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# Sensual Spaces: When experience meets architecture and art

Sasha Zwiebel

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# Sensual Spaces

**When experience  
meets architecture  
and art**

Sasha Zwiebel

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# introduction

All media are designed by humans for humans. Everything we interact with, from the signs we read, to the cups we hold, to the roads we navigate, are designed by people that have specific ideas about the way that interfaces should exist in the world. Subsequently, these design solutions typically focus on efficiency or visual aesthetics. Often this lends itself well to keeping trains running on time, but can fail to give the user a desirable experience. In recent years, there has been a turn; a new trend in design has emerged. Designers, innovators, artists have begun to create media, in the broadest sense, with a new focus on the user. Instead of seeing users as merely a rational thinking brain, this trend acknowledges to user an embodied, emotional, sensing, relational creature that is affected and can affect the world.

This movement is coming to life across multiple disciplines. Product design, material design, architecture, art, advertising, digital interface design, and even business have picked up this zeitgeist and have slowly been experimenting with new ways to situate their respective products for a more user-centered experience. Each discipline discusses and actualizes the integration of affectivity and embodiment slightly differently and with each there is a different vocabulary. However, ultimately, I believe that media in multiple disciplines are as a whole moving toward a similar goal, one that is contributing to a more fulfilling engagement between users and media.

For this project, I aim to investigate the expression of this movement in spacial experiences.

*This correlation of architectural framing and embodiment entails a certain understanding of architecture's technical dimension ... this is partly because buildings—even digitally designed buildings—must still be built; more fundamentally though, it is because they must still be inhabited, which is to say, calibrated to our embodied form of life. No amount of freedom from formal constraint can undo architecture's constitutive correlation with embodiment.*

- Mark Hansen<sup>1</sup>

Space is inherently embodied – to be in space one must physically, three-dimensionally, encounter it. But what would happen if the sensory, affective, embodied human was at the center of spatial design? What would space be if creating an experience was at the center? What is the role of the senses in creating these spacial experiences? How do you materially create sensory, affective and embodied space?

**SENSUAL SPACES:** spaces that combine optics and haptics to provoke affective engagement and sensory response. These spaces demand an embodied presence from the user, while simultaneously demanding participation from the architecture. Together these spaces illuminate a trend in art, architecture, and design that aims to create vivid spatial experiences that evoke sensory and affective response within the user.

This essay is composed of three parts. The first part will explore the historical background of sensation and affect in art, architecture and design. The second part aims to create a taxonomy of works that fall under this category of sensual space. The nature of this categorization is that it crosses multiple disciplines and thus places works together that ordinarily would not be grouped. Finally, the third part will recount my process of creating an immersive installation of my own.

# part 1

*The sensuous aspect of art is only related to the two theoretical senses of sight and hearing; smell, on the other hand, taste, and the feeling of touch are excluded from the springs of art's enjoyment. ... These senses cannot have to do with objects of art, which ought to subsist in their actual and very independence, admitting of no purely sensuous or rather physical relation. The pleasant for such senses is not the beauty of art.*

- G. W. F. Hegel<sup>2</sup>

Enlightenment philosophers laid the foundations of our modern conceptions of art and aesthetics. Hegel's theory on the philosophy of art separated the senses into a hierarchical relationship, where only sight and hearing were privileged enough to comprehend beauty. This theory and others from this time period developed into common tropes of the art museum as we know it today, i.e. the signs and calls from the museum guards, "do not touch" and "stand back from the art". Many movements of 20th and 21st centuries questioned and rebelled against these Enlightenment conceptions of art, but even so, only until recently are the senses of touch, smell, and taste being taken seriously.

In certain ways, many designers have been thinking about designing for user-experience for a long time. Since the beginning of design as a discipline, a focus on a need of an intended user in an intended context creates popular and profitable products. For example, the design of the Princess Phone by Henry Dreyfuss in 1960 exhibits characteristics of a user-centered design.<sup>3</sup> The design team for Bell Telephone noticed that the original "Model 302" designed in 1937 was very heavy for teenage girls who liked to place the body of the telephone on their stomachs as they conversed on their beds. Designed to cater these girls, the Princess Phone was made significantly lighter and thus made it easy carry around the house. The new phone was marketed as a fashionable accessory for the home. But, ultimately, the desire behind this redesign was to expand the market from the businessman-dominated office to the housewife-dominated interiors. Here, the movement toward a user-centered design was discussed as a branding strategy; creating fulfilling interactions between users and products was not part of the conversation. This affective, experience-driven focus of the current moment is an inherently different world; although, yes, there are traces of this in the past, this is the first time multiple disciplines have focused on the full sensorium of the user's experience.



***Considering multiple sensory modalities during the design process is likely to create richer, more interesting and more engaging user-product interactions, because these products exploit the full potential of people's sensory connections with the surrounding world.***

**- Hendrik N.J. Schifferstein and Lisa Wastiels<sup>4</sup>**

Architectural modernism most recently attempted to completely extract the human experience from design. Le Corbusier designed from an aerial view focusing on efficient movement for cars within cities; efficiency and bareness of form drove the aesthetic agenda. However, this Modernist way of building led to the creation of spaces that are cold, uniform, harsh, awkwardly spacious, and overall unpleasant to dwell in. In the 1960's, a different theoretical framework emerged that would come to be known as Post-Modernism. Post-Modernism in the broadest sense was a critical rejection of Modernist views. This movement often had a very eclectic and nontraditional aesthetic. Jane Jacobs led the way with her Everyday Urbanism that argued for designing cities by observing the way people already interact with the urban fabric. This transition from Modernist to Post-Modernism was a radical change in the way of seeing urban space.

*Since the metropolis is impossible to command except in bits and pieces, urban design (and note that postmodernists design rather than plan) simply aims to be sensitive to the vernacular traditions, local histories, particular wants, needs, and fancies, thus generating specialized, even highly customized architectural forms...*

-David Harvey<sup>5</sup>

*We no longer need to equate detachment and distance with intellection and abstraction nor feeling with crude sentimentality, and so now we can return to experience with new theoretical vigor.*

-Sylvia Lavin<sup>6</sup>

Lavin is referencing the theoretical remnants left from Architectural Modernism (and the Enlightenment in many ways) that still contribute to way many viewers and artists engage art. She claims that feeling and emotion can (and should) regain aesthetic and theoretical value, citing many artists who have already been integrating affect into their work. No longer must the viewer only engage with art as a "viewer," — the viewer can now be a participant. By integrating multiple senses into their work, artists have started putting their viewer within their work. Art-goers of today can touch, lay on, move within, and manipulate works of art with the critical lens that was initially reserved for solely optical interactions.

***Rather than being concerned only with meaning and images that demand close analytic attention, these surfaces work to provoke strong synaesthetic responses in the viewer and therefore to make architecture participate in a culture of interactive receptivity instead of impose signification.***

-Sylvia Lavin<sup>7</sup>

# part 2

*Sensory interactions with materials is a system and process, where inputs from both objective properties of materials and subjective responses from people are integrated, together with the influence of environmental context.*

- Hengfeng Zuo, Tony Hope, and Mark Jones<sup>8</sup>

Senses cross formal cognitive boundaries – a space does not need to be called “architecture” to experience it. That being said, these categories do highly inform the reception of a work of spacial design. Sensory perception is deeply informed by the combination of objective properties of materials, subjective responses, and environmental context. This project aims to reconfigure normative cognitive categories of art, architecture and design in attempts to reach beyond certain contextual constraints, i.e. calling something “art” immediately brings up the socially constructed idea of what it means to be a work of art.

While gathering my taxonomy of sensual spaces, I became very interested in the ways these sensual spaces used specific materials to create vivid experiences. Thus, in this taxonomy, I will use material and experiential distinctions to highlight certain similar qualities that make space affective, embodied, and sensory. These four fluid categories of Light, Pods, Organic Material and Participation will guide you through this eclectic body of sensual spaces.

# light

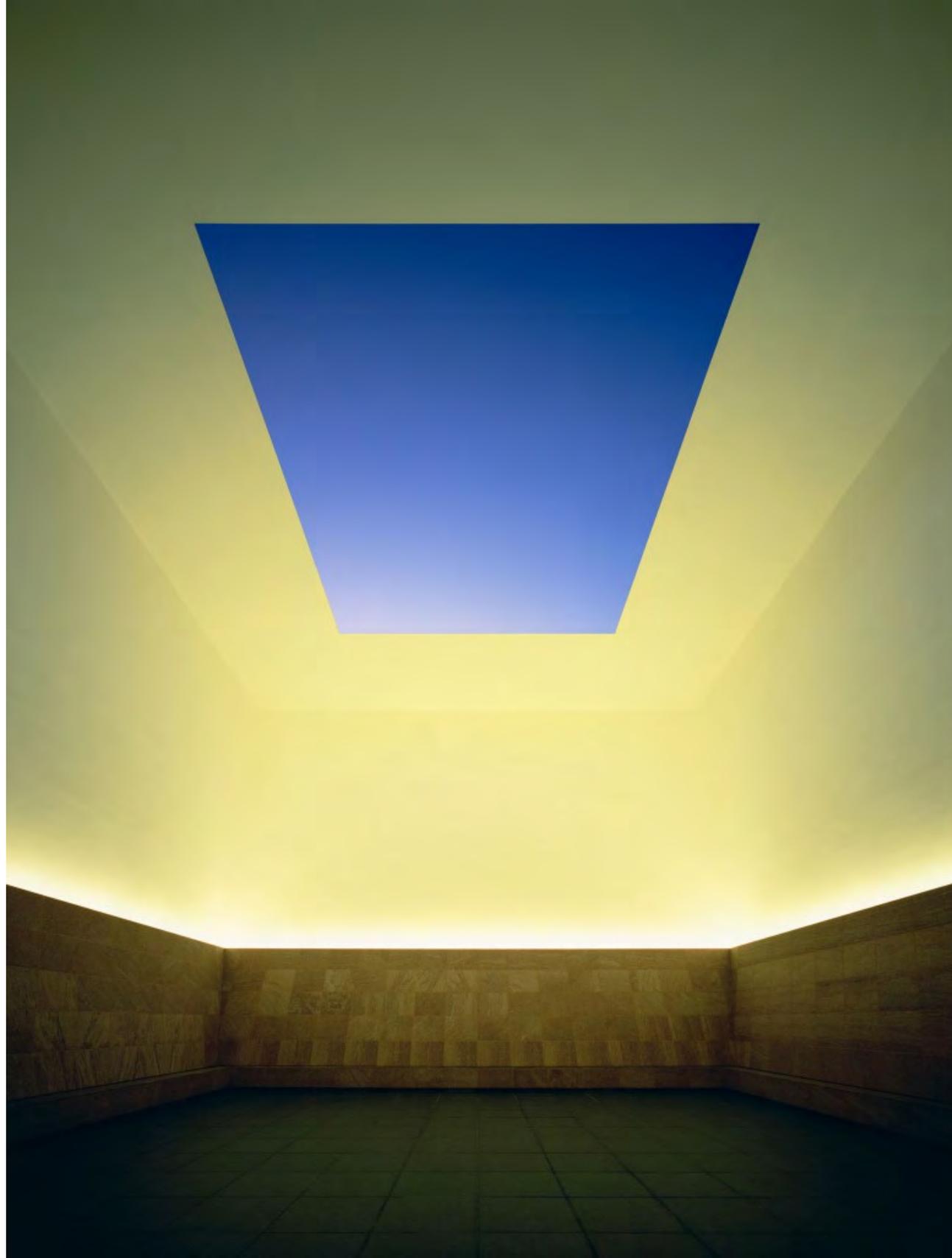
*Turrell creates space and volume with light that activates surfaces phenomenologically, leading the observer to the realization that light itself is an architecture and, as such, has the ability not only to be a space but also to make us be in space.*

