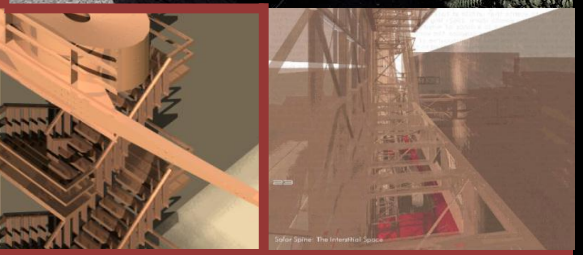
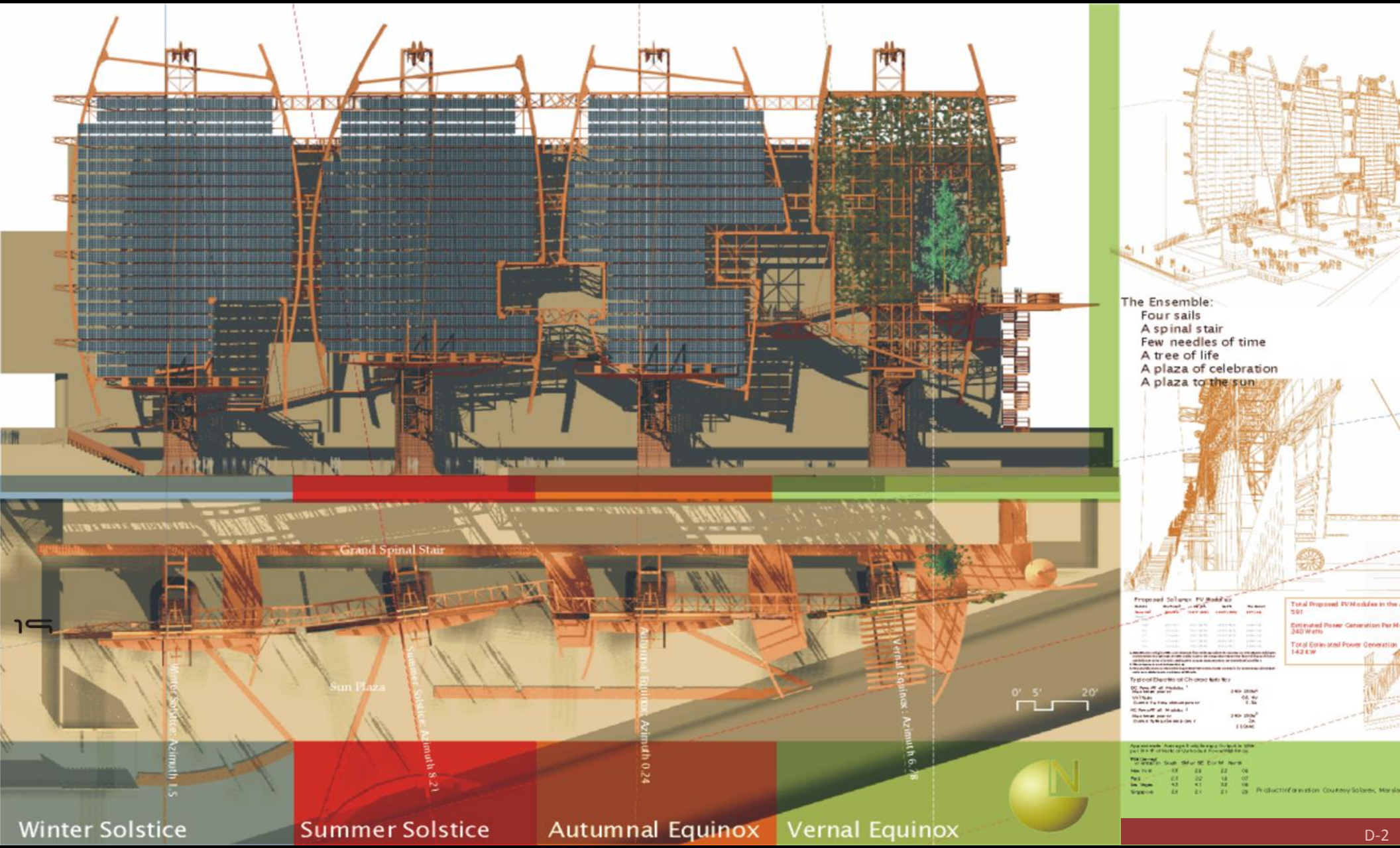


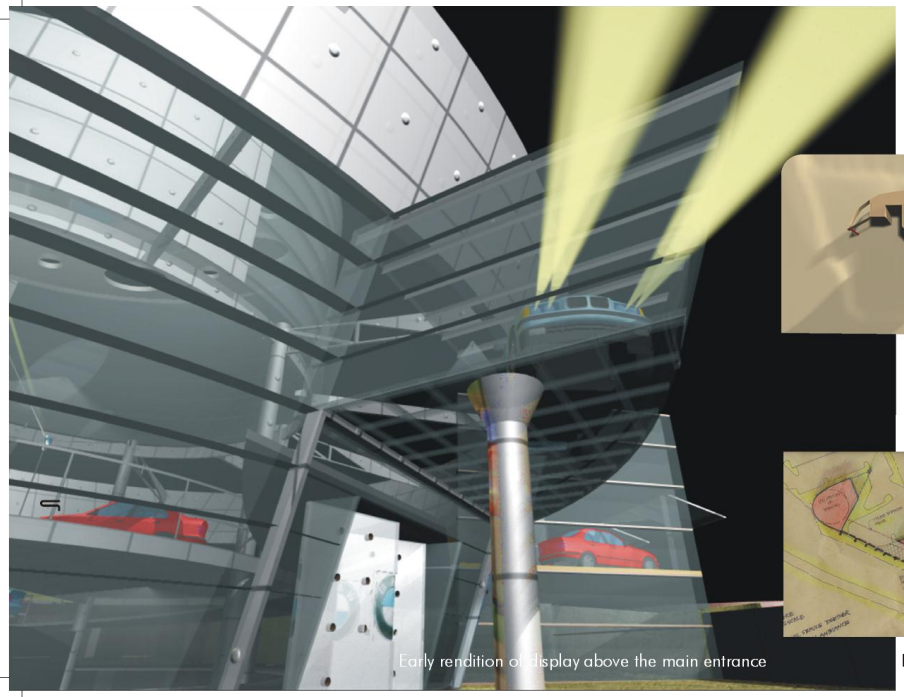
Solar Sails: An Installation

2nd Prize winner from 115 entries, US Department of Energy Sun Wall competition, Washington, DC, 2000AD.

