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“In short, the practically cognized present is no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time. The unit of comparison of our perception of time is a duration, with a bow and a stern, as it were -a rearward- and a forward-looking end.”

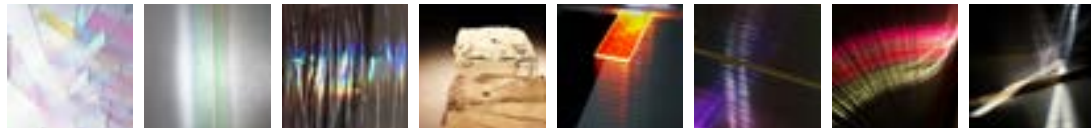
-William James,  
*The Principles of Psychology*



# 1

CLASS FRAMEWORK





RESONANCE is the culmination of the spatial and experiential research conducted by students of Derek Porter's class, *Light-Space, Art*. Students collaborated to theorize, design, and construct an operational artifact to be unveiled in support of the event Questioning Light, held at the New School University Center on November 3, 2016, featuring guest speaker Emrah Baki Ulas. RESONANCE uses light to spread the image of exhibition participants infinitely in two directions - into the past and future - as they move within the work, forcing them to confront their own positioning in a mechanized out-of-body experience. Consistent with the theories of artists studied in the class, the work is incomplete without incorporating the movement of the body, reminding us that the human component is the most vital of any designed experience.

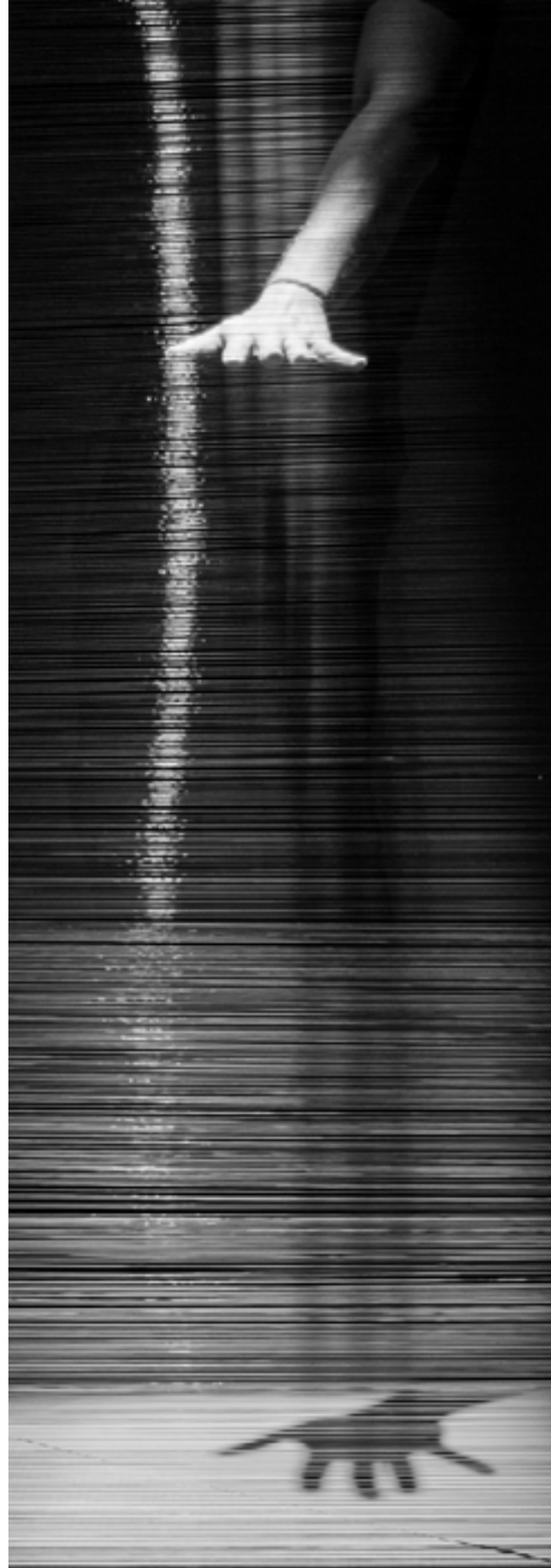


The Lighting Design curriculum at Parsons School of Design is unique amongst its peers for its proficiency in the experiential and phenomenological aspects of a profession that is rapidly evolving from a niche market to a household turn-of-phrase. The need for an education of the eye grows in step with the prevalence of our work in the public realm. The confluence of these reveals just how much our environment has been impacted by the application of electric lighting; the extent of this new light on our bodies will be investigated for generations.

It is within this context that our students are asked to practice. We work in firms that design for clients big and small, as often naïve to the import of lighting as not, necessitating conversations about light that must avoid jargon and engage directly with human experience. Of all of the academic work at Parsons, it is perhaps *Light-Space, Art* that most succinctly bridges the divide between the art and practice of lighting design.