- Giuliana Bruno<sup>9</sup>

From natural light to projection, reflective mist to neon lighting, optical reception of light is deeply intertwined with affective response. The reception of light through vision informs our understanding of texture, perceives both thermal warmth and metaphorical warmth, and helps us make sense of depth and spacial relationships. For the first category, this project will explore the ways in which light has been used "make us be in space".

## BLUE PLANET SKY

Blue Planet Sky<sup>10</sup> by James Turrell (a work from his Skyspaces Series) turns light into volume through the combination of natural and artificial light and its play on architecture.<sup>11</sup> As the sunlight light changes throughout the day, the interior lighting reacts to create visual contrast and intriguing color combinations. The crisp edges of the opening in the ceiling forms an illusion of structural unity between sky and architecture, simultaneously flattening the sky and expanding the ceiling. The way the light defuses throughout the gallery turns transparent space into a luminous volume, optically making space tangible. The viewer becomes a witness, immersed in the light play and interior/exterior relationship of architecture and sky. As sky and ceiling converge, light becomes architecture and optics become an embodied experience.<sup>12</sup>





## THE WEATHER PROJECT

Inspired by the way the city mediates weather, The Weather Project by Olafur Eliasson<sup>13</sup> brings weather inside the museum – usually a place where one expects to escape the elements. The room is filled with a light mist that naturally collects and dissipates throughout the day. A circular sheet of lights illuminate the large room, mimicking the light of the sun but on a closer than natural scale. The mist floating in the room gives physical form to the emanating light, bringing a tactility to this otherwise optical experience. This installation choreographs the movements of the viewer in such a way that it demands an embodied reception of the art; the mist makes the viewers physically aware of the space as they feel the moisture on their skin, and the immersive, mystical quality of the space compels the viewer to lay down to better absorb the artificial atmosphere. Haptic participation is crucial to the articulation and reception of this immersive experience.<sup>14</sup>

*Architecture's new confounds are not just making buildings visible but are encouraging them to find ways to make perception enter the realm of experience rather than vision, to make images that produce material impressions, to make experience that is vivid.*

- Sylvia Lavin<sup>15</sup>

## POUR YOUR BODY OUT



White, banal walls of the MoMA, New York are a typical expression of the Modernism era. The walls have straight, harsh edges and the ceiling is monumental in scale, a type of architecture that is meant to be solely cognitive, disinterested, and purposively blank. *Pour Your Body Out* (7354 Cubic Meters) (2008) kisses this banal surface of Modernity with the color, luscious movement, and organic images of its multichannel projection. This new skin of the projection morphs the space into an affective, sensual dwelling. Rist's eye-shaped lounge in the center of the exhibition room provokes a horizontal engagement and invites visitors to slow down and stay awhile to experience the installation. The combination of the entrancing projection and soft cushions evoked a different temporality for the museum; couches in museums are often a rare breed, as visitors are not encouraged to slow down, but rather quite the opposite. This change of temporality encourages a relaxation of the cognitive and an enlivenment of the affective. *Pour Your Body Out* turns the massive 7354 cubic meters of the gallery into an approachable, intimate, and human scale space, symbolically reinserting the human into Modernist architecture.<sup>16</sup>

*Affective response, by contrast [to linear time], is 'associated with nonlinear processes; resonance and feedback that momentarily suspend the linear progress of the narrative present from past to future' (Massumi 26) – in other words, it involves a different kind of temporality.*

- Eugénie Shinkle<sup>17</sup>

## NIKE TECH PACK, 21 MERCER ST.



SET Creative is a creative design agency that focuses on human experience to create irresistible brand love. SET's main business is creatively engineering retail environments, events, and pop-up shops for companies. They describe their work with retail environments as: "from windows that intrigue and draw consumers in, to custom fixtures and visual merchandising that tells the story of the product in an elevated and experiential way, we focus on the details to shape immersive experiences that leave a lasting impression."<sup>18</sup> SET has worked with many big name clients, including Nike, Starbucks, Toms, Victoria Secret, Jeep, Uniqlo, Bose, and The North Face.

Pictured here is SET's work on the design of Nike's retail store on 21 Mercer St. in New York City. This project was undertaken for the launch of Nike's Tech Pack. SET produced a minimal, almost secretive store window display of the purple "+" of the Tech Pack brand with red neon lighting emanating from inside. A large red metal box is set back from the doorway and reads "TECH PACK" in a glowing frame. The consumer is drawn in by her curiosity provoked by the ambiguous window display and the information in the distance. Inside, the grey lightweight fabric wraps the walls. Multiple styles of sleek shapes in the grey fabric stand out against the neon red light. Specific styles are framed in red metal containers, guiding the consumer through the sports line. The simple, bold aesthetic is paired with clear copy strategically placed throughout the store to inform and focus the consumer's attention on the attractiveness and necessity of this product. Overall, experience design is used to convey a clear immersive brand story: a hip, exclusive brand on the cutting edge of sportswear technology.<sup>19</sup>

# Pods

*Space becomes wearable when embodied affectivity becomes the operator of spacing.*

- Mark Hansen<sup>20</sup>

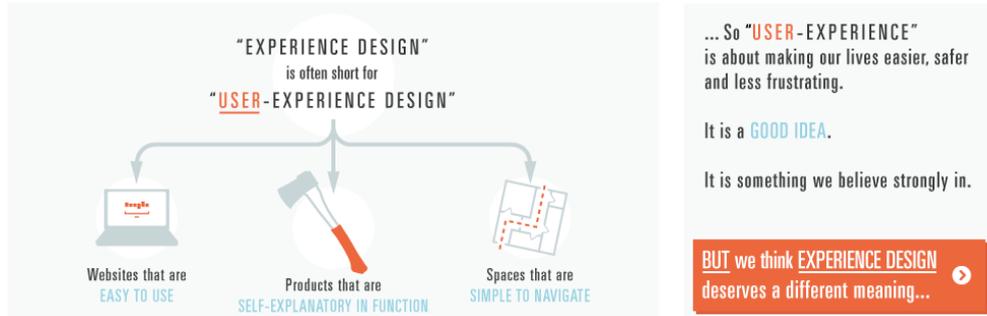
Small spaces, by nature, bring the structure closer to the visitor's body. The walls wrap tightly around the visitor, immersing her in their essence. This physical proximity adheres well to Hansen's concept of "wearable space". As Hansen articulated previously, architecture can never free itself from its essential linkage with embodiment, however not all space is inherently "wearable". Space becomes "wearable" when the body is at the center of spatial design. The centrality of embodiment in wearable space makes it so that the space actively demands an embodied response. When someone steps into one of these pods, they feel their body as the operator of the space, they feel as though they are putting it on like clothing. Each pod creates an immersive capsule of experience that sensorially transports its wearers.

## COLOR THERAPY PODS



I encountered these Color Therapy Pods in the retrospective of the Austrian architect and philosopher Rudolf Steiner at the Museum of Applied Arts (MAK) in Vienna. From the outside, they are white, geometric pods that blend in with the white walls of the gallery, modestly occupying the space. But when you duck in to the sculpture/architecture, you become immediately incased in color. By sitting down and feeling the walls pulse around you, the power of color gives a striking sensory response. For me, the yellow pod was absolutely unbearable to be in, the color made me feel anxious and unbalanced, while the purple pod instantly calmed me and made me feel safe and at peace. These spaces were intentionally crafted to provoke affective responses from the viewer by the use of color and form. This piece is a stunning display of the feedback and interconnectedness between optics and haptics and runs the line between sculpture, architecture, and psychology.<sup>21</sup>

# experience design



We think "EXPERIENCE DESIGN" should be dedicated to creating RICH, POWERFUL, AFFECTING experiences. Helping people to:



PAN Studio, London is a design firm that calls their work that engages the embodied, sensorial human "experience design". Experience design in the tradition sense usually refers to user-experience design (UX) for digital interfaces. UX aims to improve human-computer interactions by focusing on usability, visual perception, human behaviors, etc. However, PAN Studio takes the idea of improving human-computer interactions and reapplies the language of experience design to enhancing human-media, human-space, or human-human interactions. PAN uses design to create experiences to help people discover new sensation, explore deep emotions, and think in new ways. PAN graphically explains their approach in this infographic found on their website (see figure).<sup>22</sup> This graphic illustrates the transition of experience design from focusing on the product (the images of the website, hammer, and map) to the user (the image of the blue figure).

Naturally, anything a user engages with elicits an experience. However, PAN's innovative angle on design is that they see experiences as something with the potential to be designed. PAN has a very particular design process that enables them to create such powerfully experiential work. Often experience or user interaction is taken into account in all design fields, but for PAN it is the absolute center from which the rest of the design process flows. To explain more concretely, often PAN begins with a particular experience they are intending to create. From there, they will research, brainstorm, and prototype ideas, materials, sensations, and emotions that will create their intended experience until they reach the desire outcome of the app, object, or space.

