-.011	-.750	186	.298	.088	.781	.042
153	-.404	.137	-.068	-1.002	187	.282	.087	.724	.042
154	-.659	.231	-.041	-1.570	188	.255	.088	.709	.018
155	.023	.210	.685	-.737	189	-0.000	-0.000	-0.000	-0.000
156	.344	.133	.739	-.205	190	.175	.096	.627	-.099
157	.358	.119	.745	-.217	191	-0.000	-0.000	-0.000	-0.000
158	.380	.118	.848	.048	192	-0.000	-0.000	-0.000	-0.000
159	.265	.095	.657	-.023	193	-.213	.069	.054	-.467
160	.136	.086	.489	-.121	194	-.239	.079	.005	-.552
161	.017	.079	.407	-.310	195	-0.000	-0.000	-0.000	-0.000
162	-.220	.088	.147	-.563	196	-.192	.086	.010	-.756
163	-.474	.142	.022	-1.076	197	-.233	.090	.009	-.884
164	-.632	.221	-.105	-1.637	198	-.242	.089	-.025	-.958
165	-.557	.209	-.077	-1.595	199	-.448	.158	-.064	-1.211
166	-.49	.183	.068	-1.309	200	-.218	.096	.020	-.849
167	-.443	.164	-.016	-1.114	201	-.192	.089	.038	-.752
168	-.439	.180	.054	-1.240	202	-.351	.088	-.099	-.775
169	-.386	.162	.064	-1.035	203	-.210	.067	-.033	-.585
170	-.379	.133	.001	-1.006	204	-.229	.060	-.054	-.572

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 CLTER BUILDING  
 WIND DIRECTION 330

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.229	.100	.134	-.671	35	.309	.286	1.134	-.542
2	-.167	.089	.105	-.694	36	.369	.276	1.074	-.621
3	-.352	.145	.236	-.961	37	.268	.207	.815	-.530
4	-.378	.154	.094	-.923	38	.138	.181	.983	-.615
5	-.344	.168	.448	-1.093	39	.005	.153	.643	-.611
6	-.023	.100	.306	-.496	40	-.241	.154	.457	-.952
7	-.043	.129	.360	-.477	41	-.487	.183	.348	-1.417
8	-.365	.136	.211	-.919	42	-.711	.230	.259	-1.829
9	-.454	.139	-.049	-1.085	43	-.569	.229	.263	-1.544
10	-.063	.116	.329	-.544	44	-.483	.201	.238	-1.512
11	.148	.151	.665	-.374	45	-.451	.164	-.010	-1.674
12	-.295	.117	.117	-1.115	46	-.416	.149	.006	-1.117
13	-.236	.064	-.025	-.538	47	-.357	.122	.006	-1.098
14	-.202	.059	-.025	-.457	48	-.354	.105	.063	-.985
15	-.242	.065	-.067	-.571	49	-.340	.093	-.016	-.838
16	-.271	.072	-.093	-.665	50	-.333	.094	.067	-.744
17	-.241	.066	-.012	-.526	51	-.283	.090	.178	-.746
18	-.317	.103	.645	-1.593	52	-.215	.060	.066	-.509
19					53	-.252	.060	-.056	-.655
20					54	-.244	.053	-.096	-.491
21					55	-.228	.056	-.073	-.515
22	-.340	.094	-.061	-.729	56	-.209	.058	-.046	-.449
23					57	-.273	.061	-.107	-.569
24	-.317	.105	.130	-.771	58	-.259	.064	-.080	-.565
25	-.266	.083	.040	-.623	59	-.244	.071	-.008	-.550
26	-.393	.131	.078	-.915	60	-.280	.081	-.005	-.610
27	-.773	.192	-.116	-1.517	61	-.314	.094	-.030	-.686
28	-.180	.234	.836	-.920	62	-.311	.106	.037	-.747
29	-.109	.152	.809	-.623	63	-.289	.101	.078	-.783
30	-.027	.148	.529	-.506	64	-.318	.114	.114	-.729
31	.012	.148	.602	-.451	65	-.425	.127	.211	-.927
32	-.050	.162	.582	-.710	66	-.304	.125	.326	-.845
33	-.221	.276	.766	-1.201	67	-.208	.106	.639	-.646
34	.013	.181	.708	-.581	68	-.225	.100	.268	-.682



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 330

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.258	.112	.170	-.879	103	-.130	.103	.408	-.478
70	-.263	.125	.099	-.848	104	-.184	.100	.503	-.566
71	-.271	.140	.106	-.929	105	-.223	.095	.244	-.635
72	.166	.268	.976	-.621	106	-.218	.091	.200	-.669
73	.181	.232	.891	-.517	107	-0.000	-0.000	-0.000	-0.000
74	.119	.188	.976	-.535	108	-.233	.088	.078	-.842
75	.015	.162	.811	-.595	109	-.235	.085	.193	-.615
76	-.228	.148	.425	-.865	110	-.247	.093	.123	-1.037
77	-.501	.185	.270	-1.319	111	-.350	.193	.161	-1.557
78	-.686	.231	-.080	-1.801	112	-.266	.198	.518	-1.157
79	-.495	.209	.264	-1.598	113	.047	.223	.755	-.712
80	-.421	.184	.209	-1.300	114	.174	.184	.649	-.497
81	-.386	.151	-.025	-1.167	115	.204	.200	.952	-.529
82	-.369	.148	.066	-1.221	116	.240	.208	1.028	-.562
83	-.337	.132	.098	-1.221	117	.207	.170	.872	-.529
84	-.337	.111	.025	-1.069	118	.136	.152	.958	-.481
85	-.327	.090	.003	-.818	119	.034	.125	.538	-.453
86	-.322	.082	-.018	-.866	120	-.185	.118	.307	-.647
87	-.269	.073	-.038	-.611	121	-.440	.155	.221	-1.141
88	-.278	.072	.015	-.654	122	-.581	.219	-.009	-1.518
89	-.207	.052	-.043	-.526	123	-.456	.185	.279	-1.569
90	-.189	.055	-.003	-.437	124	-.401	.168	.285	-1.285
91	-.238	.055	-.040	-.482	125	-.363	.151	.019	-1.402
92	-.217	.048	-.079	-.412	126	-.354	.147	.037	-1.180
93	-.239	.054	-.096	-.487	127	-.295	.080	-.086	-.818
94	-.216	.055	-.053	-.457	128	-.309	.088	.076	-.957
95	-.186	.060	.028	-.476	129	-.303	.073	-.023	-.949
96	-.238	.069	-.032	-.557	130	-0.000	-0.000	-0.000	-0.000
97	-.268	.073	-.051	-.605	131	-.285	.068	.026	-.725
98	-.262	.077	-.046	-.634	132	-.246	.099	.191	-.705
99	-.221	.073	-.022	-.557	133	-.277	.088	.031	-.679
100	-.233	.076	.060	-.545	134	-.240	.058	-.062	-.626
101	-.297	.087	.051	-.713	135	-.218	.060	-.041	-.523
102	-.180	.107	.428	-.559	136	-.195	.052	-.029	-.462

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
UNIFORM UPSTREAM ROUGHNESS  
OUTER BUILDING  
WIND DIRECTION 330

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.233	.044	-.087	-.409	171	-.333	.083	-.080	-.714
138	-.207	.046	-.044	-.413	172	-.320	.073	-.102	-.771
139	-.178	.049	-.011	-.370	173	-.219	.105	.251	-.629
140	-.228	.057	-.029	-.530	174	-.239	.081	-.001	-.629
141	-.240	.063	-.027	-.707	175	-.242	.065	-.075	-.567
142	-.214	.067	-.014	-.788	176	-.250	.061	-.093	-.554
143	-.184	.071	.037	-.691	177	-.215	.055	-.075	-.507
144	-.239	.070	.043	-.515	178	-.219	.048	-.073	-.428
145	-.311	.079	.033	-.641	179	-.243	.055	-.075	-.457
146	-.229	.084	.139	-.603	180	-.130	.093	.362	-.404
147	-.156	.089	.287	-.554	181	-.058	.105	.394	-.519
148	-.191	.091	.158	-.548	182	-.139	.124	.202	-.652
149	-.238	.099	.181	-.600	183	-.312	.169	.136	-1.122
150	-.248	.113	.197	-.764	184	-0.000	-0.000	-0.000	-0.000
151	-.221	.117	.237	-.770	185	.168	.154	.657	-.442
152	-.278	.113	.124	-1.010	186	.267	.091	.562	-.065
153	-.342	.139	.056	-1.078	187	.249	.089	.560	.004
154	-.571	.226	.102	-1.505	188	.217	.092	.556	-.029
155	-.266	.211	.701	-.932	189	-0.000	-0.000	-0.000	-0.000
156	.216	.165	.728	-.504	190	.119	.105	.485	-.241
157	.235	.151	.863	-.466	191	-0.000	-0.000	-0.000	-0.000
158	.309	.150	.801	-.228	192	-0.000	-0.000	-0.000	-0.000
159	.221	.120	.638	-.298	193	-.202	.065	.015	-.451
160	.116	.102	.492	-.275	194	-.443	.107	-.024	-.864
161	.017	.087	.416	-.278	195	-0.000	-0.000	-0.000	-0.000
162	-.194	.083	.174	-.618	196	-.463	.152	.255	-1.041
163	-.388	.121	.044	-.884	197	-.435	.125	-.012	-.914
164	-.466	.175	-.164	-1.249	198	-.479	.119	-.085	-.966
165	-.435	.158	-.088	-1.208	199	-.411	.129	-.092	-1.096
166	-.416	.153	.026	-1.160	200	-.359	.119	-.028	-.923
167	-.388	.138	.006	-1.096	201	-.303	.114	-.011	-1.170
168	-.377	.142	-.016	-1.144	202	-.328	.063	-.133	-.692
169	-.344	.119	-.023	-1.009	203	-.274	.088	-.014	-.649
170	-.351	.101	-.064	-.852	204	-.233	.079	.112	-.491

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.151	.076	.070	-.452	35	.203	.248	1.009	-.678
2	-.135	.094	.188	-.653	36	.034	.310	1.088	-1.174
3	-.242	.106	.143	-.713	37	-.025	.205	.618	-.811
4	-.186	.097	.056	-.695	38	-.089	.188	.643	-.745
5	-.206	.197	.576	-.876	39	-.140	.158	.531	-.770
6	-.175	.112	.265	-.551	40	-.314	.117	.161	-.918
7	-.113	.100	.197	-.474	41	-.414	.118	.407	-.941
8	-.204	.123	.233	-.764	42	-.510	.129	-.138	-1.278
9	-.446	.132	-.042	-.961	43	-.419	.120	-.094	-1.142
10	-.124	.113	.305	-.731	44	-.389	.111	.040	-.874
11	.045	.124	.557	-.365	45	-.355	.084	-.016	-.720
12	-.188	.117	.224	-.614	46	-.350	.080	-.054	-1.004
13	-.236	.045	-.104	-.429	47	-.323	.073	-.050	-.764
14	-.208	.044	-.083	-.442	48	-.338	.073	-.082	-.676
15	-.259	.060	-.086	-.566	49	-.336	.069	-.117	-.646
16	-.285	.066	-.060	-.557	50	-.341	.068	-.108	-.629
17	-.267	.074	.187	-.585	51	-.317	.070	-.073	-.594
18	-.277	.067	-.013	-.561	52	-.215	.035	-.099	-.355
19	-.314	.075	-.053	-.620	53	-.256	.040	-.072	-.465
20	-.297	.076	-.040	-.581	54	-.289	.067	-.079	-.705
21	-.262	.081	.019	-.600	55	-.276	.080	-.018	-.778
22	-.310	.086	-.011	-.703	56	-.255	.079	.119	-.682
23	-.347	.091	-.044	-.783	57	-.304	.075	-.079	-.673
24	-.340	.097	-.055	-.896	58	-.287	.077	-.049	-.610
25	-.289	.086	.039	-.651	59	-.254	.084	.051	-.642
26	-.271	.102	.080	-.597	60	-.308	.087	-.034	-.692
27	-.503	.175	.112	-1.390	61	-.346	.090	-.065	-.732
28	-.106	.237	.823	-.688	62	-.340	.093	-.086	-.759
29	-.004	.216	.867	-.591	63	-.313	.086	-.039	-.775
30	-.026	.195	.985	-.562	64	-.282	.115	.120	-.791
31	-.031	.173	.836	-.595	65	-.456	.149	.033	-1.166
32	-.016	.157	.869	-.551	66	-.143	.208	.876	-.846
33	-.075	.238	.813	-1.060	67	-.027	.212	.900	-.755
34	.122	.222	.740	-.881	68	-.060	.176	.804	-.568

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.099	.155	.756	-.547	103	-.004	.193	.662	-.710
70	-.111	.123	.727	-.513	104	-.029	.197	.769	-.598
71	-.100	.110	.593	-.569	105	-.084	.186	.793	-.726
72	-.236	.204	.891	-.836	106	-.107	.155	.597	-.594
73	-.228	.183	.729	-.943	107	-0.000	-0.000	-0.000	-0.000
74	-.252	.162	.359	-.845	108	-.123	.113	.521	-.489
75	-.258	.154	.489	-.893	109	-.098	.132	.602	-.490
76	-.352	.115	.378	-.883	110	-.197	.142	.604	-.839
77	-.439	.101	-.007	-.900	111	-.247	.130	.203	-1.076
78	-.496	.135	-.146	-1.250	112	-.264	.153	.435	-1.013
79	-.403	.112	.019	-.915	113	-.223	.193	.384	-.991
80	-.370	.090	-.018	-.894	114	-.116	.199	.562	-.770
81	-.352	.072	-.042	-.716	115	-.097	.209	.665	-.672
82	-.349	.070	.042	-.745	116	-.102	.234	.726	-.691
83	-.315	.055	-.149	-.578	117	-.116	.209	.628	-.739
84	-.331	.051	-.171	-.569	118	-.135	.200	.697	-.881
85	-.326	.045	-.180	-.591	119	-.185	.169	.716	-.782
86	-.323	.043	-.180	-.533	120	-.314	.127	.294	-.943
87	-.273	.049	.012	-.498	121	-.482	.132	.385	-.943
88	-.288	.050	-.109	-.542	122	-.495	.189	-.018	-1.484
89	-.255	.065	-.086	-.530	123	-.500	.154	.069	-1.240
90	-.248	.074	-.025	-.573	124	-.426	.127	-.102	-1.041
91	-.296	.073	.067	-.596	125	-.394	.115	-.104	-1.057
92	-.265	.069	-.022	-.523	126	-.381	.109	-.020	-1.033
93	-.311	.086	-.044	-.847	127	-.333	.072	-.085	-.711
94	-.291	.086	-.032	-.734	128	-.349	.082	-.067	-.850
95	-.259	.093	.006	-.747	129	-.340	.070	-.110	-.646
96	-.295	.088	.016	-.721	130	-0.000	-0.000	-0.000	-0.000
97	-.333	.088	-.053	-.676	131	-.318	.063	-.012	-.578
98	-.323	.091	-.001	-.768	132	-.248	.081	.111	-.626
99	-.294	.085	-.009	-.662	133	-.283	.072	.048	-.786
100	-.280	.097	.014	-.773	134	-.264	.060	-.046	-.631
101	-.455	.138	.096	-1.111	135	-.263	.073	-.030	-.593
102	-.120	.190	.771	-.805	136	-.253	.072	.003	-.643

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.284	.074	-.053	-.705	171	-.391	.089	-.069	-.779
138	-.267	.075	-.046	-.628	172	-.378	.082	-.047	-.749
139	-.229	.078	-.012	-.716	173	-.214	.076	-.159	-.532
147	-.276	.079	.053	-.597	174	-.261	.080	.068	-.631
141	-.304	.081	.061	-.617	175	-.277	.071	.046	-.683
142	-.297	.085	.213	-.644	176	-.301	.074	-.065	-.773
143	-.262	.084	.157	-.677	177	-.278	.074	-.065	-.686
144	-.289	.093	-.024	-.709	178	-.254	.060	-.098	-.529
145	-.397	.110	-.079	-.812	179	-.280	.063	-.124	-.699
146	-.213	.140	.509	-.758	180	.016	.149	.587	-.504
147	-.099	.158	.522	-.614	181	.023	.144	.714	-.588
148	-.094	.166	.503	-.600	182	.063	.131	.523	-.363
149	-.119	.158	.561	-.685	183	-.073	.132	.531	-.762
150	-.116	.140	.441	-.622	184	-0.000	-0.000	-0.000	-0.000
151	-.092	.135	.485	-.604	185	-.082	.129	.380	-.579
152	-.085	.133	.462	-.564	186	.015	.134	.574	-.658
153	-.163	.160	.442	-.922	187	.008	.136	.488	-.562
154	-.337	.228	.374	-1.370	188	.037	.124	.493	-.389
155	.043	.231	.780	-.650	189	-0.000	-0.000	-0.000	-0.000
156	-.001	.194	.530	-.716	190	.001	.142	.470	-.423
157	.035	.184	.574	-.619	191	-0.000	-0.000	-0.000	-0.000
158	.215	.198	.777	-.474	192	-0.000	-0.000	-0.000	-0.000
159	.136	.159	.893	-.485	193	-.217	.074	.104	-.508
160	.048	.135	.763	-.499	194	-.376	.120	.067	-.851
161	-.048	.105	.448	-.479	195	-0.000	-0.000	-0.000	-0.000
162	-.268	.087	.104	-.556	196	-.356	.130	-.003	-.872
163	-.520	.115	-.034	-.957	197	-.385	.086	-.143	-.820
164	-.721	.170	-.222	-1.415	198	-.472	.105	-.197	-.986
165	-.602	.164	-.059	-1.446	199	-.502	.115	-.170	-.992
166	-.532	.150	-.019	-1.566	200	-.361	.092	-.082	-.712
167	-.498	.136	-.097	-1.610	201	-.303	.088	-.058	-.756
168	-.487	.145	-.082	-1.746	202	-.328	.058	-.135	-.637
169	-.428	.130	-.035	-1.003	203	-.281	.075	-.042	-.639
170	-.418	.107	-.060	-.919	204	-.241	.069	.020	-.521

