

**Transbay Transit Center**  
**Glazing Seismic Detailing**  
May 11<sup>th</sup>, 2010



Transbay Transit Center

## Glazing Seismic Detailing



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### Governing Design Level Earthquake - Structure and Specialty Glazing

Designing for a Magnitude 8.0 earthquake on the San Andreas fault (a 975 year event)

#### Structural Performance

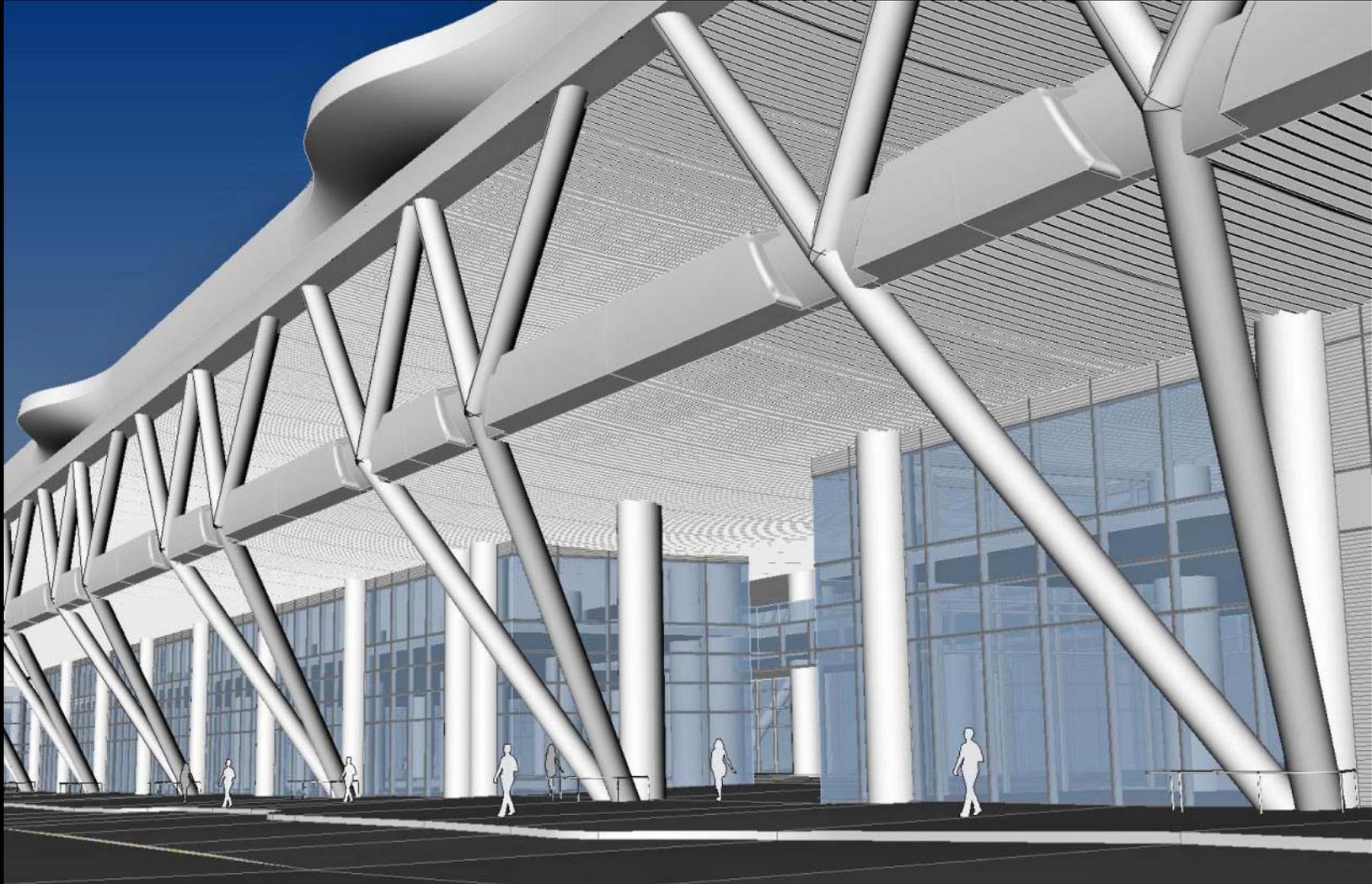
- Some structural damage will be acceptable, but no significant loss of function due to structural damage.
- All structural repairs can be made in-place in localized areas while building is operational, without replacement of material.