## TIME MACHINE



As it corresponds with the concept of the pod, PAN Studio created a time machine entrance for an immersive theater performance set in the past. By beginning with questions such as, “what would it feel like to travel in time?”, “what are the audience’s expectations of what time travel should feel like?” and “how can we make a fun and compelling experience?” PAN then researched the aesthetics of time travel in pop culture. From their research, they noticed some uniting qualities in the aesthetics of time travel: cramped space, a feeling of motion and acceleration, and the notion of the portal. Under this guidance, PAN

created Time Machine to resonant with these qualities. The audience members must crawl, one at a time, into PAN’s cramped, cylindric portal. In the Time Machine, the participant becomes immersed in swirling light (enabled by a rotating cylinder surrounding the transparent cylinder the participant touches) and an ever-crescendoing audio track that together feel as though the machine is propelling the participant through space. Visually, the Time Machine’s blue lights and silver interior appear as a sleek and technologically advanced version of time travel.<sup>23</sup>

## QUIET MOTION

Quiet Motion built for Milan's design festival in 2013 acted as both an advertisement for BMWi and a calming oasis from the excited stimulation of the festival. The designers created an experience that aims to illustrate what it means to have electric cars and how that could change the experience of driving. In this installation, festival-goers are invited to sit on the soft cork and leather cushions as the pod slowly and quietly rotates. This motion evokes feelings of tranquility and relaxation. Fabric stripes hang down at the perimeter echoing the motion of the pod and acting as a permeable membrane that protects the user inside, while allowing for visibility outside. The materials used read both as simple, elegant raw materials and abstracted elements of a car (the leather cushion reminds us of luxury car seats, the hanging lights appear as headlights, the fabric strips are ribbed similarly to tires). "What we propose with this installation is to say that motion, movement, energy in general should probably be quieter, softer and something which is less about speed and aggression," says designer Erwan Bouroullec to Dezeen Magazine.<sup>24</sup> This installation places experience at the center of its design process and focuses on materials and motion to convey that targeted experience.





## THE MIRROR CUBE

The Tree Hotel located in Northern Sweden is a concept hotel built to have a seamless relationship with nature. Each “treeroom” of the hotel aims to create the experience of living amongst the trees. The hotel focuses on living within nature by having a minimal eco footprint from construction to daily energy use and by creating an experience of uninterrupted natural beauty. One of the treerooms of the hotel is dubbed the Mirror Cube. The most distinguishing quality of this room is its exterior paneling of mirrors. The use of mirrors creates visual harmony with its surrounding, quietly camouflaging the room amongst the trees and sky, disappearing and reappearing as you move around it. The Mirror Cube superficially alters a classic cube to have a seamless interaction with nature through optical illusion. The complete covering of a surface with one material clearly illustrates the possibilities of that material and becomes a study of how that material warps the space it touches. The Mirror Cube provokes me to question more broadly the effects of covering the entirety of a surface with one material on the material, the space, and the user.<sup>25</sup>



## BUBBLE HOUSE

MMASA Arquitectos designed buBbLe House in A Coruña, Spain to provide a solution for housing in contemporary cities where space is limited and life is uncertain. These architects used ephemeral, dynamic and flexible materials to create this temporary structure. The structure can be easily put up and broken down, eventually fitting into a locker at the corner of the cube. The intrigue of this piece is in its bubble walls; every wall acts as a pocket that could be filled with materials of the user choice. In this photo, the walls are filled with air, grass and hay; these elements provide insulation, a feeling of privacy, and a synthetic naturalness that contrasts the asphalt of the city. The walls could also be filled with clothing and other personal possessions of the owner. In this way, possessions become architecture as they surround and encapsulate the occupant. Because of the flexibility of the walls and their transparency, with every owner the experience of structure completely changes.<sup>26 27</sup>

# organic material

*Some materials appear to have designated, embodied meanings. Wood is literally warm to touch and therefore perceived as inviting and cozy, whereas stone or steel are generally cold to the touch and thus tend to be perceived as more distant. These latter materials are, on the other hand, relatively heavy and would for that reason also be regarded as high quality. Similarly, light materials have a tendency to be considered cheap. ... Finally, soft materials are mostly regarded as being alive where hard materials are considered dead. Such material-meaning associations are, by their sensorimotor nature, very robust and persistent.*

- Paul Hekkert and Elvin Karana<sup>28</sup>

This next section will explore the ways in which organic materials have been used to create sensual spaces. In these examples, grass, water, and rocks (each having their own embodied meaning) are re-contextualized into roofs, cars, architecture, and galleries. This re-contextualization of organic materials into non-natural settings provokes new sensory understandings of each material, while also carrying with them their consistent sensorimotor associations.



## HYPAR PAVILION

Designed by Diller Scofidio + Renfro, the HyPar Pavilion in Lincoln Center, New York (completed in 2010) was a part of a larger renovation to improve the public spaces of this Modernist center. The pavilion accommodates for both a restaurant and a public lawn within the same footprint, by making the lawn function as both a green roof and a public space. The use of grass provides a pop of green within the black and grays of the center's buildings and plazas. The grass as a medium also physically softens the plaza in comparison to the cold, hard materials of stone, concrete, and marble that previously dominated the center. The ingenious twisting of the roof creates surprise and fluidity to the visually predictable Modernist structures. The entrance to the lawn occurs where the roof touches down to the plaza; this entrance feels as though the structure is welcoming, almost offering its hand down to the visitors. The pavilion contrasts with the monumental scale of the six story high columns and awkwardly spacious plazas. The HyPar Pavilion structurally, materially, and functional softens the harsh edges of Lincoln Center, embracing Modernism with the touch of humanity.<sup>29</sup>

## THE BLUR BUILDING

Built for the Swiss Expo in 2002, the Blur Building (also by Diller Scofidio + Renfro) deconstructs our reliance on the sense of sight and reconstitutes it by activating spacial awareness through the body. The building is constructed out of high-pressure mist nozzles that spray water from the lake below. This technique creates a structure that is mainly composed of fog. As the participants enter the water vapor mass, they are faced with the task of navigating space without sight as if they were in a cloud. The water vapor touches the skin its occupants, and, as they feel the moisture, they are feeling what is constituting the space. The building melds the body and space so deeply that it feels as if the inhabitants have "put on" the space like a coat. This building beautifully articulates Hansen's idea of "wearable space" through its use of unusual building materials that both affects the participant and is affected by the participant. The architects describe their project as: "contrary to immersive environments that strive for high-definition visual fidelity with ever-greater technical virtuosity, Blur is decidedly low-definition: there is nothing to see but our dependence on vision itself. Unlike entering a building, Blur is a habitable medium—one that is spaceless, formless, featureless, depthless, scaleless, massless, surfaceless, and dimensionless."<sup>30</sup> This space demands habitation, it demands from the participant embodied presence, for without it, one would be lost in the blur.<sup>31</sup>



# product experience



*At least three basic components or levels of product experience can be distinguished: the degree to which the sense are gratified (aesthetic experience), the meanings we attach to the product (experience of meaning), and the feelings and emotions that are elicited (emotional experience).*

- Pieter Desmet and Rick Schifferstein<sup>32</sup>

Described by Desmet and Schifferstein, aesthetic experience identifies creating positive experiences through the stimulation of the senses, typically thought of as visual appeal, but is not limited to the optic sense. An example of an aesthetic experience with my water bottle (pictured here) is the enjoyment I feel when I hear the sound the rubber top makes when you open the bottle. An experience of meaning pertaining to my water bottle is that it looks elegantly designed and soft with the rounded edges on the rubber and glass. And lastly, my mother gave me this water bottle and so it reminds me of her when I drink from it, an example of an emotional experience.

Looking at each of these elements separately helps parse out experience into elements that can be focused on in the design process. Also, this separation helps designers become conscious of the potential difficulties in designing for experience, i.e. if the experience of meaning does not line up with the intended experience because of cultural differences, while the aesthetic experience might still convey the target experience to most users. Desmet and Schifferstein emphasize a multi-sensory approach to design, an approach that sees the haptic qualities of a space/object to be just as important to the visual and cognitive qualities.



## THE CARPARK PROJECT

The Carpark Project by Jan-Geert Munneke<sup>33</sup> approaches design through understanding experience. "What I set out to do in this graduation project was to find a more positive approach for improving dilapidated neighborhoods, enabling people and giving them new opportunities instead of restricting their behaviour, making their neighborhoods more enjoyable and less fearsome. An essential part of how people experience their neighborhood is determined by the views they have of the neighborhood."<sup>34</sup> Munneke created a car/park fusion that functioned as a mobile piece of public greenery in a neighborhood that had minimal street life and welcoming public spaces. Ultimately, Munneke attempted to create an experience that would alter resident's perception of this dilapidated neighborhood. This "carpark" sought to become a physical catalyst that altered people's experience and view of the neighborhood. The project accomplished this goal by creating a sense of surprise by the unusual car and natural materials combination to unhinge old views of the neighborhood, changing the street appearance and how people interact with the street, and encouraging social connections by providing a welcoming public space. Munneke researched how to "improve" a dilapidated neighborhood not through making areas safer by adding restrictions or cleaning up old infrastructure, but by creating more positive experiences in the neighborhood by a simple intervention that appeals to the emotional, sensory user.

## RIVERBED

Riverbed by Olafur Eliasson installed at the Louisiana Museum in Denmark from in 2014 recontextualizes the experience of nature within the museum. Eliasson covered an entire wing of the museum in river rocks and gravel, ranging from about 2 to 8 feet of depth, creating a riverbed that flows down from the back to the front of the gallery space. The ice cold, winding river measures only about 8 inches wide and a foot deep, and therefore the majority of the experience of the space is dominated

by rocks. The exhibit invites the viewer to climb around the rocks, play in the river, and touch everything. In this exhibit, the artist provokes a new, haptic way for the viewer to interact with museum space. The common disinterested, distant, and composed museum-goer transforms in to a child-like, engaged, and embodied participant. Aesthetically, the rough rubble of the grey rocks clashes with the clean, white walls of the museum, instantly creating feelings of tension between these two separate worlds and emphasizing the differences between this to modes of engagement.<sup>35</sup>



# participa- tion

*When we touch a surface, we experience immersion and inversion fully, and reciprocity is a quality of this touch. There is a haptic rule of thumb: when we touch something or someone, we are, inevitably, touched in return. When we look we are not necessarily being looked at, but when we touch, by the nature of pressing our hand or any part of our body on a subject or object, we cannot escape the contact.*

- Giuliana Bruno<sup>36</sup>

What is the role of touch in architecture? Buildings are shelters that physically cover us, but rarely are its surfaces physically felt by its inhabitants. Touch is connection; things that are tactile develop a deeper relationship with its participants by nature of reciprocity. What would happen if architecture invited tactile participation? Through sticker dots, slides, cellphones, and swings, the last few works in this taxonomy investigate that question.