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.491	.149	.012	-1.070	35	.031	.281	.888	-.738
2	-.537	.147	.042	-1.121	36	-.070	.350	.948	-1.372
3	-.407	.102	-.010	-.731	37	-.088	.236	.563	-.973
4	-.444	.121	-.063	-1.028	38	-.117	.201	.616	-.977
5	-.610	.142	-.049	-1.240	39	-.188	.163	.370	-.961
6	-.550	.108	-.113	-.975	40	-.352	.120	.086	-.995
7	-.405	.111	.199	-.783	41	-.454	.116	.089	-.920
8	-.376	.109	.057	-.764	42	-.549	.139	-.243	-1.182
9	-.594	.132	-.127	-1.153	43	-.449	.124	-.118	-1.173
10	-.492	.119	-.014	-1.223	44	-.419	.113	-.070	-.942
11	-.307	.120	.216	-.706	45	-.381	.077	-.086	-.757
12	-.343	.121	.115	-.798	46	-.375	.066	-.131	-.676
13	-.301	.047	-.105	-.488	47	-.355	.054	-.115	-.657
14	-.272	.048	-.062	-.440	48	-.370	.051	-.178	-.590
15	-.320	.072	-.051	-.660	49	-.371	.051	-.218	-.720
16	-.351	.080	-.071	-.687	50	-.379	.053	-.221	-.609
17	-.312	.067	-.049	-.667	51	-.347	.054	-.171	-.603
18	-.303	.070	-.097	-.592	52	-.260	.034	-.140	-.389
19	-.338	.077	-.134	-.744	53	-.292	.041	-.150	-.442
20	-.311	.073	-.095	-.649	54	-.327	.062	-.126	-.620
21	-.267	.068	-.040	-.563	55	-.328	.075	-.126	-.762
22	-.324	.063	-.091	-.681	56	-.292	.061	-.119	-.629
23	-.349	.059	-.152	-.633	57	-.322	.054	-.160	-.753
24	-.324	.058	-.125	-.595	58	-.289	.054	-.138	-.656
25	-.318	.051	-.131	-.543	59	-.245	.053	-.068	-.599
26	-.289	.069	.050	-.569	60	-.292	.048	-.085	-.557
27	-.704	.155	-.061	-1.483	61	-.316	.047	-.114	-.572
28	-.020	.154	.906	-.535	62	-.295	.049	-.139	-.650
29	.304	.156	.873	-.473	63	-.315	.051	-.124	-.535
30	.378	.188	.945	-.347	64	-.270	.076	-.064	-.578
31	.371	.228	1.018	-.344	65	-.668	.151	-.020	-1.203
32	.294	.236	.950	-.439	66	-.037	.125	.535	-.694
33	.206	.223	1.014	-.427	67	.329	.141	.779	-.373
34	-.117	.174	.479	-.834	68	.452	.166	.983	-.295

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OUTER BUILDING  
 WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.445	.193	1.028	-.230	103	.287	.131	.743	-.459
70	.361	.209	1.160	-.338	104	.411	.160	.894	-.393
71	.229	.207	1.073	-.412	105	.424	.187	.948	-.394
72	-.392	.143	.484	-1.058	106	.398	.200	.964	-.364
73	-.345	.129	.292	-1.310	107	-0.000	-0.000	-0.000	-0.000
74	-.343	.117	.131	-.831	108	.317	.156	.989	-.239
75	-.335	.115	.153	-.897	109	.416	.163	.947	-.068
76	-.388	.096	.057	-.970	110	.227	.268	.998	-.677
77	-.423	.086	-.168	-.856	111	-.368	.265	.437	-1.545
78	-.441	.097	-.203	-1.007	112	-.513	.296	.408	-1.644
79	-.375	.086	-.091	-.882	113	-.368	.152	.215	-1.128
80	-.374	.071	-.139	-.964	114	-.217	.144	.404	-.891
81	-.350	.051	-.134	-.638	115	-.247	.161	.638	-.779
82	-.364	.046	-.127	-.634	116	-.253	.186	.616	-.793
83	-.341	.041	-.196	-.517	117	-.282	.166	.451	-.893
84	-.354	.038	-.231	-.500	118	-.313	.165	.374	-.933
85	-.347	.036	-.229	-.513	119	-.324	.141	.386	-.827
86	-.343	.037	-.222	-.543	120	-.403	.111	.054	-.783
87	-.318	.043	-.158	-.495	121	-.474	.098	.006	-.821
88	-.330	.047	-.132	-.520	122	-.536	.137	-.186	-1.185
89	-.298	.058	-.131	-.618	123	-.431	.104	-.105	-.914
90	-.289	.062	-.086	-.578	124	-.393	.086	-.070	-.888
91	-.324	.052	-.152	-.583	125	-.365	.069	-.148	-.801
92	-.298	.051	-.123	-.503	126	-.366	.064	-.140	-.729
93	-.322	.053	-.140	-.565	127	-.344	.046	-.202	-.665
94	-.293	.053	-.136	-.535	128	-.363	.052	-.207	-.728
95	-.249	.052	-.107	-.547	129	-.359	.046	-.218	-.576
96	-.302	.051	-.134	-.591	130	-0.000	-0.000	-0.000	-0.000
97	-.329	.052	-.195	-.651	131	-.338	.040	-.121	-.488
98	-.310	.055	-.136	-.671	132	-.304	.056	-.017	-.627
99	-.314	.055	-.149	-.646	133	-.332	.054	-.128	-.616
100	-.305	.067	-.055	-.572	134	-.311	.051	-.171	-.515
101	-.674	.130	-.166	-1.232	135	-.336	.078	-.033	-.788
102	-.072	.120	.611	-.728	136	-.308	.068	-.036	-.742

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 UNIFORM UPSTREAM ROUGHNESS  
 OLIER BUILDING  
 WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.337	.065	-.195	-.711	171	-.388	.054	-.229	-.625
138	-.311	.068	-.154	-.790	172	-.384	.049	-.221	-.595
139	-.266	.067	-.093	-.823	173	-.272	.071	.049	-.512
140	-.309	.055	-.080	-.604	174	-.282	.059	-.088	-.499
141	-.335	.055	-.163	-.631	175	-.332	.066	-.148	-.734
142	-.32	.063	-.152	-.771	176	-.360	.082	-.120	-.925
143	-.312	.057	-.090	-.540	177	-.335	.071	-.161	-.663
144	-.305	.071	-.049	-.595	178	-.316	.073	-.134	-.900
145	-.597	.148	-.022	-1.019	179	-.336	.066	-.169	-.747
146	-.115	.132	.557	-.627	180	.101	.091	.589	-.294
147	.191	.136	.852	-.333	181	.381	.126	.810	-.202
148	.287	.169	.848	-.293	182	.366	.142	.833	-.065
149	.309	.180	.860	-.284	183	.250	.200	.846	-.369
150	.327	.178	.848	-.373	184	-0.000	-0.000	-0.000	-0.000
151	.359	.173	.874	-.187	185	-.510	.229	.174	-1.267
152	.395	.160	.849	-.172	186	-.259	.115	.128	-.793
153	.237	.233	.683	-.609	187	-.250	.105	.075	-.767
154	-.197	.268	.462	-1.751	188	-.220	.098	.281	-.597
155	-.224	.267	.711	-1.663	189	-0.000	-0.000	-0.000	-0.000
156	-.302	.158	.232	-.946	190	-.186	.089	.272	-.488
157	-.158	.149	.428	-.978	191	-0.000	-0.000	-0.000	-0.000
158	.084	.233	.977	-.545	192	-0.000	-0.000	-0.000	-0.000
159	-.005	.177	.641	-.590	193	-.294	.078	.070	-.577
160	-.089	.152	.466	-.694	194	-.374	.079	-.065	-.649
161	-.147	.131	.367	-.586	195	-0.000	-0.000	-0.000	-0.000
162	-.322	.095	.156	-.700	196	-.383	.090	-.096	-.912
163	-.528	.097	-.156	-.896	197	-.444	.075	-.246	-.727
164	-.689	.167	-.301	-1.281	198	-.508	.092	-.269	-.873
165	-.554	.132	.079	-1.179	199	-.488	.069	-.299	-.825
166	-.494	.112	-.134	-1.011	200	-.382	.070	-.139	-.631
167	-.452	.093	-.137	-.893	201	-.318	.061	-.102	-.562
168	-.444	.093	-.117	-.896	202	-.347	.046	-.169	-.558
169	-.397	.078	-.181	-.706	203	-.330	.072	-.054	-.638
170	-.402	.064	-.219	-.695	204	-.274	.057	-.013	-.484



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 6

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.444	.154	.255	-1.169	35	-.331	.106	.166	-.799
2	-.511	.136	.249	-1.141	36	-.828	.161	-.242	-1.393
3	-.312	.121	.129	-.723	37	-.719	.153	-.224	-1.299
4	-.281	.113	.137	-.758	38	-.441	.147	.045	-.985
5	-.574	.105	-.108	-.920	39	-.395	.120	-.017	-.938
6	-.571	.120	-.127	-1.143	40	-.368	.096	-.071	-.841
7	-.279	.132	.266	-.783	41	-.401	.095	-.128	-.893
8	-.373	.156	.235	-.943	42	-.250	.087	.009	-.722
9	-.462	.100	-.129	-.945	43	-.279	.077	-.049	-.685
10	-.457	.116	-.114	-1.008	44	-.290	.081	-.037	-.626
11	-.095	.161	.667	-.717	45	-.332	.072	-.110	-.621
12	-.142	.156	.479	-.765	46	-.207	.068	.009	-.445
13	-.166	.053	.006	-.439	47	-.257	.061	-.074	-.514
14	-.176	.077	.084	-.592	48	-.257	.063	-.071	-.518
15	-.294	.134	.020	-1.082	49	-.313	.062	-.120	-.591
16	-.379	.156	.117	-1.088	50	-.187	.060	-.003	-.442
17	-.141	.203	.544	-.774	51	-.240	.063	-.025	-.492
18	-.111	.148	.438	-.550	52	-.153	.043	-.003	-.325
19	-.272	.163	.234	-.838	53	-.188	.067	.028	-.524
20	-.371	.154	.171	-.929	54	-.257	.128	.100	-.813
21	-.378	.140	.118	-1.052	55	-.254	.142	.214	-.884
22	-.468	.128	-.023	-1.089	56	-.241	.161	.547	-.905
23	-.507	.117	-.164	-.971	57	-.323	.143	.169	-1.067
24	-.542	.116	-.249	-1.137	58	-.349	.128	.071	-.951
25	-.337	.102	.274	-.673	59	-.287	.119	.047	-.967
26	-.116	.104	.333	-.473	60	-.340	.113	.099	-.884
27	-.476	.221	.350	-1.209	61	-.366	.104	.019	-.782
28	.110	.170	.796	-.455	62	-.395	.106	-.111	-.844
29	.416	.147	.866	-.129	63	-.326	.095	-.002	-.694
30	-0.000	-0.000	-0.000	-0.000	64	-.193	.122	.209	-.798
31	-0.000	-0.000	-0.000	-0.000	65	-.503	.197	.172	-1.147
32	-0.000	-0.000	-0.000	-0.000	66	-.023	.144	.512	-.588
33	-0.000	-0.000	-0.000	-0.000	67	.340	.118	.798	-.063
34	.187	.160	.903	-.495	68	.424	.132	.956	.001

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 6

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.478	.144	.947	.056	103	.226	.094	.712	-.222
70	.479	.151	1.166	.031	104	.303	.104	.646	-.123
71	.524	.157	1.253	.009	105	.357	.118	.774	-.077
72	-.639	.293	.793	-1.850	106	.372	.134	.881	-.046
73	-.436	.270	.504	-1.559	107	.475	.138	.962	.033
74	-.218	.200	.501	-1.087	108	.424	.134	1.029	.048
75	-.267	.155	.293	-.941	109	.397	.134	.934	-.146
76	-.319	.124	.291	-.844	110	.390	.155	1.025	-.090
77	-.465	.128	.017	-1.023	111	.099	.170	.639	-.757
78	-.346	.163	.006	-1.174	112	-.303	.283	.439	-1.442
79	-.350	.138	.009	-1.068	113	-.240	.165	.180	-1.026
80	-.316	.120	.018	-.963	114	-.088	.144	.301	-.884
81	-.344	.095	-.043	-1.039	115	-.179	.188	.446	-1.169
82	-.211	.082	.066	-.802	116	-.086	.197	.611	-.894
83	-.269	.067	-.094	-.634	117	-.211	.135	.312	-1.155
84	-.267	.059	-.073	-.540	118	-.100	.120	.529	-.733
85	-.316	.052	-.130	-.525	119	-.184	.109	.311	-.629
86	-.186	.049	-.019	-.391	120	-.253	.098	.189	-.706
87	-.177	.063	.167	-.516	121	-.415	.108	.061	-.887
88	-.198	.084	.061	-.654	122	-.389	.149	.015	-.937
89	-.200	.122	.195	-.823	123	-.366	.114	-.062	-.898
90	-.203	.130	.149	-.867	124	-.303	.097	-.023	-.700
91	-.246	.145	.360	-.859	125				
92	-.220	.114	.319	-.666	126	-.205	.086	.051	-.628
93					127	-.259	.070	-.068	-.605
94	-.318	.132	.173	-.920	128	-.260	.071	-.060	-.620
95	-.247	.126	.143	-.973	129	-.312	.065	-.144	-.615
96	-.304	.117	.138	-.920	130	-.175	.049	-.049	-.425
97	-.327	.111	-.043	-.838	131	-.233	.057	-.020	-.509
98	-.361	.113	-.094	-.819	132	-0.000	-0.000	-0.000	-0.000
99	-.282	.098	-.013	-.710	133	-0.000	-0.000	-0.000	-0.000
100	-.231	.118	.079	-.867	134	-0.000	-0.000	-0.000	-0.000
101	-.486	.182	.030	-1.287	135	-0.000	-0.000	-0.000	-0.000
102	-.096	.126	.451	-.537	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 6

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.242	.124	.239	-.998	171	-.292	.060	-.125	-.621
138	-.277	.117	.131	-.858	172	-.175	.055	-.003	-.472
139	-.199	.114	.376	-.764	173	-.096	.049	.077	-.294
140	-.253	.106	.085	-.812	174	-.059	.050	.099	-.308
141	-.278	.102	-.008	-.748	175	-.110	.070	.070	-.816
142	-.307	.104	-.058	-.833	176	-.150	.077	.041	-.509
143	-.237	.088	-.019	-.625	177	-.124	.094	.301	-.542
144	-.235	.107	.099	-.655	178	-.188	.090	.143	-.682
145	-.446	.162	.003	-.984	179	-.233	.091	-.018	-.703
146	-.162	.115	.321	-.564	180	.039	.057	.250	-.225
147	.131	.077	.542	-.204	181	.326	.078	.603	.110
148	.213	.077	.502	-.098	182	.325	.080	.653	.089
149	.261	.088	.565	-.059	183	.265	.089	.605	-.058
150	.279	.097	.603	-.049	184	.091	.091	.404	-.206
151	.381	.104	.790	.044	185	-.187	.134	.182	-.745
152	.314	.101	.729	.027	186	-0.000	-0.000	-0.000	-0.000
153	.292	.118	.739	-.082	187	-.059	.074	.129	-.450
154	.085	.138	.614	-.533	188	-.063	.076	.195	-.450
155	-.232	.198	.410	-1.065	189	.040	.084	.439	-.272
156	-.162	.115	.132	-.993	190	-.044	.068	.264	-.299
157	-.110	.109	.198	-.847	191	.058	.046	.246	-.119
158	-.093	.135	.401	-.766	192	-.023	.041	.133	-.262
159	-.133	.110	.281	-.728	193	-.167	.046	.003	-.372
160	-.018	.081	.324	-.427	194	-.182	.060	-.010	-.495
161	-.138	.063	.190	-.477	195	-.214	.079	-.032	-.533
162	-.215	.060	.009	-.559	196	-.148	.068	.049	-.489
163					197	-.168	.061	.017	-.477
164	-.383	.112	-.118	-.815	198	-.187	.064	.001	-.505
165	-.341	.093	-.085	-.762	199	-.307	.059	-.122	-.560
166	-.277	.082	-.043	-.681	200	-.134	.057	.009	-.369
167	-.311	.079	-.107	-.667	201	-.105	.054	.022	-.367
168	-.213	.076	.006	-.583	202	-.178	.059	-.025	-.421
169	-.242	.064	-.062	-.592	203	-.121	.050	.006	-.331
170	-.238	.063	-.063	-.488	204	-.116	.046	.039	-.277

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 16

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.355	.147	.174	-.851	35	-.254	.099	.232	-.605
2	-.402	.128	.144	-.881	36	-.754	.145	-.227	-1.233
3	-.217	.123	.268	-.768	37	-.589	.134	-.113	-1.067
4	-.205	.110	.134	-.716	38	-.384	.128	.032	-.901
5	-.436	.111	-.073	-.925	39	-.298	.095	-.019	-.786
6	-.417	.111	-.011	-.926	40	-.279	.069	.034	-.645
7	-.206	.145	.273	-.765	41	-.265	.069	.031	-.566
8	-.217	.153	.274	-.805	42	-.199	.063	.046	-.525
9	-.377	.094	-.051	-.822	43	-.196	.058	.043	-.500
10	-.360	.098	-.037	-.825	44	-.208	.061	-.008	-.454
11	.038	.164	.575	-.524	45	-.198	.056	.001	-.462
12	-.031	.148	.613	-.550	46	-.156	.053	.015	-.377
13	-.155	.048	-.004	-.395	47	-.177	.052	-.022	-.437
14	-.152	.069	.022	-.653	48	-.189	.053	-.014	-.429
15	-.283	.118	-.013	-.896	49	-.189	.053	-.016	-.424
16	-.467	.157	-.104	-1.107	50	-.145	.051	.021	-.374
17	.090	.169	.710	-.682	51	-.172	.051	-.006	-.384
18	.106	.132	.527	-.372	52	-.129	.048	.034	-.410
19	-.039	.159	.409	-.862	53	-.195	.079	.009	-.645
20	-.156	.167	.338	-.854	54	-.291	.134	.037	-1.118
21	-.224	.177	.219	-.848	55	-.324	.152	.209	-1.060
22	-.400	.161	.159	-.966	56	-.093	.215	.665	-.812
23	-.548	.135	-.050	-1.196	57	-.226	.188	.411	-.987
24	-.642	.130	-.266	-1.189	58	-.279	.171	.198	-1.133
25	-.268	.114	.337	-.667	59	-.265	.151	.200	-.895
26	.025	.110	.448	-.355	60	-.369	.137	.068	-1.096
27	-.170	.202	.561	-.977	61	-.434	.114	-.057	-.957
28	.330	.179	1.012	-.218	62	-.501	.113	-.151	-1.046
29	.543	.172	1.065	-.008	63	-.340	.096	.022	-.729
30	.548	.163	1.078	-.011	64	-.069	.114	.410	-.549
31	.563	.164	1.044	.034	65	-.247	.197	.452	-.850
32	.515	.159	1.003	-.039	66	.165	.157	.787	-.326
33	.512	.163	1.059	-.019	67	.423	.137	.936	.052
34	.048	.166	.588	-.635	68	.452	.142	.946	.062

