

## Wind Loads

Average Wind Velocity: 90 mph						
Level	Height	Kz	qz	p	Atrib	P
Roof	124.33	1.051	21.789	31.174	2261.078	70.486
8	110.00	1.015	21.047	30.728	4522.156	138.958
7	95.67	0.977	20.259	30.255	4522.156	136.820
6	81.33	0.934	19.367	29.720	4522.156	134.401
5	67.00	0.878	18.206	29.024	4522.156	131.250
4	52.67	0.821	17.018	28.311	4522.156	128.026
3	38.33	0.750	15.552	27.431	4522.156	124.048
2	24.00	0.636	13.188	26.013	6047.062	157.301
1	0.00	-	-	-	-	-
<b>Interior Wall V=</b>						<b>1021.290</b>

Average Wind Velocity: 90 mph						
Level	Height	Kz	qz	p	Atrib	P
Roof	120.000	1.051	21.789	43.158	565.269	24.396
8.000	110.000	1.015	21.047	42.304	1130.539	47.826
7.000	95.667	0.977	20.259	41.398	1130.539	46.802
6.000	81.333	0.934	19.367	40.373	1130.539	45.643
5.000	67.000	0.878	18.206	39.037	1130.539	44.133
4.000	52.667	0.821	17.018	37.671	1130.539	42.588
3.000	38.333	0.750	15.552	35.985	1130.539	40.682
2.000	24.000	0.636	13.188	33.266	1511.766	50.291
1.000	0.000	-	-	-	-	-
<b>Exterior Frame V=</b>						<b>342.361</b>

## Seismic Loads

Level	w floor	w wall	W(kips)	h(ft)	h <sup>k</sup>	wh <sup>k</sup>	Cvx=Wxhx <sup>2</sup> /(Swih <sup>2</sup> )	V=C <sub>s</sub> W	Fx=Cvx(V)
Roof	1800.00	150	1950.00	124.33	5720.73	11155424	0.267	93.21	24.92
8	1808.61	300	2108.61	110.00	4592.47	9683709	0.232	93.21	21.64
7	1696.50	300	1996.50	95.67	3575.25	7137977	0.171	93.21	15.95
6	1696.50	300	1996.50	81.33	2671.72	5334093	0.128	93.21	11.92
5	1759.89	300	2059.89	67.00	1887.07	3887167	0.093	93.21	8.68
4	1759.89	300	2059.89	52.57	1221.31	2515764	0.060	93.21	5.62
3	1722.60	300	2022.60	38.33	692.95	1401567	0.034	93.21	3.13
2	1723.50	300	2023.50	24.00	299.20	605423	0.015	93.21	1.35
									93.21
Sw = W=	16217.49	Sw h <sup>2</sup> =		41721124					

Note: w floor assumes concrete with 150 pcf. Calculations assume the use of a moment frame along column line F.

### Seismic calculations

Fv	2.4
Fa	1.6
Site Class	D
Ss	0.17
S1	0.06
Sds	0.1813
Sd1	0.096
R	8
le	1
Cu	1.7
x	0.9
Ct	0.016
hn	124.33
Ta	1.2281
T	2.0878
Cs	0.0227
Cs min	0.01
Cs max	0.0057
k	1.7939

### Consultants

Structural Engineer  
Hollie Becker

Mechanical Engineer  
Matthew Setzekorn

Electrical Engineer  
Jim Stadelman

Aeronautic Specialist  
David Aston

### Contract Information

Forest City  
Washington  
1615 L Street NW,  
Suite 400  
Washington, DC  
20036

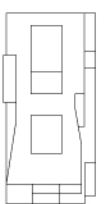
Phone: 202-406-6600  
www.dcwashington.com

Kent State University  
College of  
Architecture &  
Environmental Design

### Client



### Key Plan



Date: 4/10/2011  
Drwn by: Travis Clarke  
Chkd by: Harker  
Sheet Title:  
Calculations