#### Specialty Glazing Performance

- No cracking or loss of glass under the design level earthquake



## Glazing Seismic Detailing



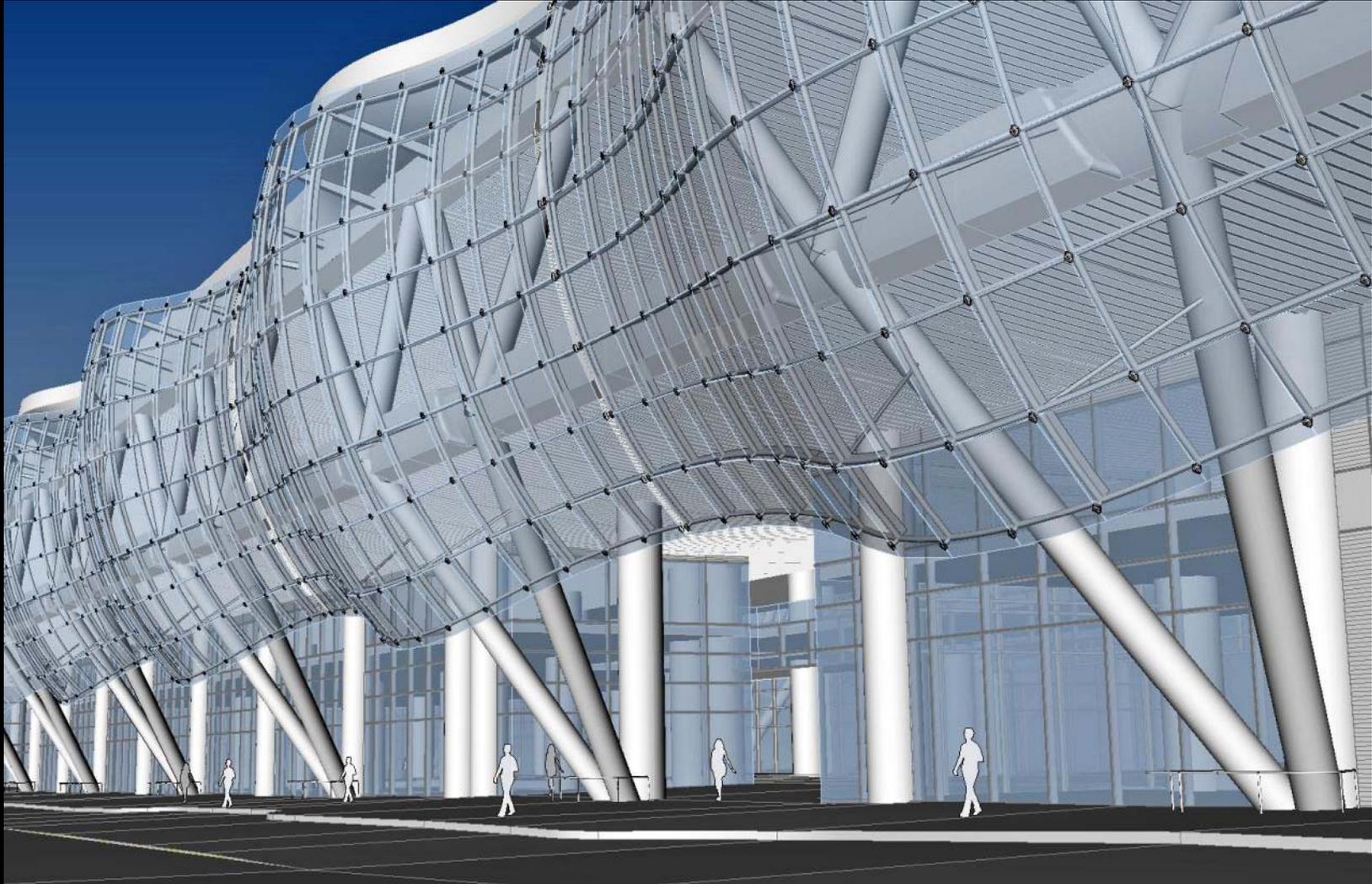
