


ASCE Charles Pankow Foundation  
Annual Architectural Engineering  
Student Competition  
April 9th, 2010

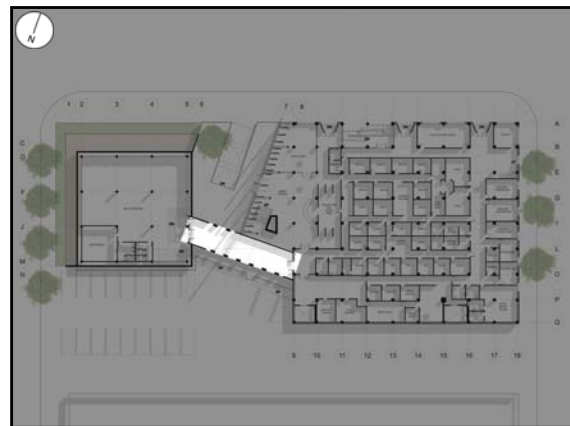
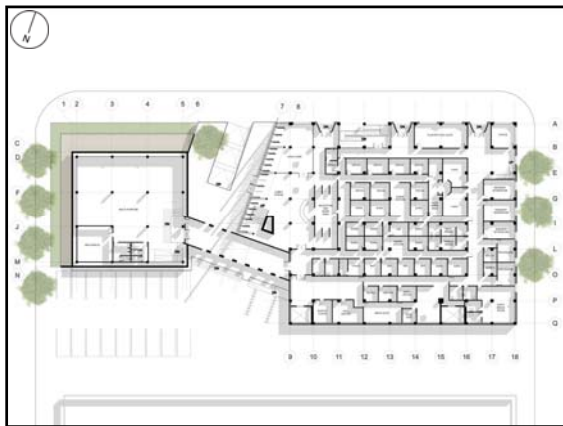
Structural  
Systems  
Presentation.

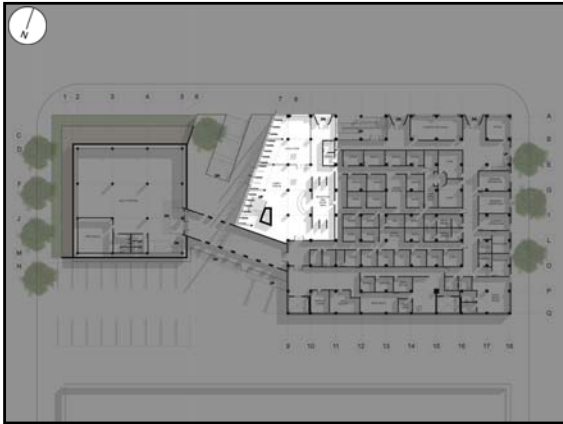


Team 2010-3  
Emily Carlip & Grace Rose  
Architectural Engineering Majors  
California Polytechnic State University, San Luis Obispo

Preview

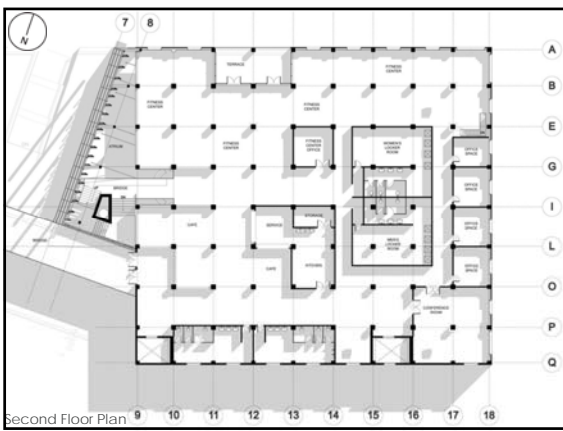
- Service  
To benefit the community
- Safety  
To protect the community
- Sustainability  
To safeguard the future of the community





## Service

- Expanded Program
- Iconic Structure within the Brady Arts District
- Total Site Development

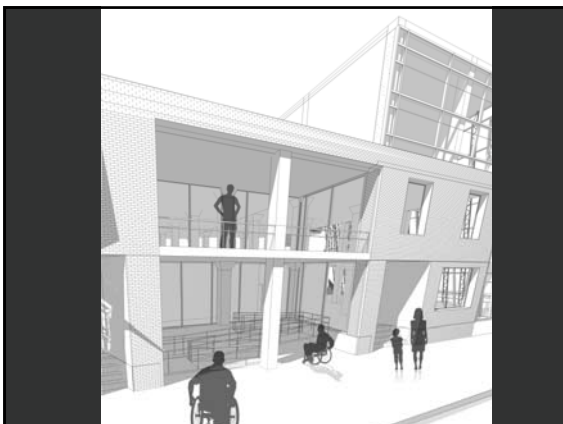


Second Floor Plan

## Service



Tower Placement from Bridge (Image courtesy of google maps)



