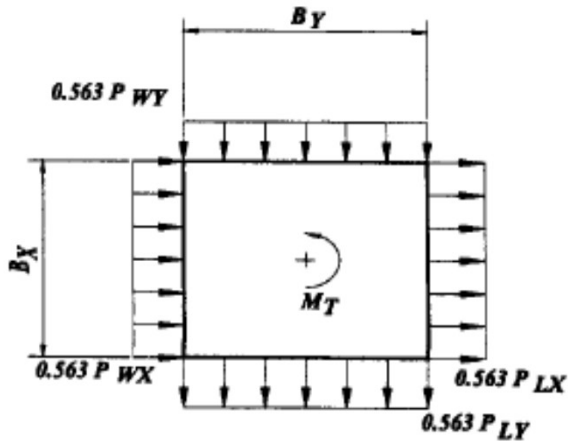## WIND LOADING ANALYSIS - Main Wind-Force Resisting System
### Per ASCE 7-05 Code Method 2 for Enclosed or Partially Enclosed Buildings
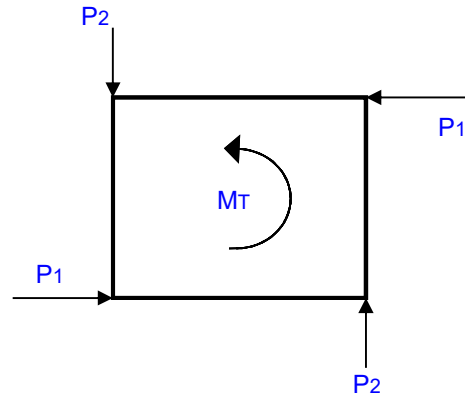### Design Wind Load Case 4 from Figure 6-9

| Job Name: | | Subject: | | |
|---|---|---|---|---|
| Job Number: | | Originator: | | Checker: |

**ASCE 7-05 Figure 6-9 - Design Wind Load Case 4**



$$M_T = 0.563 \, (P_{WX}+P_{LX})B_X e_X + 0.563 \, (P_{WY}+P_{LY})B_Y e_Y$$
$$e_X = \pm 0.15 \, B_X \qquad e_Y = \pm 0.15 \, B_Y$$

**Application of Additional Torsional Mom**

**Input Data:**

| | | |
|---|---|---|
| Bldg. Dimension (x-dir.) = | 100.00 | ft. |
| Bldg. Dimension (y-dir.) = | 200.00 | ft. |
| Windward, $P_{wx}$ = | 0.0290 | ksf |
| Leeward, $P_{Lx}$ = | 0.0080 | ksf |
| Windward, $P_{wy}$ = | 0.0298 | ksf |
| Leeward, $P_{Ly}$ = | 0.0025 | ksf |

**Results:**

| | | |
|---|---|---|
| Length, $B_x$ = | 200.00 | ft. |
| Length, $B_y$ = | 100.00 | ft. |
| Eccentricity, $e_x$ = | 30.00 | ft., $e_x = 0.15 \cdot B_x$ |
| Eccentricity, $e_y$ = | 15.00 | ft., $e_y = 0.15 \cdot B_y$ |
| Torsional Moment, $M_T$ = | 152.3 | ft-kips, $M_T = 0.563 \cdot (P_{wx}+P_{Lx}) \cdot B_x \cdot e_x + 0.563 \cdot (P_{wy}+P_{Ly}) \cdot B_y \cdot e_y$ |
| Perimeter Force, $q_w$ = | 0.003807 | kips/ft./ft. Ht., $q_w = M_T/(2 \cdot B_x \cdot B_y)$ |
| Applied Load, $P_1$ = | 0.381 | kips/ft. Ht., $P_1 = q_w \cdot B_y$ |
| Applied Load, $P_2$ = | 0.761 | kips/ft. Ht., $P_2 = q_w \cdot B_x$ |

Note: Loadings P1 and P2 are to be applied per ft. of building height.

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