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 16

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.470	.145	.951	.084	103	.275	.113	.701	-.013
70	.427	.141	.880	0.000	104	.319	.115	.796	.020
71	.427	.145	.883	-.085	105	.351	.120	.818	.027
72	-.633	.137	-.264	-1.250	106	.360	.124	.809	.013
73	-.498	.131	-.110	-1.129	107	.459	.125	.887	.149
74	-.345	.132	.072	-.888	108	.398	.116	.801	.079
75	-.281	.118	.151	-.754	109	.399	.115	.838	.026
76	-.255	.094	.075	-.651	110	.377	.134	.805	-.086
77	-.247	.084	.107	-.667	111	.072	.191	.685	-.749
78	-.174	.075	.098	-.516	112	-.493	.227	.511	-1.223
79	-.189	.072	.032	-.538	113	-.373	.146	.181	-1.137
80	-.207	.071	-.014	-.648	114	-.249	.143	.336	-.825
81	-.197	.054	-.054	-.500	115	-.276	.165	.439	-.856
82	-.141	.046	-.013	-.363	116	-.227	.240	.621	-1.031
83	-.168	.039	.001	-.336	117	-.198	.181	.526	-1.051
84					118	-.133	.142	.411	-.954
85	-.181	.037	-.052	-.329	119	-.186	.108	.248	-.573
86	-.124	.038	.012	-.309	120	-.227	.090	.164	-.645
87	-.167	.048	-.024	-.512	121	-.280	.094	.042	-.897
88	-.207	.082	.034	-.637	122	-.241	.108	.004	-1.019
89	-.227	.122	.068	-.899	123	-.230	.090	.003	-.695
90	-.238	.131	.107	-.839	124	-.216	.078	.016	-.596
91	-.168	.161	.605	-.698	125	-.199	.067	-.002	-.636
92	-.137	.132	.324	-.565	126	-.139	.063	.029	-.562
93	-.228	.154	.185	-1.088	127	-.172	.048	-.038	-.492
94	-.268	.138	.092	-.895	128	-.184	.049	-.064	-.497
95	-.237	.132	.123	-.951	129	-.178	.043	-.062	-.444
96	-.327	.113	.036	-.844	130	-.116	.029	-.026	-.256
97	-.374	.105	-.046	-.930	131	-.148	.041	.029	-.357
98	-.433	.112	-.086	-1.026	132	-0.000	-0.000	-0.000	-0.000
99	-.291	.090	.044	-.656	133	-0.000	-0.000	-0.000	-0.000
100	-.138	.102	.201	-.555	134	-0.000	-0.000	-0.000	-0.000
101	-.317	.176	.236	-.964	135	-0.000	-0.000	-0.000	-0.000
102	.026	.138	.547	-.418	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 16

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.192	.115	.150	-.896	171	-0.000	-0.000	-0.000	-0.000
138	-.227	.106	.083	-.775	172	-0.000	-0.000	-0.000	-0.000
139					173	-.101	.047	.088	-.276
140	-.253	.106	.117	-.818	174	-.071	.055	.103	-.312
141	-.294	.103	-.043	-.930	175	-.132	.067	.077	-.435
142	-.338	.108	-.091	-1.015	176	-.162	.075	.012	-.572
143	-.232	.086	.014	-.585	177	-.100	.084	.232	-.566
144	-.183	.098	.105	-.615	178	-.146	.080	.108	-.558
145	-.341	.159	.112	-.984	179	-.213	.088	.064	-.641
146	-.099	.120	.390	-.519	180	.048	.060	.381	-.125
147	.145	.081	.511	-.131	181	.309	.069	.622	.132
148	.200	.081	.675	.006	182	.325	.079	.653	.135
149	.234	.083	.660	.033	183	.264	.084	.635	.052
150	.242	.087	.607	.021	184	.104	.108	.484	-.353
151	.340	.092	.723	.115	185	-.228	.143	.174	-.747
152	.311	.080	.637	.093	186	-0.000	-0.000	-0.000	-0.000
153	.286	.096	.685	-.085	187	-.121	.092	.164	-.542
154					188	-.118	.084	.178	-.525
155	-.374	.179	.295	-1.127	189	.032	.108	.584	-.424
156	-.289	.134	.093	-.866	190	.052	.068	.312	-.333
157	-.242	.122	.253	-.727	191	.059	.044	.221	-.259
158	-.143	.154	.399	-.841	192	-.032	.037	.099	-.275
159	-.076	.143	.394	-.809	193	-.115	.043	.077	-.297
160	.015	.103	.387	-.573	194	-.202	.057	-.050	-.481
161	-.043	.072	.195	-.394	195	-.179	.072	.002	-.482
162	-.134	.059	.078	-.427	196	-.126	.066	.044	-.450
163	-.222	.073	.117	-.531	197	-.154	.060	.025	-.400
164	-.237	.094	-.002	-.701	198	-.168	.062	-.002	-.453
165	-.167	.056	-.012	-.409	199	-.181	.060	-.002	-.456
166	-.182	.053	-.028	-.402	200	-.134	.059	.025	-.400
167	-.169	.046	.019	-.387	201	-.101	.057	.114	-.356
168	-.113	.042	.062	-.387	202	-.116	.054	.024	-.451
169	-0.000	-0.000	-0.000	-0.000	203	-.114	.045	.039	-.351
170	-0.000	-0.000	-0.000	-0.000	204	-.121	.042	.054	-.287

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 26

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.284	.134	.173	-.853	35	-.273	.087	.124	-.625
2	-.331	.122	.238	-.775	36	-.685	.115	-.344	-1.130
3	-.164	.120	.189	-.634	37	-.579	.112	-.233	-1.018
4	-.152	.090	.219	-.609	38	-.342	.119	.011	-.750
5	-.381	.113	-.031	-.906	39	-.266	.103	.059	-.674
6	-.349	.101	-.015	-.854	40	-.257	.064	-.051	-.573
7	-.113	.137	.396	-.668	41	-.271	.070	.050	-.553
8	-.141	.137	.390	-.609	42	-.186	.071	-.020	-.671
9	-.341	.096	.072	-1.093	43	-.195	.061	-.023	-.555
10	-.330	.084	-.011	-1.026	44	-.200	.056	-.033	-.475
11	.060	.155	.549	-.472	45	-.215	.049	-.062	-.455
12	.006	.149	.491	-.451	46	-.132	.044	.027	-.294
13	-.174	.042	-.039	-.380	47	-.173	.040	-.040	-.331
14	-.165	.058	.005	-.501	48	-.184	.040	-.048	-.343
15	-.299	.112	-.031	-.798	49	-.208	.041	-.073	-.372
16	-.502	.157	-.082	-1.078	50	-.130	.040	.002	-.274
17	.157	.144	.815	-.433	51	-.169	.040	-.007	-.344
18	.209	.118	.630	-.301	52	-.135	.039	-.016	-.429
19	.119	.110	.444	-.437	53	-.198	.060	-.043	-.541
20	.031	.104	.330	-.559	54	-.307	.120	-.024	-.920
21	-.042	.121	.259	-.647	55	-.408	.147	.144	-1.017
22	-.185	.139	.203	-.844	56	.056	.166	.663	-.729
23	-.413	.156	.101	-1.081	57	-0.000	.139	.334	-.672
24	-.587	.136	-.112	-1.137	58	-.069	.138	.289	-.681
25	-.124	.133	.647	-.592	59	-.094	.147	.256	-.804
26	.182	.122	.641	-.254	60	-.217	.148	.184	-.744
27	.144	.194	.903	-.618	61	-.321	.131	.114	-.836
28	.475	.177	1.119	-.173	62	-.454	.128	.007	-1.029
29	.577	.167	1.121	.080	63	-.233	.119	.294	-.627
30	.586	.168	1.031	.043	64	.092	.123	.562	-.326
31	.578	.167	1.082	.096	65	.040	.189	.670	-.701
32	.487	.153	.970	-.033	66	.337	.166	.865	-.149
33	.394	.152	.908	-.195	67	.492	.152	1.049	.102
34	-.166	.181	.499	-1.155	68	.490	.151	1.053	.081

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 26

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.482	.147	1.036	.005	103	.344	.122	.887	.006
70	.386	.137	.874	-.047	104	.367	.124	.994	.081
71	.301	.145	.840	-.121	105	.383	.125	1.021	.081
72	-.536	.122	-.247	-1.063	106	.369	.123	.929	.055
73	-.468	.113	-.152	-1.054	107	.450	.120	.931	.150
74	-.318	.111	.009	-.781	108	.417	.119	.939	.088
75	-.313	.119	.033	-.762	109	.382	.138	.859	.008
76	-.276	.106	.187	-.761	110	.346	.138	.878	-.084
77	-.273	.098	.123	-.718	111	-.114	.216	.416	-.915
78	-.172	.085	.098	-.505	112	-.632	.204	-.163	-1.494
79	-.189	.078	.051	-.712	113	-.449	.134	-.074	-1.117
80	-.205	.073	.002	-.647	114	-.338	.113	.051	-.853
81	-.213	.051	-.047	-.452	115	-.360	.114	.184	-.876
82	-.131	.041	.025	-.328	116	-.354	.172	.511	-.860
83	-.166	.038	-.047	-.337	117	-.332	.149	.197	-.934
84	-.177	.035	-.063	-.317	118	-.226	.126	.250	-.776
85	-.201	.034	-.076	-.349	119	-.249	.093	.017	-.694
86	-.122	.032	-.032	-.268	120	-.258	.078	-.002	-.606
87	-.178	.044	-.024	-.447	121	-.289	.080	-.050	-.714
88	-.216	.069	-.035	-.590	122	-.198	.082	-.001	-.660
89	-.232	.100	.034	-.752	123	-.213	.067	-.036	-.654
90	-.298	.117	-.015	-.816	124	-.218	.059	-.060	-.481
91	-.037	.127	.395	-.545	125	-.223	.047	-.085	-.478
92	.011	.115	.364	-.510	126	-.137	.040	-.027	-.333
93	-.065	.133	.286	-.714	127	-.166	.030	-.083	-.280
94	-.123	.130	.203	-.766	128	-.176	.032	-.067	-.294
95	-.122	.135	.237	-.917	129	-.195	.032	-.070	-.309
96	-.207	.123	.243	-.765	130	-.114	.024	-.043	-.198
97	-.289	.115	.168	-.805	131	-.155	.037	-.054	-.291
98	-.394	.118	-.021	-.913	132	-0.000	-0.000	-0.000	-0.000
99	-.201	.105	.614	-.614	133	-0.000	-0.000	-0.000	-0.000
100	-.019	.103	.344	-.436	134	-0.000	-0.000	-0.000	-0.000
101	-.100	.171	.417	-.731	135	-0.000	-0.000	-0.000	-0.000
102	.165	.141	.777	-.307	136	-0.000	-0.000	-0.000	-0.000



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 26

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.108	.110	.199	-.645	171	-.188	.035	-.053	-.303
138	-.153	.105	.157	-.626	172	-.100	.034	.008	-.244
139	-.119	.102	.192	-.627	173	-.103	.052	.054	-.347
140	-.184	.088	.092	-.636	174	-.085	.070	.126	-.456
141	-.234	.084	.062	-.726	175	-.150	.080	.052	-.636
142	-.301	.090	-.054	-.763	176	-.171	.074	.026	-.577
143	-.169	.078	.177	-.469	177	-.052	.071	.230	-.409
144	-.077	.087	.237	-.477	178	-.075	.076	.144	-.388
145	-.168	.147	.272	-.734	179	-.146	.079	.116	-.515
146	.034	.119	.551	-.388	180	.110	.066	.487	-.115
147	.221	.089	.650	-.008	181	.320	.066	.686	.142
148	.232	.080	.578	.040	182	.319	.079	.586	.125
149	.255	.082	.577	.042	183	.242	.087	.527	-.133
150	.250	.083	.575	.050	184	.015	.139	.354	-.681
151	.333	.085	.752	.127	185	-.387	.168	.045	-1.294
152	.290	.081	.643	-.027	186	-0.000	-0.000	-0.000	-0.000
153	.242	.106	.612	-.097	187	-.230	.109	.061	-.903
154	-.133	.213	.648	-.903	188	-.208	.095	.254	-.562
155	-.495	.178	-.058	-1.296	189	.026	.115	.499	-.329
156	-.347	.132	-.035	-1.003	190	.053	.068	.283	-.254
157	-.308	.104	-.007	-.754	191	.044	.044	.241	-.125
158	-.278	.130	.348	-.867	192	-.051	.038	.160	-.203
159	-.235	.140	.401	-.860	193	-.119	.039	.006	-.279
160	-.083	.116	.266	-.666	194	-.235	.056	-.036	-.435
161	-.107	.088	.248	-.454	195	-.234	.080	-.056	-.641
162	-.153	.062	.077	-.366	196	-.175	.072	.011	-.451
163	-.231	.065	.016	-.468	197	-.192	.061	-.025	-.436
164	-.220	.072	-.016	-.523	198	-.200	.061	-.047	-.435
165	-.208	.064	.034	-.551	199	-.204	.055	-.059	-.404
166	-.187	.057	.015	-.438	200	-.164	.055	-.007	-.385
167	-.199	.053	-.003	-.464	201	-.124	.053	.041	-.323
168	-.124	.048	.049	-.387	202	-.089	.049	.078	-.256
169	-.168	.045	-.040	-.454	203	-.116	.041	.055	-.319
170	-.178	.040	-.048	-.308	204	-.120	.039	.065	-.276

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 36

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.226	.127	.278	-.761	35	-.332	.094	-.077	-.789
2	-.289	.125	.238	-.773	36	-.634	.123	-.263	-1.259
3	-.128	.107	.231	-.560	37	-.559	.117	-.201	-1.110
4	-.128	.081	.161	-.437	38	-.357	.131	.175	-.775
5	-.330	.113	.162	-1.026	39	-.247	.114	.186	-.730
6	-.301	.091	-.053	-.641	40	-.246	.072	-.023	-.569
7	-.036	.097	.295	-.549	41	-.268	.092	.128	-.726
8	-.075	.104	.248	-.465	42	-.240	.086	-.021	-.802
9	-.297	.108	.084	-.818	43	-.250	.081	.029	-.657
10	-.286	.074	-.027	-.555	44	-.244	.072	.021	-.593
11	-.034	.141	.440	-.463	45	-.245	.056	-.061	-.525
12	.032	.122	.522	-.369	46	-.156	.047	.008	-.309
13	-.190	.043	-.057	-.377	47	-.193	.040	-.031	-.328
14	-.176	.058	-.004	-.487	48	-.203	.038	-.067	-.347
15	-.299	.097	-.043	-.736	49	-.228	.039	-.105	-.368
16	-.485	.154	-.114	-1.079	50	-.152	.037	-.021	-.275
17	.201	.110	.590	-.461	51	-.201	.043	-.079	-.381
18	.301	.109	.665	-.052	52	-.143	.043	.026	-.315
19	.214	.088	.513	-.104	53	-.209	.061	.013	-.535
20	.128	.073	.451	-.209	54	-.307	.109	.012	-1.066
21	.135	.071	.415	-.231	55	-.438	.143	-.093	-1.074
22	.016	.096	.316	-.567	56	.127	.105	.516	-.295
23	-.178	.163	.273	-.803	57	.130	.085	.513	-.250
24	-.436	.181	.166	-1.021	58	.069	.083	.393	-.416
25	.105	.142	.740	-.463	59	.090	.092	.377	-.457
26	.351	.142	.848	-.095	60	-.021	.107	.277	-.502
27	.401	.196	1.014	-.317	61	-.133	.124	.220	-.588
28	.550	.168	1.157	.007	62	-.315	.136	.149	-.887
29	.623	.156	1.063	.114	63	-.016	.136	.592	-.428
30	.541	.147	1.055	.109	64	.230	.133	.837	-.177
31	.498	.139	.931	.033	65	.244	.185	.919	-.448
32	.376	.126	.838	-.046	66	.409	.157	1.032	-.104
33	.256	.134	.921	-.184	67	.519	.143	1.031	.115
34	-.340	.187	.270	-.953	68	.453	.135	.960	.078

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 36

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	.411	.129	.896	.068	103	.376	.115	.856	.060
70	.276	.120	.770	-.096	104	.358	.107	.795	.092
71	.153	.140	.665	-.372	105	.357	.109	.772	.097
72	-.475	.105	-.179	-.894	106	.333	.108	.735	.018
73	-.442	.101	-.178	-.827	107	.421	.106	.799	.069
74	-.327	.108	.039	-.792	108	.387	.114	.828	.084
75	-.329	.115	.129	-.800	109	.418	.137	.991	.037
76	-.296	.118	.099	-.823	110	.293	.145	.798	-.258
77	-.284	.117	.131	-.913	111	-.297	.242	.384	-1.520
78	-.181	.099	.113	-.604	112	-.684	.223	-.189	-1.606
79	-.203	.083	.085	-.579	113	-.481	.138	-.096	-1.140
80	-.221	.081	.053	-.751	114	-.373	.114	-.016	-.806
81	-.228	.061	-.039	-.561	115	-.390	.113	.039	-.929
82	-.143	.049	.025	-.435	116	-.375	.155	.183	-1.051
83	-.181	.040	-.062	-.341	117	-.360	.129	.039	-.987
84	-.187	.037	-.067	-.338	118	-.257	.111	.073	-.802
85	-.212	.036	-.100	-.365	119	-.291	.100	0.000	-.657
86	-.135	.035	-.009	-.282	120	-.283	.094	.006	-.712
87	-.167	.040	-.043	-.330	121	-.297	.093	.022	-.730
88	-.202	.060	-.029	-.484	122	-.206	.089	.045	-.699
89	-.243	.105	-.003	-.949	123	-.217	.074	-.014	-.519
90	-.338	.125	-.003	-1.118	124	-.229	.072	-.007	-.558
91	.025	.092	.502	-.300	125	-.229	.055	-.062	-.472
92	.107	.083	.452	-.233	126	-.139	.045	-.005	-.312
93	.053	.081	.351	-.471	127	-.176	.038	-.052	-.290
94	.004	.077	.230	-.394	128	-.181	.038	-.046	-.301
95	.033	.086	.283	-.350	129	-.201	.038	-.088	-.362
96	-.059	.100	.194	-.524	130	-.121	.027	-.046	-.222
97	-.146	.112	.150	-.661	131	-.151	.036	-.043	-.291
98	-.277	.123	.107	-.790	132	-0.000	-0.000	-0.000	-0.000
99	-.042	.117	.279	-.401	133	-0.000	-0.000	-0.000	-0.000
100	.104	.109	.408	-.271	134	-0.000	-0.000	-0.000	-0.000
101	.097	.161	.757	-.540	135	-0.000	-0.000	-0.000	-0.000
102	.251	.131	.756	-.149	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 36