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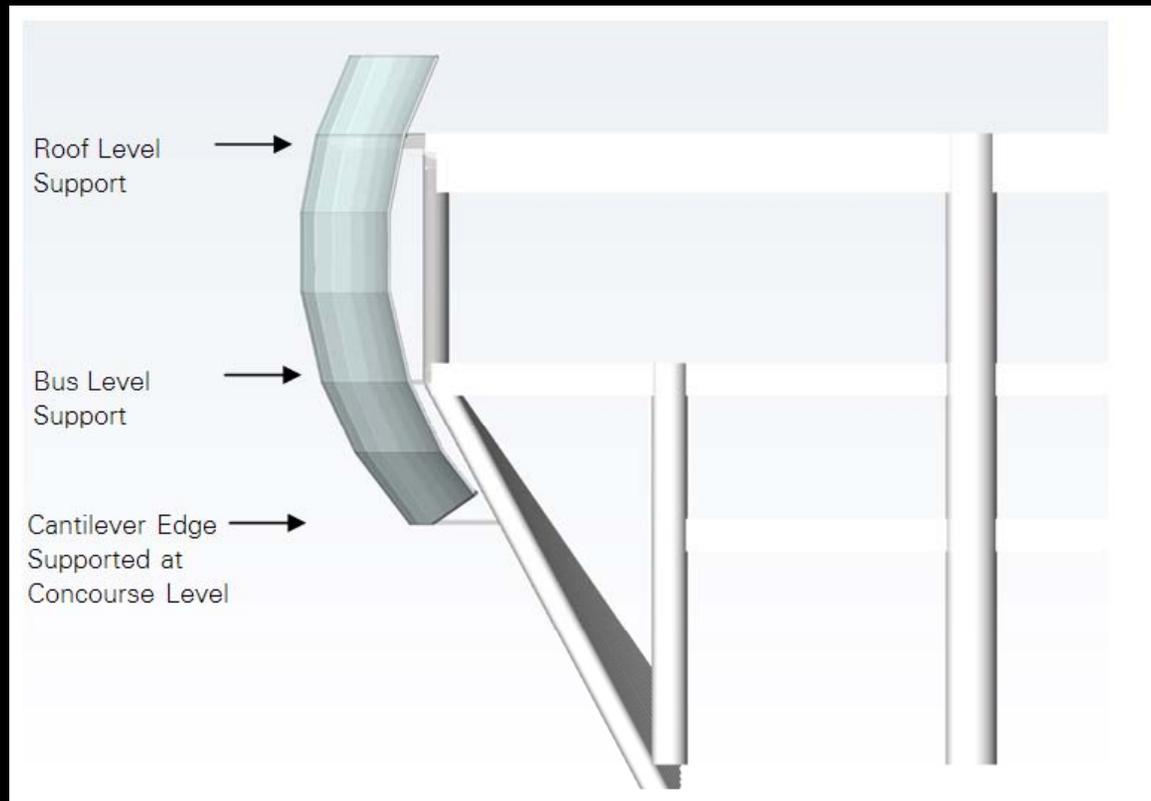
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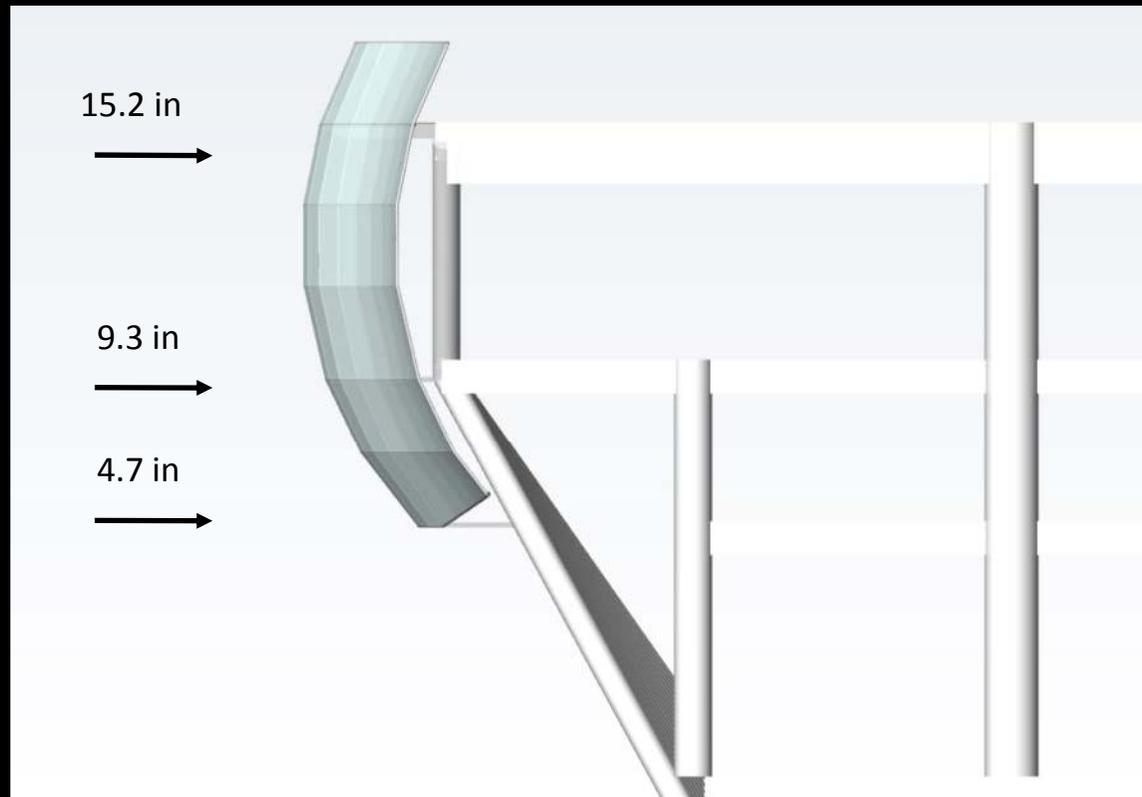
# Glazing Seismic Detailing

