TRANSCENDENCE: DISSOLVING LIMITATIONS IN THE ART ENVIRONMENT

A PROPOSAL ON INTEGRATING NEW USERS INTO THE TRADITIONAL MUSEUM MODEL.

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Barriers have become a growing problem within art environments of contemporary society. Attempts to fight this increasing issue have been hindered due to a general misunderstanding of the problem at hand. Individuals of younger generations are not simply doing things differently but perceiving them differently as well. Because of this disconnect between user and design the traditional art space has become unapproachable while the static interior is often difficult for many to digest. As a result many individuals find themselves walking through the cultural interior without actually absorbing information, while some don’t find their way inside the space at all.

Through understanding the physical and mental barriers put in place it is my mission to rethink this timeless atmosphere and adapt it to fit the learning styles of today’s visitor. If surroundings can alter the way we perceive, then they can develop the way we learn. I propose that functional technology fitted to users’ needs and Interaction hubs that promote collaboration can be used in the cultural arts interior to enhance the education experience. With this understanding, how can these designs go beyond aesthetic taste and become academic strategy? Through investigation of barriers of younger user groups and various learning styles the museum environment can adapt to new requirements by adding aspects of the art center model to pull visitors in. By creating an interior that communicates with visitors instead of speaking for itself, there is an ongoing opportunity for designers to improve the community of the Arts Environment and the façade of education.
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THESIS STATEMENT

In the evolving media induced community the increase of instant gratification has caused a lull in intellectual curiosity in the emerging generation. This stand still in educational development has begun to hinder human growth. It is my belief that the art center model can be used as a catalyst to provoke creativity, remove both physical and mental limitations, and allow visitors to flow seamlessly into the museum space.
I. INTRODUCTION

The art environment has been a keystone of culture and luxury throughout its time in society. Not only does it offer a point of view other than our own but it provides a plethora of knowledge to those that are able to view exhibit contents. In recent years older models of operation have begun to lull in efficiency. This fact exists not because these methods are insignificant but because there is a new user within the interior space. Over the years the social shift in mind has left a generational gap in the museum realm that reinforces a great stigma placed upon the generation of millennials. In efforts to break these built barriers some design has pulled a 180 by trying to change the museum environment in such a way that tradition is lost. If we take the time to understand that it is not the content that needs to change but the method of delivery then a stronger form can emerge. Perhaps it is not that the millennials only learn things differently, but they perceive things differently as well. The technology induced individuals that grew up by multitasking have new needs that must be adhered to in spatial form.

This project provides a great opportunity to efficiently evolve educational design instead of rapidly changing it. There is a new necessity in construction that should function in unison with the needs of many users, not only one. Therefore creating a connection between user and content. Implanting new technological requirements into the museum arena does not mean that the traditional design has to be forgotten. Instead
there can be a unity. Now more than ever, society needs to pull down barriers of the built environment and build bridges that can ease users of both models into the world of the other. By preserving historical grandeur and allowing technology to translate information into experience a portal between these two worlds can be created.

The proposed thesis takes the change of learning style due to media into consideration and formulates solutions for issues caused by technological development. In order to reinforce the encouraging and stimulating mood set in the art atmosphere a balance between juxtaposing ideologies must be found. The mind can continue to be developed through a program that functions based upon the communication with the audience.

II. THEORETICAL FRAMEWORK

Historical Review

Exhibitions are not new to the world, on the contrary gallery design has been used as a catalyst for information and display for centuries even if it did not hold the same title.

At the time singular design models had a unifying purpose, display. Most, if not all, of the art and design presented was new to the public. Everything sparked curiosity
because everything either came from a foreign land or was constructed out of a new material. Many of the cons of contemporary society lie in its pros. By exposing the worlds wonders by the touch of a screen items appear closer while they are further away than ever. We are able to see everything while experiencing none of it. Here lies the key to modern design success, creating an experience instead of a mere aesthetic. In order to reach these goals the user must be more than understood but their needs, interests, and knowledge base must be anticipated. The crucial step in this design process does not exist in throwing out all reference to the old and replacing it with the new but in the ability to analyze the majesty the resided in historic footprints and bring the same element of surprise and fantasy into a new age. Developing this understanding was a large part of the thesis process. By studying what the environment lacks and implanting it with a method we can trigger the same response in a new user.

User Typology- Millennials

In recent years a new generation has emerged and is starting to pick up where their predecessors left off. This specific group of the populace born between 1980 and the mid 2000’s, represented a third of the U.S. population in 2013 (The Council of Economic Advisors 2014). The generation grew up with a contrasting outlook that was formed by a combination of gold stars granted just for showing up, an urgency for choosing and fighting for a career, and the notion, formed during a period of economic hindrance, that
the individual is more important than the whole. Coupled with blossoming media and instant messenger we have a group that is galaxies away from the mindset of citizens not even two decades ago. Analyzing this profile provides the art space with the ability to “better reach current and potential visitors by more efficiently meeting their needs and requirements” “NEMO Audience Development”.

“Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.” – Albert Einstein

We can’t treat visitors the way we always have because they don’t function the same. This stands to reason why the art-scape has become seemingly less efficient in education even though visitors numbers continue to climb. When applying educational landscapes to projects a general model must be discarded and replaced by one that suits user intellectual makeup. But what does this mean in terms of the Millennial? In October of 2014, the Council of Economic Advisors released a detailed report on Millennials that outlines key characteristics that are present in the society that will one day lead this country. In many cases, these traits can assist in the understanding of their interaction with space and expectations in a creative environment.

This report outlines four facts that are connected to what millennials need to effectively function in space. Firstly, “Fact 1: Millennials are now the largest, most diverse population in the U.S. Population” (The Council of Economic Advisors 2014). The great
level of diversity reinforces the earlier claim that this populace cannot be taught in one plane of interpretation. The report shows that the diversity describes a variety of different traits including, an age range the envelopes 24 years and a strong foreign presence that encompasses about 15% of the group. The cultural assortment creates an influx in language and an unpredictable knowledge base (The Council of Economic Advisors 2014). The complex skew of familiarity makes it difficult to narrow the scope in artistic appeal, because it is impossible to gauge and record everything that these users have seen. Yet, with an unwavering attendance recorded in American Museums that brings in the entire spectrum of Millennials it can be concluded that it is not the aesthetic that needs to be altered but the experience (American Alliance of Museums, Museum Facts). This is where Fact 2 comes into play.

While the initial information explores the user makeup it is facts two through four that outline how they invest their time and energy. “Fact 2: Millennials have been shaped by technology” (The Council of Economic Advisors 2014, Pg 7). It is a pretty clear statement that most of the under 40 crowd attach themselves to their devices like life support. Yet, this is not a downfall necessarily when it is used in connection with the notion that this is how they were raised. In a dual growth pattern, Millennials and technology have advanced greatly in the past few decades. These innovations have allowed users to be at the forefront of technological comprehension. It is a part of daily
life thus it should be embraced within special design and not ignored. However, this does not conclude that computers should replace the gallery as a whole.

As pointed out in the next instance, while users are connected to machinery they also long for physical connection. “Fact 3: Millennials value community, family, and creativity in their work” (The Council of Economic Advisors 2014). The upside that has been generated by the high level of media is that users have greater ideals for what they can do in their lives and in the lives of others. The existing “Community-mindedness” highlights an influx in societal contribution and a connection to family as a high priority (The Council of Economic Advisors 2014, Pg 9). Growing up there was a large significance at home and in school to do for those that could not do for themselves. Students planted trees, recycled, and donated to shelters. This care for surroundings was equaled by a care for the self. Lastly, “Fact 4: Millennials have invested more in human capital than previous generations” (The Council of Economic Advisors 2014). Increasing college and continued education study is only a fraction of the effort put into evolving human capital (The Council of Economic Advisors 2014, Pg 12). Alongside education, Millennials have spent time developing hobbies, skillsets, social sharpness, and cultural wisdom.
Focal Issues – Personal Barriers

Audience analysis, while constructive, illustrates a guideline for issues that must be solved within the interior space. Because the museum model offers a strict presentation that rarely varies, the specific factors that have allowed the focal user group to flourish also come with its own barriers to break. Figure 3 demonstrates the connection between the core thesis issues/user characteristics and how they hinder users in the environment.

![Diagram of Focal Issues – Personal Barriers](image)

Figure 1. Analysis of Core Issues Identified Between User and Art Space
After a series of informal interviews and observations it became clear that one of the key problems in the museum space is getting people in, without a school requirement, and getting them to fully engage with the art that surrounds them. Granted there are literal barriers that exist in space from security to laser sensors, and the well known food restrictions. Many fail to focus upon the mental barriers that can deter the user in an artistic atmosphere. In the culturally rich Nations Capital, the location of the thesis site, there are an abundance of museums and galleries established that welcome users free of charge. Yet, despite this general knowledge many residents do not take advantage of the gifts at their door. What stops this process? Informal interviews with peers revealed that some feel these establishments will always be here so they feel no general rush, museums are literally taken for granted because the structure and items within them are static and unchanging. Further conversations revealed that some students feel that there is a certain prestige that comes with the museum territory, one that they feel uncomfortable entering if they don’t find themselves visually presentable or with a group. This disconnect with space and self urges visitors to stay within their familiar digital world, where everything is under their control. If that isn’t enough, media also encourages the concept of instant gratification that formulates symptoms of irritation or lack of interest when impulsive needs aren’t met. This leads the user to situations that can more quickly fulfil short term goals. With innovation evolving rapidly there is very little time to investigate interests because many are running to keep up with new trends.
Primary Goals – Thesis Significance

In order for the Millennial to invest time the future of the art space can benefit by striving to create a less intimidating entrance portal. It is necessary to provide flexible interaction in a structured environment that makes the user feel encouraged, stimulated, and accepted. Moving focus away from removing the barriers to building bridges allows the opportunity to transport the millennial into the traditional space is a way that nurtures their needs while retaining cultural monument.