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.009	.085	.277	-.471	171	-.193	.040	-.053	-.328
138	-.055	.085	.230	-.472	172	-.107	.037	.028	-.246
139	-.013	.089	.304	-.452	173	-.116	.059	.019	-.493
140	-.092	.086	.131	-.476	174	-.110	.086	.128	-.948
141	-.153	.083	.090	-.521	175	-.175	.088	.013	-.927
142	-.235	.085	.046	-.645	176	-.206	.078	-.029	-.605
143	-.065	.084	.206	-.401	177	-.022	.068	.336	-.290
144	.013	.083	.369	-.260	178	-.001	.067	.175	-.395
145	-.025	.129	.455	-.475	179	-.067	.074	.147	-.575
146	.101	.103	.702	-.195	180	.156	.071	.603	-.057
147	.245	.085	.791	.033	181	.321	.071	.665	.155
148	.254	.083	.630	.066	182	.326	.074	.695	.135
149	.260	.084	.632	.066	183	.225	.089	.569	-.128
150	.247	.084	.606	.047	184	-.132	.178	.328	-.918
151	.329	.084	.680	.125	185	-.504	.184	-.041	-1.239
152	.302	.093	.734	.096	186	-0.000	-0.000	-0.000	-0.000
153	.204	.121	.665	-.214	187	-.306	.122	.009	-.870
154	-0.000	-0.000	-0.000	-0.000	188	-.266	.103	.140	-.691
155	-0.000	-0.000	-0.000	-0.000	189	.007	.139	.493	-.419
156	-.367	.023	-.306	-.555	190	.035	.082	.390	-.328
157	-0.000	-0.000	-0.000	-0.000	191	.025	.054	.183	-.237
158	-.326	.111	.103	-.851	192	-.066	.044	.088	-.242
159	-.310	.121	.209	-.799	193	-.137	.045	.012	-.309
160	-.162	.108	.274	-.609	194	-.231	.061	-.013	-.444
161	-.181	.093	.168	-.525	195	-.224	.089	-.018	-.710
162	-.184	.072	.130	-.486	196	-.171	.079	.029	-.522
163	-.237	.074	.128	-.576	197	-.190	.064	-.013	-.458
164	-.227	.084	-.023	-.725	198	-.199	.061	-.052	-.418
165	-.207	.061	-.034	-.470	199	-.220	.064	-.042	-.455
166	-.195	.058	-.017	-.489	200	-.155	.063	.038	-.424
167	-.214	.057	-.016	-.596	201	-.112	.056	.067	-.350
168	-.134	.048	.018	-.397	202	-.079	.050	.070	-.312
169	-.174	.049	-.043	-.453	203	-.125	.045	.082	-.321
170	-.178	.046	-.057	-.409	204	-.136	.044	.037	-.293

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 96

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.171	.114	.222	-.616	35	-.058	.072	.144	-.390
2	-.123	.116	.263	-.707	36	-.071	.079	.155	-.489
3	-.172	.110	.207	-.532	37	-.099	.078	.138	-.445
4	-.274	.100	.268	-.666	38	-.020	.078	.214	-.345
5	-.026	.126	.437	-.498	39	-.065	.079	.177	-.401
6	-.207	.094	.227	-.559	40	-.082	.082	.165	-.363
7	-.264	.086	.002	-.576	41	-.107	.084	.130	-.428
8	-.157	.108	.278	-.527	42	-.036	.083	.211	-.362
9	.193	.137	.703	-.289	43	-.072	.079	.153	-.464
10	-.185	.086	.091	-.526	44	-.103	.081	.094	-.445
11	-.207	.080	.068	-.530	45	-.158	.100	.129	-.595
12	-.039	.114	.479	-.622	46	-.082	.089	.218	-.447
13	-.126	.092	.184	-.626	47	-.141	.088	.200	-.523
14	-.125	.109	.152	-.648	48	-.161	.087	.309	-.611
15	-.101	.169	.569	-.766	49	-.184	.081	.051	-.603
16	.277	.196	1.004	-.571	50	-.103	.076	.132	-.507
17	.592	.157	1.009	.103	51	-.134	.075	.098	-.496
18	.585	.146	1.064	.078	52	-.086	.132	.227	-1.115
19	.578	.153	1.005	.074	53	-.163	.148	.189	-1.250
20	.558	.153	1.025	.044	54	-.216	.191	.494	-.982
21	.651	.155	1.110	.139	55	.113	.205	.818	-.810
22	.588	.157	1.106	.135	56	.500	.154	.990	.005
23	.568	.156	1.105	.108	57	.473	.136	.885	.089
24	.489	.157	1.036	-.079	58	.456	.136	.877	.070
25	.237	.182	.860	-.628	59	.540	.137	1.031	.122
26	.267	.115	.818	-.162	60	.475	.133	1.035	.122
27	-.123	.118	.516	-.598	61	.440	.135	1.064	.054
28	-.511	.148	.017	-.994	62	.345	.145	.956	-.230
29	-.278	.151	.222	-.824	63	.155	.167	.703	-.654
30	-.134	.109	.172	-.554	64	.175	.118	.635	-.423
31	-.061	.078	.235	-.471	65	-.130	.113	.386	-.572
32	-.079	.063	.145	-.430	66	-.360	.125	.003	-.810
33	-.037	.071	.248	-.336	67	-.187	.127	.214	-.654
34	-.104	.096	.176	-.591	68	-.149	.135	.215	-.637

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 96

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.108	.124	.351	-.667	103	-.041	.121	.271	-.510
70	-.095	.104	.309	-.604	104	-.009	.110	.269	-.568
71	-.021	.090	.447	-.431	105	.033	.103	.298	-.627
72	-.043	.066	.130	-.311	106	.074	.098	.391	-.490
73	-.052	.069	.219	-.289	107	.187	.091	.454	-.258
74	.058	.079	.403	-.237	108	.242	.106	.632	-.168
75	.046	.087	.502	-.239	109	.246	.155	.867	-.222
76	.054	.096	.560	-.320	110	.129	.087	.458	-.358
77	.002	.096	.555	-.318	111	-.019	.094	.216	-.534
78	-.066	.122	.433	-.595	112	.001	.073	.231	-.445
79	-.057	.096	.303	-.519	113	-.007	.051	.139	-.295
80	-.099	.108	.324	-.542	114	.036	.045	.176	-.191
81	-.156	.125	.345	-.679	115	-0.000	-0.000	-0.000	-0.000
82	-.061	.107	.355	-.456	116	-0.000	-0.000	-0.000	-0.000
83	-.106	.115	.415	-.509	117	-.015	.034	.088	-.129
84	-.123	.120	.373	-.672	118	-0.000	-0.000	-0.000	-0.000
85	-.160	.128	.264	-.808	119	.002	.050	.228	-.229
86	-.082	.126	.250	-.748	120	-.012	.055	.248	-.189
87	-.104	.142	.182	-.887	121	-.044	.060	.190	-.292
88	-.155	.164	.208	-1.015	122	.020	.064	.237	-.243
89	-.174	.188	.347	-.981	123	-.005	.076	.245	-.314
90	.059	.169	.557	-.678	124	-.030	.085	.271	-.452
91	.308	.116	.709	-.053	125	-.068	.103	.306	-.515
92	.347	.108	.835	.060	126	.011	.095	.334	-.359
93	.321	.109	.875	.028	127	-.033	.078	.248	-.402
94	.307	.109	.861	.027	128	-.061	.097	.292	-.681
95	.387	.109	.937	.108	129	-.095	.103	.294	-.750
96	.341	.104	.788	.063	130	-.020	.084	.201	-.439
97	.314	.107	.816	-.001	131	-.061	.108	.213	-.735
98	.255	.116	.786	-.132	132	-0.000	-0.000	-0.000	-0.000
99	.163	.141	.813	-.448	133	-0.000	-0.000	-0.000	-0.000
100	.154	.100	.581	-.164	134	-0.000	-0.000	-0.000	-0.000
101	-.040	.104	.412	-.382	135	-0.000	-0.000	-0.000	-0.000
102	-.206	.126	.133	-.833	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 96

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.207	.080	.627	-.004	171	-.065	.095	.231	-.695
138	.193	.081	.589	.004	172	.007	.098	.208	-.723
139	.272	.081	.740	.091	173	-.022	.121	.243	-.733
140	.240	.074	.629	.032	174	-.007	.124	.249	-.838
141	.217	.077	.643	-.009	175	-.108	.131	.231	-.783
142	.180	.085	.681	-.066	176	-.054	.110	.307	-.650
143	.162	.104	.521	-.247	177	.169	.081	.538	-.164
144	.165	.078	.483	-.100	178	.268	.066	.586	.082
145	.068	.084	.465	-.232	179	.238	.061	.554	.077
146	-.013	.092	.253	-.476	180	.130	.058	.320	-.120
147	.116	.084	.369	-.263	181	.232	.050	.437	.038
148	.099	.074	.301	-.294	182	.240	.053	.499	.093
149	.107	.073	.320	-.312	183	.089	.052	.262	-.155
150	.118	.071	.318	-.289	184	-.095	.094	.177	-.440
151	.207	.073	.449	-.302	185	-.011	.077	.271	-.324
152	.195	.081	.654	-.280	186	-0.000	-0.000	-0.000	-0.000
153	.061	.061	.410	-.228	187	.023	.068	.237	-.421
154	-.007	.083	.206	-.364	188	.003	.069	.222	-.247
155	.074	.064	.252	-.272	189	.036	.082	.267	-.390
156	.024	.050	.157	-.247	190	.057	.074	.248	-.236
157	.013	.044	.199	-.172	191	.123	.058	.309	-.155
158	.030	.036	.133	-.130	192	.061	.049	.218	-.219
159	.005	.036	.123	-.126	193	.051	.048	.247	-.154
160	.077	.036	.224	-.043	194	.020	.051	.194	-.239
161	.029	.041	.182	-.169	195	.068	.048	.246	-.153
162	.020	.041	.153	-.138	196	.102	.050	.300	-.077
163	-.011	.043	.132	-.210	197	.031	.062	.317	-.274
164	.065	.044	.264	-.086	198	.027	.061	.272	-.260
165	.028	.047	.196	-.167	199	.027	.062	.251	-.268
166	.009	.051	.178	-.232	200	.069	.070	.377	-.457
167	-.023	.061	.213	-.350	201	.079	.076	.355	-.367
168	.051	.061	.281	-.314	202	.060	.087	.288	-.476
169	-.004	.078	.307	-.403	203	-.013	.090	.246	-.616
170	-.025	.082	.248	-.416	204	-.027	.091	.149	-.510

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 106

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.215	.131	.236	-.692	35	-.053	.085	.157	-.503
2	-.169	.131	.298	-.759	36	-.064	.084	.155	-.496
3	-.171	.117	.236	-.671	37	-.091	.085	.136	-.505
4	-.311	.100	.085	-.740	38	-.010	.090	.203	-.468
5	-.071	.132	.450	-.493	39	-.041	.093	.190	-.446
6	-.232	.102	.072	-.793	40	-.048	.097	.260	-.493
7	-.275	.084	.006	-.622	41	-.076	.097	.186	-.661
8	-.162	.105	.243	-.662	42	.006	.090	.252	-.503
9	-.134	.157	.750	-.543	43	-.049	.088	.269	-.430
10	-.211	.096	.124	-.642	44	-.106	.097	.167	-.449
11	-.217	.077	.044	-.608	45	-.119	.118	.269	-.666
12	-.086	.134	.510	-.782	46	-.069	.124	.321	-.595
13	-.206	.099	.070	-.687	47	-.159	.128	.340	-.844
14	-.217	.112	.106	-.879	48	-.213	.121	.274	-.877
15	-.075	.183	.613	-.732	49	-.262	.111	.273	-.756
16	.469	.188	.953	-.216	50	-.189	.099	.214	-.556
17	.607	.159	1.053	-.012	51	-.214	.097	.113	-.680
18	.600	.151	1.072	.135	52	-.177	.156	.208	-1.014
19	.604	.161	1.067	.106	53	-.265	.160	.135	-1.009
20	.577	.160	1.039	.001	54	-.145	.219	.559	-1.091
21	.651	.158	1.091	.106	55	.258	.197	.848	-.497
22	.579	.150	1.058	.020	56	.529	.145	1.012	.126
23	.521	.149	.934	-.006	57	.494	.134	1.053	.080
24	.390	.159	.901	-.235	58	.475	.132	1.002	.047
25	-.010	.193	.570	-.813	59	.544	.130	1.060	.122
26	.144	.117	.598	-.354	60	.482	.127	.933	.149
27	-.183	.101	.365	-.588	61	.409	.128	.907	.066
28	-.377	.132	.021	-.989	62	.246	.146	.783	-.250
29	-.243	.121	.275	-.737	63	-.035	.181	.584	-.787
30	-.214	.118	.192	-.713	64	.083	.116	.485	-.452
31	-.168	.116	.202	-.716	65	-.134	.108	.198	-.543
32	-.129	.107	.256	-.604	66	-.224	.140	.147	-.789
33	-.034	.098	.357	-.482	67	-.119	.134	.296	-.617
34	-.072	.091	.207	-.533	68	-.138	.140	.280	-.748



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 106

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.125	.145	.315	-.794	103	-.029	.120	.279	-.527
70	-.101	.142	.269	-.786	104	-.038	.117	.319	-.607
71	-.007	.134	.416	-.611	105	-.022	.116	.332	-.600
72	-.021	.097	.371	-.477	106	.004	.116	.379	-.567
73	-.028	.095	.298	-.554	107	.103	.092	.458	-.261
74	.066	.093	.407	-.417	108	.133	.110	.544	-.216
75	.033	.093	.398	-.286	109	.106	.139	.762	-.395
76	.018	.095	.393	-.456	110	.116	.112	.564	-.539
77	-.022	.096	.399	-.728	111	.021	.119	.341	-.506
78	.017	.097	.315	-.649	112	.029	.091	.327	-.685
79	-.008	.077	.256	-.304	113	.015	.087	.340	-.297
80	-.053	.085	.197	-.493	114	.105	.088	.594	-.385
81	-.096	.113	.250	-.629	115	.086	.090	.388	-.369
82	-.024	.114	.346	-.557	116	.047	.089	.309	-.681
83	-.098	.132	.375	-.578	117	.018	.086	.350	-.446
84	-.147	.142	.359	-.716	118	.096	.087	.483	-.220
85	-.223	.153	.314	-1.033	119	.059	.091	.398	-.343
86	-.169	.148	.444	-.939	120	.039	.095	.415	-.460
87	-.170	.175	.208	-1.162	121	.007	.095	.345	-.551
88	-.249	.194	.258	-1.117	122	.055	.094	.390	-.567
89	-.134	.212	.564	-1.141	123	.022	.075	.265	-.299
90	.138	.181	.676	-.743	124	-.014	.087	.256	-.369
91	.300	.116	.685	-.008	125	-.038	.097	.285	-.470
92	.380	.112	.863	.089	126	.043	.093	.375	-.339
93	.358	.117	.947	.077	127	-.021	.099	.310	-.381
94	.342	.117	.872	.031	128	-.061	.132	.529	-.786
95	.414	.115	.980	.114	129	-.133	.144	.399	-.955
96	.323	.105	.771	-.020	130	-.088	.120	.249	-.589
97	.276	.104	.743	-.038	131	-.116	.128	.304	-.613
98	.184	.116	.685	-.238	132	-0.000	-0.000	-0.000	-0.000
99	.039	.146	.601	-.562	133	-0.000	-0.000	-0.000	-0.000
100	.080	.095	.485	-.311	134	-0.000	-0.000	-0.000	-0.000
101	-.066	.095	.214	-.604	135	-0.000	-0.000	-0.000	-0.000
102	-.133	.129	.145	-.746	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 106

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.236	.081	.549	-.012	171	-.042	.107	.294	-.636
138	.222	.083	.566	-.036	172	.027	.107	.252	-.678
139	.297	.083	.727	.036	173	.030	.118	.296	-.750
140	.255	.085	.634	.029	174	.046	.116	.355	-.684
141	.217	.086	.656	-.015	175	-.066	.145	.258	-.781
142	.167	.095	.621	-.160	176	.024	.110	.542	-.520
143	.100	.108	.504	-.410	177	.180	.077	.488	-.144
144	.116	.078	.499	-.300	178	.284	.069	.544	.105
145	.023	.071	.364	-.305	179	.249	.064	.572	.031
146	-.031	.088	.186	-.502	180	.085	.058	.264	-.172
147	.078	.082	.332	-.345	181	.207	.049	.422	.008
148	.059	.083	.363	-.384	182	.237	.053	.607	.009
149	.068	.080	.309	-.400	183	.148	.050	.360	-.087
150	.074	.083	.336	-.564	184	.078	.071	.319	-.292
151	.163	.082	.451	-.675	185	.125	.061	.306	-.243
152	.146	.083	.618	-.112	186	-0.000	-0.000	-0.000	-0.000
153	.095	.073	.508	-.219	187	.125	.057	.398	-.148
154	.078	.076	.309	-.284	188	.117	.057	.352	-.105
155	.129	.063	.330	-.333	189	.148	.062	.379	-.148
156	.070	.063	.332	-.161	190	.148	.055	.474	-.064
157	.086	.071	.400	-.135	191	.190	.053	.391	-.029
158	.097	.061	.350	-.224	192	.136	.051	.335	-.065
159	.069	.061	.357	-.145	193	.136	.055	.482	-.030
160	.142	.063	.415	-.097	194	.108	.051	.295	-.069
161	.098	.057	.320	-.122	195	.130	.056	.327	-.145
162	.086	.059	.335	-.170	196	.165	.051	.407	-.023
163	.054	.060	.328	-.310	197	.100	.052	.302	-.123
164	.113	.062	.302	-.420	198	.087	.055	.295	-.134
165	.074	.066	.317	-.311	199	.079	.059	.350	-.145
166	.049	.067	.274	-.211	200	.118	.061	.333	-.166
167	.010	.073	.298	-.291	201	.135	.064	.357	-.165
168	.086	.069	.345	-.225	202	.108	.069	.556	-.187
169	.041	.088	.310	-.353	203	.048	.078	.243	-.383
170	.012	.099	.429	-.472	204	.037	.074	.216	-.319