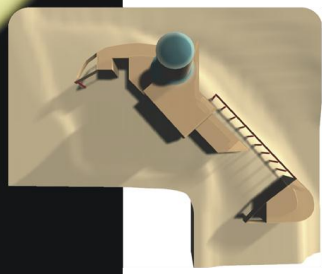
Competitors included *Studio GANG, Ove Arup, Kiss+Cathcart, James Carpenter and Wellington Reiter*


The Ensemble:
Four sails
A spinal stair
Few needles of time
A tree of life
A plaza of celebration
A plaza to the sun
Grand Spinal Stair
Sun Plaza
Winter Solstice Azimuth 1.5
Summer Solstice Azimuth 8.21
Autumnal Equinox Azimuth 0.24
Vernal Equinox : Azimuth 6.28
0' 5' 20'
Winter Solstice
Summer Solstice
Autumnal Equinox
Vernal Equinox

66202



Early rendition of display above the main entrance



Early sketches

Coordinates:Merriam, Kansas

Floor Area:48,000 sft

Project Type:Auto Dealership

Year Built:2000 AD

Role:Lead Designer

Client:Baron BMW

Credits: Gould Evans Goodman Associates, Kansas City

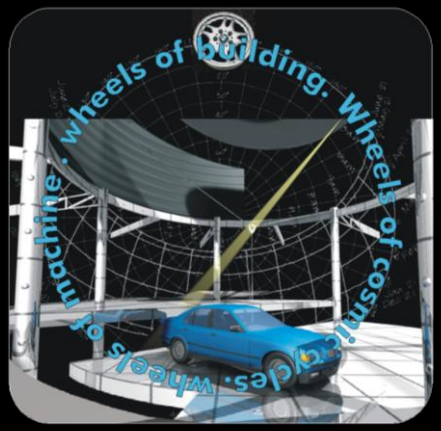
Baron BMW Dealership

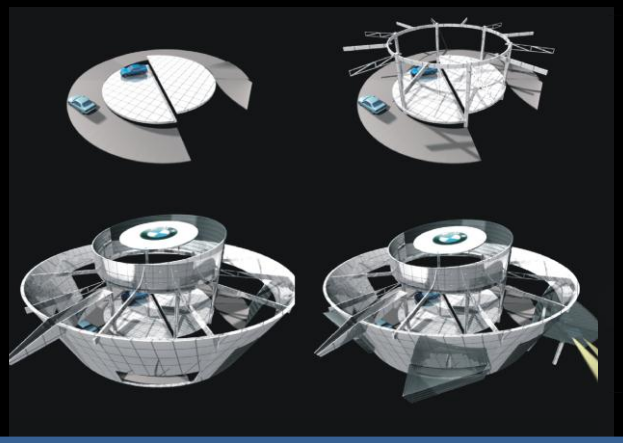
AIA Kansas City Merit Award, 2001

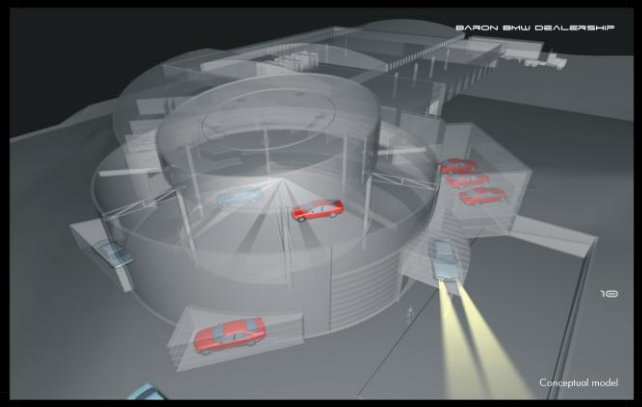
6

View from IH-35 on ramp

Entrance to Showroom





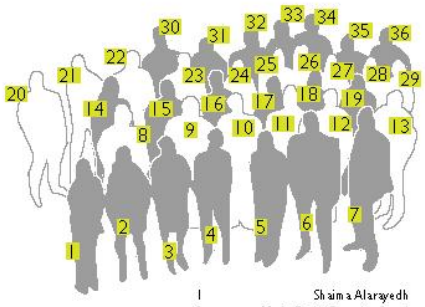


Conceptual model

Armadillo

Advanced Fabrics Exhibition at Henry B. Gonzalez Convention Center, San Antonio, 2005

Winner of the International Fabrics Foundation *Outstanding Achievement Award*

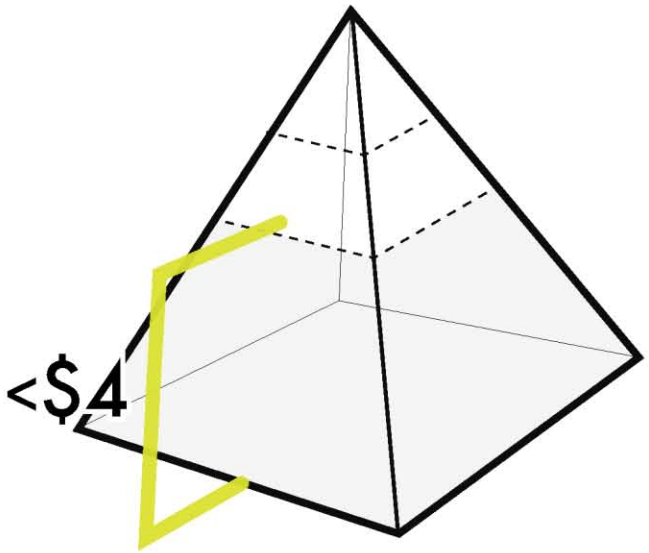


1	Shaima Alarayedh
2	Maria Paula Gonzalez Bozzi
3	Elizabeth Kisenwether
4	Barbara Terman
5	Noha El-Ghobashy
6	Mahesh Daas
7	Shekhar Chandrashekhar
8	Mark Henderson
9	Wes Janz
10	Lew Terman
11	Kevin Klinger
12	Karthik Ramani
13	David Ferguson
14	Anil Gupta
15	Madhu Rangi
16	Matthew Jelacic
17	Gretchen Crutchfield
18	Anne Schneider
19	Farah Alam
20	Dustin Headley
21	Chris Bull
22	James Creel
23	Lawrence Sass
24	Iana Aranda
25	Pratim Biswas
26	Resmi Anithakumari
27	Ashley Stocker
28	Kate Werner
29	Tammy McCord
30	George Elvin
31	Amy Smith
32	Amos Winter
33	Erin Moore
34	James DeChant
35	John Faldoni
36	Larry Barrow

*participants not pictured on page XX

BASE OF THE PYRAMID

MORE THAN **4,000,000,000** PEOPLE LIVE ON **$4 OR LESS A DAY**



7,000,000,000
World Population

4,000,000,000
People who live on $4 or less a day

dialogue TAP-TAP

A NEW WAY to DISCUSS...