*Surfaces are where architecture gets close to turning into something else and therefore exactly where it becomes vulnerable and full of potential.*

- Sylvia Lavin<sup>39</sup>

## THE OBLITERATION ROOM

Yayoi Kusama's The Obliteration Room<sup>37</sup> uses participation to radically alter the surface of the gallery wall. The installation begins as a room outfitted with a dining room table, chairs, couches, lamps, a television, a piano, and other household objects all seamlessly painted white. The use of white in this artificial dwelling capitalizes on the trope of the white cube museum aesthetic, thus both reenacting the trope (as sort of blank canvas or empty gallery wall) but also cleaning off the surface to prepare these domestic objects to be easily received in a gallery. However,

when participants come into the room they are given a sheet of brightly colored dots to place around the room where ever they desire. As time passes and people leave their dotted mark, the room slowly begins to dissipate into a limitless array of dots. The dots obliterate form and distinction between objects and architecture – playfully deconstructing domestic space to replace it with a fully immersive infinity of color. This piece attests to the way in which a simple superficial alteration of surface dramatically changes the optical reception of a space, which in turn has a powerful effect on the affective reception.<sup>38</sup>



## TEST SITE

For his exhibition Test Site displayed at London's Tate Modern in 2006, Carsten Höller constructed multiple metal slides in the Turbine Room to investigate different types of transportation between floors. The fast pace at which the visitor is propelled down the slide disorients her and forces her to lose control during travel, often evoking screams that echo throughout the museum. The slides can often feel very disorienting in part from the speed and also from the transparency of the top of the slide. This transparency allows the user to attempt to catch glimpses of the museum as she whirls and circles through the space. The combination of speed, transparency, and curvature, creates a thrilling, vivid experience. Unlike the restricted, contemplative attitude of the average museum-goer, this form of transport is a completely immersive experience that demands presence from its user and evokes experiences of childhood playgrounds as she races down the tube. Aesthetically, these are not brightly colored, plastic slides of playground lore. These slides are polished silver, beautifully curving through the museum appearing sleek and sculptural. As a result, the act of sliding is elevated to fit with the museum aesthetic.<sup>40</sup>

*Discussion of affective response, in other words, should not be confused with appeals to an innocent, precognitive 'state of nature.' ... Affect is about the way that body, mind and world work together as a feedback system.*

- Eugénie Shinkle<sup>41</sup>

Shinkle in "Corporeal Ergo Sum" discusses the layers of affective response for users in reference to gaming. She clarifies that individual affective response is not isolated from the sociocultural realm. Human reactions to stimuli are not only from evolutionary, 'primitive' behavior, but also very much from learned social behavior. This feedback between the senses, the world and the sociocultural context is a very important element in attempting to design experiences.



EC1107 Hello post box!

Whoa! You startled me. Hi. Can I ask you something... what do I look like?

You're big and red with two slots. People use you to send letters.

Thanks. Someone once said "You are a monster with two mouths"... Where is this place?

...

## HELLO LAMP POST

Hello Lamp Post designed for the Playable City Award by Watershed is another project by PAN Studio. The project is a playful SMS platform where anyone can converse with the city infrastructure. By texting the serial number on lamp posts, post boxes, cranes, bridges, parking meters in Bristol, UK, users were asked questions by the objects. Parking Meter #2995: "If you listen carefully, what's the quietest thing you can hear?" Users can then respond and start a conversation with the object, wherein the object tells stories about past people's questions and answers. Threads of storytelling and connection are woven through the city, thus turning concrete into connection platforms, turning static utility infrastructure into playful, curious semi-animate objects.

PAN reimagined the everyday experience of walking through the city busily on your cell phone, ostensibly connecting to a non-localized world, into a far more deep connection with the everyday local urban landscape. Moments of delight and surprise became embedded in daily commutes. In 2015, PAN brought Hello Lamp-post to Austin for South by Southwest, Ben Barker one of the co-founders of PAN explains to The Daily Texan: "[The project] paints an image of our environment, the city, as a [guide] about how we got to be the way we are, [...]" Barker said. "The project for us is about asking people to think differently about their environment and where the boundaries between citizens and services are."<sup>42</sup> PAN's anthropomorphizing of urban infrastructure created a sort of quirky, playfulness that encourages building relationships with objects. Through this connection, urban dwellers developed a more engaged and localized relationship to the city they live in.<sup>43</sup>



## THE EVENT OF A THREAD

Walking into Ann Hamilton's *The Event of a Thread* displayed in New York City in 2012, participants first notice the huge, white sheet dancing in the middle of the Armory. The sheet's movement is choreographed by the motion of many large swings hung around the room. The large height at which the swings hang down from the ceiling combined with the heaviness of the wood and metal creates a slow, steady pendulum motion. This slow, repetitive movement joined with the feeling of floating through the air provokes feelings of peace, euphoria, and childhood nostalgia. Contrasting to the loud streets of the city directly outside, the sounds of chatter and laughter are quieted by the expansive ceiling. Many participants also gather underneath the gigantic, billowing sheet. Laying below it, people become mesmerized in its simple beauty, unpredictable motion, and calming fluidity. Participants are free to move between the multiple elements of the installation and free to interact with each on their own time, in their own way. The meaning of *The Event of a Thread* is not predetermined by any one element of the installation, the piece invites individual and collective experience to stand for concrete artistic meaning.<sup>44</sup>

*part*  
*3*

# brainstorming

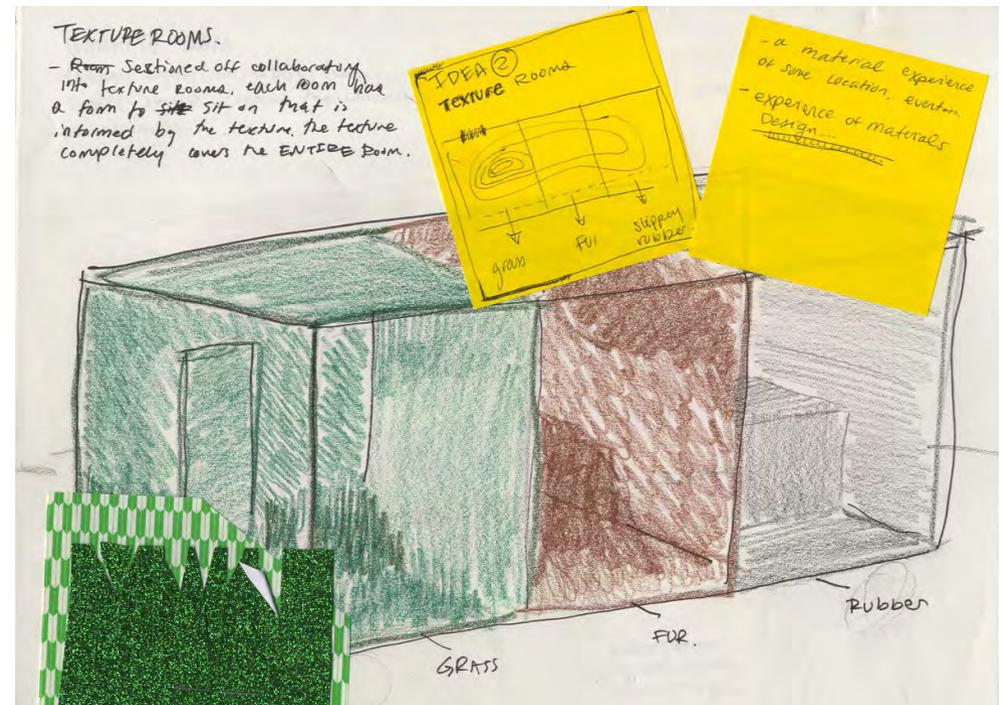
I live through making things with my hands. From a young age, I loved making art and my parents encouraged it. My father loves to build and design houses, interiors, furniture, and my mother loves to design clothes with specific attention to shapes and fabrics. Growing up, my father and I constructed many small projects together: a desk, a table for my mother, a bed for my doll. For each project, I remember carefully measuring the spaces these objects were intended to fit to design the perfect product. I learned how to use the different saws and chose paint colors. I began to develop a fine attention for design and materials. I remember hanging around with my mother and her friends watching them touch cloth and being able to identify the composition of each material. Listening to their conversations about clothing with simple shapes and beautiful fabrics, I developed my own love for such things.

When I began my senior project, I knew that I wanted to have a making component. Beginning in mid-January, I started brainstorming ideas for what that would entail. All I knew was that I wanted to make an installation that was immersive, interactive, and touchable. In the semester previous, I had already started developing my taxonomy of sensual spaces; I loved dwelling on the ways space affects its inhabitants and the particular ways designers provoke a targeted experience.

Inspired by the Color Therapy Pods and the Mirror Cube, I was interested in the ways material shows off when you cover an entire space with it. The yellow of the Color Therapy Pod would not be affective if it only covered one wall of the pod, similarly the mirrors on the Mirror Cube would not disappear into the landscape if only one side had mirrors. The first idea I had for my installation was to create three different spaces, one covered in grass, another in fur and a third in rubber. I chose these materials because I wanted each to have a radically different texture. The viewer would survey the different spaces, notice how each material made the space feel, and notice their relationship with

that material change when it became fully encompassing. However, as my advisor quickly pointed out, these texture rooms felt more like separate studies and less like pieces of art. Feeling frustrated on how to make a work of art that both complimented my written thesis and stood on its own, I went back to my sketch book.

At this point, I was still attempting to work in the Collaboratory, a metal trailer on Vassar's Campus used for multidisciplinary art projects. I liked the idea of using the Collaboratory because it does not have a specific function, as in, it is neither a classroom, nor a gallery. Also, I wanted to keep the idea of covering an entire space in materials and I thought the Collaboratory would be appropriate because of its small size (it measures about 7' x 21' x 6.5').



**We address a dress just as we access a house or a movie house: as we put ourselves in it we absorb it, and it absorbs us. ... Because it is inhabited, design 'wears' the marks of life, both material and mental. ... To occupy space is, literally, to wear it.**

- Giuliana Bruno<sup>45</sup>

While I was brainstorming new ideas, this quote kept running through my head. What would it mean to take this quote literally? How could I push the experience of space closer to the experience of wearing clothing? I came to the idea of putting a table and chairs in the Collaboratory and having everything on one side of the room covered in artificial grass and everything on the other side covered in artificial fur. Also, I wanted to make a grass coat and fur coat that participants could wear inside the installation. I conceived of chairs and parts of the wall blending into elements of clothing, in that, some fur covered chairs would have sleeves and the walls would have strange blanket-like appendages. My advisors liked the idea, so I began to look into the logistics of making it.