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 116

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.225	.146	.378	-.803	35	-.052	.080	.196	-.389
2	-.199	.148	.334	-.861	36	-.070	.088	.168	-.734
3	-.088	.098	.294	-.493	37	-.096	.095	.162	-1.022
4	-.309	.098	-.012	-.729	38	-.011	.089	.306	-.597
5	-.033	.130	.437	-.619	39	-.054	.097	.232	-.482
6	-.270	.120	.080	-.806	40	-.063	.098	.168	-.519
7	-.274	.079	.046	-.705	41	-.103	.110	.168	-.557
8	-.090	.118	.365	-.523	42	-.003	.084	.264	-.398
9	.108	.149	.728	-.465	43	-.098	.089	.238	-.441
10	-.233	.119	.102	-1.185	44	-.237	.122	.190	-.752
11	-.241	.072	-.042	-.530	45	-.076	.103	.380	-.437
12	.128	.145	.656	-.486	46	.056	.073	.375	-.308
13	-.289	.117	.072	-.782	47	.059	.108	.450	-.434
14	-.311	.138	.036	-1.026	48	-.025	.155	.788	-.583
15	.277	.193	.911	-.712	49	-.204	.161	.513	-.782
16	.652	.177	1.277	-.078	50	-.226	.134	.521	-.785
17	.615	.148	1.090	.084	51	-.284	.113	.160	-.712
18	.612	.143	1.048	.134	52	-.218	.132	.153	-.923
19	.619	.147	1.092	.124	53	-.297	.136	.161	-1.035
20	.576	.141	.963	.068	54	.069	.229	.728	-1.026
21	.634	.142	1.127	.176	55	.421	.168	1.024	-.084
22	.543	.136	1.073	.071	56	.542	.144	.972	-.023
23	.444	.133	.956	.001	57	.504	.136	.940	.142
24	.246	.148	.834	-.229	58	.474	.132	.917	.111
25	-.224	.191	.370	-.843	59	.523	.126	.975	.187
26	.031	.125	.406	-.529	60	.423	.116	.846	.104
27	-.121	.073	.179	-.448	61	.312	.112	.750	-.022
28	-.149	.082	.149	-.577	62	.094	.137	.831	-.360
29	-.063	.084	.229	-.487	63	-.203	.172	.361	-.790
30	-.095	.087	.183	-.506	64	-.040	.119	.340	-.480
31	-.097	.091	.230	-.522	65	-.088	.070	.147	-.448
32	-.094	.090	.264	-.564	66	-.083	.082	.143	-.477
33	-.010	.088	.294	-.509	67	-.005	.084	.311	-.430
34	-.045	.071	.173	-.359	68	-.046	.084	.242	-.460

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 116

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.062	.092	.281	-.793	103	.018	.074	.221	-.334
70	-.068	.089	.244	-.673	104	-.020	.080	.232	-.579
71	-.004	.096	.328	-.546	105	-.032	.084	.220	-.628
72	.002	.075	.328	-.322	106	-.037	.082	.305	-.431
73	-.009	.072	.272	-.355	107	.045	.066	.356	-.284
74	.062	.069	.409	-.247	108	.023	.071	.357	-.247
75	.022	.064	.224	-.308	109	-.007	.103	.529	-.456
76	.009	.060	.187	-.255	110	.026	.113	.463	-.663
77	-.017	.061	.197	-.273	111	.066	.085	.295	-.385
78	.040	.070	.328	-.243	112	.050	.071	.257	-.548
79	-.012	.081	.340	-.343	113	.051	.053	.457	-.191
80	-.078	.096	.265	-.533	114	.080	.041	.233	-.067
81	-.073	.099	.340	-.525	115	.066	.043	.230	-.093
82	.019	.116	.386	-.543	116	.046	.046	.241	-.146
83	-.038	.147	.378	-.587	117	.024	.046	.219	-.171
84	-.152	.164	.489	-.668	118	.086	.046	.277	-.136
85	-.195	.166	.469	-.798	119	.041	.041	.180	-.110
86	-.164	.144	.458	-.729	120	.022	.046	.155	-.167
87	-.187	.158	.173	-1.169	121	-.005	.051	.156	-.218
88	-.273	.167	.123	-1.132	122	.055	.058	.217	-.176
89	-.013	.205	.527	-.866	123	-.003	.063	.235	-.253
90	.251	.157	.757	-.638	124	-.056	.072	.162	-.359
91	.348	.110	.714	-.019	125	-.040	.070	.240	-.332
92	.362	.102	.739	.058	126	.060	.080	.353	-.262
93	.347	.104	.709	.046	127	.018	.101	.357	-.439
94	.324	.100	.655	.048	128	-.026	.138	.444	-.498
95	.382	.097	.804	.097	129	-.110	.159	.693	-.675
96	.314	.100	.745	.061	130	-.084	.121	.260	-.460
97	.231	.100	.692	-.066	131	-.117	.116	.147	-.597
98	.082	.115	.519	-.265	132	-0.000	-0.000	-0.000	-0.000
99	-.119	.132	.316	-.662	133	-0.000	-0.000	-0.000	-0.000
100	-.019	.092	.268	-.465	134	-0.000	-0.000	-0.000	-0.000
101	-.059	.062	.133	-.323	135	-0.000	-0.000	-0.000	-0.000
102	-.060	.073	.149	-.464	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 116

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.250	.083	.621	.012	171	-.037	.107	.300	-.577
138	.230	.082	.642	-.006	172	.018	.101	.406	-.494
139	.293	.079	.652	.036	173	-.002	.125	.273	-1.010
140	.240	.078	.611	.029	174	.019	.113	.281	-.525
141	.178	.076	.515	-.038	175	-.047	.137	.308	-.787
142	.081	.088	.461	-.284	176	.089	.097	.501	-.349
143	-.040	.110	.325	-.557	177	.225	.079	.532	-.137
144	.015	.079	.225	-.313	178	.280	.076	.715	.078
145	-.032	.059	.171	-.303	179	.222	.068	.489	-.018
146	-.038	.071	.169	-.368	180	.014	.067	.202	-.295
147	.042	.072	.274	-.357	181	.144	.059	.387	-.192
148	.006	.077	.274	-.471	182	.192	.061	.552	-.049
149	0.000	.076	.264	-.401	183	.123	.061	.393	-.125
150	-.001	.075	.233	-.389	184	.032	.088	.228	-.427
151	.083	.073	.315	-.379	185	.095	.055	.245	-.200
152	.060	.081	.508	-.316	186	-0.000	-0.000	-0.000	-0.000
153	.050	.085	.541	-.319	187	.120	.042	.317	-.040
154	.071	.065	.284	-.317	188	.115	.045	.326	-.032
155	.113	.059	.300	-.418	189	.137	.044	.270	-.037
156	.080	.040	.229	-.093	190	.140	.035	.269	.016
157	.066	.038	.211	-.098	191	.177	.039	.325	.031
158	.070	.035	.172	-.073	192	.105	.040	.236	-.083
159	.043	.036	.145	-.130	193	.087	.041	.229	-.102
160	.103	.036	.229	-.052	194	.070	.049	.215	-.156
161	.053	.039	.180	-.116	195	.102	.049	.264	-.173
162	.038	.043	.159	-.202	196	.137	.049	.354	-.112
163	.010	.047	.156	-.241	197	.057	.060	.238	-.187
164	.076	.049	.232	-.187	198	.083	.052	.290	-.165
165	.033	.052	.208	-.203	199	.091	.046	.285	-.054
166	-.007	.064	.171	-.287	200	.133	.060	.422	-.131
167	-.002	.056	.162	-.247	201	.149	.066	.408	-.104
168	.087	.062	.283	-.173	202	.112	.077	.342	-.222
169	.043	.088	.311	-.393	203	.043	.086	.312	-.539
170	.014	.100	.403	-.413	204	.020	.081	.227	-.448

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 126

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.123	.116	.306	-.550	35	-.104	.073	.143	-.523
2	-.091	.114	.363	-.502	36	-.124	.081	.127	-.520
3	.029	.075	.340	-.304	37	-.153	.087	.128	-.586
4	-.214	.095	.118	-.540	38	-.108	.092	.174	-.439
5	.023	.106	.518	-.427	39	-.131	.095	.136	-.496
6	-.164	.101	.218	-.643	40	-.142	.098	.122	-.554
7	-.248	.088	.083	-.545	41	-.201	.137	.087	-.942
8	.095	.086	.410	-.509	42	-.072	.076	.164	-.399
9	.159	.115	.639	-.249	43	-.185	.098	.058	-.622
10	-.131	.127	.188	-.919	44	-.370	.141	.039	-.887
11	-.260	.075	.022	-.534	45	-.141	.106	.392	-.480
12	.186	.118	.553	-.196	46	.074	.064	.391	-.203
13	-.122	.106	.251	-.635	47	.187	.094	.543	-.149
14	-.131	.117	.143	-.702	48	.167	.146	.685	-.285
15	.555	.165	1.013	-.082	49	-.025	.196	.757	-.560
16	.620	.152	1.017	.057	50	-.098	.152	.959	-.693
17	.540	.120	.983	.137	51	-.172	.111	.184	-.613
18	.546	.150	.949	.078	52	-.067	.125	.298	-1.098
19	.613	.154	1.057	.104	53	-.165	.128	.179	-.898
20	.527	.136	.886	.055	54	.360	.179	.951	-.360
21	.557	.134	.989	.125	55	.503	.141	.918	.005
22	.442	.132	.825	.038	56	.517	.119	.896	.188
23	.294	.126	.658	-.114	57	.491	.137	1.057	.113
24	.054	.146	.702	-.405	58	.430	.118	.831	.088
25	-.473	.170	.167	-1.025	59	.445	.110	.836	.126
26	-.167	.143	.286	-.819	60	.333	.105	.742	-.002
27	-.174	.065	.049	-.419	61	.175	.100	.579	-.127
28	-.163	.073	.056	-.479	62	-.103	.121	.358	-.550
29	-.079	.077	.140	-.512	63	-.370	.147	.088	-.885
30	-.118	.086	.133	-.709	64	-.213	.136	.263	-.820
31	-.122	.083	.154	-.560	65	-.146	.087	.221	-.641
32	-.127	.079	.167	-.550	66	-.112	.084	.233	-.601
33	-.052	.075	.223	-.426	67	-.038	.085	.244	-.649
34	-.089	.063	.126	-.390	68	-.073	.076	.188	-.441

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 126

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.089	.075	.165	-.615	103	-.003	.084	.281	-.530
70	-.099	.069	.109	-.753	104	-.050	.083	.260	-.539
71	-.070	.071	.199	-.488	105	-.067	.085	.225	-.604
72	-.080	.081	.192	-.448	106	-.071	.080	.170	-.591
73	-.096	.077	.150	-.425	107	.014	.057	.219	-.226
74	-.037	.073	.166	-.305	108	-.020	.062	.371	-.276
75	-.074	.077	.272	-.356	109	-.051	.072	.532	-.372
76	-.087	.077	.157	-.436	110				
77	-.109	.084	.145	-.513	111	.040	.070	.277	-.329
78	-.067	.094	.192	-.515	112	.003	.062	.225	-.332
79	-.121	.090	.172	-.585	113	-.026	.064	.150	-.301
80	-.211	.102	.116	-.768	114	.013	.056	.216	-.293
81	-.142	.080	.170	-.536	115	-.001	.052	.161	-.196
82	.055	.076	.286	-.295	116	-.031	.064	.151	-.316
83	.090	.115	.432	-.413	117	-.060	.066	.119	-.444
84	.065	.158	.521	-.526	118	-.008	.067	.158	-.321
85	-.043	.191	.705	-.735	119	-.058	.072	.196	-.514
86	-.058	.164	.596	-.661	120	-.078	.076	.135	-.510
87	-.061	.126	.257	-.698	121	-.100	.080	.104	-.530
88	-.146	.142	.227	-.946	122	-.052	.083	.189	-.491
89	.246	.153	.830	-.444	123	-.119	.089	.131	-.461
90	.380	.123	.775	-.146	124	-.194	.099	.094	-.651
91	.344	.104	.677	.070	125	-.113	.070	.104	-.386
92	.342	.098	.727	-.005	126	.062	.058	.263	-.224
93	.351	.107	.794	-.018	127	.077	.071	.326	-.257
94	.305	.095	.701	-.031	128	.069	.109	.387	-.395
95	.341	.087	.723	.033	129	.006	.145	.513	-.545
96	.242	.085	.629	-.014	130	.018	.095	.313	-.282
97	.120	.079	.457	-.103	131	-.043	.118	.298	-.528
98	-.086	.100	.361	-.433	132	-0.000	-0.000	-0.000	-0.000
99	-.265	.133	.154	-.869	133	-0.000	-0.000	-0.000	-0.000
100	-.155	.106	.150	-.672	134	-0.000	-0.000	-0.000	-0.000
101	-.100	.079	.160	-.551	135	-0.000	-0.000	-0.000	-0.000
102	-.080	.085	.196	-.578	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 126

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	.236	.091	.573	-.011	171	.038	.094	.332	-.392
138	.205	.084	.518	-.042	172	.081	.096	.460	-.420
139	.252	.077	.526	.023	173	.097	.083	.326	-.404
140	.177	.068	.459	-.044	174	.113	.080	.325	-.319
141	.087	.064	.340	-.129	175	.095	.088	.414	-.374
142	-.043	.081	.317	-.366	176	.155	.071	.553	-.182
143	-.150	.110	.191	-.632	177	.229	.075	.565	.021
144	-.087	.090	.162	-.493	178	.231	.066	.495	.041
145	-.060	.074	.161	-.478	179	.138	.056	.381	-.071
146	-.046	.079	.172	-.499	180	-.030	.072	.146	-.634
147	.027	.082	.237	-.426	181	.057	.071	.302	-.377
148	-.027	.084	.195	-.571	182	.106	.065	.539	-.213
149	-.045	.086	.260	-.682	183	.050	.074	.348	-.350
150	-.046	.082	.228	-.596	184	.055	.059	.253	-.386
151	.040	.074	.517	-.385	185	.090	.062	.279	-.438
152	.005	.068	.355	-.290	186	-0.000	-0.000	-0.000	-0.000
153	-.019	.086	.332	-.323	187	.106	.044	.300	-.054
154	.034	.067	.300	-.396	188	.115	.040	.282	.008
155	.069	.063	.300	-.472	189	.123	.039	.275	-.044
156	.022	.057	.211	-.375	190	.098	.043	.260	-.076
157	-.002	.054	.155	-.266	191	.123	.045	.262	-.032
158	.009	.057	.181	-.290	192	.044	.053	.211	-.171
159	-.024	.061	.160	-.382	193	-.001	.070	.191	-.313
160	.021	.063	.191	-.367	194	-.053	.083	.162	-.356
161	-.032	.067	.120	-.377	195	.034	.063	.194	-.261
162	-.054	.070	.101	-.368	196	.099	.059	.268	-.245
163	-.084	.075	.079	-.372	197	-.001	.079	.180	-.364
164	-.015	.069	.169	-.275	198	.054	.059	.254	-.168
165	-.051	.070	.108	-.422	199	.095	.046	.297	-.078
166	-.119	.089	.080	-.648	200	.154	.049	.359	-.080
167	-.058	.060	.116	-.329	201	.187	.058	.439	-.065
168	.079	.050	.285	-.162	202	.169	.069	.440	-.060
169	.083	.059	.283	-.254	203	.104	.079	.474	-.219
170	.078	.077	.340	-.315	204	.082	.075	.419	-.297



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 186

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.405	.173	.290	-1.105	35	-.349	.101	-.036	-.756
2	-.272	.169	.316	-1.096	36	-.377	.117	.099	-.810
3	-.516	.133	.041	-1.075	37	-.481	.131	.094	-1.014
4	-.545	.121	.193	-1.031	38	-.455	.142	.138	-1.031
5	-.227	.161	.367	-.813	39	-.605	.143	-.098	-1.113
6	-.199	.125	.317	-.684	40	-.742	.156	-.316	-1.368
7	-.516	.088	-.222	-.873	41	-.908	.176	-.421	-1.651
8	-.539	.128	-.157	-1.037	42	-.415	.128	.367	-.968
9	-.040	.175	.530	-.684	43	-.073	.111	.355	-.617
10	.037	.152	.536	-.485	44	-.310	.211	.421	-1.462
11	-.485	.087	-.218	-.772	45				
12	-.488	.118	-.123	-1.034	46	.492	.158	.973	-.016
13	.554	.159	1.097	.021	47	.486	.167	.978	-.034
14	.413	.230	1.063	-.400	48	.509	.182	1.062	-.095
15	-.863	.251	.022	-1.970	49	.429	.182	.950	-.179
16	-.825	.242	-.222	-1.956	50	.545	.184	1.137	-.034
17	-.637	.190	-.093	-1.517	51	.459	.172	1.004	-.037
18	-.581	.166	.278	-1.137	52	.502	.141	.960	.102
19	-.499	.259	.691	-1.118	53	.160	.224	.926	-.767
20	-.319	.277	.673	-1.057	54	-.712	.208	-.126	-1.641
21	-.059	.207	.601	-.824	55	-.559	.171	-.085	-1.666
22	-.091	.111	.276	-.611	56	-.440	.143	.011	-1.570
23	-.209	.078	.067	-.597	57	-.485	.151	.173	-1.190
24	-.297	.105	.114	-.730	58	-.462	.164	.184	-1.066
25	-.329	.136	.050	-.989	59	-.329	.163	.234	-.947
26	-.311	.111	.012	-.788	60	-.308	.159	.178	-.942
27	-.270	.096	.077	-.697	61	-.284	.134	.160	-.883
28	-.247	.089	.047	-.734	62	-.286	.118	.229	-.818
29	-.173	.076	.108	-.600	63	-.227	.101	.064	-.782
30	-.204	.062	-.008	-.455	64	-.219	.087	.141	-.570
31	-.214	.060	-.018	-.458	65	-.220	.083	.033	-.577
32	-.226	.065	-.010	-.526	66	-.219	.072	-.019	-.668
33	-.165	.069	.108	-.491	67	-.147	.062	.038	-.466
34	-.215	.089	.038	-.686	68	-.175	.051	-.040	-.445