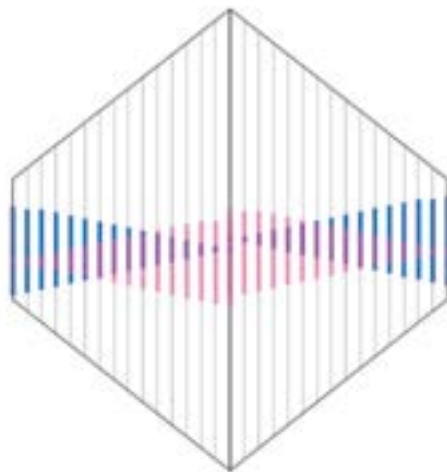
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Beginning with a foundation in art-historical philosophy and theory, students immersed themselves in the works of prominent designers and theorists, concluding in a trip to Dia:Beacon to experience, firsthand, installations by James Turrell, Robert Irwin, Bruce Nauman, and Dan Flavin. Building a vocabulary informed by the dense history of investigations carried out by practitioners and artists in fields cognate to lighting design enables our students to have more nuanced, informed, and constructive conversations while developing classwork, and results in a final product that speaks to a narrative far larger than its aesthetic intent.



# 2

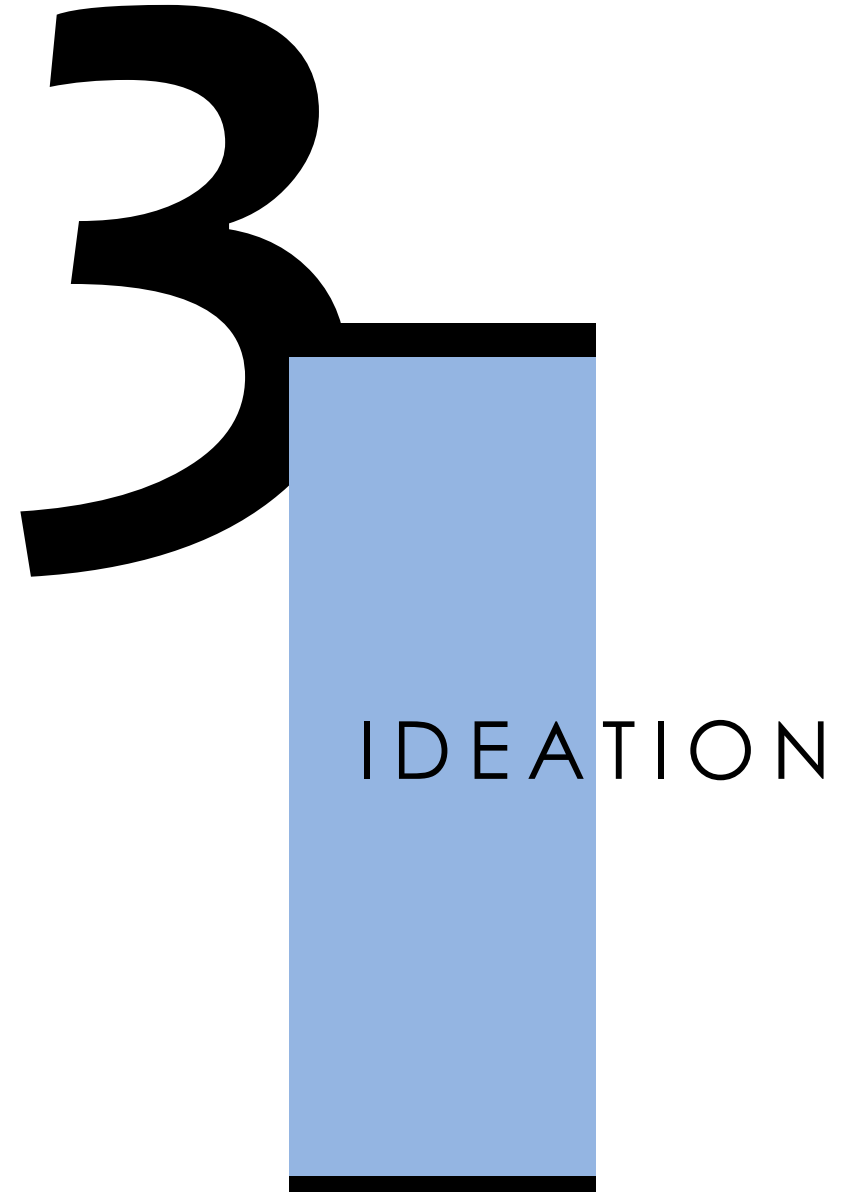
## PHENOMENAL



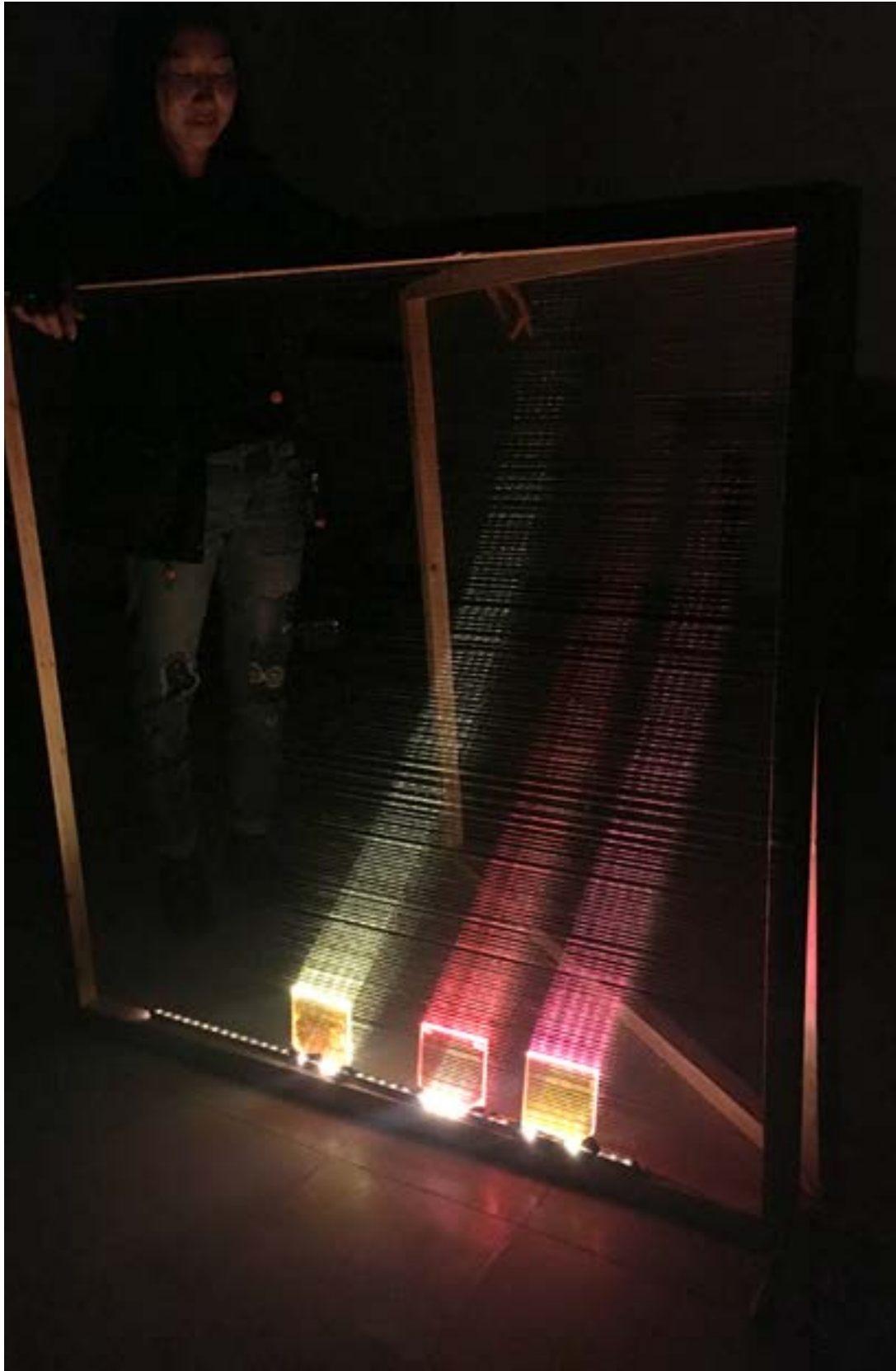
The inspirations for RESONANCE were numerous, but common to all is an awareness of the body's impact upon its own conception of space and time as expressed through movement. RESONANCE, to borrow the words of William James, attempts to be the "saddle-back" upon which our guests sit astride to witness themselves being. The phenomenon of the reflected body spreading infinitely in two directions forces one to confront their body from the outside, from both the past and future, in a mechanized out-of-body experience. That one must choose to enter and exit the "machine" "brackets" the experience, allowing us to, as Husserl states so succinctly, "suspend our preconceptions and consider experience as it occurs (enactively entrenched rather than objectively distant)" (emphasis added). Perhaps as an even deeper allusion to our everyday psychology, the effect of RESONANCE is far more dramatic when perceiving others through the machine from the outside.

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The final project evolved through a series of convergent exercises. Each week, students, starting with individual projects and later in teams, presented physical maquettes exploring phenomenal effects of light and material. Students presented and constructively critiqued each others' work in an attempt to distill common ideas. Afterward, students with shared thematic interests were new teams and charged with refining the number of ideas present. Projects were consistently assessed through empirical testing methods that yielded tangibly-based perceptual experiences. Theory was applied subsequently as a grounding agent that also helped to guide following actions.