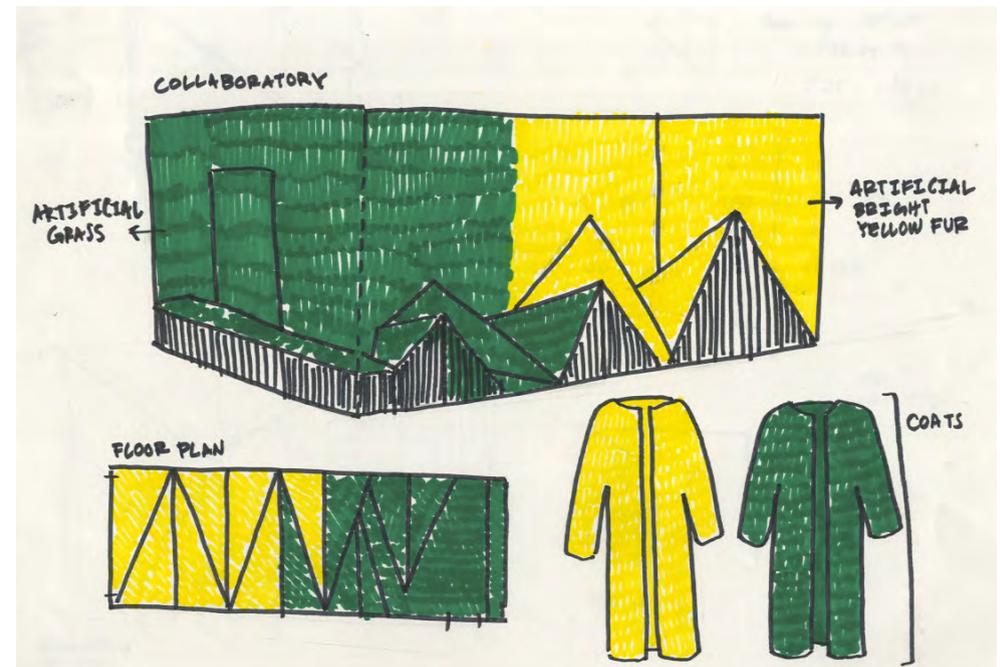
From there, I had to figure out how I would come to actualize this plan in the Collaboratory. I first measured the trailer and realized that the long table I was imagining would not fit. The next idea I had was to make a space of angular peaks and valleys that would demand the participant to climb up and around them to explore the space. I liked the idea of breaking out of the everyday verticality of sitting and standing, as Pipilotti Rist and Olafur Eliasson did in their works.

Next, I looked up prices of artificial fur and grass. I was shocked at the exorbitant rates of these materials and simultaneously shocked by the amount of square footage I would need to cover the Collaboratory, ~550 sq ft. I then realized that artificial grass is quite heavy and thus it would need a very strong adhesive to attach to metal walls. Velcro was too expensive, super glues would ruin the wall, tape wouldn't be strong enough, screwing into the walls was not allowed, magnets were also too expensive, and making an inter shell of wood was both too expensive and too work intensive for the product it would create. My project was quickly falling into the realm of impossibility, everywhere I turned there were stumbling blocks that threatened failure.

My project was set to open mid-April. It was early March, and I had virtually nothing to show. Feeling lost, I went and talked to anyone on campus that I thought might be able to help. My advisor concluded with me that my project was unfeasible and I would have to go back to the drawing board. The interdisciplinary Arts Coordinator who oversees the Collaboratory tried to help me brainstorm how to work within the limits of the space, but ultimately we could not figure out a way it could work.

I talked to Dean of Strategic Planning and Academic Resources to try and find other space on campus to use. We looked at some unoccupied offices that I thought would be viable spaces to cover in grass. But for most of them, adhering the grass to the wall was still going to be a problem. Also, transforming a preexisting, functional space into a grass room had different thematic connotations that I could not quite solve. I even talked to the Director of Operations to ask if I could use the old security booths on campus, but ended up deciding that those would be too small and covering them with different materials would feel too similar to my first idea.

I just wanted to cover a room in grass, why was that too much to ask? I was set on using artificial grass from the beginning of my project because, firstly, I loved the textural quality of it. Secondly, I was intrigued by the way I had seen it used in other projects like the Hyper Pavilion, the Carpark Project, and urban roof top terraces. Something about the pleasure it brings to find grass in unexpected locations and the beautiful artificiality of synthesis grass really appealed to me.



There was only one option left for me in terms of space: I had to build my own. But, now that I was free from the constraints of a preexisting room, I didn't know where to start to build the form. I wanted the exterior form to be informed by the interior function, but not give away too much. At this point, I was still working with the idea of geometrical peaks and valleys that projected out of the floor and ceiling. This idea visually appealed to me, however, the form of these geometrical structures had an arbitrariness to me that I couldn't solve. I had no reason to have the ceiling slant down or the floor spike up, other than it might create an interesting space of which to be inside.

Thinking back to my mother's beautifully simple designs, I thought, how can I simplify this form? What if you walked into a room that was completely dominated by one large slant of the floor? I rolled this idea of a single slant of the floor around in my head. It needed one more thing, one more layer of thematic meaning.

A slanted plane of grass is basically a section of a hill... Images of all the years of laying on the hill in the backyard of my mother's house in the suburbs filled my head. All the times I had laid there by myself or with friends and looked up at the clouds – the sweet memories of feeling supported by the solidness of the ground and simultaneously freed by the expansion of the clouds above. Everything was falling into place; I was going to put that feeling into my box.

I wanted to make the form so that the most natural thing to do was to lay down and look up at the clouds. The components I needed at this point were: a slanted floor, a large skylight, a small space, an entrance, and a lot of grass. Entrances often hold a lot of information about how the enterer should engage with the space they are going into. I wanted the entrance to take the participant from their vertical stance to a horizontal position. I experimented with a lot of different options and landed on a simple rectangular opening that would span the width of the box, sit about two and a half feet off the ground, and rise about two feet high. This entrance would make the participant duck into the space and then crawl up on to the slant, thus providing a fluid transition from standing to crawling to laying down. I angled the entrance down so that when people are inside the box, they can only see the grass outside through the opening.

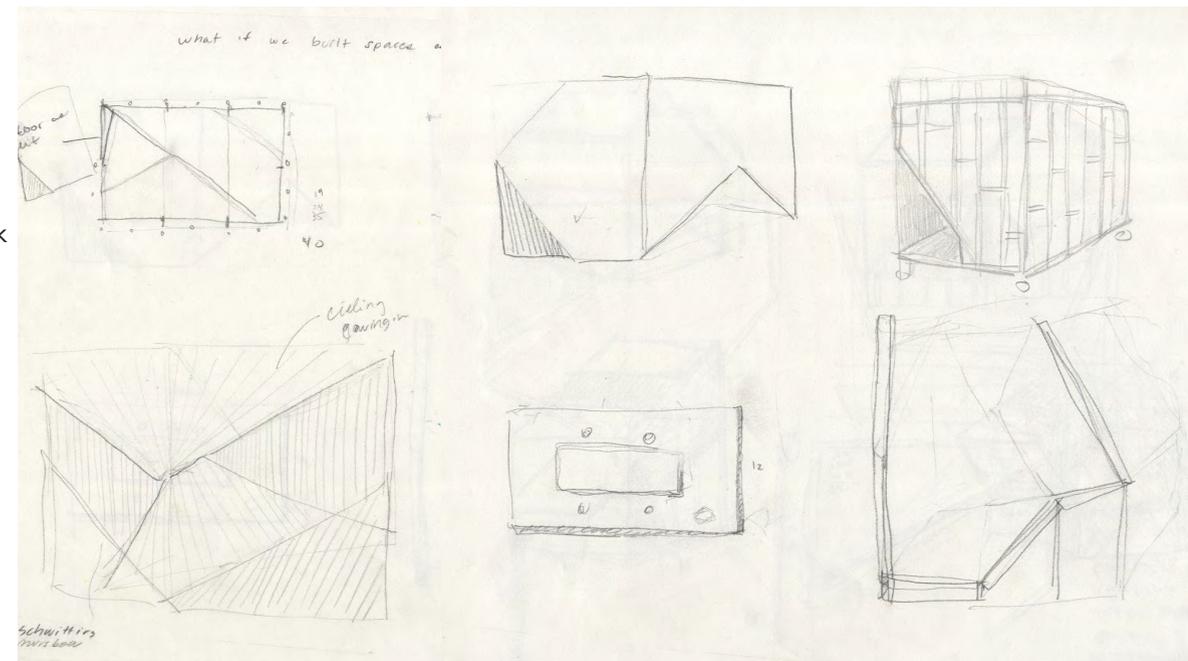
The angle of the slant was also very crucial to the success of this piece, too slanted would make the inhabitant slide down and too flat would lose the feeling of being on a hill. To get the angle right, I propped up a piece of wood and tried it at multiple different angles until I could just lay on it without sliding down. For the skylight, I decided on another simple rectangle that would echo the same shape as the entrance opening. The height of the interior was also very important to the function. I wanted to find the sweet spot between having it low enough, so that it is very uncomfortable to stand, and high enough so

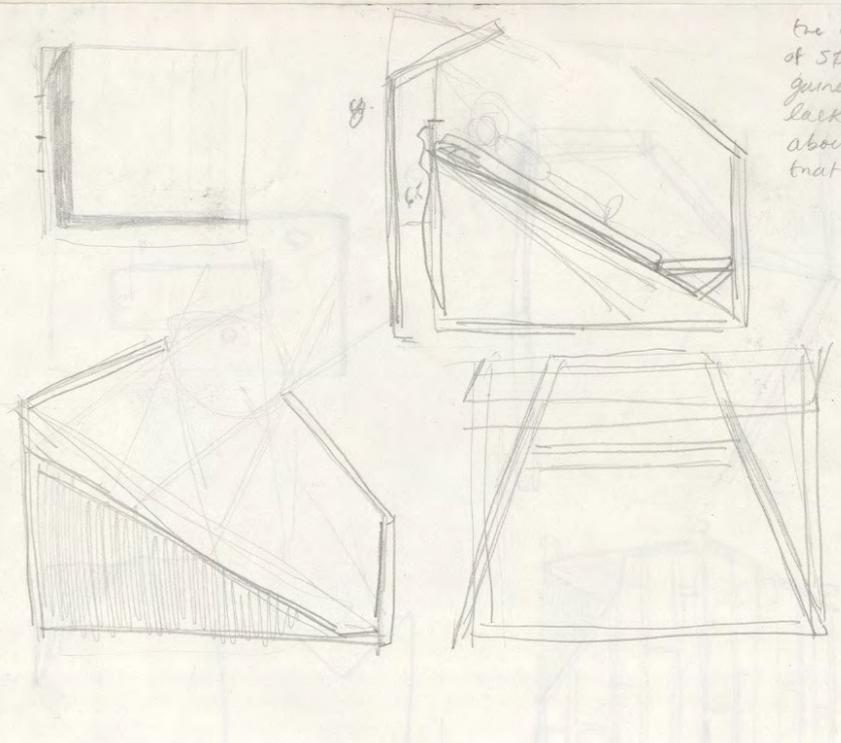
that you would not feel claustrophobic. I found that height to be four feet because that makes it so that you have about 1.5-2 feet of space above your head when you sit up in the space, but it is virtually impossible to stand.