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 186

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.190	.046	-.030	-.417	103	-.112	.049	.076	-.282
70	-.198	.045	-.033	-.440	104	-.144	.042	-.011	-.346
71	-.139	.053	.041	-.432	105	-.156	.040	-.027	-.339
72	-.375	.156	.147	-1.270	106	-.164	.039	-.052	-.299
73					107	-.100	.036	.002	-.257
74	-.407	.163	.268	-1.137	108	-.133	.045	.015	-.338
75	-.520	.146	-.006	-1.156	109	-.160	.045	-.003	-.321
76	-.594	.147	-.180	-1.138	110	-.135	.053	.035	-.433
77	-.722	.170	-.298	-1.402	111	-.117	.069	.078	-.443
78	-.473	.118	-.106	-.965	112	-.219	.093	-.005	-.660
79	-.164	.117	.302	-.544	113	-.140	.111	.330	-.566
80	-.326	.173	.319	-.911	114	.014	.164	.687	-.546
81					115	-.119	.134	.356	-.572
82	.397	.139	1.003	-.049	116	-.222	.136	.188	-.856
83	.426	.135	.939	-.037	117	-.330	.125	.025	-.988
84	.457	.139	.938	-.013	118	-.280	.135	.138	-.906
85	.386	.137	.879	-.051	119	-.414	.131	-.019	-.952
86	.509	.137	.987	.075	120	-.514	.132	-.101	-1.117
87	.338	.117	.792	-.039	121	-.674	.150	-.309	-1.389
88	.006	.206	.694	-.726	122	-.385	.102	.070	-.743
89	-.641	.224	-.065	-1.798	123	-.143	.089	.279	-.552
90	-.454	.183	-.005	-1.368	124	-.248	.145	.280	-.917
91	-.415	.159	-.019	-1.247	125	.061	.137	.699	-.390
92	-.375	.135	-.014	-.947	126	.329	.121	.843	-.022
93	-.409	.155	.200	-1.196	127	.325	.112	.707	.017
94	-.394	.152	.223	-1.071	128	.337	.121	.812	-.010
95	-.269	.149	.338	-.820	129	.261	.118	.802	-.082
96	-.263	.139	.178	-.783	130	.384	.102	.755	.100
97	-.248	.124	.159	-1.079	131	.337	.115	.765	.026
98	-.251	.114	.099	-.944	132	-0.000	-0.000	-0.000	-0.000
99	-.186	.099	.178	-.695	133	-0.000	-0.000	-0.000	-0.000
100	-.186	.078	.095	-.475	134	-0.000	-0.000	-0.000	-0.000
101	-.197	.078	.075	-.545	135	-0.000	-0.000	-0.000	-0.000
102	-.187	.059	.039	-.425	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 186

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.341	.122	-.059	-1.173	171	.163	.090	.547	-.095
138	-.344	.124	.040	-1.058	172	.285	.089	.696	-.001
139	-.247	.121	.247	-1.055	173	.165	.092	.531	-.204
140	-.236	.109	.144	-1.063	174	-.146	.140	.283	-.689
141	-.224	.105	.153	-.941	175	-.491	.175	-.051	-1.408
142	-.226	.106	.177	-.806	176	-.316	.124	-.034	-.989
143	-.145	.085	.131	-.593	177	-.285	.115	-.046	-.938
144	-.159	.073	.041	-.547	178	-.272	.125	.023	-1.051
145	-.176	.075	.031	-.642	179	-.193	.088	.199	-.594
146	-.166	.056	.010	-.443	180	-.138	.047	-.022	-.503
147	-.088	.043	.055	-.306	181	-.051	.034	.058	-.200
148	-.118	.037	.013	-.272	182	-.056	.034	.064	-.175
149	-.137	.035	-.025	-.386	183	-.127	.054	.032	-.408
150	-.138	.034	-.015	-.255	184	-.194	.086	-.012	-.697
151	-.069	.034	.034	-.191	185	-.251	.134	-.003	-.990
152	-.118	.035	.005	-.281	186	-0.000	-0.000	-0.000	-0.000
153	-.142	.042	-.023	-.307	187	.066	.074	.495	-.147
154	-.127	.050	.010	-.364	188	.075	.053	.321	-.069
155	-.134	.076	.040	-.553	189	.046	.047	.224	-.140
156	-.123	.083	.216	-.696	190	-.044	.047	.141	-.223
157	.011	.123	.582	-.438	191	.042	.045	.211	-.154
158	-.088	.084	.240	-.475	192	-.035	.054	.134	-.273
159	-.184	.085	.117	-.580	193	-.152	.074	.083	-.492
160	-.117	.093	.144	-.582	194	-.177	.089	.041	-.627
161	-.237	.099	.074	-.742	195	-.010	.067	.289	-.381
162	-.338	.106	-.054	-.757	196	.155	.070	.482	-.065
163	-.513	.119	-.163	-1.078	197	.109	.088	.424	-.167
164	-.228	.084	.045	-.576	198	.202	.092	.632	-.046
165	-.072	.079	.232	-.477	199	.147	.086	.526	-.113
166	-.144	.124	.355	-.640	200	.291	.073	.640	.029
167	.070	.122	.537	-.305	201	.329	.070	.658	.120
168	.273	.108	.774	-.055	202	.289	.079	.559	.073
169	.235	.092	.631	-.028	203	.259	.070	.579	.025
170	.247	.091	.650	-.023	204	.255	.083	.621	-.081

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 196

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.469	.164	.167	-1.163	35	-.326	.088	-.040	-.679
2	-.338	.164	.297	-.946	36	-.381	.100	-.013	-.820
3	-.559	.130	.104	-1.037	37	-.470	.108	-.106	-.934
4	-.600	.132	-.042	-1.249	38	-.411	.131	.001	-1.107
5	-.271	.178	.234	-.850	39	-.614	.150	-.043	-1.186
6	-.275	.132	.206	-.771	40	-.845	.161	-.276	-1.454
7	-.540	.103	-.179	-1.125	41	-1.075	.173	-.524	-1.688
8	-.569	.123	-.117	-1.228	42	-.375	.166	.456	-.943
9	-.005	.169	.423	-.587	43	-.009	.120	.395	-.458
10	-.167	.149	.545	-.663	44	-.145	.198	.730	-.773
11	-.468	.082	-.206	-.805	45	.342	.186	.948	-.337
12	-.548	.107	-.230	-1.140	46	.559	.174	1.027	-.027
13	.537	.161	1.055	.009	47	.530	.165	.975	-.012
14	.212	.242	.930	-.788	48	.535	.178	1.024	-.010
15	-.686	.241	-.078	-1.804	49	.443	.177	.993	-.117
16	-.590	.194	-.095	-1.584	50	.561	.178	1.111	.020
17	-.494	.157	.013	-1.308	51	.439	.162	.904	-.020
18	-.467	.123	-.049	-.956	52	.473	.149	.985	.045
19	-.488	.142	.166	-1.032	53	-.022	.235	.679	-1.058
20	-.480	.152	.125	-1.241	54	-.644	.237	-.088	-1.692
21	-.381	.167	.306	-1.098	55	-.497	.209	.038	-1.607
22	-.337	.163	.153	-.975	56	-.394	.180	.051	-1.277
23	-.306	.140	.128	-.970	57	-.419	.166	-.004	-1.679
24	-.300	.135	.304	-.891	58	-.423	.167	.378	-1.241
25	-.299	.125	.095	-.830	59	-.339	.159	.396	-1.110
26	-.276	.110	.072	-.752	60	-.337	.143	.237	-.860
27	-.262	.096	.036	-.735	61	-.321	.133	.144	-.815
28	-.257	.082	-.043	-.642	62	-.324	.132	.109	-.852
29	-.207	.074	.019	-.688	63	-.245	.104	.138	-.735
30	-.225	.066	-.032	-.567	64	-.245	.091	.034	-.857
31	-.231	.066	-.042	-.540	65	-.260	.090	-.033	-.666
32	-.244	.069	-.030	-.526	66	-.247	.068	-.018	-.617
33	-.202	.072	.028	-.518	67	-.182	.058	.019	-.422
34	-.222	.084	.030	-.715	68	-.198	.050	-.048	-.403

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 196

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.212	.053	-.048	-.422	103	-.142	.049	-.004	-.387
70	-.229	.062	-.050	-.511	104	-.164	.046	-.008	-.351
71	-.183	.072	.053	-.501	105	-.179	.049	-.030	-.400
72	-.387	.132	.161	-1.047	106	-.192	.055	-.031	-.467
73	-.468	.152	-.007	-1.252	107	-.132	.053	.042	-.388
74	-.477	.162	.153	-1.121	108	-.160	.056	.046	-.444
75	-.553	.168	.006	-1.234	109	-.182	.055	-.028	-.385
76	-.667	.161	-.110	-1.350	110	-.165	.068	.015	-.532
77	-.824	.176	-.306	-1.559	111	-.145	.085	.075	-.584
78	-.523	.124	.065	-1.005	112	-.276	.131	.006	-1.386
79	-.148	.117	.372	-.629	113	-.187	.111	.218	-.625
80	-.263	.174	.573	-.832	114	.065	.164	.679	-.614
81	.167	.171	.827	-.449	115	-.043	.123	.386	-.498
82	.461	.151	1.056	.005	116	-.155	.130	.224	-1.097
83	.462	.146	.924	.046	117				
84	.473	.144	.928	.079	118	-.220	.151	.160	-1.050
85	.389	.135	.867	-.010	119	-.361	.160	.190	-1.147
86	.513	.132	.956	.080	120	-.486	.178	.258	-1.166
87	.312	.126	.755	-.043	121	-.686	.190	.227	-1.491
88	-.172	.203	.384	-.956	122	-.349	.161	.784	-.890
89	-.574	.247	.026	-1.503	123	-.112	.119	.550	-.567
90	-.383	.191	.061	-1.267	124	-.191	.164	.598	-.901
91	-.368	.162	-.025	-1.142	125	.130	.158	.816	-.458
92	-.325	.136	-.014	-1.152	126	.381	.141	.873	-.045
93	-.364	.155	.044	-1.425	127	-0.000	-0.000	-0.000	-0.000
94	-.367	.154	.045	-1.267	128	-0.000	-0.000	-0.000	-0.000
95	-.288	.147	.261	-.967	129	-0.000	-0.000	-0.000	-0.000
96	-.306	.141	.196	-.854	130	-0.000	-0.000	-0.000	-0.000
97	-.300	.135	.208	-.855	131	.349	.127	.847	.018
98	-.308	.140	.128	-1.007	132	-0.000	-0.000	-0.000	-0.000
99	-.222	.111	.093	-.634	133	-0.000	-0.000	-0.000	-0.000
100	-.222	.087	.038	-.583	134	-0.000	-0.000	-0.000	-0.000
101	-.242	.092	-.010	-.626	135	-0.000	-0.000	-0.000	-0.000
102	-.213	.062	-.025	-.499	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 196

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.311	.131	-.024	-1.094	171	.171	.100	.590	-.158
138	-.325	.139	.119	-1.082	172	.297	.097	.694	-.030
139	-.247	.134	.253	-.904	173	.147	.095	.562	-.242
140	-.268	.120	.144	-.863	174	-.207	.148	.411	-.839
141	-.274	.116	.177	-.926	175	-.550	.210	-.089	-1.462
142	-.284	.124	.231	-.953	176	-.332	.137	-.020	-.932
143	-.191	.096	.081	-.684	177	-0.000	-0.000	-0.000	-0.000
144	-.195	.083	.038	-.677	178	-.290	.133	-.017	-1.094
145	-.215	.089	.033	-.683	179	-.238	.100	.126	-.918
146	-.185	.065	.063	-.548	180	-.161	.052	.007	-.393
147	-.107	.049	.092	-.385	181	-.093	.047	.046	-.288
148	-.137	.045	.014	-.376	182	-0.000	-0.000	-0.000	-0.000
149	-.151	.046	-.013	-.382	183	-.132	.054	-.008	-.417
150	-.162	.049	-.022	-.395	184	-.162	.066	-.016	-.668
151	-.098	.049	.035	-.324	185	-.181	.094	.017	-.667
152	-.127	.044	.025	-.307	186	-0.000	-0.000	-0.000	-0.000
153	-.166	.059	-.014	-.491	187	.040	.072	.373	-.222
154	-.155	.077	.074	-.634	188	.031	.048	.232	-.129
155	-.184	.109	.032	-.823	189	.021	.046	.228	-.171
156	-.166	.088	.184	-.598	190	-.073	.051	.147	-.353
157	.040	.128	.592	-.535	191	.031	.048	.232	-.163
158	-.081	.082	.217	-.468	192	-0.000	-0.000	-0.000	-0.000
159					193	-.153	.082	.172	-.521
160	-.090	.090	.190	-.615	194	-.164	.096	.121	-.571
161	-.195	.101	.086	-.734	195	-.021	.072	.297	-.277
162	-.283	.120	.138	-.867	196	.133	.062	.469	-.076
163	-.461	.145	.179	-1.165	197	.081	.079	.372	-.309
164	-.177	.117	.354	-.603	198	.177	.086	.557	-.078
165	-.051	.087	.450	-.331	199	.121	.095	.534	-.189
166	-.069	.122	.576	-.484	200	.287	.084	.647	-.011
167	.087	.130	.585	-.257	201	-0.000	-0.000	-0.000	-0.000
168	.286	.119	.746	-.039	202	.277	.092	.605	-.003
169	.248	.110	.740	-.069	203	.259	.080	.521	-.019
170	.253	.107	.719	-.079	204	.258	.090	.525	-.043

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 206

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.353	.140	.176	-.966	35	-.337	.095	.114	-1.100
2	-.252	.117	.140	-.710	36	-.427	.106	.306	-.951
3	-.397	.187	.536	-1.008	37	-.476	.104	.314	-.899
4	-.471	.125	-.032	-1.038	38	-.325	.111	.474	-.730
5	-.111	.176	.343	-.812	39	-.423	.157	.335	-.981
6	-.222	.139	.449	-.691	40	-.682	.209	.154	-1.328
7	-.465	.111	-.029	-.959	41				
8	-.475	.149	.393	-.963	42	-.124	.251	.724	-.885
9	.109	.176	.609	-.514	43	.081	.132	.711	-.391
10	-.077	.165	.549	-.702	44	-.005	.273	.830	-1.204
11	-.421	.099	-.035	-.962	45	.415	.195	1.215	-.285
12	-.491	.117	-.117	-.999	46	.616	.182	1.259	-.003
13	.571	.159	1.021	.071	47	.556	.166	1.056	.012
14	.130	.214	.724	-.762	48	.546	.165	1.060	-.100
15	-.450	.190	-.002	-1.551	49	.438	.160	.990	-.113
16	-.373	.142	.004	-1.063	50	.557	.159	1.060	.080
17	-.309	.131	.108	-1.044	51	.474	.150	1.098	-.133
18	-.413	.102	-.114	-.837	52	.478	.153	1.023	-.009
19	-.429	.115	-.116	-.959	53	-.062	.198	.691	-1.014
20	-.576	.122	-.245	-1.145	54	-.472	.191	-.006	-1.382
21	-.356	.126	.097	-1.076	55	-.328	.171	.143	-1.207
22	-.400	.127	.112	-.910	56	-.247	.141	.109	-1.110
23	-.385	.123	.144	-.932	57	-.410	.133	.022	-1.392
24	-.528	.133	-.059	-1.249	58	-.555	.132	-.078	-1.278
25	-.294	.108	.074	-.835	59	-.337	.126	.206	-.913
26	-.347	.091	-.028	-.719	60	-.391	.108	-.051	-.913
27	-.344	.090	-.071	-.754	61	-.396	.103	-.125	-.788
28	-.478	.083	-.253	-.861	62	-.549	.115	-.266	-1.042
29	-.264	.078	-.032	-.649	63	-.299	.091	-.057	-.634
30	-.325	.078	-.097	-.685	64	-.328	.074	-.073	-.602
31	-.331	.085	-.064	-.703	65	-.332	.072	-.007	-.632
32	-.480	.096	-.172	-1.084	66	-.471	.064	-.266	-.712
33	-.279	.103	.028	-.935	67	-.259	.059	-.068	-.507
34	-.348	.113	.284	-1.041	68	-.322	.067	-.046	-.605

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 206

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.334	.075	-.026	-.008	103	-.246	.056	-.025	-.477
70	-.488	.086	-.153	-1.019	104	-.309	.067	-.156	-.633
71	-.291	.092	.040	-.744	105	-.315	.073	-.103	-.704
72	-.377	.106	-.035	-.891	106	-.462	.079	-.272	-.799
73	-.439	.117	-.102	-1.037	107	-.255	.076	-.080	-.558
74	-.331	.136	-.091	-.917	108	-.306	.076	-.105	-.679
75	-.457	.162	.067	-1.141	109	-.213	.072	.019	-.490
76	-.559	.182	.080	-1.411	110	-.206	.081	-.001	-.852
77	-.722	.195	.186	-1.625	111	-.205	.108	.043	-.835
78	-.409	.173	.415	-.969	112	-.371	.159	.204	-1.405
79	-0.000	-0.000	-0.000	-0.000	113	-.206	.122	.314	-.614
80	-0.000	-0.000	-0.000	-0.000	114	.082	.144	.811	-.405
81	-0.000	-0.000	-0.000	-0.000	115	-.034	.119	.464	-.507
82	-0.000	-0.000	-0.000	-0.000	116	-.144	.091	.226	-.596
83	.405	.169	1.031	-.086	117	-.236	.089	.163	-.690
84	.434	.164	.971	-.153	118	-.119	.117	.412	-.664
85	.364	.150	.884	-.228	119	-.202	.127	.287	-.857
86	.495	.145	.913	-.063	120	-.257	.181	.468	-1.117
87	.295	.162	.837	-.311	121	-.423	.253	.587	-1.315
88	-.111	.191	.513	-.949	122	-.111	.225	.658	-.886
89	-.471	.220	.018	-1.447	123	-.062	.155	.555	-.554
90	-.300	.173	.089	-1.157	124	-.172	.201	.495	-.906
91	-.299	.146	.032	-1.223	125	-.012	.167	.688	-.562
92	-.360	.124	.003	-1.139	126	.236	.160	.907	-.223
93	-.380	.140	.022	-1.424	127	.226	.145	.749	-.171
94	-.523	.137	.167	-1.357	128	.257	.158	.768	-.224
95	-.307	.124	.085	-.972	129	.201	.153	.713	-.280
96	-.372	.119	.019	-.896	130	.340	.128	.694	-.024
97	-.368	.113	.042	-.829	131	.265	.147	.946	-.201
98	-.520	.122	-.091	-1.157	132	-0.000	-0.000	-0.000	-0.000
99	-.274	.098	.021	-.778	133	-0.000	-0.000	-0.000	-0.000
100	-.313	.078	-.089	-.599	134	-0.000	-0.000	-0.000	-0.000
101	-.318	.078	-.116	-.704	135	-0.000	-0.000	-0.000	-0.000
102	-.453	.061	-.182	-.744	136	-0.000	-0.000	-0.000	-0.000