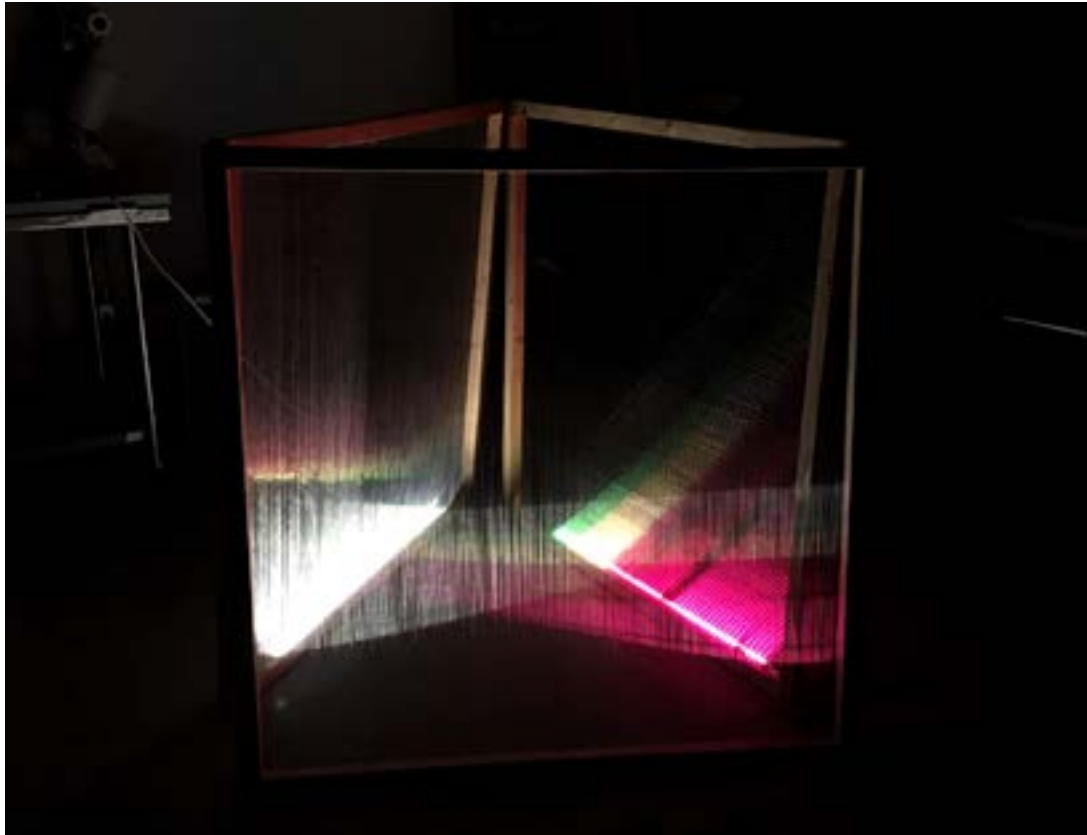


# 3 IDEATION



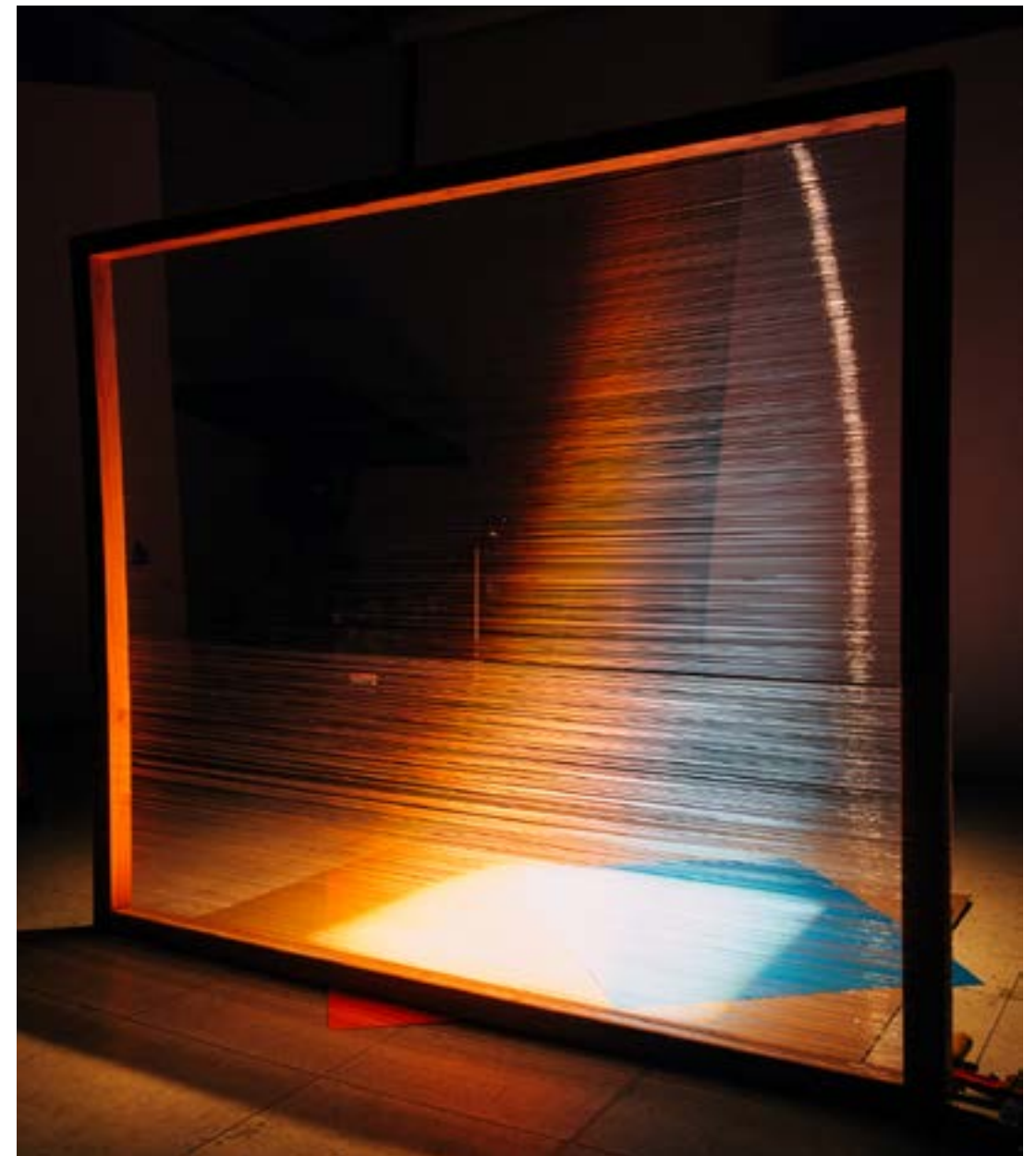
The project documented in this book is the culmination of several weeks of experimentation and iteration. At the start of the semester, each student was asked to portray their unique perspective on an aspect of lighting design practice, theory, or technology. The interests of our students ranged widely from the perceptual impact of color-mixing white light to manipulating depth perception and perspective. These works offered insight into the broad potentials of light within art and design practice. Our investigations revealed several “themes,” such as interactivity, movement, color, and material interference and augmentation that helped to group students for further refinement of their ideas.