Lastly, for the exterior form, I equally wanted it as simple and functional as the interior. To create the interior slant, I put a rectangular prism, 8' x 8' x 4' (the interior space to be covered in grass), on a wedge. This would create the exterior structure to look like a cube with the top half skewed about 15 degrees.

While I was thinking about space and form, I still had the problem that artificial grass is too expensive for my budget. So I went out searching for a donation. One day, I called about eight different artificial grass companies in the United States and emailed many more. "Hi, my name is Sasha Zwiebel. I'm doing an art project for my senior thesis at Vassar College, I am wondering if your company would be willing to donate about 300 square feet of artificial grass to my project...?"

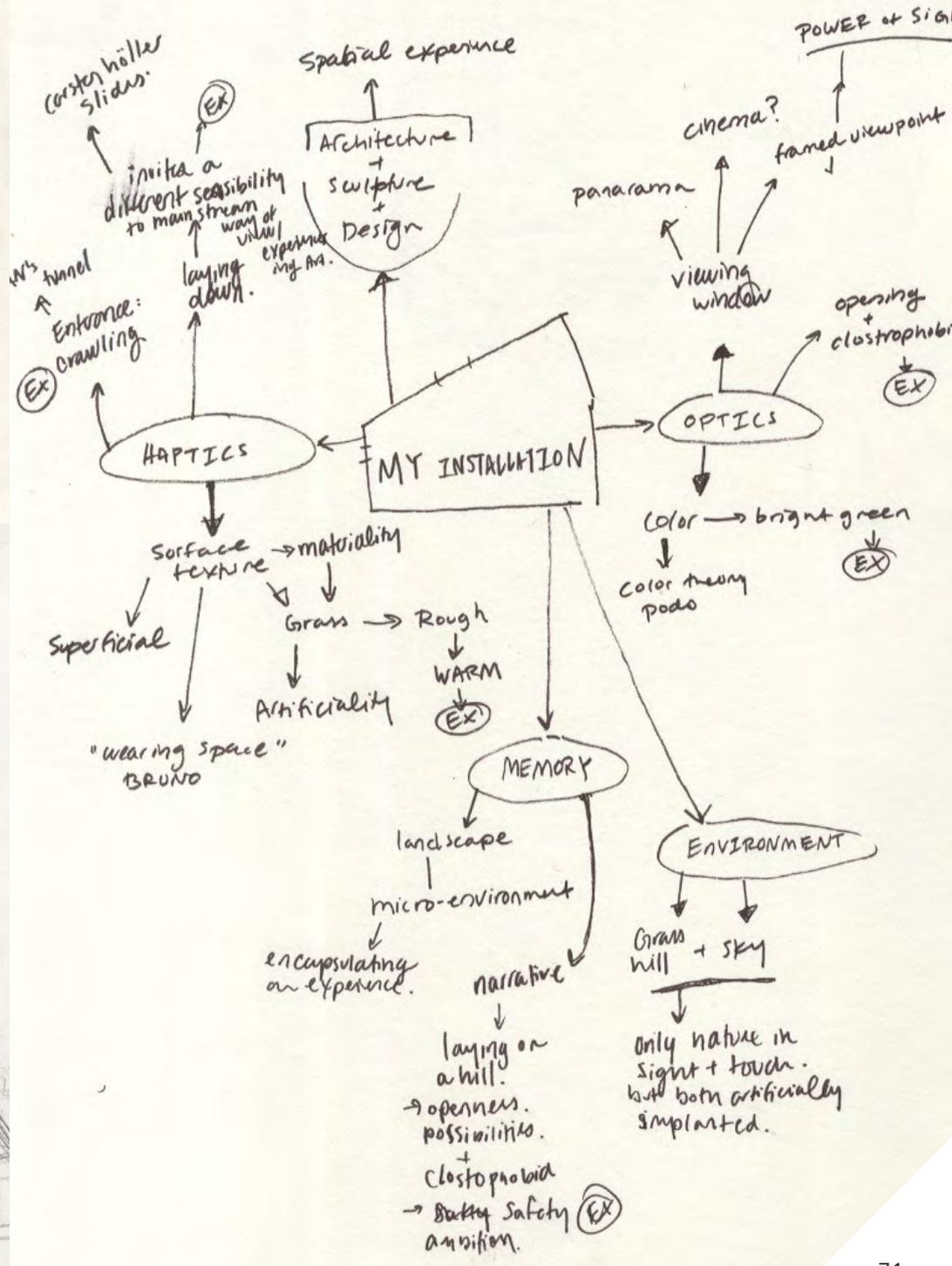
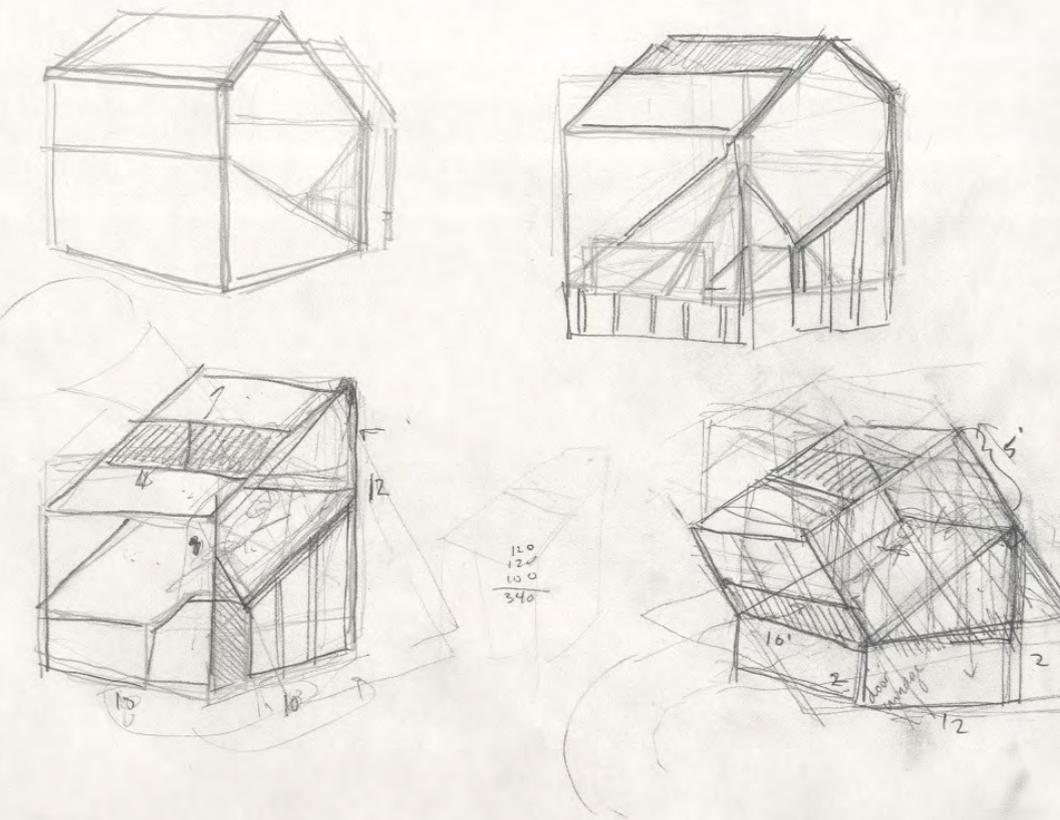
After a long day of leaving a lot of messages, SYNLawn, an eco-minded artificial grass company in New York City, called me back willing to donate. I was so surprised and overjoyed that my plan had actually worked. In return, all they wanted was an article published about the project featuring them. I immediately emailed the Miscellany News and asked them to write the piece.<sup>46</sup> The idea was set, the structure was set, the grass donation was set, I was ready to start making the construction plans and beginning the building process.