In efforts to further understand user interest, investigation was placed upon how the populace learns. based upon data collected and organized by the Bureau of Labor Statistics on societal interests, figure illustrates how individuals spend the hours of their day and which activities hold the most precedence.
What is extremely compelling about this information is that Television, Social Media, and Virtual activity is a prominent action in the lives of those within the millennial age range. What is even more captivating is that the likelihood of these activities continues to most likely consume the day of older individuals, well outside of the millennial range, while the likelihood of educational influence falls rapidly. This tells us that there are specific tools that can be used as an educational benefactor within the traditional museum space. Even more deeply this expresses a great preference in engaging activities and an acute likelihood of educational and reading exercises. So there is a greater need for all gallery visitors to be able to learn in a new atmosphere tailored to fit them.

During the breakdown of user interest became apparent that technology should be merged with nonconventional learning styles to provide an effective model for the modern bridge into the museum. The proposed plan would allow users to take charge in their environment and their learning path while also moving them organically throughout the space and into the traditional museum seamlessly. The goal here is to pull the subconscious into making choices based upon curiosity provoked by different learning styles. By putting this method in place users will not only come to understand the art within the complex but themselves, possibly without realizing it at all. In the midst of data provided by VARK learning style surveys were given an additional layer of data
that assessed the outcome if people were given the option to choose more than one learning preference.

Figure 3. Surveyed Learning Styles

Figure 5. Illustrates this study by VARK and shows that many users do indeed learn through sight but over 35% of them learn through other methods that include Aural, Reading and Writing, and Kinesthetic. In theory if visitors can be given the opportunity to learn through tactile and audio styles, two variables lost within the traditional museum model, then they can digest information more effectively. Given the chance to choose without boundary over half of the surveyed population feel comfortable learning through 2 or more methods. This means that over half of the population cannot learn efficiently through the model currently in place. With this knowledge it stands to reason that in order to teach proficiently the environmental instructor must translate the
lesson plan into other planes of learning. We can’t preserve a historical landmark if we continuously want to alter its contents. Instead let’s alter perspective and speak in different languages that users can comprehend.

III. ENVIRONMENTAL EXPANSION

Observational Data and Social Trends

Orchestrating this thesis project began in subconscious observation. While walking galleries in Washington, DC it became clear that many millennials would visit museums but not engage within them. Either visitors were either taken to an exhibit by a parent or school group; it became a general question of, when did the disconnection happen? When did museums become a part of a curriculum and not a stage for exploration?

The difference within space is that while the world, technology, and humans have evolved the art museum setting has not. It has become an unapproachable space that makes users feel a need to be quiet. If beauty is in the eye of the beholder then shouldn’t there be various ways to present art? The proposed project seeks to comprehend what was missing in educational development of users and insert those aspects as a living bridge between two methods of understanding. The grip of social connection and technology
spans across several generational groups, as shown in figure 4, in order for the built environment to meet these new needs it must not change, it must evolve.

**Programming and Planning**

The program seeks to find less intimidating art environments and inject them with interactive teaching techniques that call upon various learning styles to create an education rich environment. In order to create a functional space to combat these built barriers designers are responsible, not only for understanding their users needs, but anticipating them as well. The group of millennials is quite interesting because they hold a wide range of ages that requires new teaching methods for both children and adults. An article by Deb Peterson suggests that “the teacher of adults has a different job”. A statement that is quite factual. As stated earlier, millennials invest in community, family, and human capital but this is not without reason (The Council of Economic Advisors 2014). Adult learners understand why something is important or important to know which means that an environment should be more nurturing than not (Peterson 2014). When we make the conscious choice to take part in something we are automatically making a part of the self vulnerable while simultaneously allowing it to become empowered. This is because we are revealing something that we hold dear. To this esteem it is drastically important that they have the ability to learn their own way, and if they do not know their path, they have the opportunity to find it (Peterson 2014). The barrier that
exists for millennials and the museum space is that of social generalization and single track education. As an effect there are multiple interests and preferences funneled into a single curriculum, one that can be harmful to the majority of its users. With the millennial user this misunderstanding is also backed by their saturation in technology, so walking into the static walls of a museum can be discouraging because it is unfamiliar (The Council of Economic Advisors 2014). This plan of action incorporates social and individual learning opportunities and education portals that help ease the transition into the traditional museum and vice versa. This method would allow all users to take part in a positive experience without receiving a culture shock upon entry.

Providing a model that fulfills millennial needs while respecting traditional practices requires a merger as opposed to a clean slate. Figure 6 illustrates the combination of two focal models, the art museum and the art center that could aid in the user experience in the art space.