## Safety

### Overview

- Tornado shelter
- Existing building
- Tower
- Breezeway

Safety  
*Tornado Shelter*

Design goals

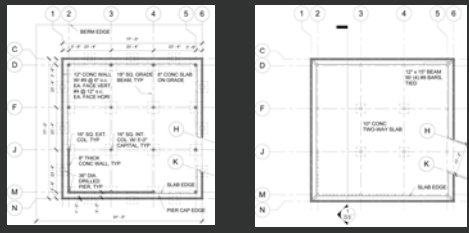
- Balance protection with aesthetic requirements
- Meet FEMA guidelines for a community safe room
- To provide "near-absolute protection" during emergencies

Safety  
*Tornado Shelter*

Structural Systems

- Gravity
- Lateral
- Foundation
- Tornado protection

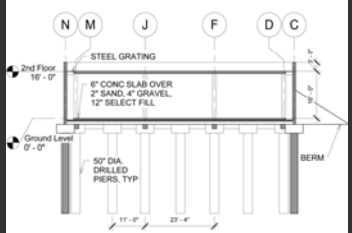
Safety  
*Tornado Shelter*



Foundation Plan

Roof Plan

Safety  
*Tornado Shelter*



Section

Safety  
*Tornado Shelter*



Wind Test Model

Wind Flow

Safety  
*Existing Building*

Design goals

- Provide medical support to the community
- Act as a triage center after an emergency
- Support the daily needs of the community

## Safety

*Existing Building*

### Structural Systems

- Gravity
- Lateral
- Reinforced inner core
- Support of medical equipment

## Safety

*Existing Building*

Partial First Floor Plan

## Safety

*Existing Building*

Reinforced Core

## Safety

*Tower*

### Design goals

- Enhance existing program
- Design to a Life Safety standard

## Safety

*Tower*

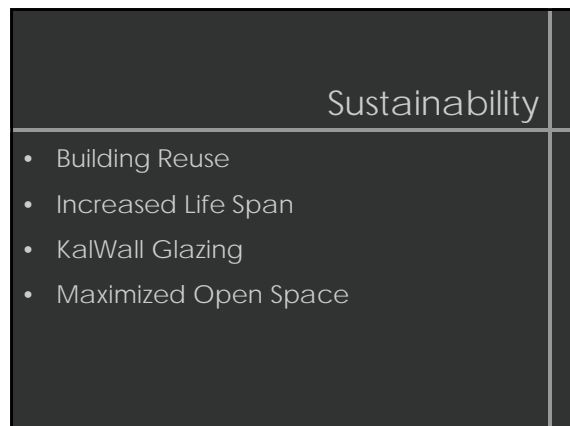
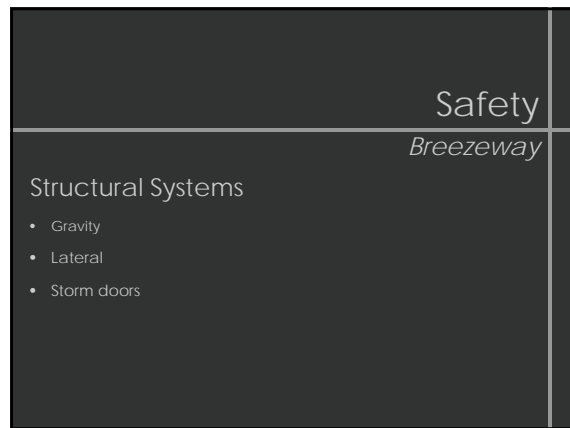
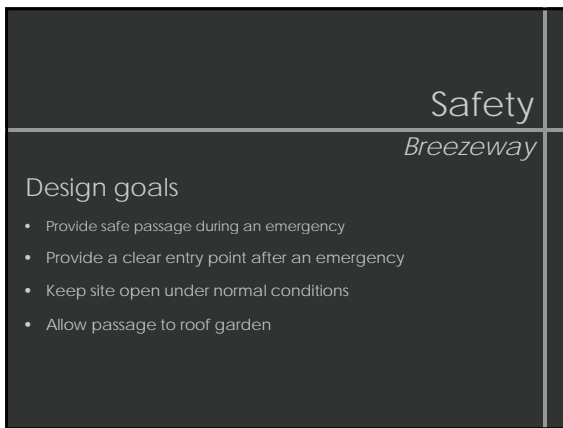
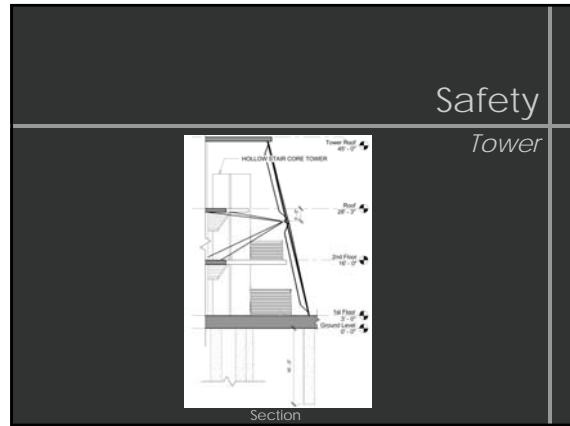
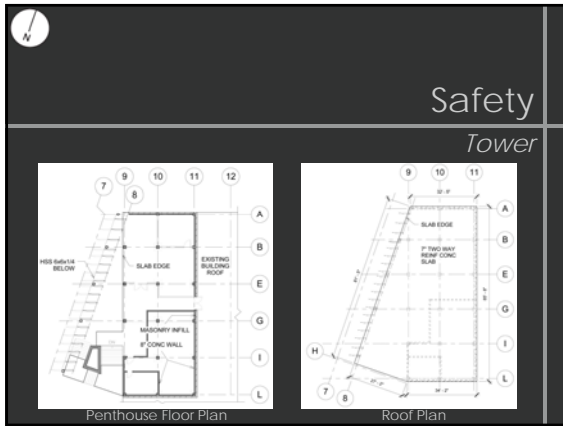
### Structural Systems