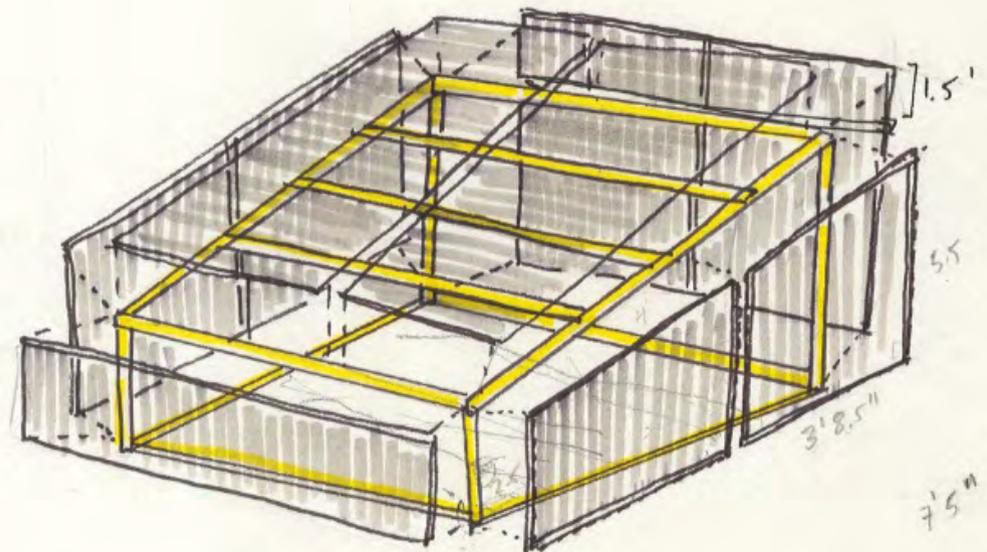
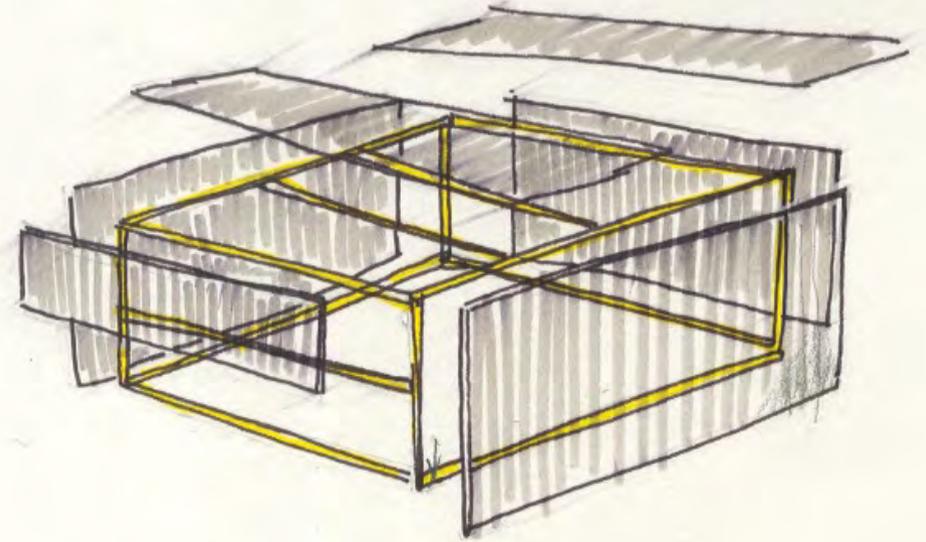
the artificial replication of spaces. what is gained? what does it lack? what is learned about the reality of that experience.

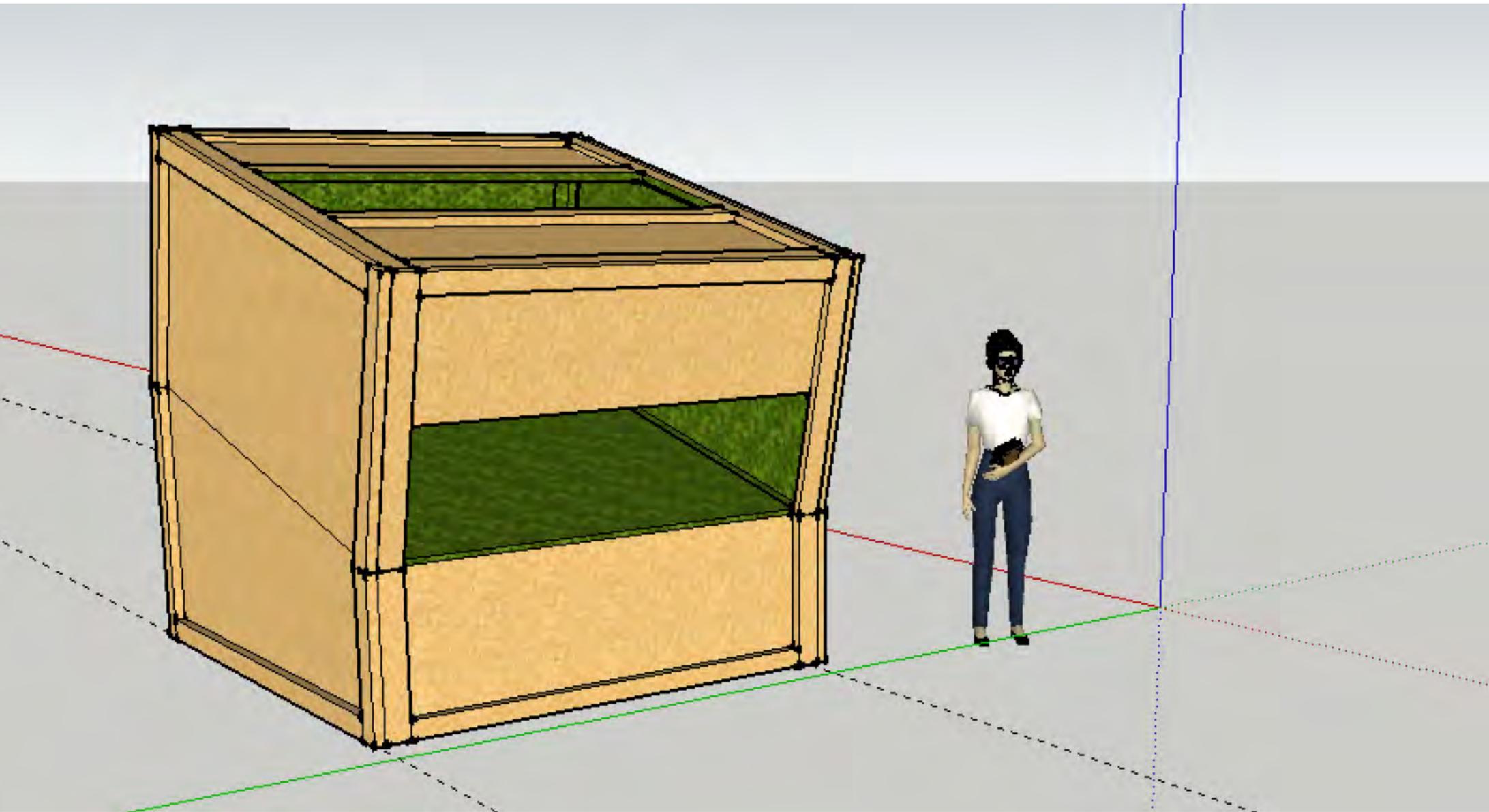
SYNTHETIC Experience  
 ↓  
 constructed experience  
 ↓  
 real experience.



# building

Together with my father, we tediously developed the construction plans for what was to be called the Grass Box. We decided to build it in two parts: the bottom wedge and the top four walls and ceiling. We put the 2x4 structure on the inside to create a clean exterior. Because the structure on the bottom was not going to be seen on the inside, and the structure in the top half was going to be covered grass, having an interior structure would not be seen in either the exterior or the interior. For the top half, we significantly minimized the interior structure in order to make it less visible; more structure was not necessary because the top half does not bare any weight. We minimized the structure by using 2x2s cut on a 45 degree angle. We slid the 2x2s along the edges where one sheet of plywood met the other. The grass would seamlessly cover this minimal amount of structure. Also, we added wheels to the plan, so that it could be built in the studio and then easily moved to the Chapel Lawn on Vassar's Campus.





After the construction plans were set, the building process went very smoothly. In the span of four days, we bought all the plywood and 2x4s, cut the wood to size, built bottom pieces, upholstered the grass, placed the top on the bottom, and painted it with two coats of polyurethane. One of the hardest parts of the building process was upholstering the grass. SYNlawn donated their leftover pieces, so I had to carefully cut and fit each piece (making sure to line up the grain) on to each sheet of plywood. The plywood I used was too hard to accept the staples I had, thus I needed to use screws to attach the grass. Lastly, the heaviness of the grass made it difficult to hold up and screw at the same time.

I had never done a building project as large as this. I had a good knowledge of how to work with wood and a good amount of experience with the tools, but I would not have been able to actualize my idea without the help of my father. He taught me the incredible amount of precision required to build this big of a structure. (At one point, our pieces did not line up by fractions of an inch, and we had to take apart the section and recut the pieces.) Overall, my father and I worked as a great team and had a wonderful time building the Grass Box.

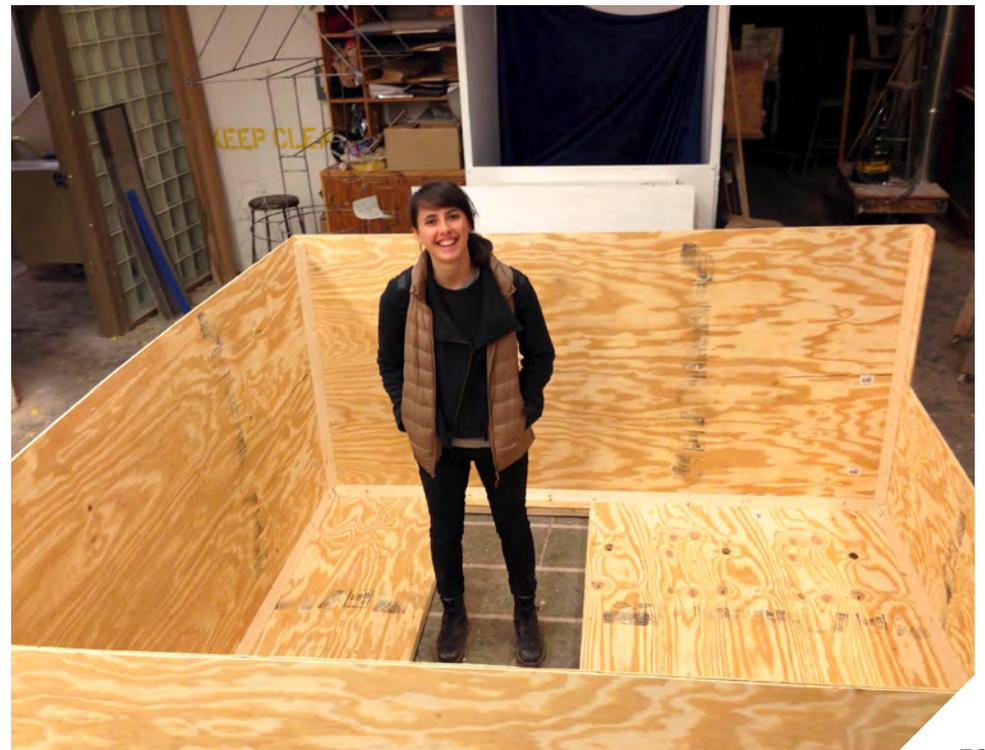
With the help of a couple of my friends, I rolled the Grass Box up from Doubleday studio to the Chapel Lawn. We angled it just right so that only sky is visible when you look up from inside the Box. The installation of the Box was complete. That evening in mid-April, my friends, family, and professors came for the official opening.



Below: driving back from Home Depot with our supplies.

Right: building the bottom wedge.

Right bottom: me in the finished top half of the box.