Continuous throughout this editing process was an interest in the use of reductive lighting effects that were intentionally positioned to create or distort one's perception of space. This is most evident in the early models utilizing monofilament as a lensing material, a technique which became central to the final work.

Iterative explorations led the class to a methodology that realized their desire to bend or extend light, changing our understanding of how light behaves through its interaction with the "lensing" of monofilament line. It was clear from the beginning that the viewer's interaction with the work would play a key role in our installation, giving them agency in their own experience, poetically recalling Robert Irwin's famous phrase, "perceiving yourself perceiving".



Dynamism caused through the body's movement in relation to light and material was discovered by the class through iterative prototypes and became a primary interest. Subtle changes in the position of the body, the angle at which the work is viewed, or the orientation of lighting resulted in nearly infinite possibilities that had to be carefully catalogued, documented, and individually critiqued to judge their value as components in the final installation. While an interest in using colored light as a key component was also kept through each iteration, this interest became embedded within the user rather than the work itself; in this way, it is the body that is the most critical component of the work's success - the desired play of light and optical expansion is absent without human interaction.



RESONANCE was assembled, positioned, and tested in one evening through the contribution of the entire class. A well thought-out and planned assembly was key: each wall panel was matched with its neighbor and pre-drilled for easy assembly. Each panel was laid in place to create a “map” of the final structure and each panel was aligned and checked for inconsistencies in construction. The monofilament was also spot-checked at each interval.

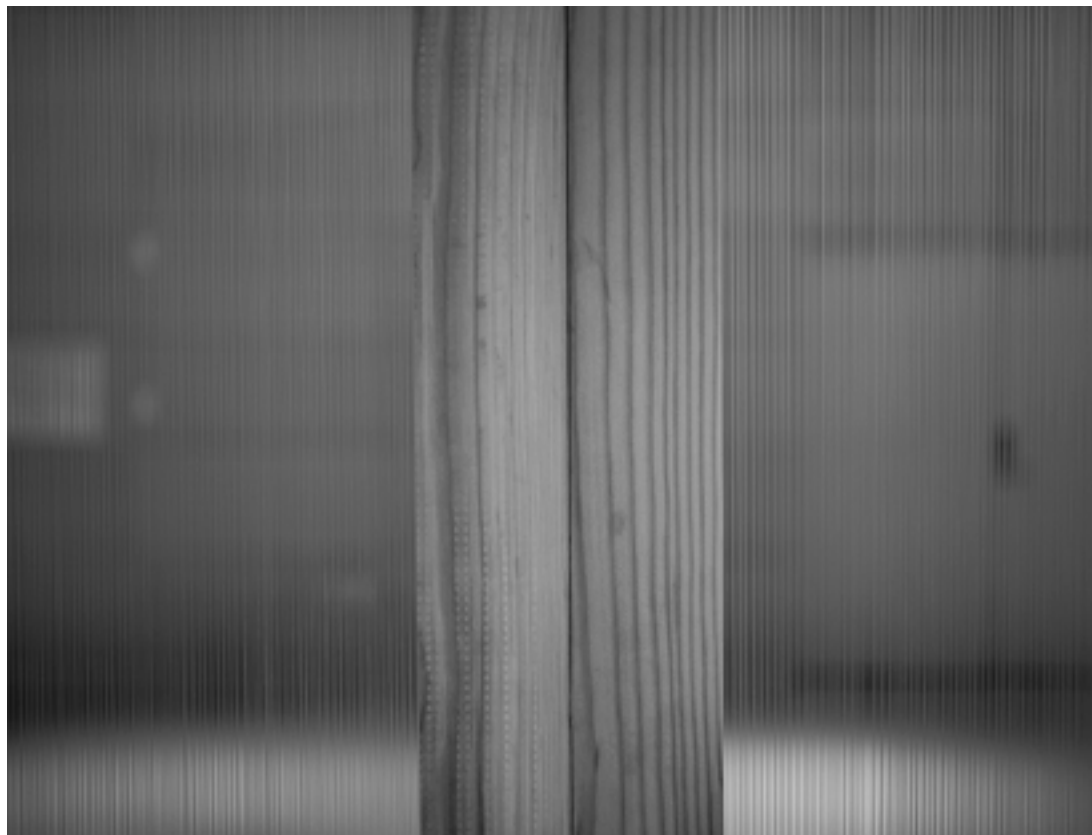
Assembly proceeded from one end of the room to the other, working in sequence to install each section of the machine, capping with a roof structure, and then moving onto the next. Because of the installation’s modular construction, multiple sections could be installed simultaneously; while one group finished attaching the roof structure, the next group could attach the next module’s wall panels, while the previous panel was outfitted with wiring and lighting (which was also pre-assembled). Finally, the work was documented thoroughly before its public debut the following evening.