Figure 4. Program Generation Venn Diagram
Taking this design into consideration users can feel accepted and encouraged by a relaxed art center as well as stimulated by the exhibits surrounding them.

The thesis program requires activity areas prompt the millennials to not only view knowledge but to communicate with it. Thus providing a learning opportunity and the access of two learning styles that are absent in the traditional museum model.

By looking into research resources and varied case studies the program and implementation methods is able to evolve to suit the millennial user group as well as a broad range of museum visitors. The figurative hypothesis is that new users reach information differently and thus they must be presented information in a way that they are able to comprehend through familiar devices. By structuring flexible interaction in a structured space users not only navigate museum galleries effortlessly but they can absorb knowledge in a way that is tailored to the individual.

In a diagramed view of the proposed program in figure 13, spaces are organized through space requirements, flexibility, and necessary adjacency. Given that comfort is often generated by familiarity the majority of the static areas are private and support spaces. The public areas that remain stationary are given this effect to welcome visitors more easily. Although interaction should be surprising the environment should feel
secure. All flexible spaces are used to promote high levels of interaction, social and individual.

Figure 5. Program Analysis

These learning structured environments are built within all four Art Center floors that promoted in strategies that fit individual floor focus. To continually push circulation into the surrounding Portrait Galleries programmatic gateways are necessary in order for users to feel at ease with the displayed content, generate personal connection with content, and ease the transition from one model to another. As users flow upward in the space the interaction begins to shift from individual development areas to social interaction zones. Providing private areas encourages users to reflect upon experience and step away from a stimulating atmosphere so that understanding of the built environment can take place. Similarly social areas reinforce reflection through peer connection thus providing outside perspective that may further trigger user curiosity. The design intent is to provide the experiences many users long for through the touch of a
screen. By providing this wanted experience users will not feel the need to engage their devices unless it is to view or share gallery content.

**Interactive Design: Learning Landscapes**

"...the practice of interaction design is grounded in an understanding of real users - their goals, tasks, experiences, needs, and wants. Approaching design from a user-centered perspective...” (Maier 2009)

The interactive design called upon in the thesis program is based upon needs generated by user requirements. It is more than simply a task of bringing users into the gallery but one of holding their interest in a way that encourages them to explore freely. Interaction, as well as experience design, are key elements to the project because they are outfitted to facilitate engagement between users and the environment (Maier 2009). While there is a distinct difference between design methods, both are crucial to the thesis program because they allow for learning to be experimental for each user. Experimental learning gets users involved in their own learning and thus allows them to invest in themselves (Peterson 2014). This is when design becomes more than an aesthetic but an experience, a tangible collaboration that users can walk away with.

The first of two Interactive Learning Landscapes is designed to create indoor stargazing and exploration, an activity that is almost impossible within large cities. To make the user feel the calm of this activity within an interior environment multi user
touch screens will be used to create an interstellar observatory that spans the ceiling and interior walls. Users will be able to guide through the galaxy with the touch of a hand, locating formations and their history, and visiting galaxy views across the world. The calm mood will be pieced together with furniture that reflects outdoors and blends into the room as rocks blend into a mountain side.

The second interactive space that calls for more tactile collaboration is the space designed to highlight the musical aspects of the focal exhibition. By translating the horizontal into 3D planes, horizontally, vertically, and diagonally. This enables visitors to play musical cords as the touch different surfaces, be it the floor or bars extending from the ceiling.

In addition to the temporary interactive landscapes, the program calls for a permanent activity area that incorporates traditional items from the surrounding galleries in a virtual method. In this programmatic bridge user interest is triggered by creating an emotional connection to the plethora of history within the gallery. Now they are not only communicating with the works but finding connection on a personal level. This space consists of bringing historic portraits closer to home by allowing visitors to insert themselves into the portraits within the gallery after a short series of questions analyses what areas of art interest or lifestyle may align closely with their own. By creating their own portrait in the blink of an eye, or “photo-bombing” famous portraiture history does not seem so detached from contemporary reality. As a digital result, a tour sequence is
created noting other Portrait Gallery exhibits that contain the same interests for a personalized exploration tailored to fit different users.

Modern museum visitors seek experience, something that they can share, that makes them put their devices down. That is what this program wishes to provide. Human habitat has always had the ability to nurture certain aspects of human character and in some cases the existing gallery setting. The proposed permanent activity area for the National Portrait Gallery Given the knowledge of education and tools of interior design, creates learning landscapes that can effectively nurture visitors in a fashion that does not hinder growth but encourages it.

“It’s like this...All your life you’re yellow. Then one day you brush up against something blue, the barest touch, and voila, the rest of your life you’re green.”

