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Overview

This investigation derived from a personal childhood memory of an autistic boy, living with Autism Spectrum Disorder (ASD). His struggles to communicate and to have people understand him drives this thesis investigation in hopes of better connecting people of all abilities through accessible design. After serving a summer term working at a special needs inclusion camp, there is the exposure to the lack of awareness and communication gap between design and people living with autism. The study develops a series of strategies that strengthen communication between people with and without ASD and ultimately seeks to educate the design profession on how to create more inclusive designs. After seeing, first hand, the struggles that the families go through, financially and socially, it is the aim of this proposal to develop landscape design strategies that help facilitate more sympathetic and connected experiences for everyone.

The ideas and concepts have changed throughout the investigation. Phase 1 started with trying to design something that people with autism spectrum disorder could use as a treatment tool. Phase 2 built upon phase 1 by focusing primarily on raising awareness and connecting people through. Phase 3 is a narrative about a boy living with autism who loves bright sunlight, in order to make people know him and others who are different than us. People are so different but at the same time so similar, by realizing the differences people could know that actually everyone is equal and similar, we all have the rights to be respected and treated well.

This project does not suggest that landscape design will solve developmental disorder issues or that all social inequalities against people with disorders are erased. Instead, it is about facilitating a layering of relationships and a dialogue between people and creating spaces that are seamlessly accessible by all abilities. Through the narrative approach a story about an autistic boy is told and, more deeply, it highlights the differences in aspects that we all have, in which we all see and understand the same world.

Site

The site is at Madison Square Park in Manhattan. It is very necessary to bring out the problem to treat children and especially children with developmental disorders and to provide support for them in the urban environment. As more and more families move out of the city a bad cycle develops and designs are not sympathetic or accommodating for people with disabilities. Design installations about autism in such a context could help to draw people’s attention to the issue.
Phase 1 Investigation
Bridge the gap for autism
Abstract

This thesis seeks to bridge the gap between accessibility and design. Focusing on sensory design experiences for people living with autism, this investigation provides. Autism is a developmental disorder, which has always been misunderstood and therefore not considered in the design process. This research examines strategies for how to accommodate for people living with autism and provides insights into how to make design more inclusive for individuals living with disabilities. Phase 1 explores the history of accessible design and briefly covers the existing strategies in place for inclusive design. Phase 2 further develops the research from the previous phase and examines.

Introduction

Today’s current design and urban planning strategies about autism emphasize creating pure and peaceful places to provide calm and meditative spaces. While necessary to have, it is also important to provide engaging opportunities for people living with autism. This is because in the realm of landscape architecture and design, materiality and the spatial qualities of the project become the tools that need to be employed to help achieve more inclusive spaces and begin to create a sequence for autistic people to feel more included and to breakdown stigmas associated with people living with autism spectrum disorder.

Methods

1. Secondary resource research
2. Medical lectures
3. Precedent study
4. Experiences about sense

Daily life of Le, who is an autistic boy
Timeline

Throughout history, the first documented autism was described as a monster, after a really long time, scientists started to study about it and knew that it is a mental disorder that people were born with. Until 1911, little was understood about autism spectrum disorder. It was not until this time that scientists began to understand the developmental disorder and started to classify it as a psycho-pathological symptom that occurred in the brain. The population of people diagnosed with autism spectrum disorder is rising. This issue should be paid more attention to.
Autism is usually thought of as a childhood disorder, but its costs can be felt well into adulthood. Wages and benefits lost for those with ASD and their caregivers. BUT the cost of lifelong care can be reduced by 2/3 with early diagnosis and intervention.

Only 19.8% of people with disabilities in the U.S. were participating in the labor force — working or seeking work. Of those, only 17.6% were employed.

HIGH FUNCTIONING AUTISM
ASPERGER
TYPICAL AUTISM
ATYPICAL AUTISM
RETT SYNDROME

Social Difficulties

Speech Skill

Obsessive Behaviors

Autism Spectrum and Main Characteristics

People with autism are seeing the world with a broken mirror; it is still the same world, but with multiple angles and directions, and instead of the whole thing, it may be in pieces. Also, the reactions like the reflections are going to different ways.

General Information about Autism

Around 1,500,000 Americans have an autism spectrum disorder.

Boys are 5X more likely to have autism than girls.

44% of students with autism did not finish high school.

Only 10% of people with disabilities in the U.S. were participating in the labor force — working or seeking work.

Of those, only 17.6% were employed.

