

# Innovative Teaching Manual

## PROJECT TITLE

Lighting Fixture Design Competition

## AUTHOR

Paulette R. Hebert, Ph.D.  
University of Louisiana at Lafayette  
Lafayette, LA  
prh2239@ucs.usl.edu

## PROJECT LEVEL

3rd and 4th Year Students

## ABSTRACT

The students were charged with designing custom, operable lighting fixtures for "clients" which they selected from the people featured in a current issue of the university's alumni magazine, La Louisiane. The students' lighting fixtures were required to manifest at least one of the lighting techniques introduced by Fran Kellogg Smith's book, Bringing Interiors To Light which had been presented and discussed during the semester. These techniques include: uplighting, downlighting, beam play, shadow play, highlighting, backlighting, structural lighting, silhouette, light as art, and sparkle. The students chose "clients" familiar to them – musicians, scientists, business people and fellow students – and based their designs on the needs of and interests of the selected clientele. In order to promote sustainable design, students were encouraged to utilize "found" or recycled materials. The utilized materials included straw baskets, PVC pipe, various kinds of paper, wire mesh, corrugated cardboard and copper tubing. Some lighting fixtures were created using a high degree of craftsmanship and more traditional lighting fixture materials including glass and various metals. All of the lighting fixtures produced were powered and displayed in an on-campus exhibit/design competition. Judges included architecture faculty, the President of the Illuminating Engineering Society of North America (IESNA), New Orleans Section, and the Editor of La Louisiane Magazine. Winners of this competition presented their lighting fixtures to members of the Illuminating Engineering Society of North America, New Orleans Section, at their regular monthly meeting. IESNA members and other attending design professionals interacted with the students and a design dialogue ensued. Certificates and complementary dinners were provided for the students. The IESNA members indicated that this was one of their most successful and interesting meetings. An article about the project and its process was run in La Louisiane magazine following the projects' completion. Additionally, some selected lighting fixtures were published in the January/February Issue of Architectural Lighting magazine. Further, a west coast lighting fixture showroom contacted the instructor requesting more information and possibly a meeting with the students to discuss showing or mass-marketing their light fixtures.

## OBJECTIVES

1. To teach design students about lighting techniques through hands-on experiences
2. To design and construct operable, expressive lighting fixtures as works of art
3. To design for clients' particular personality and needs
4. To encourage design students to utilize "found," re-used or recycled components in order to reinforce the idea of "sustainable design"
5. To broaden students' understanding of materials and construction

6. To encourage feedback for designs through the students' participation in an on-campus exhibit of their lighting fixtures
7. To educate others at the university about interior design through an on-campus exhibit of student work
8. To encourage interaction between students and professionals by involving the IES as a supporter for a lighting fixture design competition
9. To encourage excellence in student design through a lighting fixture design competition with exposure and prizes
10. To enhance oral presentation skills and confidence through students' presentations to IES professionals.

## PROCESS

Lighting fixtures should be designed for a particular person featured in La Louisiane magazine. Students must explain why their lighting fixtures meet their clients' needs and tasks. Students' projects must manifest at least two lighting techniques. Lighting fixtures should utilize "found," re-used or recycled materials. Students fixtures must be operable, electrically safe and physically stable and able to withstand transportation to off-campus presentations.

- Students attended several in-class lectures by instructor on lighting sources.
- Students purchased instructor-prepared packet at a local electrical distributor which consisted of necessary electrical components and accessories necessary for lighting fixture operation.
- Students attended a guest lecture by an electrical engineer on principles of electricity, safety, lighting fixture construction and operation. This included a demonstration of the proper connection of the wires and components in the instructor-prepared student electrical packet.
- Students read about lighting techniques in Bringing Interiors to Light.
- Students attended in-class lecture by instructor on lighting techniques.
- Students participated in the in-class activity of evaluating catalogued lighting fixtures designed by others and identifying the materials, lighting techniques and lighting sources utilized in these lighting fixtures.
- Students participated in independent, informal field trips to a local electrical distributor to speak with lighting fixture sales representatives.
- Students created the design concept and preliminary design of lighting fixtures in written and graphic format and submitted them to instructor for review.
- Written critiques were given to students by instructor.
- Students further developed and improved lighting fixture designs in written and graphic format and submitted to instructor.
- Written critiques were given to students by instructor.
- Students participated in informal one-on-one critiques with instructor.
- Students revised designs and completed fabrication of their lighting fixtures in the design building's workshop.
- Students presented their work in an on-campus exhibit.
- Students' projects were judged in 4 categories by 3 outside judges.
- First, second and third place students received certificates and recognition.
- First place students orally presented their projects at the state's Illuminating Engineering Society (IES) Meeting. First place winners received dinner at the meeting courtesy of the IES at the restaurant where the meeting was held.
- IES professional members additionally chose an overall winner, who received a certificate.
- First place winners were acknowledged at the college's awards night.