— Tess Callahan

**Site Selection – National Portrait Gallery, Washington, DC**

The chosen site for the thesis project is the National Portrait Gallery in Washington, DC, a focal national landmark and the epitome of the traditional museum, shown in figure 7. There is a long history revolving around the National Portrait Gallery of DC, starting from its birth place in a lot reserved on the city plan by Pierre L’Enfant (National Portrait Gallery). This lot evolved over the years to hold some of the most valuable items in U.S. history. From the construction of the southern wing in 1936 the
site has held a Patent Office and The National Gallery, on the 3rd floor (National Portrait Gallery). After its transition to the Smithsonian in 1958 the building became the National Portrait Galleries and American Art Museum, galleries that have gained admiration vastly over the years (National Portrait Gallery).

Figure 6 National Portrait Gallery, Washington, DC

In recent years the museum has grown in popularity and design with the creation of the Kogod Courtyard, shown in figure 8. “The enclosed courtyard with its elegant glass canopy designed by world-renowned architects Foster + Partners provides a distinctive, contemporary accent to the museums' Greek Revival building” (National Portrait Gallery). In just the last few years since the completion of its renovation, visitor numbers have moved from 786,000 in 2007 to over 1.1 million in 2013 (National Portrait Gallery).
Gallery). The design used to transform the interior courtyard into a versatile atrium space has become a central space that draws many gallery visitors for leisure activities and performance art gatherings. However, despite the large crowds drawn here, observations revealed that many millennials visit the atrium space without venturing into the surrounding galleries. This presents a great opportunity to merge the atmospheres of old and new.

Visitor numbers tracked in the past year confirms the presence of millennials in the gallery space. Figure 9 reveals that the majority of individuals in Smithsonian Museums are teenagers and adults. Additionally, a survey given a the National Portrait Gallery shows that the most popular exhibits are those that users can relate to due to experience or pop culture relevance (National Portrait Gallery).
Figure 8. Smithsonian Visitor Age Range

The prerequisite program requires a space with traditional footprints, in a central city location. The National Portrait Gallery provides this setting due to the facts that it houses some of the most landmarked imagery of U.S. history and it is located in an area that is a millennial hotspot. The Kogod courtyard, allowing access to both wings of the building, creates a portal for old and new models to merge. However, with the full height of the building exposed there are three levels of space that can benefit from this built space. Design fitted to the interests of millennial users can draw users into exhibition spaces and filter them into the surrounding building. By structuring an art center with organized circulation into a third of the Kogod Courtyard bridges between museum models can be built while preserving the structure that currently stands.
IV. CONCEPT DEVELOPMENT

Function Through Concept

Design development often grows from a core of understanding. A foundation that can push knowledge through programing and form. In order for this project to translate the program of breaking mental barriers it was necessary to explore what that means in space and apply that grand gesture to the overall design. What does it mean to dissolve something? To pull away at material until there is a universal transparency. That, I soon found would be where this project could make it or break it. That is where millennial transcendence would reside.

Technological Epicenter

The first phase of circulation came from understanding the necessary adjacency as users moved from the museum and into the art center. After looking into connections within cities, transit, and the human body a similar system arose to the surface. Generally these systems revolve around a central core that radiates life outward. This means that the programed intersections between Gallery and Art Center, and Art Center and the surrounding area are vital and should work seamlessly to pump life through the building just as the heart pumps blood throughout the body. If the implanted Art Center could mirror this functionality then it would be possible to increase educational impact because millennial flow could sprout from a technological nucleus and into the surrounding
galleries. During the study of in house tours through the gallery the general notion began with historical precedence and often concluded with special exhibitions or gallery highlights. However, many millennials are not wired for this form of procession. Due to the impacts of media, journey is often overlooked because many individuals want to reach the pinnacle experience. Most visitors want to reach that awe-inspiring view which then allows interest to form around the how’s and whys. With the addition of the Technological Art Center, millennials are prompted to travel through the gallery because they are presented with content in a form that speaks directly to them and integrates them slowly into the traditional form. Therefore, positively impacting circulation.

Strategizing horizontal hierarchy was generated by determining which aspects of the program were mental bridges and which were purely a part of the contemporary museum model. Bridges in this context can be defined as a portal that assists in the transportation between new and old. More specifically, this bridge uses technology to see traditional art in a new way. Therefore, setting the stage for more interactive experience areas.

Figure 9. Technological Epicenter Building Section
In Figure 1, the building section shows users progressing to and away from the centers core. These areas on each floor set the stage for the overall experience and focus on circulating user groups from the core into The Natural Portrait gallery.

Interaction Design and Experience Design are key figures within this thesis project. Since their developments in educational spaces the museum atmosphere has changed dramatically. Society is constantly in the shift between new and old, and often this shift comes as a question of either/or, when design advancement can most benefit from using a mixture of both perspectives. The goal is to not erase tradition but to learn from it and guide new users into its embrace. After learning more about the traditional model it was vital to take in information from the current model as well. By exploring both methods of thinking and where each may lack in communication this thesis project was able to strategize where bridges could be made.