"We are going to engage you in a different form of discussion called TAP-TAP. I am going to frame a question and I'll pose that question to four volunteers. Someone starts and the discussion continues. The rest of the people will be standing in key positions around the four volunteers. The idea behind TAP-TAP is to engage each of you in the discussion. If you hear someone say something that you want to make a comment on just tap that person on the shoulder and that person walks away. You occupy the person's chair and you continue the conversation. Our hope and intent is that as I framed that question, each of you will participate in the discussion and at the end of 30-45 minutes we will have a healthy discussion--LETS TAP-TAP!"

IF WE LEVERAGE TECHNOLOGY, WOULD YOU CONSIDER THAT SOCIALLY RESPONSIBLE?

MARK HENDERSON: I sometimes think you need to leverage technology and technology needs to be sensitive and I think that technology needs to be used in an intelligent way..a culturally sensitive way.

ELIZABETH KISENYYETHER: What's the problem, what's the background, what's really the problem? Do we have a good problem statement, do we really understand what all the issues are? It may be that the developing world doesn't need technology, maybe there are other solutions.

SHAIMA ALARAYEDH: I think that in any context we are using technology whether we like it or not. Technology is not just the hardware or software but it is also the know how. It's a matter of analyzing the context and the problem and using the right technology in the right context. We need to analyze the problem to use the correct technology.

MATTHEW JELACIC: I think we are avoiding answering the real question that was posed because I think the intention of the question is how do we sit with laser cutters in doing this work? What is the real challenge of using CAD (computer aided design) if we are talking about working with people that don't have electricity. Is there any ethical boundary there? Personally, I don't think the problem is the high technology or the luxurious technologies we have in developed countries but I do question the approaches that do require those technologies to provide the solutions for the problems. If we can design a better mousetrap, make a better prototype using cad software, then potentially we can figure out an easier way of producing by using appropriate technologies in a developing community. But there's a limit.

MARK HENDERSON: There is also high technology and low technology. I think you have to distinguish between high technology and low technology and choose the

TAP-TAP During the afternoon of Day 1, NSF Workshop participants contribute to the TAP-TAP dicussion.

appropriate one.

KARTHIK RAMANI: We could decommoditize technology making it extremely low cost and that's another way to think about it and that's happening in a lot of areas. I think the key is innovation and not to make it appear as tradeoffs but make the tradeoffs vanish.

PRATIM BISWAS: I think its not always true, but I think being socially responsible is another parameter, so by leveraging technology we need to ensure we are being socially responsible.

SHAIMA ALARAYEDH: I agree. We need to take the context, financial, political, and all other aspects of the problem we are trying to solve as we use technology.

AMY SMITH: What do you mean by leveraging technology--I prefer to teach my students how to use hacksaws and use basic tools and can produce the equivalent of what is done with laser cutters. I think we are missing a huge opportunity if we don't expose our students to the hand craft work. To a certain degree we need to leverage technology of all forms so people are learning the intense skill that local artisans are doing so when they see one of those things being made then they understand the shear artistry of manufacturing that went into it the making.

ANIL GUPTA: I think it is a good idea to use high tech whenever it is possible and blend it into low tech to create new experiences.

LARRY TERMAN: I think it would be socially irresponsible not to leverage technologies. You have technologies mankind has expanded and done things they didn't know they could do. Some of that technology is going in the wrong direction. It has been said that technology has advanced most during war time. That is using technology in the wrong direction. But things come out of that period of time and we can later use it. We have to take those technologies and make that bridge between the high technologies that we come up with and apply it to the bottom of the pyramid. It is necessary to take those technologies and bring them down to where they can be applied to the larger group of people in the world!

MAHESH DAAS: I think that was a provocative question by Shekhar. I think that by asking technology versus social responsibility

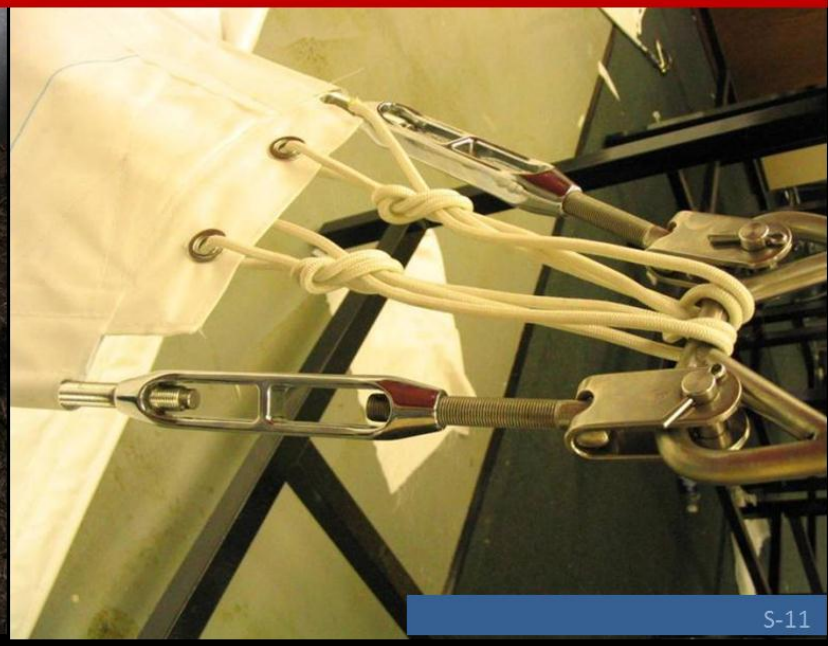
UTenSAils: Design-Develop-Build Studio, Spring 2005