- The best overall winner was interviewed and photographs of the student and the project were featured in the university's alumni magazine.

#### PRESENTATION

1. Operable, full scale, lighting fixture
2. Card attached with the following information:
  - Photograph of person designed for (from school alumni magazine)
  - Explanation of why this fixture meets their client's needs
  - Task and space lighting fixture was designed for
  - Students' lighting design concept/inspiration
  - Identification of two of the lighting techniques manifested by the students' lighting fixture

#### EVALUATION

Students were graded on an 100 point scale:

90 - 100 = A, 80 - 89 = B, 70 - 79 = C, 60 - 69 = D, below 60 = F

Grades were based on the following:

- Craftsmanship
- Creativity
- Manifestation of 2 lighting techniques
- Clarity and manifestation of design concept
- Appropriateness of solution for client, task and space selected
- Utilization of "found," recycled or reused materials
- Adherence to directions, meeting deadlines

#### PROJECT LENGTH

The students had 2 months from the introduction of this project until their final exhibition. The class was a lecture only. Students worked on their projects on their own time. Two formal interim deadline dates for preliminary sketches and concepts were given. Additionally, students met with instructor during instructor's office hours and free time for consultations.

#### RESOURCES

Smith, F. K., Bringing Interiors to Light, out-of-print.

#### CREDITS

Dr. George Loli, Professor, University of Southwestern Louisiana, School of Architecture, is credited with special inspiration and for directing the most successful student in the design competition, a student enrolled in his class, Ms. Amanda Bernard.