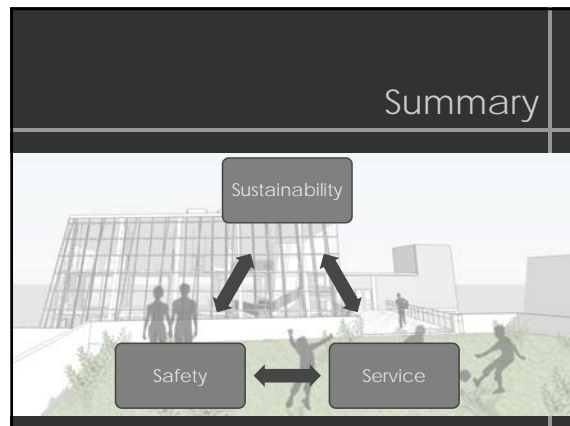
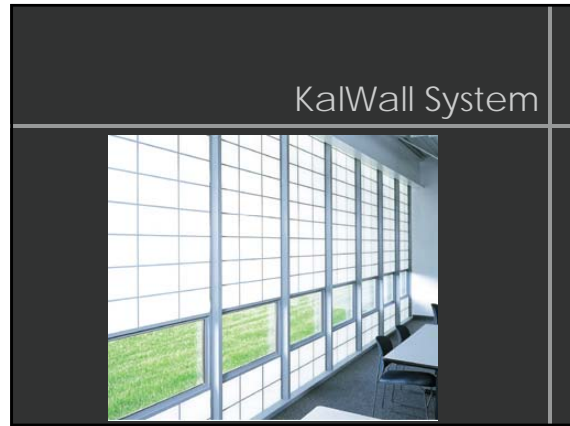
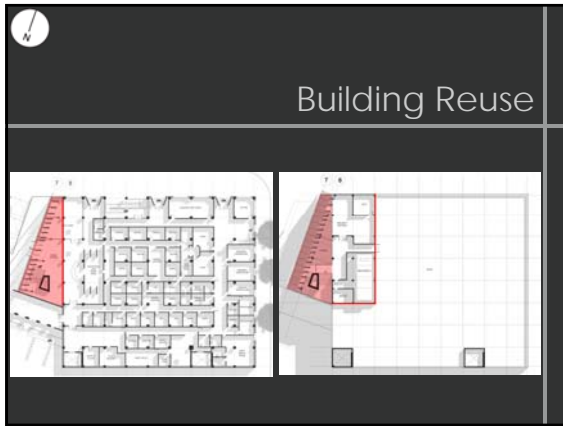
- Gravity
- Lateral
- Foundation
- Interface with existing building

## Safety

*Tower*

Foundation Plan      Second Floor Plan





### Special Thanks to:

- Jim Guthrie, SE, Senior Project Advisor
- Craig Baltimore, SE, Advisor
- Al Estes, PE, ARCE Department Head
- Peter Trettli, Team Member
- David Denio, Team Member