University of Texas at San Antonio, Senior Topics Studio

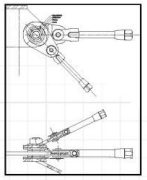
Students:
Shad Calvetti, Steven Cordero, Michael Czimskey, Curtis Fish, Hector Guevara, Matthew Martinez, David Matiella, Hector Mendez, Sarah Ness, Joshua Pierce, Ryan Squyres, Andrew Wit





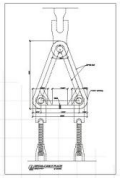



Red PVC-Coated Fabric:
Hiraoka, Japan
Chism Company



Stainless Steel Details:
Garces Metal Specialities
(Water jet)

Blue PVC Fabric:
Verseidag (Germany/Holland)
Fabrication Shop:
Chism Company, San Antonio

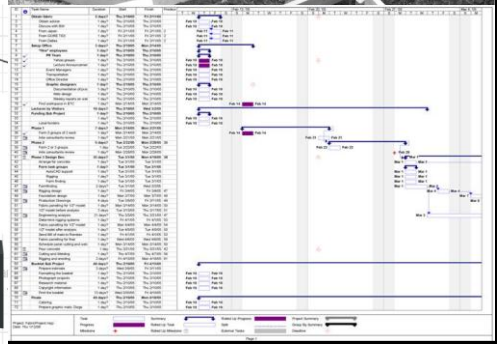


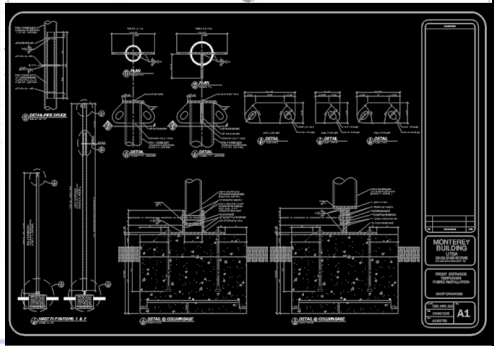
Aluminum Welding
Bruni Welding

Turnbuckles and SS Cables
Ronstan
Hayn Enterprises

Aluminum Plates and Pipes:
Hendee Enterprises, Houston
Comet Signs
Bruni the Weldor

Helical Anchors:
AB Chance
Rich Thorsten PE





Refereed Scientific Publications (3)

1. *"Pushing the Boundaries: Lessons from A Tensile Membrane Design-Develop-Build Studio"* refereed paper published in the Proceedings of the 95th Annual Meeting of ACSA, Philadelphia, 2007
2. *"Light Exchange,"* juried scientific exhibit and narrative published in the Proceedings of the ACADIA International Conference, Louisville, KY, 2006
3. *"Curvilinear: Pedagogy of Tensile Fabrications,"* refereed paper published in the Proceedings of the ACADIA International Conference, Louisville, KY, 2006

Articles in Trade Magazines and Other Professional Publications (5)

1. *"Adventures in Teaching and Building Tensile Membrane Structures."* Invited paper published in the Handbook of the Fabric Structures 2005 international conference, October 25-26, 2005, San Antonio.
2. *"Adventures in Designing and Building Tensile Membrane Structures,"* in the Fabric Architecture 2005 conference handbook, San Antonio, October 26, 2005.
3. *"Tensions in Texas."* Invited article published in Fabric Architecture magazine, May/June issue, 2005.
4. *"Adventures in Teaching and Building Tensile Fabric Structures."* Invited article published in Fabric Architecture magazine, July/August issue, 2006.
5. *"UTenSAils: A Design-Develop-Build Studio,"* Texas Architect regional magazine, January/February 2007. This trade magazine circulates to Texas architects, designers and specifiers.

Awards and Recognition (4)

1. *AIA Best Practice BP07.05.04* "UTenSAils a Design-Develop-Build Studio".
2. *President's Distinguished Achievement Award* for Creative Production, UTSA 2007
3. *IFAI International Achievement Award for Freestanding Canopies* 2007, Nominated
4. *IFAI International Achievement Award for Architectural Structures* 2007, Nominated

Presentations and Workshops that Featured UTenSAils (10)

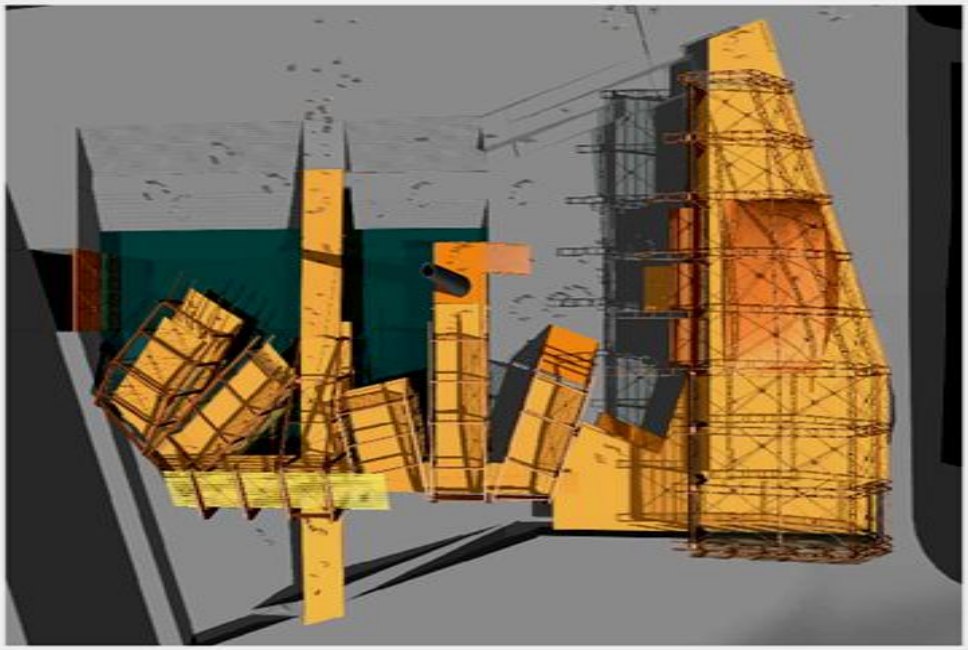
1. *Fabric Structures 2005 conference*, San Antonio, TX, October 2005
2. *Southwest Industrial Fabrics Association convention*, San Antonio, TX, April 2007
3. "Global Competitive Edge through Academic Partnerships", *DVD produced and distributed*
4. "Innovation through Academic Partnerships" *YouTube® broadcast*, July 2007 (157 views to date)
5. UTenSAils project presented at *the School of Architecture and Planning, Jawaharlal Nehru Technological University, Hyderabad, India*, July 2006
6. UTenSAils project presented at *UDBHAVA forum for architecture, Bangalore, India*, August, 2006
7. UTenSAils project presented at the *College of Architecture, Texas A&M University*, Februrary, 2007
8. Presented at the Annual Conference of the *Association of Collegiate Schools of Architecture, Philadelphia*, March 2007
9. Presnted at the *Association for Computer-Aided Design in Architecture international conference*, Louisville, Kentucky, October 2006
10. Exhibited at the *Association for Computer-Aided Design in Architecture international conference Digital Design Exhibition*, Louisville, Kentucky, October 2006