## System - Attachment to Superstructure



## Glazing Seismic Detailing

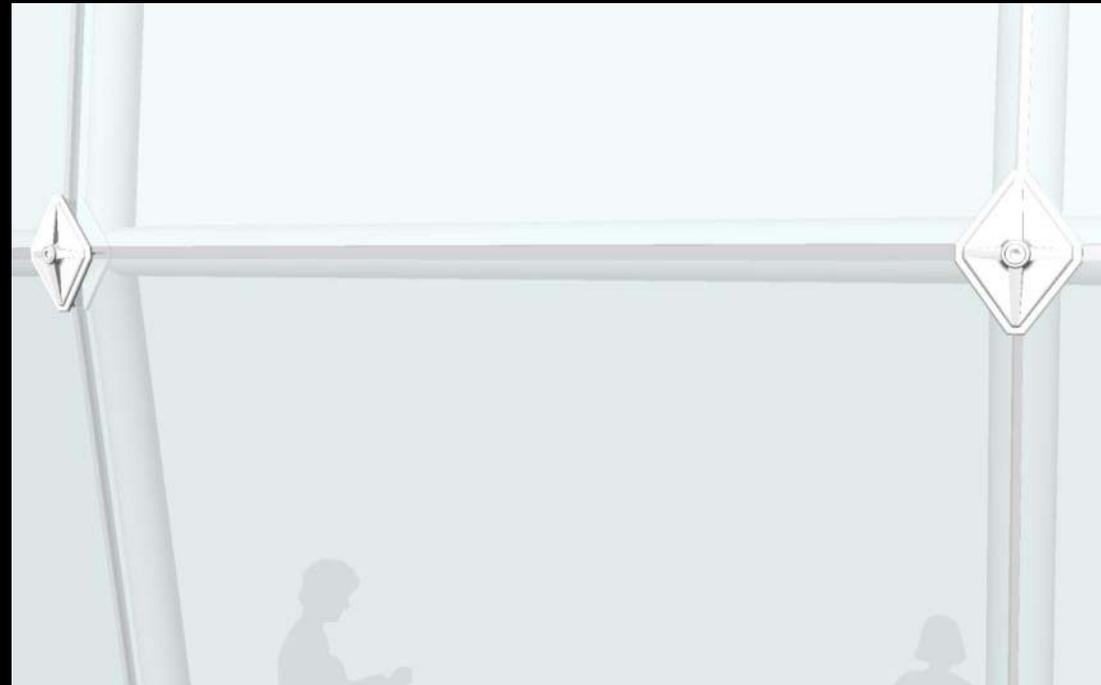
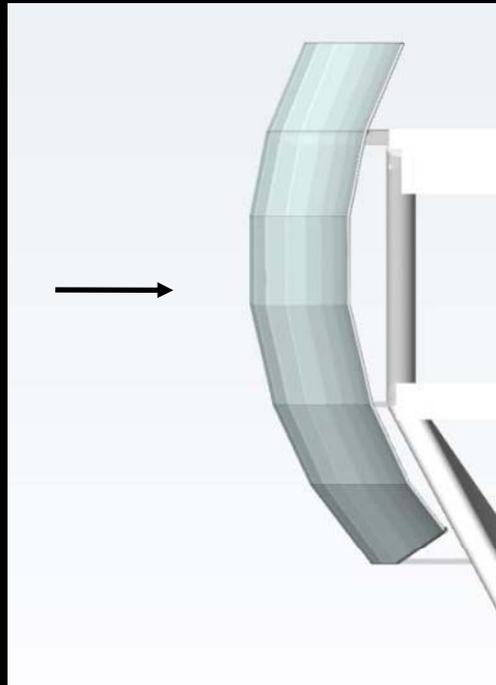
### System – Estimated Maximum Drift in Transverse Direction