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 206

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.351	.115	-.112	-1.142	171	-0.000	-0.000	-0.000	-0.000
138	-.497	.117	-.250	-1.120	172	-0.000	-0.000	-0.000	-0.000
139	-.281	.108	.005	-.781	173	.161	.097	.539	-.152
140	-.342	.104	-.099	-1.026	174	-.084	.126	.311	-.531
141	-.342	.100	-.120	-.834	175	-.421	.162	-.043	-1.210
142	-.502	.117	-.221	-1.110	176	-.278	.119	-.034	-1.002
143	-.252	.090	-0.000	-.611	177	-0.000	-0.000	-0.000	-0.000
144	-.281	.076	-.076	-.567	178	-.356	.123	-.095	-1.084
145	-.280	.074	-.098	-.626	179	-.307	.099	.027	-.645
146	-.415	.061	-.195	-.757	180	-.373	.050	-.211	-.576
147	-.203	.056	-.009	-.492	181	-.185	.054	-.057	-.474
148	-.259	.056	-.105	-.519	182	-0.000	-0.000	-0.000	-0.000
149	-.267	.058	-.010	-.468	183	-.156	.053	-.012	-.375
150	-.412	.059	-.234	-.667	184	-.181	.057	-.042	-.597
151	-.201	.058	-.049	-.538	185	-.199	.084	-.001	-.545
152	-.160	.055	.025	-.399	186	-0.000	-0.000	-0.000	-0.000
153	-.204	.076	-.003	-.623	187	-.007	.064	.505	-.261
154	-.196	.092	.039	-.720	188	-.008	.046	.210	-.150
155	-.231	.130	.173	-.845	189	-.012	.045	.146	-.200
156	-.187	.090	.169	-.598	190	-.100	.048	.073	-.452
157	-.014	.090	.442	-.345	191	.008	.048	.168	-.169
158	-.118	.063	.108	-.509	192	-0.000	-0.000	-0.000	-0.000
159	-.198	.063	-.013	-.550	193	-.147	.078	.064	-.584
160	-.085	.067	.135	-.413	194	-.153	.084	.072	-.425
161	-.178	.075	.018	-.658	195	-.046	.071	.180	-.339
162	-.221	.094	.223	-.705	196	.087	.064	.350	-.136
163	-.338	.120	-.007	-.951	197	.004	.085	.302	-.341
164	-.124	.100	.272	-.585	198	.129	.098	.532	-.200
165	-.084	.078	.159	-.369	199	.051	.100	.513	-.262
166	-.133	.119	.257	-.630	200	-.217	.094	.662	-.083
167	-.033	.118	.455	-.407	201	-0.000	-0.000	-0.000	-0.000
168	.174	.121	.629	-.133	202	.228	.102	.634	-.092
169	-0.000	-0.000	-0.000	-0.000	203	.209	.092	.580	-.123
170	-0.000	-0.000	-0.000	-0.000	204	.213	.097	.596	-.039

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLIER BUILDING  
WIND DIRECTION 276

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.360	.157	.113	-1.177	35	-.022	.234	.730	-.905
2	-.252	.139	.297	-.909	36	-.037	.267	.834	-1.034
3	-.373	.190	.280	-1.356	37	-.017	.221	.723	-.869
4	-.216	.164	.281	-.987	38	-.019	.226	.754	-.915
5	-.453	.139	.073	-1.288	39	-.107	.264	.900	-1.304
6	-.159	.114	.393	-.604	40	-.134	.301	1.038	-1.538
7	-.197	.200	.390	-1.120	41	-.097	.250	.869	-1.268
8	-.354	.187	.113	-1.163	42	-.101	.255	.897	-1.266
9	-.425	.137	-.002	-1.051	43	-.474	.157	-.038	-1.189
10	-.092	.116	.432	-.730	44	-.552	.179	-.062	-1.359
11	-.120	.237	.500	-1.095	45	-.444	.149	-.051	-1.117
12	-.343	.164	.187	-.875	46	-.456	.152	-.040	-1.131
13	-.011	.176	.629	-.706	47	.025	.105	.279	-.537
14	-.507	.199	.071	-1.477	48	.017	.119	.323	-.622
15	-.251	.102	.015	-.857	49	.028	.099	.277	-.472
16	-.230	.076	-.020	-.590	50	.027	.101	.270	-.487
17	-.295	.056	-.134	-.536	51	.010	.147	.666	-.521
18	-.201	.051	-.028	-.418	52	-.033	.152	.471	-.544
19	-.199	.054	-.029	-.429	53	-.463	.176	-.038	-1.373
20	-.339	.054	-.169	-.582	54	-.241	.110	.015	-1.186
21	-.128	.050	.025	-.345	55	-.308	.081	-.119	-.753
22	-.199	.053	-.019	-.450	56	-.161	.046	-.025	-.417
23	-.203	.054	-.026	-.482	57	-.192	.036	-.052	-.330
24	-.351	.061	-.142	-.793	58	-.340	.036	-.202	-.467
25	-.161	.076	.089	-.524	59	-.142	.036	-.003	-.304
26	-.235	.080	0.000	-.857	60	-.211	.040	-.094	-.378
27	-.267	.087	-.039	-.765	61	-.216	.046	-.081	-.431
28	-.433	.098	-.015	-.892	62	-.366	.054	-.228	-.639
29	-.223	.089	.148	-.813	63	-.169	.065	.012	-.592
30	-.310	.090	-.008	-.741	64	-.232	.067	-.020	-.535
31	-.283	.097	.088	-.730	65	-.243	.069	-.029	-.609
32	-.515	.126	-.064	-1.193	66	-.407	.068	-.163	-.775
33	-.558	.217	.077	-1.710	67	-.198	.064	.025	-.570
34	-.127	.209	.748	-1.210	68	-.262	.069	0.000	-.527

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
CLTER BUILDING  
WIND DIRECTION 276

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.294	.081	.009	-.667	103	-.152	.053	.026	-.481
70	-.517	.105	-.132	-.995	104	-.217	.058	-.035	-.565
71	-.463	.142	.003	-1.020	105	-.223	.066	.042	-.582
72	0.000	.167	.768	-.636	106	-.375	.083	-.046	-.772
73	.015	.139	.621	-.498	107	-.179	.092	.345	-.445
74	.013	.142	.627	-.503	108	-.294	.084	-.012	-.691
75	-.115	.119	.334	-.969	109	-.297	.102	-.070	-.770
76	-.143	.136	.391	-1.130	110	-0.000	-0.000	-0.000	-0.000
77	-.104	.113	.344	-.888	111	-0.000	-0.000	-0.000	-0.000
78	-.108	.115	.336	-.912	112	-0.000	-0.000	-0.000	-0.000
79	-.375	.141	.197	-.966	113	-0.000	-0.000	-0.000	-0.000
80	-.440	.160	.205	-1.133	114	-.102	.092	.173	-.470
81	-.351	.133	.169	-.917	115	-.001	.084	.389	-.224
82	-.367	.136	.184	-.934	116	-.013	.095	.409	-.271
83	-.082	.101	.314	-.565	117	.003	.079	.362	-.211
84	-.106	.115	.350	-.672	118	.002	.081	.379	-.219
85	-.074	.095	.299	-.505	119	-.121	.078	.241	-.527
86	-.077	.097	.292	-.549	120	-.149	.090	.260	-.631
87	-.143	.107	.329	-.562	121	-.110	.074	.230	-.519
88	-.301	.124	-.029	-.925	122	-.114	.076	.218	-.513
89	-.272	.072	-.083	-.895	123	-.315	.107	.008	-.895
90	-.142	.056	.017	-.547	124	-.371	.122	-.005	-1.021
91	-.179	.040	-.032	-.457	125	-.294	.101	.034	-.818
92	-.170	.032	-.059	-.335	126	-.302	.103	.019	-.867
93	-.169	.031	-.061	-.325	127	-.130	.075	.224	-.444
94	-.214	.031	-.221	-.451	128	-.160	.085	.257	-.525
95	-.115	.028	-.022	-.230	129	-.119	.071	.239	-.431
96	-.179	.033	-.075	-.309	130	-.123	.072	.227	-.437
97	-.182	.035	-.019	-.392	131	.024	.069	.471	-.176
98	-.235	.039	-.176	-.574	132	-0.000	-0.000	-0.000	-0.000
99	-.138	.042	.012	-.333	133	-0.000	-0.000	-0.000	-0.000
100	-.198	.042	-.067	-.373	134	-0.000	-0.000	-0.000	-0.000
101	-.201	.046	-.045	-.403	135	-0.000	-0.000	-0.000	-0.000
102	-.255	.052	-.189	-.600	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 276

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.151	.027	-.071	-.267	171	-.130	.052	.052	-.417
138	-.299	.028	-.208	-.402	172	-.135	.053	.044	-.452
139	-.097	.028	-.012	-.194	173	-.237	.045	.022	-.396
140	-.159	.028	-.064	-.306	174	-.115	.042	-.001	-.352
141	-.162	.029	-.074	-.296	175	-.164	.036	-.035	-.405
142	-.313	.033	-.221	-.425	176	-.159	.034	-.060	-.272
143	-.120	.037	-.003	-.333	177	0.000	-0.000	-0.000	-0.000
144	-.181	.038	-.017	-.375	178	-0.000	-0.000	-0.000	-0.000
145	-.188	.042	-.068	-.352	179	-0.000	-0.000	-0.000	-0.000
146	-.341	.048	-.153	-.513	180	-0.000	-0.000	-0.000	-0.000
147	-.134	.052	.063	-.365	181	-0.000	-0.000	-0.000	-0.000
148	-.199	.059	.055	-.424	182	-0.000	-0.000	-0.000	-0.000
149	-.204	.072	.067	-.498	183	-.293	.074	-.088	-.764
150	-.381	.088	-.059	-.793	184	-.384	.109	-.057	-.840
151	-.207	.090	.219	-.613	185	-.060	.118	.458	-.440
152	-.266	.071	-.001	-.542	186	-0.000	-0.000	-0.000	-0.000
153	-.303	.085	-.060	-.660	187	.011	.072	.261	-.199
154	-.490	.151	-.107	-1.499	188	.030	.079	.375	-.159
155	.033	.151	.652	-.457	189	-.027	.082	.262	-.257
156	-.034	.089	.284	-.373	190	-.174	.051	.001	-.384
157	.001	.088	.353	-.305	191	.028	.054	.286	-.133
158	.016	.079	.559	-.228	192	-0.000	-0.000	-0.000	-0.000
159	.027	.066	.483	-.147	193	-.210	.058	-.012	-.463
160	.026	.067	.469	-.178	194	-.219	.059	.051	-.446
161	-.157	.068	.237	-.406	195	-.341	.077	-.056	-.742
162	-.191	.078	.278	-.470	196	-.159	.068	.199	-.478
163	-.144	.065	.249	-.377	197	-.210	.055	.060	-.455
164	-.150	.066	.253	-.414	198	-.237	.057	-.070	-.455
165	-.242	.075	-.047	-.629	199	-.161	.048	-.004	-.372
166	-.287	.086	-.075	-.722	200	-.285	.055	-.056	-.443
167	-.224	.071	-.048	-.587	201	-0.000	-0.000	-0.000	-0.000
168	-.231	.073	-.047	-.594	202	-.166	.049	-.003	-.369
169	-.142	.055	.046	-.443	203	-.175	.043	-.033	-.328
170	-.174	.062	.038	-.530	204	-.154	.040	.018	-.270

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 246

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.272	.136	.218	-.900	35	.034	.239	.866	-.981
2	-.156	.166	.399	-.874	36	.027	.272	.936	-1.103
3	-.274	.146	.139	-.927	37	.036	.226	.798	-.937
4	-.141	.117	.294	-.807	38	.035	.231	.823	-.940
5	-.402	.159	.102	-1.147	39	-.107	.245	.822	-1.744
6	-.070	.137	.361	-.615	40	-.133	.280	.929	-1.960
7	-.121	.136	.255	-.881	41	-.097	.232	.761	-1.596
8	-.249	.153	.217	-1.303	42	-.101	.237	.735	-1.697
9	-.376	.147	.218	-1.003	43	-.505	.181	-.046	-1.413
10	-.004	.160	.642	-.755	44	-.587	.207	-.069	-1.567
11	-.067	.174	.492	-1.031	45	-.473	.172	-.054	-1.349
12	-.274	.161	.165	-.942	46	-.486	.175	-.051	-1.406
13	-.021	.176	.760	-.803	47	-.037	.117	.265	-.604
14	-.345	.188	.132	-1.169	48	-.054	.134	.281	-.684
15	-.182	.085	.053	-.620	49	-.031	.111	.258	-.579
16	-.174	.066	.041	-.533	50	-.033	.113	.262	-.616
17	-.221	.048	-.065	-.442	51	.199	.148	.852	-.315
18	-.179	.050	-.025	-.399	52	-.027	.138	.553	-.435
19	-.175	.051	-.016	-.419	53	-.331	.157	.005	-1.144
20	-.318	.050	-.156	-.549	54	-.196	.102	.023	-.870
21	-.111	.049	.037	-.312	55	-.261	.085	-.077	-.894
22	-.174	.050	.019	-.419	56	-.101	.047	.045	-.393
23	-.178	.056	-0.000	-.411	57	-.177	.038	-.053	-.324
24	-.325	.066	-.121	-.609	58	-.320	.037	-.195	-.454
25	-.140	.086	.105	-.610	59	-.118	.036	.006	-.246
26	-.218	.091	.077	-.722	60	-.188	.038	-.079	-.341
27	-.244	.092	.019	-.690	61	-.190	.045	-.064	-.389
28	-.428	.105	.070	-.918	62	-.339	.054	-.179	-.671
29	-.218	.095	.151	-.687	63	-.143	.067	.031	-.517
30	-.322	.108	.048	-.947	64	-.205	.069	.032	-.660
31	-.295	.116	.090	-.812	65	-.218	.069	-.034	-.613
32	-.582	.179	-.027	-1.383	66	-.388	.073	-.140	-.778
33	-.720	.267	.080	-1.781	67	-.181	.078	.058	-.751
34	-.132	.216	.859	-.914	68	-.266	.098	.016	-.849

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 286

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.325	.121	.080	-1.021	103	-.149	.074	.074	-.477
70	-.597	.154	-.132	-1.446	104	-.207	.079	.039	-.518
71	-.596	.173	-.120	-1.241	105	-.220	.098	.186	-.610
72	.214	.169	.969	-.380	106	-.377	.123	.103	-.862
73	.193	.140	.809	-.289	107	-.205	.130	.428	-.665
74	.195	.143	.809	-.294	108	-.354	.127	.120	-1.027
75	-.153	.172	.659	-.820	109	-.292	.109	.053	-.975
76	-.186	.196	.721	-.924	110	-.412	.136	-.063	-1.297
77	-.141	.162	.596	-.761	111	-.405	.187	.123	-1.177
78	-.146	.166	.640	-.780	112	-.018	.229	.745	-.802
79	-.406	.136	-.038	-1.064	113	.032	.130	.559	-.410
80	-.475	.155	-.047	-1.210	114	.014	.113	.476	-.537
81	-.385	.129	-.024	-1.031	115	.091	.110	.500	-.371
82	-.390	.132	-.042	-1.056	116	.091	.125	.555	-.433
83	-.133	.101	.199	-.537	117	.090	.104	.468	-.330
84	-.164	.115	.249	-.603	118	.090	.106	.485	-.351
85	-.122	.096	.206	-.486	119	-.176	.109	.464	-.610
86	-.124	.098	.194	-.509	120	-.212	.125	.517	-.721
87	-.132	.091	.377	-.428	121	-.162	.103	.415	-.569
88	-.224	.108	.044	-.945	122	-.167	.106	.447	-.589
89	-.226	.068	-.050	-.716	123	-.303	.106	-0.000	-.922
90	-.087	.057	.061	-.554	124	-.357	.121	-.002	-1.030
91	-.141	.038	-.041	-.343	125	-.282	.101	.022	-.871
92	-.161	.034	-.065	-.314	126	-.290	.103	.014	-.911
93	-.159	.034	-.058	-.312	127	-.145	.072	.148	-.476
94	-.305	.034	-.189	-.464	128	-.177	.082	.161	-.531
95	-.104	.033	.009	-.262	129	-.132	.068	.145	-.435
96	-.164	.037	-.057	-.338	130	-.138	.069	.132	-.445
97	-.169	.044	-.055	-.450	131	.070	.078	.388	-.178
98	-.318	.051	-.189	-.596	132	-0.000	-0.000	-0.000	-0.000
99	-.129	.061	.051	-.517	133	-0.000	-0.000	-0.000	-0.000
100	-.196	.065	.013	-.499	134	-0.000	-0.000	-0.000	-0.000
101	-.215	.072	.013	-.560	135	-0.000	-0.000	-0.000	-0.000
102	-.359	.074	-.054	-.739	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 246

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.135	.028	-.047	-.238	171	-.128	.048	.054	-.338
138	-.287	.030	-.172	-.389	172	-.133	.049	.064	-.353
139	-.087	.031	.003	-.209	173	-.211	.044	-.031	-.380
140	-.150	.033	-.036	-.268	174	-.073	.037	.054	-.231
141	-.151	.036	-.023	-.296	175	-.128	.032	.002	-.248
142					176	-.126	.029	-.001	-.256
143	-.099	.044	.077	-.305	177	-0.000	-0.000	-0.000	-0.000
144	-.167	.050	.005	-.472	178	-.134	.029	-.038	-.268
145	-.185	.058	-.024	-.533	179	-.141	.035	-.021	-.300
146	-.328	.059	-.132	-.640	180	-.300	.049	-.146	-.494
147	-.116	.063	.162	-.445	181	-.144	.088	.211	-.496
148	-.174	.082	.115	-.491	182	-0.000	-0.000	-0.000	-0.000
149	-.193	.097	.173	-.522	183	-.266	.083	-.048	-.882
150	-.392	.109	.116	-.871	184	-.365	.105	-.022	-.766
151	-.232	.100	.120	-.733	185	-.014	.106	.369	-.434
152	-.254	.078	.017	-.593	186	-0.000	-0.000	-0.000	-0.000
153	-.295	.089	-.046	-.804	187	.063	.067	.297	-.208
154	-.479	.141	-.080	-1.015	188	.074	.071	.353	-.130
155	.084	.171	.634	-.485	189	.008	.080	.363	-.245
156	.030	.103	.386	-.400	190	-.163	.059	.035	-.409
157	.061	.095	.377	-.261	191	.060	.048	.250	-.096
158	.069	.089	.430	-.218	192	-0.000	-0.000	-0.000	-0.000
159	.071	.074	.366	-.162	193	-.198	.067	.029	-.468
160	.071	.076	.380	-.174	194	-.204	.063	.043	-.468
161	-.184	.073	.119	-.488	195	-.329	.080	-.117	-.742
162	-.222	.083	.121	-.568	196	-.144	.075	.120	-.474
163	-.170	.069	.101	-.452	197	-.188	.062	.005	-.432
164	-.174	.071	.093	-.463	198	-.210	.061	-.001	-.467
165	-.190	.066	.011	-.528	199	-.150	.056	.043	-.378
166	-.228	.075	-.002	-.618	200	-.249	.052	-.084	-.432
167	-.175	.063	.007	-.482	201	-0.000	-0.000	-0.000	-0.000
168	-.181	.064	-.003	-.490	202	-.155	.057	.036	-.379
169	-.140	.051	.051	-.348	203	-.154	.041	-.028	-.342
170	-.171	.058	.054	-.408	204	-.142	.036	-.013	-.261