	Company	Sponsorship
1	A. B. Chance	Helical Earth Anchors
2	American Earth Anchors	Earth Anchors
3	Astrup Company	Ferrari PVC Coated Fabric
4	Bruni The Welder Inc.	Aluminum Welding
5	The Chism Company	Fabric Fabrication
6	Comet Signs	Aluminum Cutting
7	Constructors and Associates, Inc.	General Contractor
8	Dazian LLC.	Lycra IFR Fabric
9	Delta Prime Specialities	Anchor Installation
10	Fiesta Bolt Co., Inc.	Stainless Steel Hardware
11	Garces Metal Speciality, Inc.	SS Welding, Stamping, Waterjet
12	Hayn Enterprises LLC.	Back Entry SS Rigging
13	Hendee Enterprises Inc.	Aluminum Donation
14	Hiraoka and Co., Ltd.	Red PVC Coated Fabric
15	Home Depot	Misc. Hardware
16	Lawrence Calvetti, PE	Foundation Engineering
17	Lowe's	Misc. Hardware
18	Meliar Design	Membrane Struct. Software
19	Rich Thorsten, PE	Helical Anchor Engineering
20	Robert Harper, AIA, PE	Engineer of Record
21	Ronstan International Inc.	Front Entry SS Rigging
22	Verseidag Seemee U.S.	Blue PVC Coated Fabric
23	W. L. Gore and Assoc.	Back Entry PTFE Fabric
24	Wayne Rendely, PE	Fabric Structure Engineer

Honorable Mention

form•Z Joint Study Program 2003 HONORABLE MENTION

Project Title: **Lock Ten**
Students Name: **Natalia Beard**
Level: **Senior**
Course: **Computer projects in design**
Advisor/Instructor: **Mahesh Senagala***
Principal Investigator: **Mahesh Senagala**
Department / School: **School of Architecture**
University of Texas at San Antonio,
San Antonio, Texas



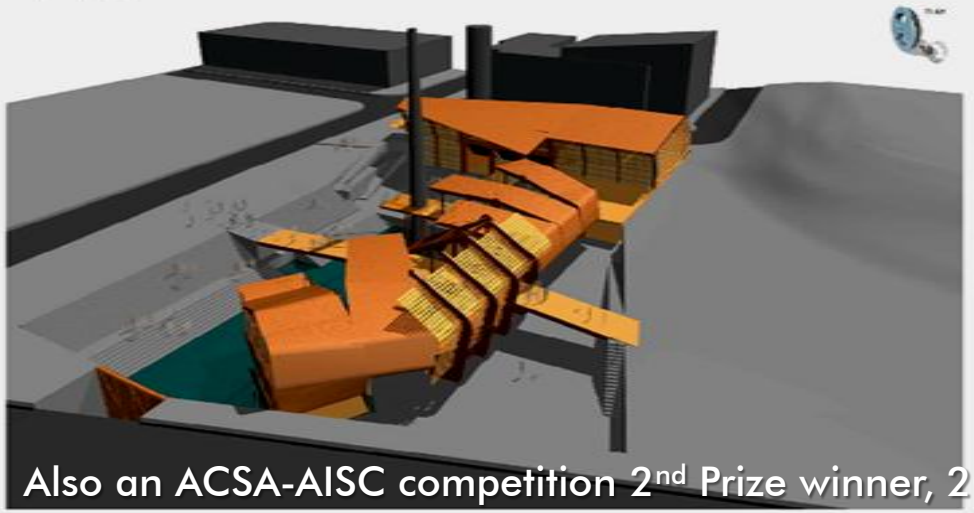
Summary description of project:

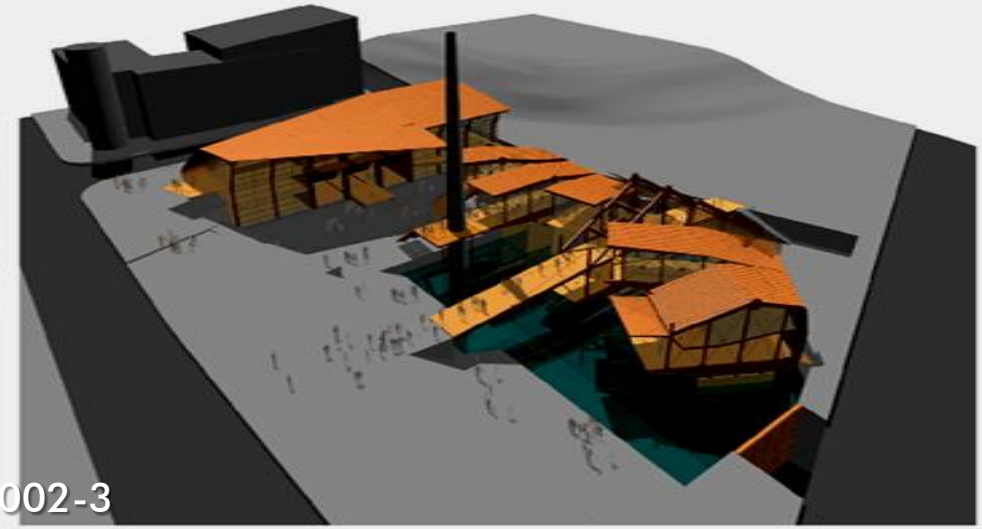
This is the Second Prize winning entry in the ACSA/AISC (American Institute for Steel Construction) competition. The competition called for an „Experimental Performing Arts Center‟ on the banks of Tennessee River in Chattanooga. The emphasis of the project was on the innovative use of structural steel.

