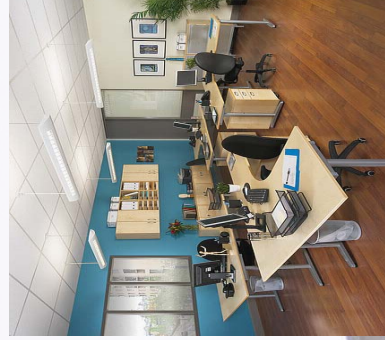


### Renovation of a Landmark

Alumni Memorial Hall is Mies van der Rohe's first classroom building on the I.I.T. campus. While the building as a whole is not under historical preservation status the exterior element, are and the University has decided to extend the historic status of the campus as a whole to the treatment of all the existing buildings of the original Mies master plan.

### Lighting Systems



Quality for the following LEED credits

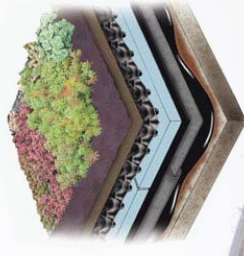
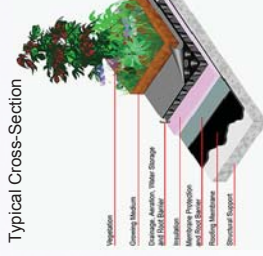
- Sustainable Sights
- Light Pollution Reduction
- Energy & Atmosphere
- Minimum Energy Performance
- Optimize Energy Performance
- Measurement and Verification
- Indoor Environmental Quality
- Controllability of Systems-Perimeter
- Innovation & Design Process

### Renovation Issues Addressed:

- Design of green roof system
- Design of rain water run off and retention
- Design of efficient HVAC system
- Design of elevator for ADA compliance
- Design of building and space access for ADA compliance
- Design of building layout to client specifications
- Design of electrical and lighting systems for code compliance
- All system design to fulfill requirements for Silver Certification from LEED EB

### Green-roof Addition And Stormwater Reduction

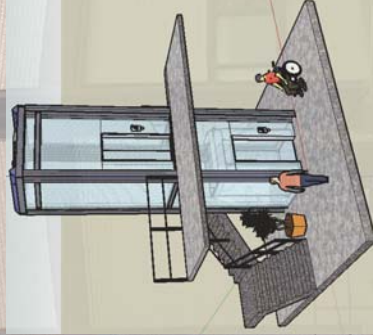
- Cover 50% of roof with green roof
- Roof to show reduction of at least 15% stormwater management
- Impervious area on site will be reduced to 43% from 64 %
- Stormwater runoff reduced 17%; LEED point available
- Total volume of water leaving site will be reduced from 3252 cubic feet to 2686 cubic feet



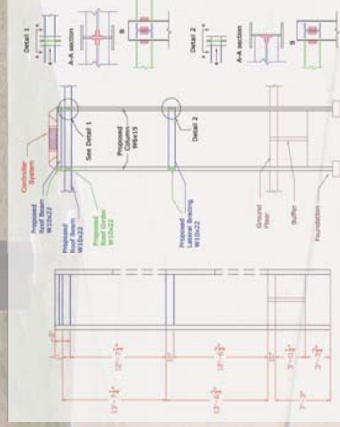
#### Checking Available Strength

- Loads
  - Dead: decking and green roof
  - Live: Rain
- Member Capacity
  - Ultimate Load vs. Design Strength
  - Beams: bending strength
  - Columns: axial strength

### Elevator Design Development



- Design a 2-story elevator that...
- minimizes energy consumption
- suitable location
- incorporate design as Miesian.



### HVAC Redesign

- Currently
  - Heated hydronically by steam
  - Entire building is not air conditioned
- Needed
  - Updated heating and air conditioning system to improve comfort and balance temperature throughout the building
- Process
  - Room loads were calculated
  - Duct sizes were determined



Second Floor



First Floor

ROOM LOAD KEY:  
3550 - 2640 CFM  
2138 - 2130 CFM  
1419 - 710 CFM  
709 - 0

The building was divided into zones. Loads for each room were calculated using computer software. The air handler must be able to push 100 tons of air through the building.



Recommended Air Handler: Trane M Series 100 ton capacity