Interactive Design got its start in the last few decades and since then it has advanced to engage users in numerous situations. A key case study for this project presented itself in Gallery One at the Cleveland Art Museum. The gallery is organized through a mixture of art and technology to encourage the user to view the permanent collection (Cleveland Art). The success of the museum relies on learnability. “Scissors are designed in such a way that someone unfamiliar with them should understand which end is for grasping and which end is for cutting. And why shouldn’t they be? The best industrial/interaction designs are those that speak for themselves; in which as the saying
goes form follows function.” (Maier 2009) This is exactly how Gallery One became so successful because it understands how individuals works and allows devices within the museum to become an extension of themselves. In this respect users are given the ability to create guided tours on their devices and investigate the collection through a 40-foot touch screen wall that displays the collections 4,100 items (Cleveland Art).

![Diagram of interaction and data flow in Gallery One](image)

Figure 10. Case Study One: Gallery One; Data Flow Chart

As figure 10 illustrates the data transmission of the gallery exists to connect the collection to the users through familiar technology. The link is strong because technology on this scale is few and far between and generates a constant connection back to the traditional collection. By taking this into consideration the Technological epicenter can be used in
the same fashion to generate connection on various levels and numerous forms to reach a wide range of individuals.

**Controlled Interaction – Pixilation**

Creating programmatic pixels, if you will, allowed for the arrangement of schematics that were not hindered by the confines of four walls. Instead it allows for a new space to be created within the National Portrait Gallery that is secured and connected to the whole by 4 preexisting levels. Organization of the program came in the effort to understand activity movement in the surrounding museum. From observational study it was found that visitors mostly reside on the first and second floors, with numbers dwindling as levels grew. The third and fourth floor levels, while containing the most modern art was less busy that the floor preceding them. The vertical language in the art center sought to counter this shift by creating a programmatic movement from individual to social interactive space. By placing a social destination on the top floor, similar to the interior Kogod Courtyard, visitors may be motivated to travel throughout all levels instead of visiting one or two. This transcendence of limitation where the visitor can interact with self and then engage with others allows for more transparency as the user moves upward.

Yet, what is this transparency and how can aesthetic choices reinforce the program? Dissolving, in traditional terms is represented in the form of glass, within the
media age, often comes in the form of pixels. These modular bits of information building upon one another to form a clear image. To more deeply analyze the concept, it must be understood that the structural fabric of pixilation does not suggest the loss of information, but the opportunity to gaze upon its infrastructure more efficiently. When magnified our contemporary world is simply a series of pixels arranged to communicate a message. By taking that approach to the Technological Art Center these pixels can be used to read between the lines of then and now, traditional and modern and promote a gradual shift from one level of understanding to the next so that users of either model can flow seamlessly between the two.

After the general mass was formed it them became a question of how do visitors interact with it. These portals in and out of the art center would be used to set the tone for the overall design. Transparency in design has often been used as a mechanism to merge space. In this instance it is also used as a vehicle for visual communication and aesthetic allure. This guideline allowed for light and glass to pool in a central location, guiding visitors the epicenter and interactive hotspots.

At the same time this transparency allows users to capture a glimpse of activity on all sides to beckon them into the art center structure. This direction was used to formulate the representation of the theoretical bridge that is formed through sight, the first step in the process of generating curiosity and stimulating movement.
Although the interior is the focal point of contact, initial magnetism has to happen beyond that point by pulling in visitors off of the street and within the Kogod Courtyard, two areas that generate large numbers of millennials. The ideal façade for visitor interaction is the closed 7th street entrance. Funneling users through a primary entrance during the day and for special events at night allows for a controlled flow as well as a new primary entrance.

In other examples of interior design a connection is built for users in social and individual interactions. User environments began to hit highpoints within the design of global Google offices. These designs while beautiful were built to engage the user in productivity and creativity. These specific designs are noteworthy because many individuals, especially millennials are introverted due to personality traits and the technology that is meant to keep us so connected. The focal Google office is located in Tel Aviv designed by Swiss Design Team Camenzind Evolution in collaboration with Israeli Design Teams Setter Architects and Studio Yaron Tal (Arch Daily 2013). The purpose and precedence of this case study is to understand communication landscapes in the developed work environment (Arch Daily 2013). The offices are designed with clear separation of collaborative social areas and private work desks (Arch Daily 2013). A look inside the offices in Figure 11 and 12 display the flexible work areas that allow employees to work efficiently in ways that best suit different objectives and preferences.
This study allowed me to further understand the existing methodology of engaging users with the built environment. Considering these choices as well as millennial preference provides direct insight into successful design. By implementing like choices in situations with the same goal this thesis project can learn from the stepping stones placed by those before it and create solutions that continue to aid in the advancement of the art environment and interior space.