Tennessee River has nine locks that regulate the water levels and make the boat transportation possible. Using the center as a tenth lock on the river, This student incorporated into the design early 20th century steel techniques and construction to allude to the long history of the Chattanooga steel industry.

Reasons for the nomination:

This proposal is a unique solution to a multitude of problems: problems of history, urbanism, structure, topography, riverfront, program and circulation. **form•Z** was used right from day one as a part of the Computer Projects in Design course. The software acted as a design incubator and was integral to the synthesis of the various problems, to evolve the design, to develop the detail and to communicate such a complex project to its audience.





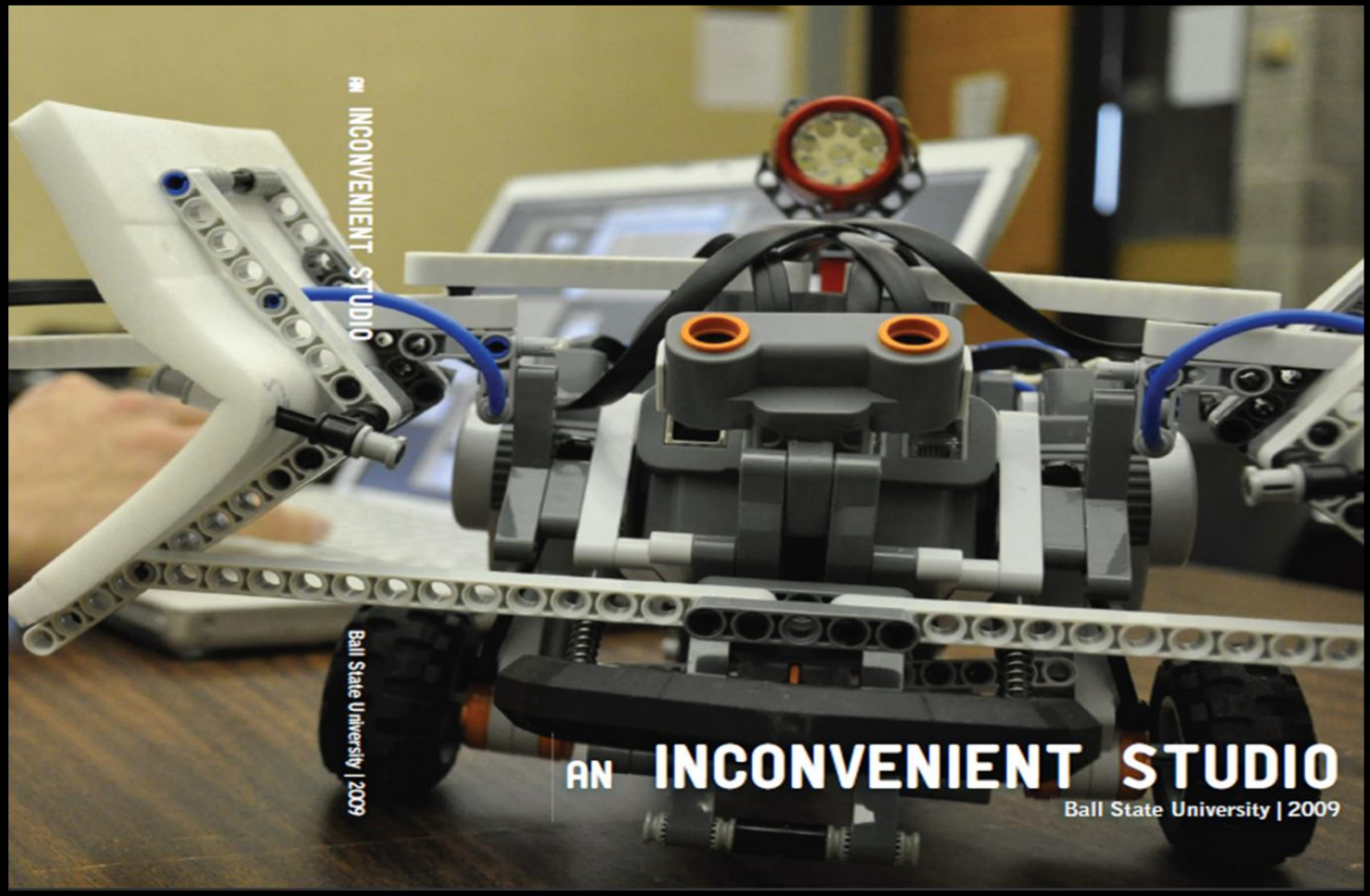
Also an ACSA-AISC competition 2nd Prize winner, 2002-3

* Credit reflects the previous name of Mahesh Daas

i.i FOREWORD

In spring 2009, An Inconvenient Studio was conducted at Ball State University with an aim to radically innovate through active strategies in environmental design (in distinction to passive design), digital technologies, robotics, interactive architecture, and collaborative design approaches that challenge conventional models of studio education. Known by many names (interactive architecture, responsive architecture, smart environments, intelligent buildings, situated technologies, and robotic architecture), these new technologies hold tremendous promise for the future of architecture.

The studio was given an opportunity to self-organize and operate around a self-defined mission and brand, as well as a set of advanced technology and design topics. Inconveniently, no preconceived design projects were given to the students. No deadlines were provided. Instead, a vertical studio consisting of 13 graduate and undergraduate students and two instructors was turned into an entrepreneurial think tank (An Inconvenient Studio 2009) with an organizational structure that evolved through practical as well as academic needs. The students were asked to come up with projects and project time lines through collective dialogue, exploration and consensus as well as to develop and choose roles for themselves for tasks such as direction, fundraising, archiving and recording work, and public relations. The studio needed to be an agile and adaptive organization to maximize its reliance on the collective intelligence—identifying problems through research and developing proposed solutions through design. As an organization, the studio was allowed to consider failure and conflict as inherent conditions of any system. Instead of handling them top-down, the studio was allowed to go through the natural cycles of learning from failure and conflict-resolution as part of the learning process.