# 4

PROCESS  
ASSEMBLY/MATERIAL

The material consistency of wood and monofilament line throughout the work come together to create rhythmic optical frames.

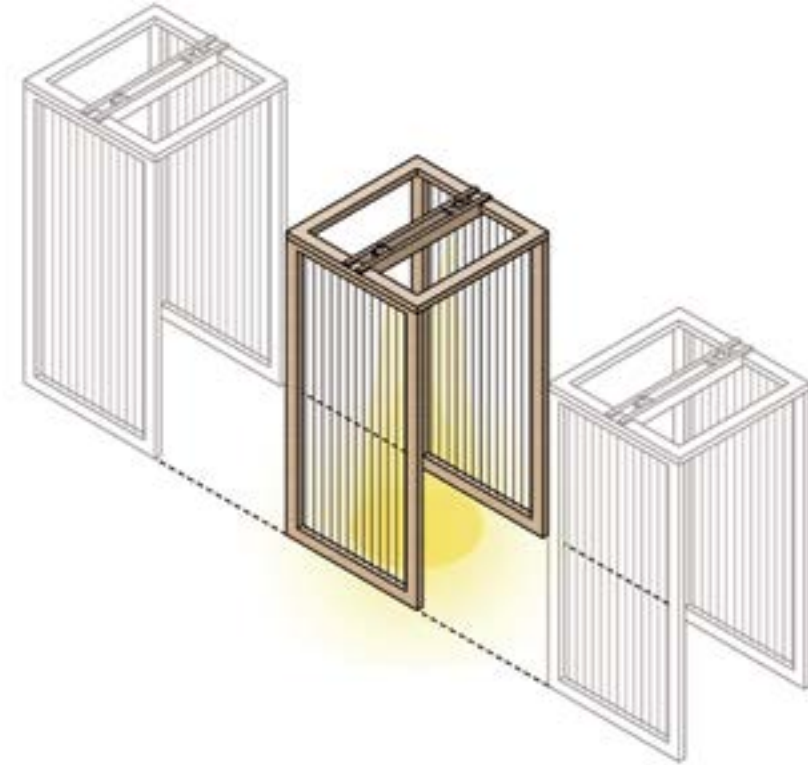


When thread meets light, magic happens - this expansive optical phenomenon of these mediums that were the primary inspiration for the machine.

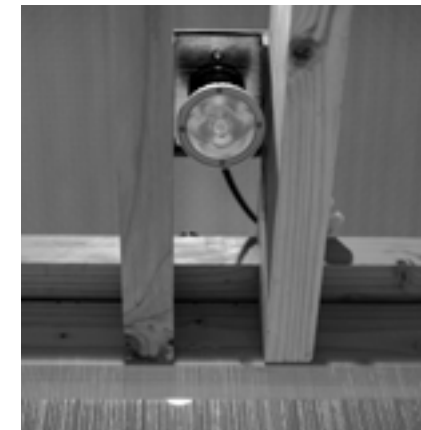
The form of the work was determined early in the design phase, responding directly to the exhibition hall's orientation. Detailing and materiality were intentionally chosen so that the work itself would blend within the room context and allow the optical effect to take center stage. The work is comprised of 9 structural units: 2 entry/exit units are slightly wider than 7 internal units outfitted with the work's lighting system.