**Material Familiarity**

Environmental construction pulled from inspiration of the existing Portrait Gallery. Earlier I mentioned the notion of forming three types of connections in order to make a bridge concrete; A personal connection that is generated by the program; A physical connection generated by program placement and aesthetic mirroring; and a mental connection fused by familiarity. This mental link is the most vital because it resides in literal and figurative space. Incorporating familiar technology encourages the
millennial and allows them to feel accepted. Once an individual feels accepted they feel comfort in exploration which provokes curiosity. Material familiarity is used to reinforce the same freedom in movement. By incorporating aspects of material from the existing museum there is a tie to the environment, therefore, less hesitation to venture outside of the Art Center boundary. The National Portrait Gallery was originally built in 3 phases which resulted in the existence of numerous natural stones united within the foundation. Taking the rich traditional materials into the art center and infusing them with the acquainted geometric glass patterning covering the Kogod Courtyard extends structural relationship across the irregular interior form. By taking the familiar Glass roof of the Kogod Courtyard and abstracting it to fit the concept of pixilation, program reinforcement can come into existence. The two forms of transparency needed for pixilation and program emersion already exist within this epic space. Using the geometric glass as transparency and the structural beams as cutout partitions the thesis project is able to become whole.

V. DESIGN PROPOSAL

The approach of this project is fueled by personal interaction within the museum and an interest in societal growth. By looking into research resources and varied case studies
the program and implementation methods is able to evolve to suit the millennial user
group as well as a broad range of museum visitors. The figurative hypothesis is that new
users reach information differently and thus they must be presented information in a way
that they are able to comprehend through familiar devices. By structuring flexible
interaction in a structured space users not only navigate museum galleries effortlessly but
they can build a knowledge base upon content and self.

Level 1 - Entry

The entry level within the Technological Art Center is vital to the user experience.
The focus of this level is to generate a connection between user and the program. This
link is used to navigate and propel the user through a path that is fit to their interests and
possible curiosities. The epicenter on this floor is the central circulation desk because of
its key placement in the walkway intersection. Here visitors from the surrounding
museum, the atrium, and the street are welcomed and able to structure their museum
trip. The newly opened entrance on 7th street was chosen specifically because of the
millennial concentration in downtown DC, opening up the view and making a
transparent entrance amongst the traditional façade allows users to see that there is a new
program put into place. Creating curiosity through the peak inside props investigation
into the surrounding space. Along with vital program spaces the main two destinations
are the Collection Browser and Selfie Hub. By implementing use of all four learning styles users are able to create their museum experience in one of two ways. The Collection Brower, seen in figure 15, is a digital display of all current National Portrait Gallery exhibition pieces. This allows users to generate their own pathway throughout the collection by viewing contents on an interactive media wall with multi-site collaboration and upon tablet kiosks. Here users are able to drag and drop exhibit pieces to create their own tour that can my synced to personal devices. The Selfie Hub, in figure 16, generates a tour for users through a short quiz and pinpointing museum destinations that they may find intriguing. To further connect users personally to the gallery content visitors are able to create digital art work by creating a selfie or photobombing artwork within their structured tour. Here the user becomes the art and directs the user to the original artwork within the gallery.

Figure 13. Entry Level Interaction – Collection Browser & Figure 14. Entry Level Interaction – Selfie Hub
Level 2 – Interactive Area

The second level, the interactive area focuses on producing a connection between the user and the artwork. Here individual curiosity in traditional work is sparked through technological translation. The enclosed yet open areas allow for private exploration that is helped along by hard floors that are used as a device to keep the visitor from remaining in one area for too long. As users enter from the 7th street entry or from the National Portrait Gallery hallways they are first met with the programmatic immersion of the Selfie Gallery, figure 15.

Figure 15. Interactive Level Interaction – Selfie Gallery

This introductory area is vital because it eases users into the Interactive Level and out into the museum by seeing portraiture in a modern fashion. By using Virtual Transparent Glass panels, walls are able to melt away and pull the eye to peers as artwork.

To progress the application of multiple learning styles the design calls for exhibition spaces that pull inspiration from a current exhibit within the National Portrait Gallery. A current exhibit, “Star” Gazing features portraits of influential individuals in
music and media. By taking this into consideration the second level design implemented a new media exhibition on astronomy, Asterismos by Nacho Rodriguez, and two interactive areas with tactile and auditory features created to enhance the exhibit content. While looking into the “Star” Gazing exhibit this thesis sought to pull design direction from astronomy and music to pull users into education through tactile activity. The first interactive area, figure 16, looks into the abstraction of musical notes on a piano, turning the entire room into a musical instrument. Vertical touch sensitive sound poles stemming from the double height ceiling and touch sensors that line the floor come together to surround visitors in music. The second interactive area, figure 17, takes on an activity often lost within the city environment, literal stargazing. A floor to ceiling curved 4k display panel with multi-site touch sensors allows millennials to explore their galaxy as well as the night sky in other countries. The focus is placed on enhancing the quality of the users emotional engagement.