There is no known cure of autism.

Indirect cost: the cost of lifelong care can be reduced by 2/3 with early diagnosis and interventions.

Direct Medical Care

Direct Non-Medical Care

Indirect Cost: 

Services and benefits lost for those with ASD and their caregivers.

40%

20%

80%

21%

91%

50%

90%

People with autism are seeing the world with a broken mirror, it is still the same world, but with multiple angles and directions, and instead of the whole thing it may be in pieces. Also, the reactions like the reflections are going to different ways.
VISUAL – individuals diagnosed with autism are very sensitive to their surroundings. Thusly, it is critical to think about elements of color, light, and the view during the design process.

COLOR – Soft colors are less stimulating, easy to make people feel relaxing, these colors should be used as the main color of the whole project.

LIGHT – In a certain range it is hard to feel the change, but when the light goes too high or too low people would feel dissatisfied, and at some place; people may be more sensitive than other places.

GUIDE – In a certain range it is hard to feel the change, but when the light goes too high or too low people would feel dissatisfied, and at some place; people may be more sensitive than other places.

SOUND – Children with autism may be sensitive to loud noise. They will feel stressed and uncomfortable in places with lots of noise.

NOISE – Children may be very sensitive about a certain kind of sound, should pay attention on the ribbon noise.

VOLUME – Some autism could be drawn attentions by a loud sound, this always apply to the treatment to draw their attention and then teach if there. Some others are very sensitive about the sound a certain kind or a very slight sound make them feel uncomfortable.

SMELL – Sensitivity to strong smells, such as perfumes and cosmetics can be overwhelming.

Plant – Wild fragrant and soft color plants selection
Throughout history and today, few people understand autism. The first recorded case of autism spectrum disorder was described as a monster. As more studies came out and scientists began to understand that it was a developmental disorder the diagnosis of autism spectrum disorder came into use. Scientists first thought of the cause of ASD as being largely environmental based or due to the disconnection of parents. This was the belief until 1965 when a scientist and father of a child with ASD by rejected the previous beliefs and instead claimed that the cause had to do with the way the brain developed. Bernard Rimland then went on to found the Autism Society, which was the first autism society, dedicated to educating the public about ASD and furthering research in the field. Bernard Rimland then went on to found the Autism Society, which was the first autism society, dedicated to educating the public about ASD and furthering research in the field. However, people now are still misunderstanding the mental disorders and more broadly, mental disabilities. With one in fifty people being diagnosed as being on the autism spectrum, it is critical that policy makers and designers take inclusive design more seriously. The costs associated with treatment and support impact not only the family but also the entire society. There are three aspects could connect with landscape, the first is sense. Landscape visual includes color, light and visual experience. People with ASD often are very sensitive to their surroundings, the color in a place, light intensity, and the visual experience. These are all important design elements to consider. Some strategies in accessible landscape design include using soft colors, which are less stimulating and make it easier for people to feel relaxed. Lighting is another critical component in inclusive design for people with ASD, there is a certain range to feel the change, but when the light goes too high or too low people would feel over-stimulated, and at some place, people may be more sensitive than other places. Visual experience is another important consideration when designing inclusive spaces. Some strategies include developing special landscape elements that create a clear hierarchy of paths and flow of direction to make it easier for individuals with ASD to follow. Children with autism may be sensitive to the loud noise. They will feel stressed and uncomfortable in space with loud noises and may be very sensitive about a certain kind of sound. It is important to pay attention to the indoor noise. Sound can be utilized in the design space as a way to attract people’s attention and to direct people’s experiences. For landscape smell, some of the autism are very sensitive to the smell like perfumes and cosmetics, those smells could make them feel over stimulated, should pay attention on the plants selection to choose mild fragrant and soft color plants selection. Findings + Conclusions Throughout history and today, few people understand autism. The first recorded case of autism spectrum disorder was described as a monster. As more studies came out and scientists began to understand that it was a developmental disorder the diagnosis of autism spectrum disorder came into use. Scientists first thought of the cause of ASD as being largely environmental based or due to the disconnection of parents. This was the belief until 1965 when a scientist and father of a child with ASD by rejected the previous beliefs and instead claimed that the cause had to do with the way the brain developed. 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Sound can be utilized in the design space as a way to attract people’s attention and to direct people’s experiences. For landscape smell, some of the autism are very sensitive to the smell like perfumes and cosmetics, those smells could make them feel over stimulated, should pay attention on the plants selection to choose mild fragrant and soft color plants selection. Assessment This project begins from an important premise: how and by what means can landscape architecture design spaces that are conducive for people who experience the world in different ways? In order to design spaces that create linkages between different people, it should also consider where the similarities and differences are and how they overlap between individuals with autism and those without. Now the outcomes are more documentary than synthetic, what can be used moving forward from all the research is lost. Need to take the project to a richer and more inventive place, remain open to the process, try to figure out how best to implement the elements before have a build landscape in mind. For a project about mental disorders medical solution is like fixing problems, but a poetic solution engages minds and bodies in ways yet unimagined. Narrow down on a generic or a specific way and identify the range of needs for a person with autism spectrum disorder. Develop a method of testing the interventions before beginning to experiment with making physical forms. Not just looking at this as a test about designing for autism, but as a question about spatial and experiential perception in which the difference between the autistics and not autistic begins to illuminate ideas about how we engage with the world.
Phase 2 Projection
Feel the world differently
Abstract
After more researches have done about autism, there are different aspects to help them. Bridge the gap could from two directions, if it is too difficult and risky to let the autism suit the society, maybe there are ways to make other people understand them and treat them well. So the concept is to create a chance to make people realize that autism is just like any other of us, they have their rights and should be accepted.