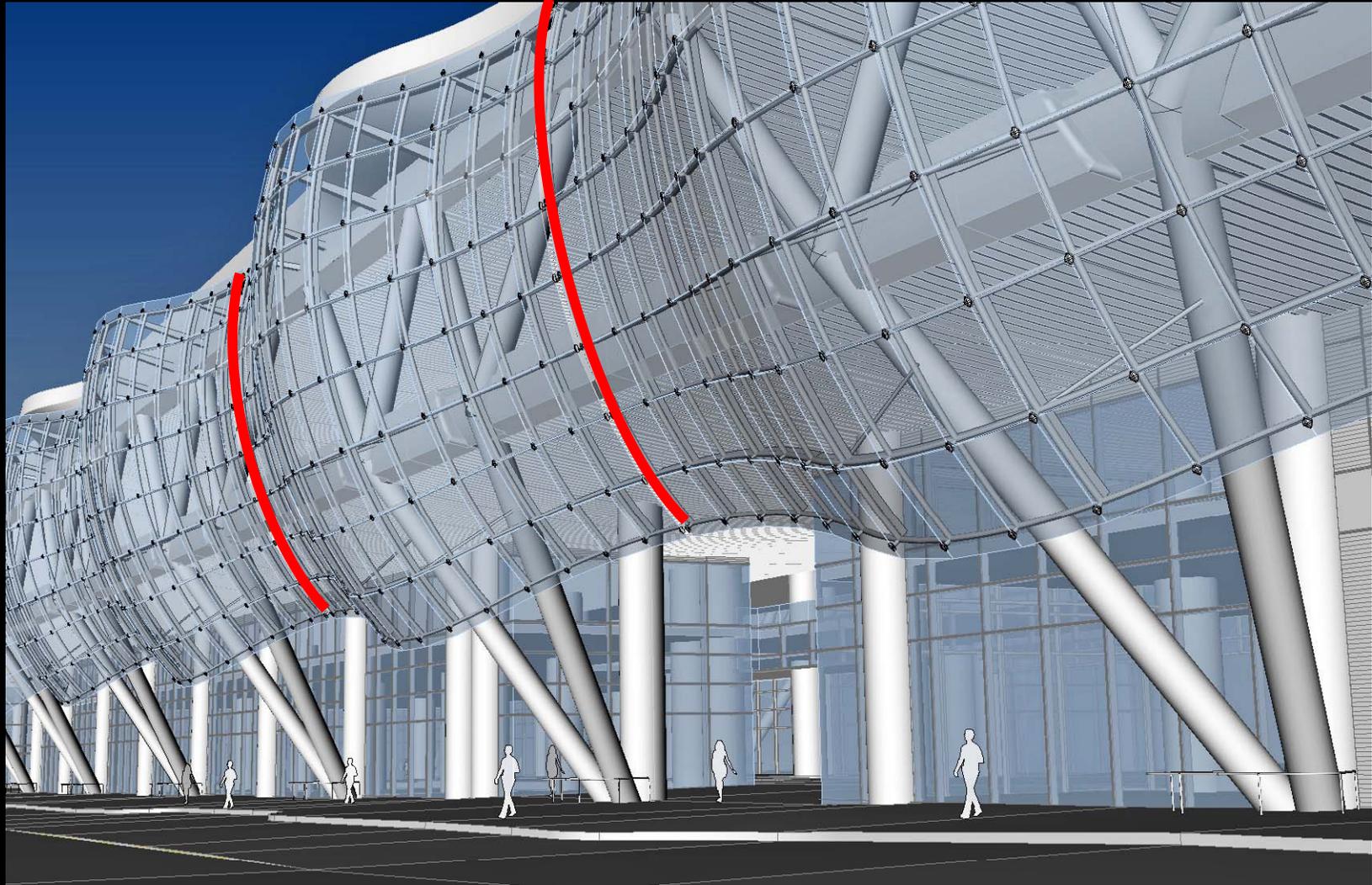
## Glazing Seismic Detailing – Attachment Design

