

## **Research and Analysis Methods**

*Problem Statement:* There are no LEED registered art museums and a general lack of interest in green building from museums and similar facilities. Green building is a theme that should be universal in construction and arts' centers would be a large stepping stone in convincing people green building is not just a small niche in the market. Since most buildings are not toured on a regular basis by large numbers of people, it is rare for the advantages of green building to be showcased to the public. Integrating green design and construction into a building aimed to showcase and teach the public is an ideal setting for demonstrating the value green techniques can bring to a building.

*Goals:* Showing LEED certification is not only viable but advantageous for museums and arts centers would go a long way to show green building is practical in almost all facility types. To properly show LEED as being viable it is necessary to pinpoint the challenges for these building types and show how they can be overcome or alternative systems which will fulfill the requirements and be better for the environment.

### *Objectives:*

#### 1. Literature Review

- ◇ Read 12 relevant and current articles on issues with greenbuilding
- ◇ Review of LEED Point system and narrow down the areas of the system that are most challenging for museums and arts' centers.
- ◇ Talk/email with the design manager from Smithsonian Institution at the Patent Office Building and see what concerns they have with LEED and why more environmentally friendly systems and techniques were not used.
- ◇ Talk w/ Penn State Office of Physical Plant Project Manager to gain some insight the differences between a museum facility and a regular classroom facility and the challenges with applying LEED to an arts' center.

#### 2. Study

- ◇ Analysis of points areas for museums to focus
- ◇ Develop Reasoning behind museums as next logical step for LEED
- ◇ Study similar facilities and arts' centers which are close to meeting LEED requirements
- ◇ Review market data for LEED from USGBC website and analyze for points aimed at by different building types

#### 3. Outcome - review data and show if museums should go green

- ◇ Show challenges specific to museums/arts' centers
- ◇ Demonstrate via similar building types and answers to interview questions that Art Museums have equal opportunity and reasons to go green/LEED

#### 4. Future Research - find shortcomings of research and new areas and ideas created by outcomes

- ◇ Show two areas of research shortcomings with potential for further research
- ◇ Show three new areas opened up by the research for further study

*Opening Statement:* LEED is a growing portion of the building market. Thus far there are no LEED registered art museums and a general lack of interest in green building from museums and similar facilities. Arts' centers would be a large stepping stone in convincing people that green building is not just a small niche in the market. Since most buildings are not toured on a regular basis by large numbers of people, it is rare for the advantages of green building to be showcased to the public.

*Unstructured Interview: Smithsonian Institution*

1. What is Smithsonian's take on the LEED point systems and does Smithsonian plan on using it on any projects in the near future?
2. What special concerns does a museum have which will make building a LEED certified facility especially challenging?
3. What reasons are most appealing to SI for having a LEED certified building?
4. What issues might affect an art museum from attaining points in the following areas:
  - Sites? (access - loading/unloading of exhibit items)
  - Water? (chemicals used in restoration, green roof)
  - Energy? (requirements for maintaining painting quality, daylighting)
  - Materials? (low VOC's, recycled materials, regional materials)

*Structured Interview: Office of Physical Plant at Penn State*

1. What are the key reasons Penn State has started building LEED certified buildings?
2. What special concerns does a museum have which might make building a LEED certified facility challenging?
3. Penn State has decided to build LEED certified buildings, are there any building types where the possibility of LEED is discounted, and why?
4. What issues might affect an art museum from attaining points in the following areas:
  - Sites? (access - loading/unloading of exhibit items)
  - Water? (chemicals used in restoration, green roof)
  - Energy? (requirements for maintaining painting quality, daylighting)
  - Materials? (low VOC's, recycled materials, regional materials)