Introduction
Instead of designing a space for autism which is very tricky and hard to fit every individuals need, it seems more reasonable to design a place for normal people, from my own understanding of autism after I did all the researches, to make people feel the world differently just like people with autism.

By controlling the phenomenon of a place, people could get a hint that no matter what and how we feel the world, it is still the same world, it’s just people have different perspectives and experiences, from feeling the differences, to realize that we are actually the same. The space would make some people feel odd or uncomfortable, or just an interesting place, but as long as any of them start to think about the difference, then my design works.

Methods
1. Interview
2. Material test
3. Mapping

Every autistic person is different, like isolated islands
Interview of a special educator

She shared some stories about the kids she is taking care of, some prefer to stay at home sitting in the corner while some other boy really enjoy going outside. Some kids like the fireworks but could not stand the loud sound they made, then his parents find a way to take him to the fireworks shows and etc.

Interview of autism parents

It is common for people with autism to have an intellectually focused hobby. About one-third listed music or some other art form (such as theater) as a favorite pursuit and another third enjoyed sports. Only 14 percent said they engaged in a “social” hobby.

Autism is a lifelong situation that cannot be cured, the autistic kids bring pain and worries to their parents but at the same time bring happiness. Parents need to see the bright side of autism and live with them happily. Sometimes because of their appearance and their special behaviors, other people would misunderstand them and treat them differently. But they have the equal rights just like everyone else. Le likes to look directly to the sunlight, wherever he goes he will stare at the sun even when others feel it is too bright. Chang is very sensitive about colors, he remembers places with the memory of color.
When doing more researches from articles, lectures, and interviews, there is a sense how different autistic people are experiencing the same place. Use Times Square as an example, asking them to describe the feelings when they are there to some other crowded places, and found out everyone's feeling is so different.

Some of them only see colors or patterns in a place, while some others may feel the people on the street are doing strange things. Some autistic people feel dizzy when there are too many people around, and someone would be only attracted by the object that they like.

Only see the shape or color of an object
Have a blur view
Attract by the object they are interested in
See things from a different perspective
Imagine things to other things they like
Very sensitive about color
Feel dizzy when crowded
Feel others' behavior are strange
Have so sense of textures
By testing different materials in the same situation, one can get a sense of how they manipulate environmental conditions: transparent materials like different types of glass can change light and shadow; frames can change the pattern of shadows; natural elements like plants and water can change sound; and all materials have different textures to feel.
After testing the materials, it is necessary to consider the relationship between spaces and materials. Here are some typical examples to explore how to use the materials to manipulate different types of spaces.

Site 1: South Manhattan
Industrial area, low access and less people
Goal: enlarge the environmental condition and highlight changes in the environment.

Site 2: Pier 26
Waterside, natural elements, blank space
Goal: feel different layers
Though the initial idea is about how to help people with autism by providing a design for them and went through some research about landscapes for autism. However, the conclusion is that there is no way to test the design and every one is so different about the feeling of a space both autistic and non-autistic individuals. So it seems impossible to really satisfy everyone. As a result, it is necessary to change the point of view and look for other aspects for how to address this issue.