Design of attachments and anchorage for design seismic loads

- Wind and blast considerations generally govern for out of plane forces

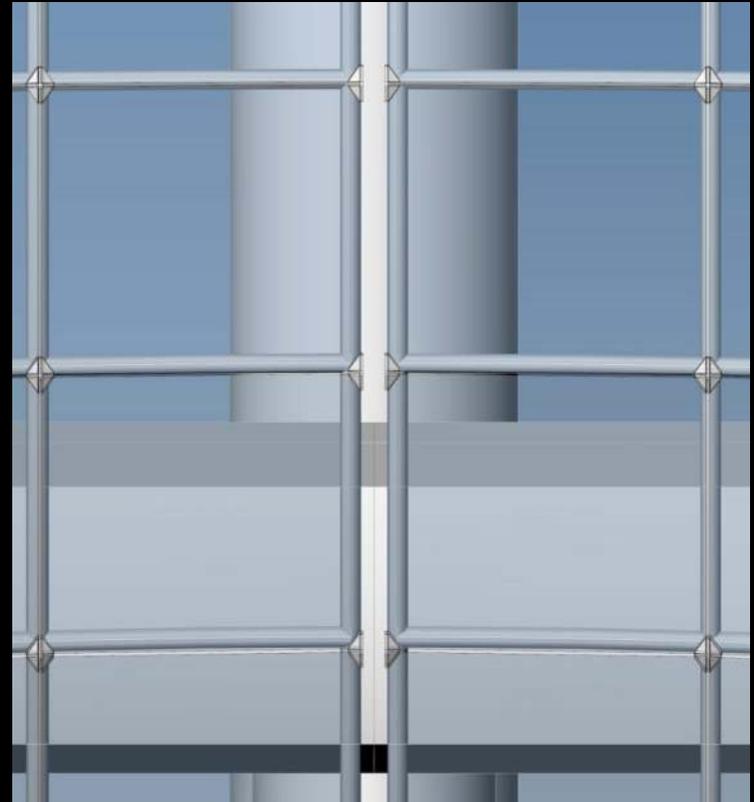
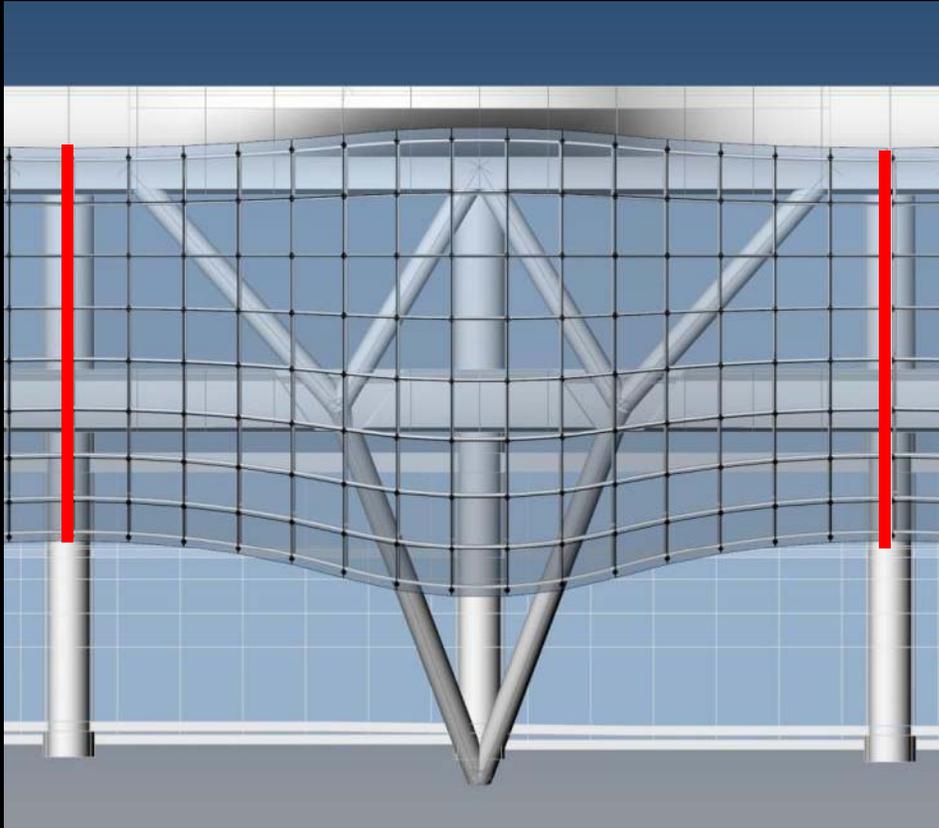


