

Ivan Markov

# HOMEWORK 2

Due 9/20/16

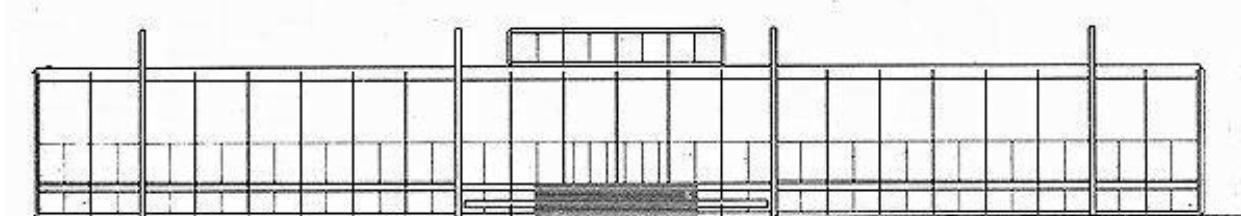
1. Refer to the bay of the Crown Hall shown in the figures. The building roof is suspended of four large steel plate girders that in turn are supported by eight exterior steel columns to provide vertical and lateral load resistance system as shown in the drawing. Disregard the set of windows on the roof in the middle span. The columns are spaced 60 feet apart. The glass wall facade in the typical bay is supported by vertical joists (mullions) 10ft apart and the columns on the side. The mullions are supported by top and bottom horizontal beams 20ft apart and the foundation. The bottom beam is 4ft above the foundation as shown in the figure. The building is 120ft wide.

Lateral wind load perpendicular to the facade is  $80\text{lb}/\text{ft}^2$ . For the typical bay shown in the figure find:

1. Using EBEM method find the loading condition for: a) the mullions b) the beams and c) the girder frame.
2. Using CAM method find the loading condition for: a) the mullions b) the beams and c) the girder frame.
3. Comment



Figure of a typical bay



Drawing of the bay