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OUTER BUILDING  
WIND DIRECTION 296

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-.277	.188	.245	-1.079	35	.159	.289	.207	-.830
2	-.171	.209	.693	-.834	36	.170	.330	.935	-.950
3	-.254	.151	.318	-.808	37	.155	.274	.809	-.792
4	-.113	.099	.231	-.530	38	.156	.280	.808	-.829
5	-.432	.175	.425	-1.119	39	-.158	.243	.934	-.865
6	-.075	.177	.490	-.710	40	-.191	.276	.984	-.975
7	-.085	.106	.279	-.579	41	-.145	.230	.884	-.826
8	-.262	.160	.225	-.952	42	-.150	.235	.942	-.840
9	-.386	.123	.150	-.857	43	-.526	.182	.109	-1.500
10	-.003	.186	.767	-1.284	44	-.612	.209	.095	-1.637
11	-.004	.123	.470	-.681	45	-.493	.173	.039	-1.315
12	-.288	.174	.318	-1.063	46	-.506	.177	.092	-1.447
13	-.094	.140	.381	-.588	47	-.086	.109	.192	-.535
14	-.286	.152	.053	-1.117	48	-.110	.124	.210	-.600
15	-.173	.070	-.004	-.744	49	-.077	.103	.200	-.483
16	-.170	.057	-.031	-.609	50	-.081	.105	.211	-.498
17	-0.000	-0.000	-0.000	-0.000	51	.374	.168	1.030	-.598
18	-.184	.054	.018	-.387	52	-0.000	-0.000	-0.000	-0.000
19	-.185	.055	.022	-.409	53	-0.000	-0.000	-0.000	-0.000
20	-.331	.056	-.119	-.543	54	-0.000	-0.000	-0.000	-0.000
21	-.130	.054	.062	-.371	55	-.252	.070	-.097	-.648
22	-.188	.058	-.011	-.418	56	-.095	.041	.011	-.370
23	-.190	.062	.027	-.437	57	-.171	.034	-.061	-.277
24	-.343	.072	-.063	-.678	58	-.317	.036	-.197	-.436
25	-.167	.089	.108	-.637	59	-.122	.038	-.006	-.266
26	-.246	.095	.074	-.844	60	-.191	.047	-.013	-.423
27	-.285	.099	-.036	-.915	61	-.195	.059	-.007	-.540
28	-.440	.098	.077	-.975	62	-.343	.071	-.142	-.798
29	-.202	.089	.154	-.666	63	-.158	.087	.086	-.651
30	-.284	.105	.125	-.725	64	-.213	.094	.164	-.688
31	-.260	.120	.225	-.732	65	-.244	.096	.013	-.819
32	-.621	.197	.080	-1.391	66	-.389	.092	.067	-.826
33	-.755	.240	.162	-1.761	67	-.162	.101	.253	-.671
34	-.169	.199	.630	-.820	68	-.222	.123	.274	-.772



WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OLIVER BUILDING  
 WIND DIRECTION 296

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.284	.153	.200	-.928	103	-.128	.086	.176	-.641
70	-.550	.178	.048	-1.278	104	-.174	.104	.180	-.698
71	-.503	.176	.161	-1.202	105	-.186	.126	.232	-.911
72	.414	.192	1.176	-.675	106	-.340	.159	.236	-1.209
73	.358	.159	.974	-.559	107	-.148	.169	.446	-.689
74	.364	.162	.975	-.583	108	-.340	.155	.417	-1.007
75	-.300	.212	.537	-.986	109	-.373	.146	.065	-.932
76	-.355	.241	.567	-1.113	110	-.507	.161	-.022	-1.292
77	-.280	.200	.522	-.923	111	-.496	.186	.106	-1.217
78	-.288	.205	.532	-.966	112	.187	.154	.690	-.576
79	-.429	.156	.075	-1.172	113	.242	.115	.637	-.133
80	-.501	.178	.058	-1.372	114	.170	.117	.597	-.245
81	-.401	.148	.082	-1.122	115	.262	.113	.658	-.139
82	-.412	.151	.071	-1.113	116	.287	.129	.749	-.154
83	-.169	.104	.153	-.604	117	.253	.107	.650	-.099
84	-.204	.119	.149	-.746	118	.256	.109	.671	-.103
85	-.155	.098	.131	-.591	119	-.311	.133	.130	-.939
86	-.160	.101	.131	-.595	120	-.366	.152	.126	-1.058
87	-.162	.077	.288	-.459	121	-.289	.126	.117	-.876
88	-.185	.083	.064	-.654	122	-.298	.129	.128	-.889
89	-.214	.051	-.073	-.526	123	-.269	.121	.060	-.913
90	-.078	.042	.050	-.321	124	-.319	.138	.072	-1.073
91	-.138	.034	-.025	-.327	125	-.251	.115	.077	-.887
92	-.160	.032	-.046	-.282	126	-.258	.117	.074	-.907
93	-.156	.032	-.045	-.273	127	-.176	.088	.109	-.585
94	-.301	.032	-.180	-.409	128	-.212	.100	.119	-.691
95	-.103	.033	.022	-.221	129	-.162	.083	.116	-.552
96	-.167	.043	-.038	-.407	130	-.167	.085	.105	-.546
97	-.170	.050	-.024	-.455	131	.173	.077	.496	-.054
98	-.320	.060	-.144	-.798	132	-0.000	-0.000	-0.000	-0.000
99	-.131	.072	.099	-.651	133	-0.000	-0.000	-0.000	-0.000
100	-.204	.079	.010	-.628	134	-0.000	-0.000	-0.000	-0.000
101	-.236	.084	-0.000	-.658	135	-0.000	-0.000	-0.000	-0.000
102	-.361	.086	.171	-.776	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 296

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.134	.031	-.052	-.271	171	-.129	.058	.080	-.361
138	-.279	.032	-.196	-.420	172	-.134	.060	.071	-.368
139	-.082	.034	.005	-.223	173	-.233	.060	.005	-.512
140	-.144	.036	-.017	-.278	174	-.089	.048	.066	-.344
141	-.141	.040	-.003	-.316	175	-.133	.040	-.022	-.354
142	-.285	.045	-.137	-.514	176	-.119	.031	-.028	-.269
143	-.093	.054	.059	-.365	177	-0.000	-0.000	-0.000	-0.000
144	-.167	.058	.010	-.493	178	-.132	.030	-.035	-.259
145	-.201	.068	-.049	-.703	179	-.133	.034	-.026	-.287
146	-.323	.066	-.098	-.712	180	-.274	.047	-.111	-.582
147	-.095	.074	.139	-.468	181	-.093	.096	.403	-.532
148	-.148	.092	.247	-.599	182	-0.000	-0.000	-0.000	-0.000
149	-.169	.111	.264	-.671	183	-.283	.089	-.057	-.826
150	-.373	.126	.149	-.923	184	-.385	.113	-.084	-.851
151	-.219	.115	.213	-.748	185	-0.000	-0.000	-0.000	-0.000
152	-.264	.083	.047	-.617	186	-0.000	-0.000	-0.000	-0.000
153	-.312	.104	-.069	-.924	187	-0.000	-0.000	-0.000	-0.000
154	-.550	.138	-.097	-1.076	188	-0.000	-0.000	-0.000	-0.000
155	.190	.126	.697	-.381	189	.057	.086	.487	-.158
156	.184	.094	.506	-.203	190	-.165	.068	.008	-.488
157	.209	.094	.586	-.061	191	.112	.056	.379	-.056
158	.186	.088	.548	-.076	192	-0.000	-0.000	-0.000	-0.000
159	.168	.073	.464	-.059	193	-.200	.078	-.002	-.558
160	.170	.075	.471	-.052	194	-.222	.070	-.001	-.485
161	-.250	.087	.008	-.617	195	-.366	.097	-.094	-.774
162	-.296	.099	-.009	-.724	196	-.165	.087	.126	-.539
163	-.232	.082	.022	-.585	197	-.201	.071	.022	-.454
164	-.239	.084	.041	-.600	198	-.219	.071	.005	-.509
165	-.189	.088	.082	-.591	199	-.152	.065	.018	-.465
166	-.227	.101	.092	-.702	200	-.277	-0.000	-0.000	-0.000
167	-.174	.084	.071	-.552	201	-0.000	-0.000	-0.000	-0.000
168	-.180	.086	.075	-.566	202	-.158	.066	.004	-.478
169	-.142	.062	.091	-.386	203	-.174	-0.000	-0.000	-0.000
170	-.173	.070	.095	-.433	204	-.149	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 306

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
1	-0.000	-0.000	-0.000	-0.000	35	.372	.215	.976	-.608
2	-0.000	-0.000	-0.000	-0.000	36	.412	.246	1.093	-.705
3	-0.000	-0.000	-0.000	-0.000	37	.356	.204	.908	-.575
4	-0.000	-0.000	-0.000	-0.000	38	.362	.209	.925	-.571
5	-0.000	-0.000	-0.000	-0.000	39	-.219	.248	.892	-.965
6	-0.000	-0.000	-0.000	-0.000	40	-.261	.282	1.002	-1.085
7	-0.000	-0.000	-0.000	-0.000	41	-.203	.234	.825	-.878
8	-0.000	-0.000	-0.000	-0.000	42	-.210	.240	.833	-.951
9	-0.000	-0.000	-0.000	-0.000	43	-.544	.173	-.012	-1.365
10	-0.000	-0.000	-0.000	-0.000	44	-.632	.197	-.029	-1.524
11	-0.000	-0.000	-0.000	-0.000	45	-.511	.163	.001	-1.240
12	-0.000	-0.000	-0.000	-0.000	46	-.524	.167	-.003	-1.315
13	-0.000	-0.000	-0.000	-0.000	47	-.127	.109	.179	-.691
14	-0.000	-0.000	-0.000	-0.000	48	-.157	.124	.172	-.824
15	-0.000	-0.000	-0.000	-0.000	49	-.116	.103	.163	-.650
16	-0.000	-0.000	-0.000	-0.000	50	-.121	.105	.164	-.635
17	-0.000	-0.000	-0.000	-0.000	51	.422	.163	.976	-.302
18	-.109	.050	.055	-.340	52	-0.000	-0.000	-0.000	-0.000
19	-.115	.052	.050	-.323	53	-0.000	-0.000	-0.000	-0.000
20	-.126	.052	.040	-.357	54	-0.000	-0.000	-0.000	-0.000
21	-.087	.050	.093	-.326	55	-0.000	-0.000	-0.000	-0.000
22	-.110	.051	.076	-.312	56	-0.000	-0.000	-0.000	-0.000
23	-.118	.055	.064	-.396	57	-.095	.034	.020	-.230
24	-.135	.065	.087	-.456	58				
25	-.116	.080	.121	-.547	59	-.062	.036	.058	-.191
26	-.160	.085	.107	-.717	60	-.098	.043	.055	-.346
27	-.214	.089	.004	-.671	61	-.109	.053	.050	-.446
28	-.204	.088	.173	-.637	62	-.117	.062	.061	-.598
29	-.120	.073	.128	-.450	63	-.082	.071	.159	-.598
30	-.152	.092	.391	-.569	64	-.130	.083	.137	-.761
31	-.132	.104	.296	-.537	65	-.180	.091	.077	-.776
32	-.323	.176	.359	-1.129	66	-.160	.087	.408	-.651
33	-.578	.216	.184	-1.351	67	-.076	.094	.383	-.483
34	-.090	.189	.694	-.708	68	-.082	.031	.013	-.198

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
CITY UPSTREAM  
OLTER BUILDING  
WIND DIRECTION 306

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
69	-.089	.030	.004	-.201	103	-.047	.033	.052	-.214
70	-.095	.033	.005	-.201	104	-.069	.035	.030	-.215
71	-.057	.034	.042	-.177	105	-.077	.037	.027	-.231
72	.469	.186	1.101	-.391	106	-.084	.041	.037	-.269
73	.404	.155	.934	-.313	107	-.050	.047	.129	-.253
74	.411	.152	.952	-.272	108	-.086	.052	.098	-.330
75	-.302	.204	.504	-1.097	109	-0.000	-0.000	-0.000	-0.000
76	-.363	.232	.539	-1.239	110	-0.000	-0.000	-0.000	-0.000
77	-.287	.193	.458	-1.020	111	-0.000	-0.000	-0.000	-0.000
78	-.296	.192	.462	-1.072	112	-0.000	-0.000	-0.000	-0.000
79	-.383	.151	.120	-1.000	113	-0.000	-0.000	-0.000	-0.000
80	-.442	.172	.115	-1.154	114	-0.000	-0.000	-0.000	-0.000
81	-.352	.143	.104	-.955	115	.320	.126	.804	-.103
82	-.362	.146	.122	-1.005	116	.354	.144	.900	-.121
83	-.196	.101	.220	-.772	117	.308	.119	.762	-.103
84	-.235	.116	.216	-.911	118	.313	.122	.787	-.029
85	-.181	.096	.170	-.731	119	-.295	.151	.273	-.924
86	-.187	.098	.203	-.734	120	-.342	.171	.320	-1.085
87	-0.000	-0.000	-0.000	-0.000	121	-.275	.142	.291	-.878
88	-0.000	-0.000	-0.000	-0.000	122	-.283	.145	.270	-.898
89	-0.000	-0.000	-0.000	-0.000	123	-.272	.128	.097	-1.031
90	-0.000	-0.000	-0.000	-0.000	124	-.321	.146	.098	-1.186
91	-0.000	-0.000	-0.000	-0.000	125	-.252	.122	.107	-.984
92	-.089	.039	.055	-.243	126	-.260	.124	.088	-.971
93	-.101	.045	.055	-.338	127	-.169	.090	.104	-.547
94	-.102	.052	.052	-.357	128	-.205	.102	.112	-.636
95	-.077	.061	.097	-.415	129	-.156	.085	.124	-.513
96	-.118	.071	.081	-.530	130	-.161	.087	.103	-.521
97	-.170	.080	.039	-.598	131	.214	.080	.517	.004
98	-.136	.072	.158	-.581	132	-0.000	-0.000	-0.000	-0.000
99	-.054	.076	.281	-.372	133	-0.000	-0.000	-0.000	-0.000
100	-.204	.153	.316	-.761	134	-0.000	-0.000	-0.000	-0.000
101	-.073	.030	.018	-.215	135	-0.000	-0.000	-0.000	-0.000
102	-.083	.032	.017	-.228	136	-0.000	-0.000	-0.000	-0.000

WIND ENGINEERING STUDY OF THE RENAISSANCE CENTER  
 CITY UPSTREAM  
 OUTER BUILDING  
 WIND DIRECTION 306

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
137	-.131	.061	.044	-.459	171	-.134	.069	.040	-.468
138	-.108	.059	.095	-.384	172	-.139	.071	.051	-.486
139	-.036	.060	.178	-.348	173	-0.000	-0.000	-0.000	-0.000
140	-.054	.081	.221	-.465	174	-0.000	-0.000	-0.000	-0.000
141	-.076	.099	.272	-.513	175	-0.000	-0.000	-0.000	-0.000
142	-.129	.113	.331	-.551	176	-0.000	-0.000	-0.000	-0.000
143	-.126	.112	.344	-.682	177	-0.000	-0.000	-0.000	-0.000
144	-.058	.030	.046	-.169	178	-.094	.049	.091	-.276
145	-.066	.032	.043	-.174	179	-.105	.050	.083	-.309
146	-.056	.043	.099	-.236	180	-.108	.051	.083	-.301
147	.011	.081	.302	-.242	181	-.055	.049	.119	-.273
148					182	-0.000	-0.000	-0.000	-0.000
149					183	-0.000	-0.000	-0.000	-0.000
150					184	-0.000	-0.000	-0.000	-0.000
151					185	-0.000	-0.000	-0.000	-0.000
152	-0.000	-0.000	-0.000	-0.000	186	-0.000	-0.000	-0.000	-0.000
153	-0.000	-0.000	-0.000	-0.000	187	-0.000	-0.000	-0.000	-0.000
154	-0.000	-0.000	-0.000	-0.000	188	-0.000	-0.000	-0.000	-0.000
155	-0.000	-0.000	-0.000	-0.000	189	-0.000	-0.000	-0.000	-0.000
156	-0.000	-0.000	-0.000	-0.000	190	-.162	.075	.029	-.718
157	-0.000	-0.000	-0.000	-0.000	191	-0.000	-0.000	-0.000	-0.000
158	.232	.091	.596	-.007	192	-0.000	-0.000	-0.000	-0.000
159	.207	.076	.519	.007	193	-.197	.085	.025	-.839
160	.210	.077	.520	-.001	194	-0.000	-0.000	-0.000	-0.000
161	-.241	.088	.216	-.624	195	-0.000	-0.000	-0.000	-0.000
162	-.287	.101	.248	-.703	196	-0.000	-0.000	-0.000	-0.000
163	-.224	.084	.216	-.572	197	-0.000	-0.000	-0.000	-0.000
164	-.231	.086	.211	-.612	198	-0.000	-0.000	-0.000	-0.000
165	-.176	.098	.085	-.636	199	-.149	.071	.031	-.689
166	-.213	.112	.078	-.743	200	-0.000	-0.000	-0.000	-0.000
167	-.162	.093	.082	-.619	201	-0.000	-0.000	-0.000	-0.000
168	-.168	.095	.082	-.632	202	-.154	.072	.039	-.700
169	-.146	.073	.044	-.494	203	-0.000	-0.000	-0.000	-0.000
170	-.178	.083	.041	-.569	204	-0.000	-0.000	-0.000	-0.000