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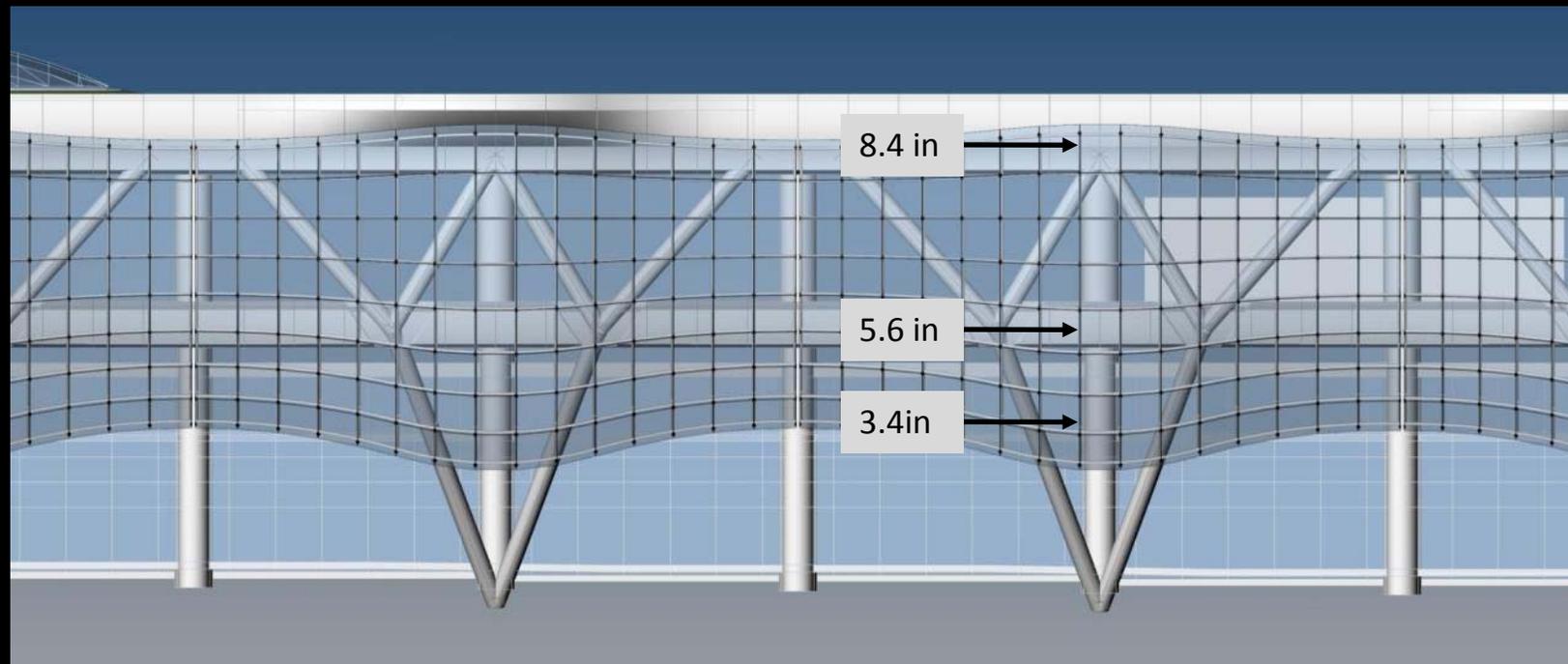
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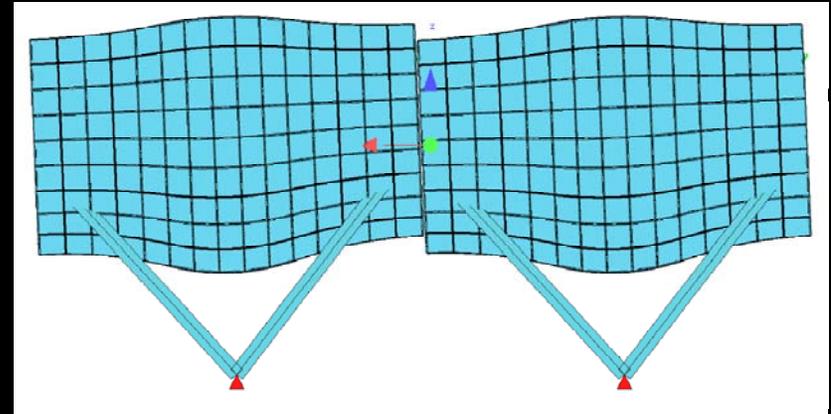
## Glazing Seismic Detailing