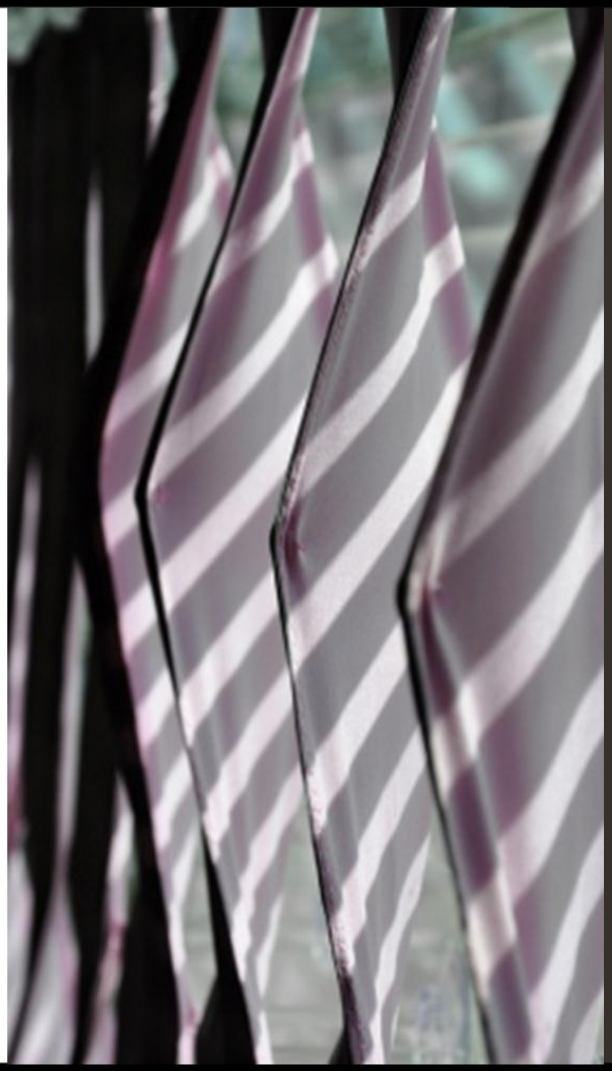


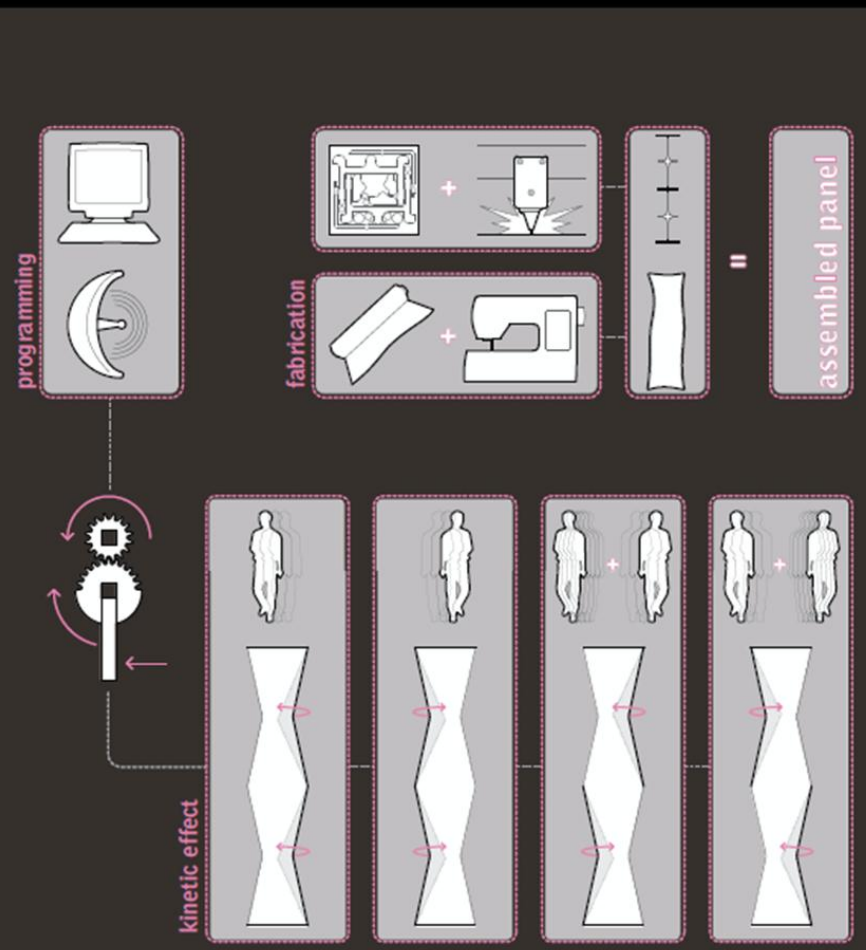
TWIST

Adam, Elizabeth and Kyle

Twist focuses on transition spaces in order to create an awareness of self and of others in space. The lycra fabric twists with the help from an inner, acrylic frame. The rotating frame stretches the fabric into a gill like opening which allows users to see beyond.

The intention of the project was to speculate on a kinetic window shading system that would replace current mechanical blinds. The shades open as users walk by, allowing light to be softly blocked throughout the day. To prevent heat gain, the component-based system can be expanded to any swath of window sizes. The group plans to investigate further prototypes with the use of Arduino computing and more sophisticated motor and sensing technologies



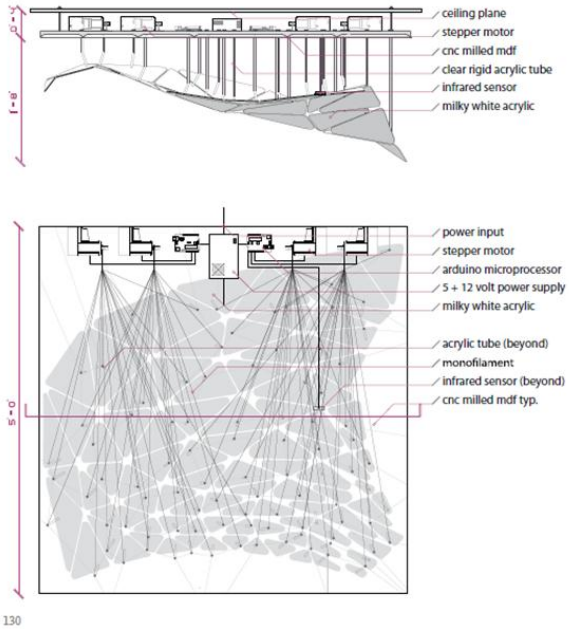


Morpho Luminescence

Adam, Elizabeth and Kyle

Morpho Luminescence utilizes an understanding of fashion photography to find its form and provide optimized lighting, enhancing the experience of trying on clothing. Fashion photographers commonly use a three-point lighting set, composed of a bright key light above eye level, a softer fill light and a back light, to create subtle shadows and a three dimensional effect.