Figure 16. Interactive Level Interaction – Interactive Area 1 & Figure 17. Interactive Level Interaction – Interactive Area 2
Level 3 – Educational Studios

The third level, the studio area focuses on forming a lasting bond between the user and education. Here visitors don’t only leave with memories but an evolving skillset. The central conference room is the focal point on this level due to the fact that it provides information to help users flow throughout the space. On either side are art studios that explores the creation of portraiture in two different ways. Exhibited in figures 18 and 19, participants can learn to construct portraits through traditional techniques in the Paint Studio, or through contemporary means in the Digital Paint Studio.

Figure 18. Educational Studio- Paint Studio
Once the larger picture was bunkered down it became time to sort out the finer
details of what these individual spaces felt like alone, and in relation to one another. The
method of inserting an open office plan around the gradient of program placement was
driven by the goal of generating collaboration. Within the earlier mentioned case study of
Google Offices this relaxed plan allowed for the creation of multi-functional spaces that
created a community feeling and empowering undertone. One of the largest takeaways in
the study of millennials is the consideration for the creation of more public and private
spaces. The reason these new office structures are so effective is because their stimulation
comes in the form of choice. The freedom of choice for a millennial to experience
interaction on their own terms is vital to success. They recognize what they want, the job
of the interior is to help them figure out how to achieve that goal. Thus creating flexible
experiences in a structural environment. The primary goal is to generate connection. The
formation of transparency in space, by not just allowing the visitor to see where they are
going but to figure out why, sparks more than a physical link but a mental one. For this
design the third level epicenter, the conference room is transparent so that visitors can
not only see information meetings taking place but employee conferences as well. Not
only creating an interest in the provided Art Center content but in possible career paths.
Following the programmatic gradient, and reinforcing private areas the cutout partition
panels used to aesthetically ease visitors into the lower galleries, creates enclosed areas for
the workrooms. This material usage gives a glimpse of activity while still allowing the
workshop participants feel free to explore new techniques.

Level 4 – Social Commons

The fourth and final level, the Social Commons, focuses on the connection forged
through social interaction between user and peers. This level seeks to trigger individual
interest in traditional art and education through the experience of others. Within the
media age we have learned to live vicariously through the stories of others. Using this
weakness as a strength allows the commons level, that could easily become a one stop
shop, to continue to urge users to visit the galleries. Furthering the communication with
art and peers with like interests, the commons level employs technology that brings these
two items together. The Café dining, in figure 20, is comprised of tabletop interfaces
where millennials can order food and explore the gallery virtually. Motivation of
movement has to be organized in a different way on the fourth floor. Because, this level is
meant to provide the most clarity and light transparency, visitors are urged into
collaborative social groups. To stir conversation and bring topics back to home base users
must see and investigate the collection in a way that works with the function of the
commons.

Additionally, after speaking with National Portrait Gallery staff a common
concern was expressed, the need for more event focused space. This prompted the idea,
not only for an observational area on the mezzanine level but for movie and television
streaming projectors, figure 21. Promoting community and social interaction, the
commons uses media projection to generate conversation and break the ice between users
of like interests.

Figure 20. Social Commons – Café/Dining
VI. FINDINGS AND CONCLUSION

This thesis was structured with the intent to begin to bridge generational gaps through programmatic organization and refinement of spatial arrangement. Witnessing an existing discrepancy in the art environment fueled the research and survey that further solidified original beliefs, that there must be some form of convergence between museum models that work to both protect tradition and integrate new users efficiently into space. By placing a transparency to proposed 7th street entrance and within the Kogod Courtyard, figure 22, the program is able to reach beyond interior bounds to generate curiosity in users and urge participation in the Technological Art Center. Furthermore, this work was completed to hopefully act as a contribution to similar research,
contemplation, and interpretation on how program and design can assist in the evolution of the millennial space.

![Kogod Courtyard Transparency Elevation](image)

Figure 22. Kogod Courtyard Transparency Elevation

The results of this thesis study found that there is a large amount of information logged about the millennial user. Due to the large differences in user backgrounds, created by a rush of technological advancements and social change in the past few decades, it is necessary for design to be molded to fit the new needs in built habitats. By embracing the technology that is familiar this project hopes to lead millennials into tradition with a higher level of respect and understanding. Throughout the process the goal of the project has evolved, from creating a physical connection in space to a mental and emotional connection with content as well. When a personal connection can be generated, then the value of content can rise because it is seen in unison with the self. This thesis proposes that if all three levels of connection can be generated, then a link can be
formed between old and new. Because this project has not been tested in the field it is impossible to conclude that this course of action will be successful in mental and physical integration. Perhaps it may be a good place to start. By understanding what is lacking amongst built-in learning styles and studying millennial human behavior, barriers of the art environment can be dissolved in order to trigger curiosity instead of deterring it.