Then, after interviewed some people who are living with autism, knowing that a lot of people still have misunderstandings about autism spectrum disorder. However, during the interviews and base on the research, it is common for people on the spectrum to live on their own if people around know them and treat them well. This is a developmental disorder that individuals are born with and that cannot be cured. Thus it is critical to design spaces that are sympathetic and that accommodate all abilities. Through educational and inclusive spaces the walls of discrimination are broken down and greater empathy is shared between everyone.

Materials and other landscape skills could be used to change the environmental conditions, different materials could change light, sound, tactile experience, and even temperature.

Study about a specific site is needed, know more about the phenomena and find ways to change it. Additionally, it is necessary to narrow down the specific feelings which want to address in design proposal for phase 3.

Assessment
Autism is a hard topic since no one really knows what their world is like. While this project is abstract and while I do not directly experience the discrimination that people with ASD experience, through research, qualitative interviewing, and case studies, a series of typologies will be developed and implemented as landscape interventions that help address the issues.

Firstly, it needs to narrow down the phenomena and the feelings, and then should really start to make something to test it, and to make the manipulation of stimuli more grounded in reality that way, a more robust knowledge of the sites and their conditions is established.

Secondly, it needs to find a medium to make the intervention. Starting with a set of experiments by using the media of landscape to manipulate space — topography, circulation, view and point of view, vegetation, etc.
Phase 3 Projection
Light installations for Le
Abstract

This phase is about grounding the research result into a project, choose a certain person as an example and use landscape design to tell a story about him. Le is a high functioning autistic boy who lives in China. I had a chance to spend sometime with him, and interviewed his mother a lot recently. He really likes bright sunlight and always stares at it, he is very sensitive to light and shadow, when he sees dramatic changes of light and shadow he feels happy and when he feels happy he liked to rock his body.

The site is at Madison Square Park, based on the context that is there are a lot of autism research and schooling institutions are within walking distance of the park. The installations proposed in this study are about light and would provide various light based experiences that would become an interesting place for people of all abilities to enjoy.

Introduction

Abstract the story of Le into 3 parts: enjoyable bright light, changing the shadow, and shinning spot light, which is like the way he rocks his body.

Grounded to the site, the first part use reflective materials work with the angles to make the change of light more dramatic, the second part is using a pack of sticks in the center of the lawn to get a sense about the shadow changing, together with the landform it could be interesting place to play with; the third part located close to the existing burger shop, a wall frame made by pieces of metal which could flow with the wind separated some private spaces, at the same time get a shinning spot which creates more possibilities to the place to be occupied.

Methods

1. Mapping
2. Documentary about light and shadow
3. Phenomena test
Site Selection

Places that autistic people may go for their daily life and the 10 minutes walking distance: like special schools and the pet shop.

Autism institutions sometimes hold exhibitions and events, parents with autistic children and other people who care about autism may go and experience the installations.

Open space network, places that public and visitors share.

The building context, gives a sense of the height and light shadow existing around the site.

Transportations, 5 minutes walking distance from the subway stations.
The context of the site, there are mixed-used buildings about the park, based on the function and the location of autism institutions, there is a possible circulation.

The light and shadow analysis, based on the sun angles of the site, and also considered the surface of the buildings around to get reflections.
During summer noon, the sunlight could go through the buildings, most times the north part of the park is bright.

During winter, there are times the sunlight could go through the streets.
Installations

Based on the specific locations, there are three main installations about light and shadow.

Curved walls of different materials, get bright lights with the angels and reflections.
Light sticks on the lawn, have a changing patterns during day time, and could use as light during night time.

A wall frame made by pieces of metal, separate the spaces and giving a shining spot light.
This phase is focused on creating a space about light to tell a story of an autism boy. In order to manipulate the environmental conditions it is very necessary to study about the site first to know about the specific characteristics of it, Madison Square Park is a popular park in the Modern city context, to study the light and shadow there also need to consider the buildings' surface material.

When located a site relative to autism, there are a lot more things need to be considered like the street conditions and possible circulations. When doing a design in New York City, it seems not a very friendly site for autism, but this project is more for the public to get a chance to feel the lights from different aspects, they do not necessarily need to think about autism when they are occupying the place, it is just a way I trying to tell a story about someone with autism and the way he is experiencing the world.

It is a challenge to transform from the concept about autism to something real and grounded, to design for a certain person and abstract his special behaviors is an easy way to do so, but at the same time it may also lost the connections.