Similar to a photographer's set, the installation variably tunes lighting levels in order to affect the fitting room experience and adapt its form to accommodate changes in the space. In its idle state the dimly lit surface hangs free, signaling to consumers that it is ready for use. A simple, infrared sensor analyzes human presence and variation in space before initiating a reconfiguration of surface panels. As the sensor reads differences in height, two Arduino microprocessors interpret the data and drive step-motors to manipulate the installation surface.

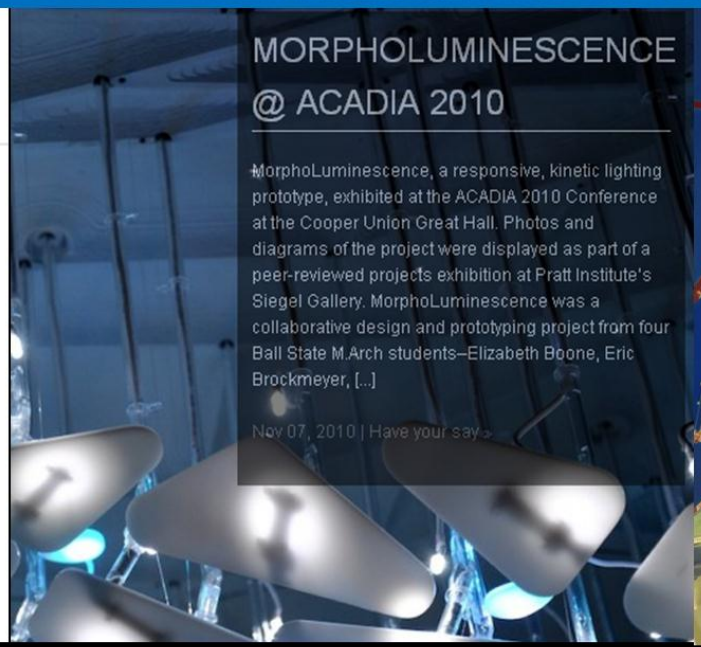


VISIONS

9th INTERNATIONAL FESTIVAL FOR ARCHITECTURE AND MEDIA
Florence, Italy | 9-17 July 2009

As part of the ninth edition of the BEYOND MEDIA festival in Florence, Italy, the SPOT ON SCHOOLS exhibition explored the didactics in the field of architectural design and of the new media of communication, while focusing on the most recent development of the use of digital technologies for design research in the field of education. Invited to show work at SPOT ON SCHOOLS, i.M.A.D.E installed various exhibit pieces on the mezzanine in the Stazione Leopolda, including Morpholuminescence, Bodhi Tree, and Veneer Luminaires.

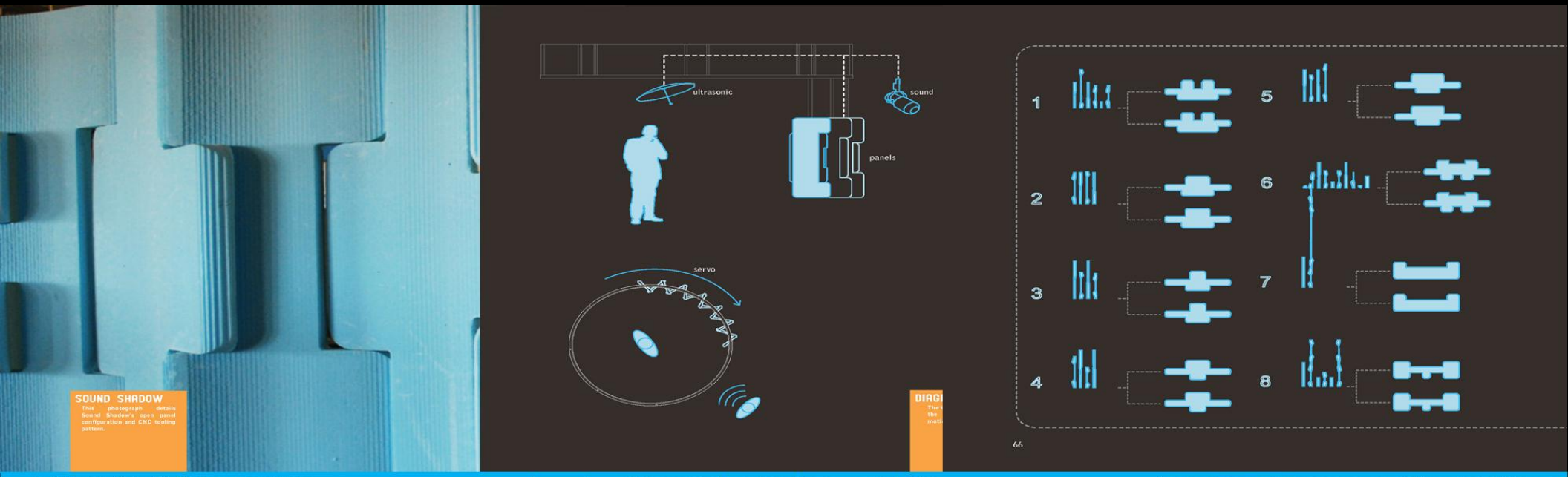
Comprised of custom laser-cut "petals", "stems", and hinges, Morpholuminescence was pre-assembled for testing prior to shipping in pieces. Petal movements and LED hue variations were driven by Arduino microcontrollers via data from proximity sensors. Assembled completely on-site and illuminated with spot lighting, the Bodhi Tree required laser cutting of over 10,000 components from hardwood veneer. The Luminaires were also constructed on-site from hardwood veneer along with lightweight acrylic armatures and fluorescent lighting.



MORPHOLUMINESCENCE @ ACADIA 2010

MorphoLuminescence, a responsive, kinetic lighting prototype, exhibited at the ACADIA 2010 Conference at the Cooper Union Great Hall. Photos and diagrams of the project were displayed as part of a peer-reviewed projects exhibition at Pratt Institute's Siegel Gallery. MorphoLuminescence was a collaborative design and prototyping project from four Ball State M.Arch students–Elizabeth Boone, Eric Brockmeyer, [...]

Nov 07, 2010 | Have your say »



Other Projects by An Inconvenient Studio, 2009