Each unit is composed of three panels, two of which are strung with monofilament line and the third forming the structure's "roof". The constructed design of the side panels is the result of a rigorously iterative process during which every aspect of the panels construction was built, tested, and critiqued by the entire class.

By design, the installation was built in self-standing modules allowing the team to test the effect and integration of lighting systems prior to final installation.



Every detail was calculated, including the angle of the twin LED lamps so that beams overlap perfectly within each unit, amplifying the intended effect.



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The installation space for RESONANCE, a popular event and meeting space in The New School's University Center, was available to our class only for a brief window of time preceding the event. The work needed to be installed practically overnight, demanding a rigorously designed construction schedule as well as modularized components, down to the wiring. Each of the wall panels was strung and matched with its roof assembly, ensuring precise joinery. The components were fit-checked, labeled, and mapped out *in situ* prior to construction so that the class could work as an assembly line, optimizing both installation and deconstruction.



# 5

## IMPLEMENTATION



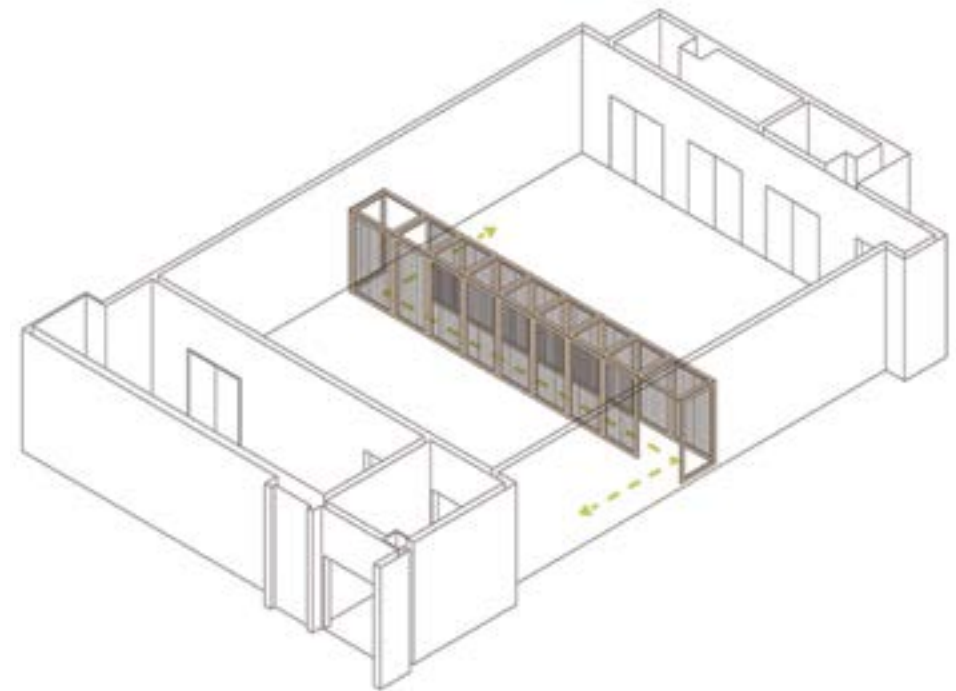
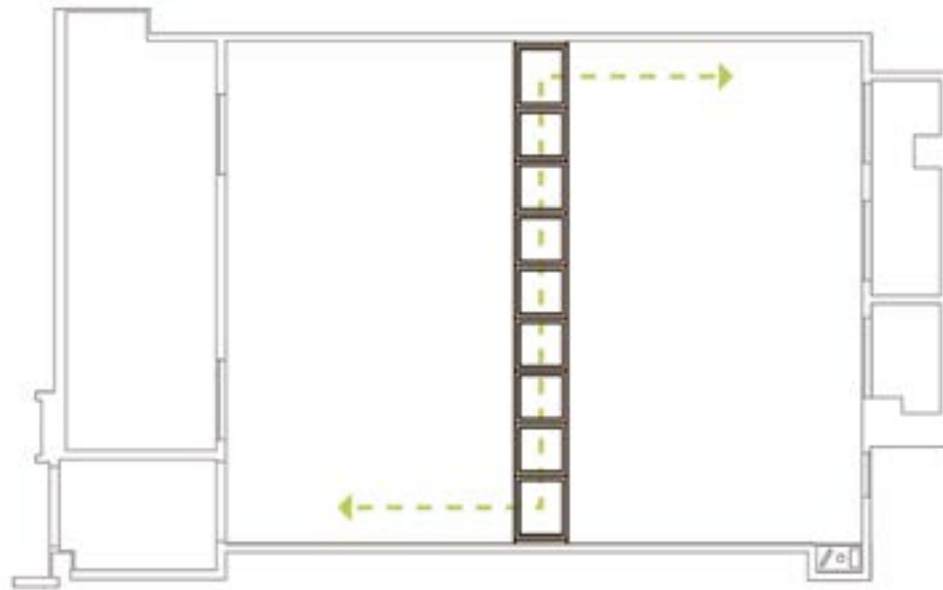








The machine bisected the event space and established a single circulation path for which guests passed to gain access to each side of the room.