Above left: upholstering the grass to the top half of the structure.

Bottom left: coating the Box in polyurethane.

Top right: moving the Box to the Chapel Lawn.

# experiencing



Resting on the line between sculpture and architecture, the Box is both a interior to dwell in and an artistic experience to contemplate. The space feels intimate and enclosed making inhabitants feel extracted from the landscape around them. The complete wrapping of all the interior surfaces with grass provokes the inhabitants to feel both buried within the earth and hugged by the surface of the earth. The space also has a womb-like nature to it, the small interior paired with the feeling of sliding out of the Box has similar qualities to birth. From feelings of being buried to born, from feelings of childhood nostalgia to present sensory stimulation, the Grass Box is an experience to immerse oneself in.

Participants wear the Grass Box like a piece of clothing. They feel its textural fabric as it brushes up against them. It wraps itself completely around them, completely encasing them in grass. Equally, the piece is just as easily taken off as a dress, the experience dissipates with your extraction.

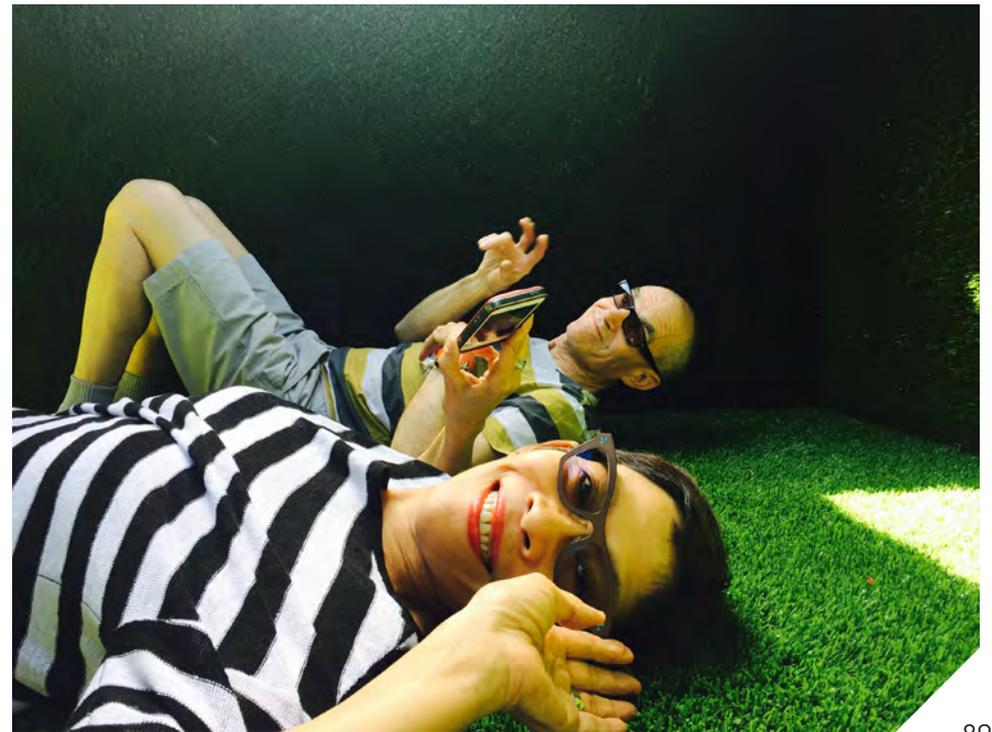
Throughout the day, the light beautifully plays inside the Box. The openings cast crisp rectangles of light onto the grass and slowly shifts position as the sun makes its way across the sky. Because the artificial grass is made out of plastic, the sunlight dramatically affects the temperature of the grass. Where ever the sun beats down, the grass gets very warm, while the areas untouched by sun remain cool for most of the day.



I originally thought the space was only going to be able to fit up to four people, but after going inside of it when it was completed, I realized that it could fit many more. Now, the Box has turned into a social space on campus where students, faculty and visitors to campus do a range of activities. Inside the Box, people have been studying, playing music, talking, relaxing, taking pictures, and sitting alone or in big groups of almost 20. The Box now has a life of its own.

Throughout the process, I kept thinking to myself how crazy it was that I was building a box covered in grass. As I was building it, people would ask me what I was making, and I would tell them: "I'm making a box and covering it with grass". Yes, that is literally what I made, but I feel like the Grass Box is much more than a box of grass. This Box is an experience, a multi-sensory experience that has something to it that is too difficult to describe in words.









*how will sensual spatial design influence  
the future of our relationship to space?*

# notes

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3. Ellen Lupton, "Princess Phone, Henry Dreyfuss," Cooper Hewitt, (Nov 2014), <http://www.cooperhewitt.org/2014/11/08/princess-phone-henry-dreyfuss/>.
4. Hendrik N.J. Schifferstein and Lisa Wastiels, "Sensing Materials: Exploring the Building Blocks for Experiential Design," in *Materials Experience: Fundamentals of Materials and Design*, ed. Elvin Karana, Owain Pedgley, and Valentina Rognoli (Oxford: Elsevier, 2014), 16.
5. David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Cambridge, Blackwell, 1989), 66.
6. Sylvia Lavin, *Kissing Architecture* (Princeton: Princeton University Press, 2011), 22.
7. Lavin, *Kissing Architecture*, 101.
8. Hengfeng Zuo, Tony Hope, and Mark Jones, "Tactile Aesthetics of Materials and Design," in *Materials Experience: Fundamentals of Materials and Design*, ed. Elvin Karana, Owain Pedgley, and Valentina Rognoli (Oxford: Elsevier, 2014), 28.
9. Giuliana Bruno, *Surface: Matters of Aesthetics, Materiality, and Media* (Chicago: University of Chicago Press, 2014), 67.
10. In this essay, I am intentionally not italicizing works of art. Because my taxonomy includes works of art, architecture and design, I wanted to treat the title of each work the same to unify this taxonomy and to have readers untie themselves from these formal categories.
11. *Blue Planet Sky* by James Turrell was displayed in the 21st Century Museum of Contemporary Art, (Kanazawa, Japan) in 2004.
12. Image: Atsushi Nakamichi / Nacása & Partners, Courtesy 21st Century Museum of Contemporary Art, found on James Turrell's website: <http://jamesturrell.com/artwork/blueplanetsky/>
13. *The Weather Project* by Olafur Eliasson was displayed at the Tate Modern (London, England) in 2003 as part of the Unilever Series.
14. See *The Weather Project* on the Tate Modern's website: <http://www.tate.org.uk/whats-on/tate-modern/exhibition/unilever-series-olafur-eliasson-weather-project>.
15. Lavin, *Kissing Architecture*, 111.
16. Image: Lavin, *Kissing Architecture*, 2-3.
17. Eugénie Shinkle, "Corporealis Ergo Sum: Affective Response in Digital Games," in *Digital Gameplay: Essays on the Nexus of Game and Gamer*, Ed. Nate Garrelts (Jefferson: McFarland & Company, Inc., 2005) 28.
18. SET LLC, "Retail Environments," (2015), <http://setcreative.com/services/retail-environments>.
19. Find the project and image here: SET LLC, "Nike Tech Pack," (2015), <http://setcreative.com/work/tech-pack>.
20. Hansen, *Bodies in Code*, 175.
21. Find the image and more about the project here: Jamie Kennedy, "Part Sculpture, Part Cave—See Inside for Seats!" KNSTRCT, (Mar 2014), <http://www.knstrct.com/art-blog/2014/3/4/part-sculpture-part-cavesees-inside-for-seats>.
22. Learn more about PAN Studio at <http://panstudio.co.uk/>.
23. "Time Machine," PAN Studio, <http://panstudio.co.uk/folio/time-machine/>.
24. Rose Etherington, "Quiet Motion by Ronan and Erwan Bouroullec for BMWi," *Dezeen Magazine*, (Apr 2013), <http://www.dezeen.com/2013/04/08/quiet-motion-by-ronan-and-erwan-bouroullec-for-bmw-i/>.
25. "The Mirror Cube," Treehotel, <http://treehotel.se/mirrorcube>.
26. Learn more about the project in: Phyllis Richardson, *Nano House: Innovations for Small Dwellings* (London: Thames & Hudson, 2011), 90-93.
27. Image: Phyllis Richardson, *Nano House: Innovations for Small Dwellings* (London: Thames & Hudson, 2011), 56.'
28. Paul Hekkert and Elvin Karana, "Designing Material Experience," in *Materials Experience: Fundamentals of Materials and Design*, ed. Elvin Karana, Owain Pedgley, and Valentina Rognoli (Oxford: Elsevier, 2014), 9.

29. "Hypar Pavilion at Lincoln Center," Diller Scofidio + Renfro, <http://www.dsrny.com/#/projects/lincoln-center-hypar>.
30. Elizabeth Diller and Ricardo Scofidio, "Architecture as a Habitable Medium," in *Disappearing Architecture: From Real to Virtual to Quantum*, eds. Georg Flachbart and Peter Weibel (Basel: Springer Science & Business Media, 2005), 188-9.
31. Image: Elizabeth Diller and Ricardo Scofidio, "Architecture as a Habitable Medium," 187.
32. Pieter Desmet and Rick Schifferstein, *From Floating Wheelchairs to Mobile Car Parks: A Collection of 35 Experience-Driven Design Projects*, (The Hague: Eleven International Publishing, 2011), 5.
33. The Carpark Project is a masters degree graduation project from the Industrial Design Engineering program at Delft University of Technology in 2008.
34. Jan-Geert Munneke, "The Carpark Project," in ed. Pieter Desmet and Rick Schifferstein, *From Floating Wheelchairs to Mobile Car Parks: A Collection of 35 Experience-Driven Design Projects*, (The Hague: Eleven International Publishing, 2011), 89.
35. "Olafur Eliasson: Riverbed," Louisiana Museum of Modern Art, (Aug 2014), <http://en.louisiana.dk/exhibition/olafur-eliasson>.
36. Bruno, *Surface*, 19.
37. The Obliteration Room has been replicated in many places around the world. It was most recently displayed in 2014 at the Gallery of Modern Art in Queensland, Australia.
38. "The Obliteration Room," Yayoi Kusama: Look Now, See Forever, (2011), [http://interactive.qag.qld.gov.au/looknowseeforever/works/obliteration\\_room/](http://interactive.qag.qld.gov.au/looknowseeforever/works/obliteration_room/).
39. Lavin, *Kissing Architecture*, 26.
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41. Shinkle, "Corporealis Ergo Sum," 30.
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