### System – Approximate Maximum Drift in Longitudinal Direction

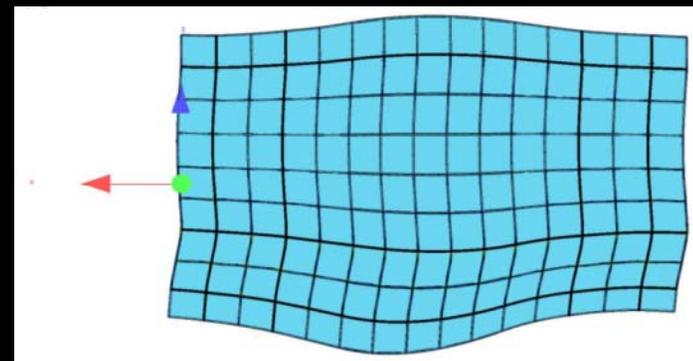


## Glazing Seismic Detailing – Imposed Seismic Drift of Superstructure

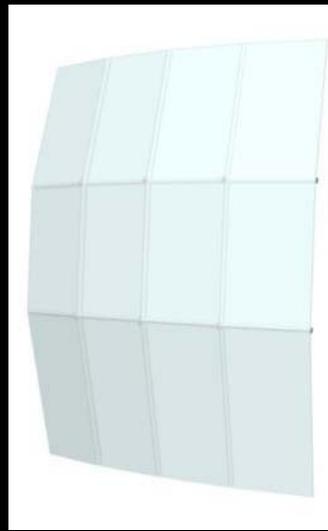
Seismic joints at building hinges isolate glazing from building motion



Flexibility of secondary grid support somewhat isolates the glazing system from building drift

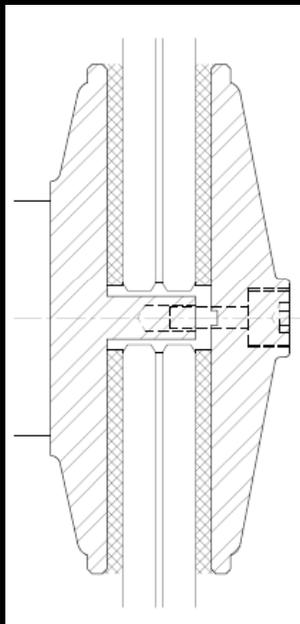
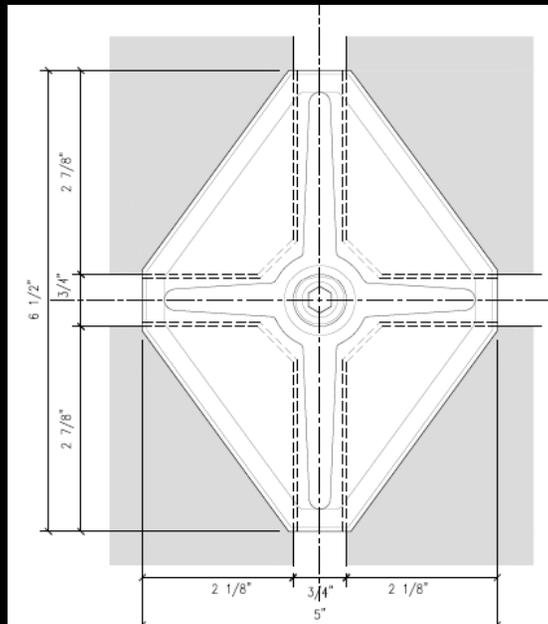


## Glazing Seismic Detailing – Attachment Design



Panels consist of two 10 mm sheets of glass bonded with a 1.52 mm laminate layer

Flexible corner support of panels allows rotation and prevent moments in glass panels



Glazing attachments detailed to prevent breakage under racking due to the design drifts