For the effect to be experienced to its full potential, controlling ambient light and its directionality became key. The team designed a lighting system within each structural module to direct two narrow-beam LED light sources into the core of the machine creating one uniformly rhythmic path of light.







The completed installation makes a strong statement. By dividing the room, viewers are forced to interact with the machine through its narrow passage connecting each side of the room, but do not experience the optical result of their actions, which is only perceived outside of the machine. This decoupling of action and observation may be best explained by Martin Heidegger's statement, "[T]o let that which shows itself be seen from itself in the very way in which it shows itself from 'itself.'" - Martin Heidegger, *Being & Time*

RESONANCE was debuted as the centerpiece (both literally and metaphorically) of *Questioning Light*, a public event held in the New School University Center's Starr Foundation Hall on the 3rd of November, 2016.

The machine was centrally located in the room and aligned with the book-matched, faceted ceiling. The speaker podium was located within the machine with two projection screens flanking each side where event guests were seated. The intent was for people to actively engage the piece - the speaker during his presentation and the audience during the following reception - as an integral aspect of the event rather than have it be perceived as an isolated object. Entry and exit points on opposite ends of the machine forced participants to engage with the work in order to move from each side of the room. The work's central location afforded unique views of its effects from everywhere in the space, and became a compelling participant in the presentation of our guest speaker, Emrah Baki Ulas.

Over one hundred attendees witnessed Emrah interact with the machine while the message of his presentation challenged the audience to confront the typical relationships in lighting design practice between light, space, and material, with interest to create a more beautiful and nuanced built environment. Time was a particularly important metric to his arguments, which dovetailed brilliantly with the intent of RESONANCE.

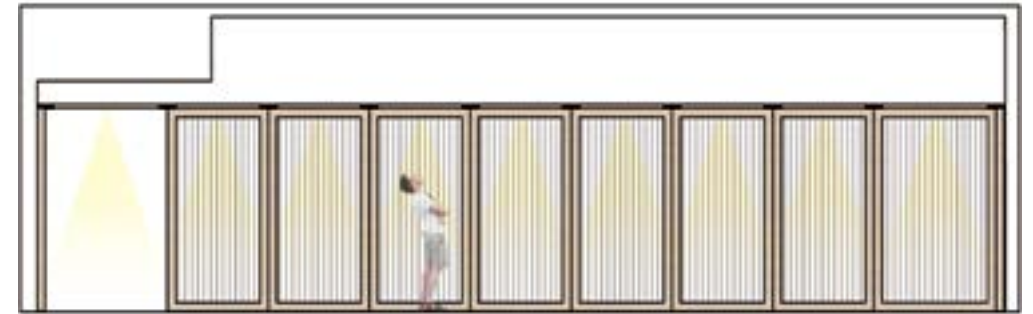




Guest lecturer Emrah Baki Ulas interacting with RESONANCE during the event.







The machine is activated through the presence of people; its reactive nature caused dynamic effects that were accentuated by bright colors and reflective surfaces, and is only evident to the observer outside the installation. Experiencing the effects of the machine take place from two vantage points: an actor within the machine and an outside observer.









One of the key takeaways for our class was the importance of commitment to any artistic endeavor. The work required long hours and fierce determination to design, iterate, and construct. Working with a team as large as ours is never easy - especially when many ideas are rich and everyone's opinions are equally weighted. Developing a strong, open, and collaborative design process, where collective interest toward a single, common idea was constantly reinforced, was vital to the success of RESONANCE.

It also became clear how essential a clear thesis and use of language was to the success of the work. Being able to describe both what we see and what we imagine seeing is extremely difficult, but the ability to communicate these ideas clearly to both design audiences and laypeople is important. Experiencing the completed work in conjunction with a discussion about the varying effects that we hoped to produce was enlightening, and an important part of developing our individual theses as ideas progressed.



# 7

## SUMMATION

RESONANCE was made possible by the generosity of our faculty, partners, and administration.

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Collaborators:

Jonathan Beilin, MFA Design and Technology '17  
Sudtida Benchahiransak, MFA Lighting Design '17  
Paola Bernal Arguelles, MFA Lighting Design '17  
Magnus Pind Bjerre, MFA Design and Technology '17  
Tanner Chee, MFA Lighting Design & Interior Design '18  
Chen Chen, MFA Lighting Design & Interior Design '18  
Youn Hee Choi, MFA Lighting Design & Interior Design '18  
Minyu Dong, MFA Lighting Design & M Architecture '17  
Jimmie Drummond, MFA Lighting Design & M Architecture '17  
Joanna Filter, MFA Lighting Design & Interior Design '18  
Stefanie Foster, MFA Lighting Design & Interior Design '17  
Haniyeh Mirdamadi, MFA Lighting Design '17  
Sunmin Park, MFA Lighting Design & Interior Design '18  
Xena Petkanas, MFA Lighting Design & Interior Design '18  
Brandon Pietras, MFA Lighting Design & M Architecture '17  
Khwanrudee Samranvedhya, MFA Lighting Design '17  
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