DOCUMENTATION

Image 1



Image 2

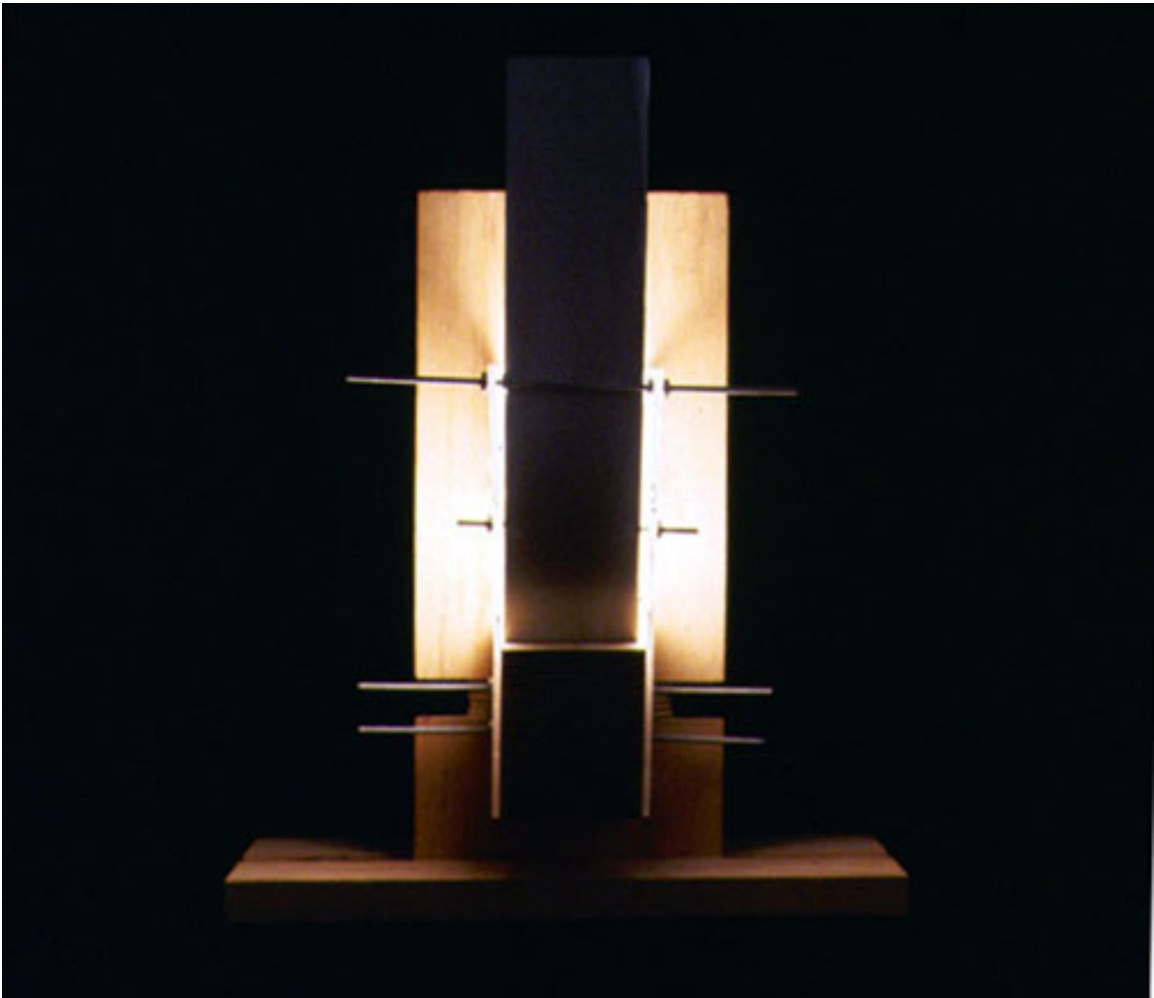


Image 3

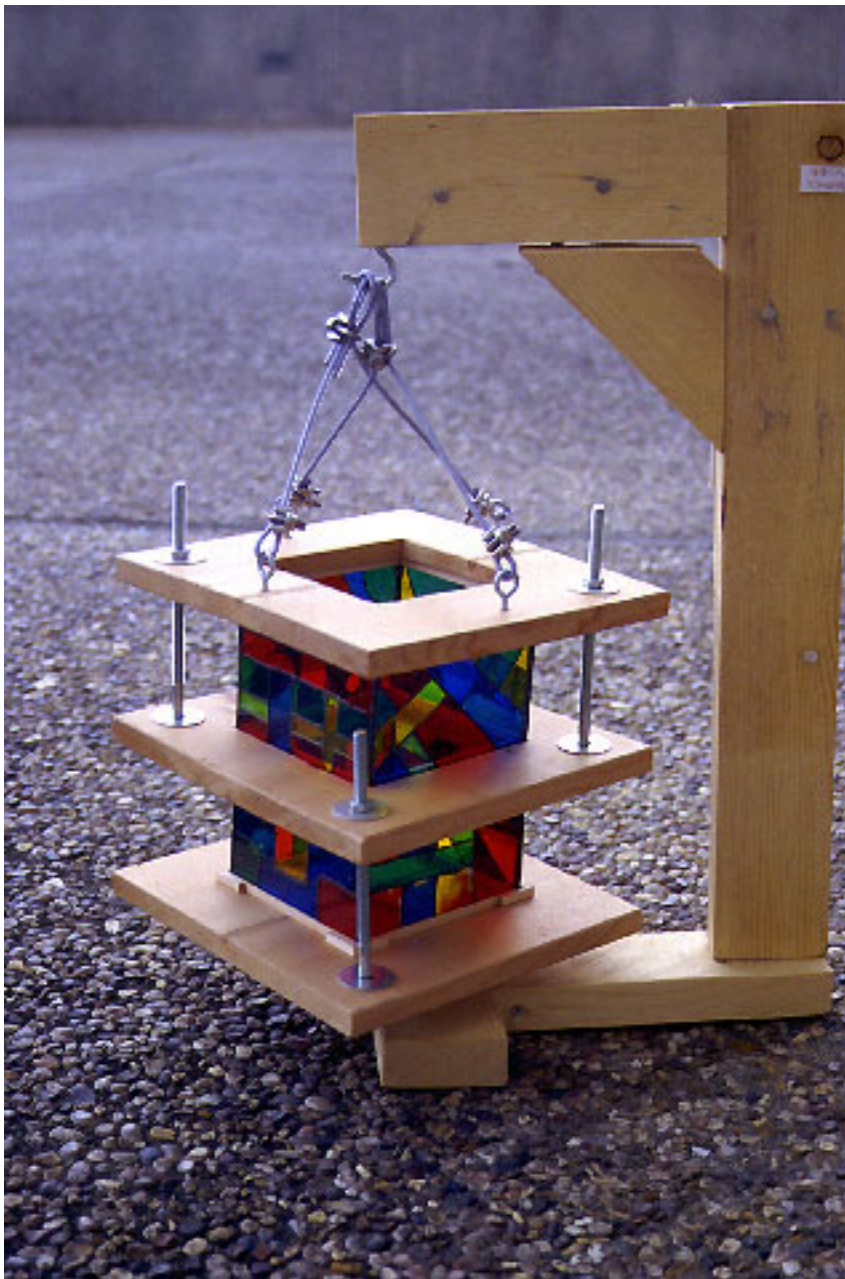


Image 4



Image 5