It may be stronger if the site is the backyard of the boy’s home, or just a place to pleased him, when trying to reach so many goals it is very easy to get lost. The concepts about mental health is hard to evaluated, only themselves know the real needs of them, here the project is just trying to do something to help, so it may be more strong if considered as a test.

Assessment
The concept has changed from the phase 1 research outcomes, but still it is not so effective, to design a park for a chosen person is a little bit too narrow, the better way might have been able to make the project a test case in which a designer could learn from his mode of perception.

For now it is more like a jump board from the previous research to do something about light, the flow is not very clear and there need to be more connections showing how and why it ends up to be an installation design. Also, it could be better if there is a mockup model to really test the phenomenas of the site to make it more believable. Also, need to make sure about what the project really wants from this project relative to autism.
Overall Assessment
Final Conclusions

Every individual autism is so different, but they shared some common characteristics, such as the social difficulties, speaking skill problems, and behavioral problems. Each element like a part of a cube, when they are all combined together it build up an autistic person. They are not willing to be isolated, they just need more time to understand and respond. There is a theory called, Broken Mirror, which attempts to describe how an autistic individual’s brain may work. The theory uses a mirror as a metaphor for the brain saying that individuals living without ASD see the world as a whole mirror, allowing them to learn to communicate with others in social situations, as well as how to develop responses to others. While a person with autism sees the world as a broken mirror, they see things but in pieces. People with ASD learn differently and are unable to respond to others in what is perceived as “normal” ways because they lack the ability to read societal cues. This is where a design intervention could help. Developing a scenario to aid in facilitating social interaction that helps both people living with ASD and non-ASD individuals to learn from each other. It is always based on the common elements, could use the sense of landscape to stimulate them in order to apply the treatments. However, the goal of designing something as a treatment for autism is hard to reach, the special educators always spend a lot of time with the autistic kids, though the common treatment is to stimulate them to draw their attention and then teach basic knowledge, it is more important to design a specific treatment based on everyone’s own behaviors. Which means there is no general way could work with the whole group. To achieve the initial desire to help autism, to bridge the gap, it could be driving from both sides, if there is no way to make the autistic people suiting the society with a landscape design, it worth a try to make other people understand the autism world. The strategy used in this project is that choose a certain example and abstract his way seeing the world, analyze the phenomena on the site and tell the story of him by designing some installations. Autism is a mental disorder that someone born with and could not be cured, nowadays medical studies could not solve this problem, neither does designs. The project is just telling a story about one single person, a person like everyone else who is living in this world, it is not necessary to really notice the intervention is about autism, the purpose is just showing another aspect to feel the world, an aspect might be unordinary but interesting.

Final Assessment

Through the whole process, the concept is not very clear, it is important to understand deeply whether the goal here is in making spaces for autistic people (or just people who experience the world differently), or whether it is to teach others to appreciate this kind of difference, or to find in this alternative mode of perception some universal truths that allow regular people to see their world anew. Since the project could not be tested, autism is a special group of people, a designer could not really think like they do. It is same when doing the researches about them, reading articles and listening lectures about them are not enough to understand autistic people, we need to really spend a lot of time with them to know their needs better, the design project might better be a test in which learning from his mode of perception, and try to apply on other people and other places, should have been able to gather evidence, test ideas, and express values that would ultimately have led to the expansion of the project to a larger stage, but now the way the story is told may not have effectively aligned with necessary to do further test the ideas. Design a project relative to mental health is very hard, first of all, the individuals are so different from each other, there is no common rules could use. Secondly, the designer could not imagine their real special needs, the concept is only build up on the researches, so it seems necessary to have the special group of people to engage in the concept development. And it is easier to start with some certain examples then find out how to take what we know of the individual and specific scale and translate that to something which is public and open and for everyone to experience. The lesson should be learned here is that the more precisely outline the task, the more specifically and tightly frame the question of the project the more effectively would be able to take it on. Test the idea and make conclusions about what knowledge is learned from different steps could help to find a way to moving forward.
Bibliography

BOOK:
Kristi Gaines, Angela Bourne, Michelle Pearson, Masha Kleibrink. Designing for Autism Spectrum Disorders, 2016
Naomi Sachs, ASLA and Tara Vincente, ASLA. Outdoor Environments for Children with Autism and Special Needs, Implications VOL. 09 ISSUE 01
Elizabeth Decke. Landscape architect designs toolkit to make cities inclusive of adults with autism, 2014

WEBSITE:
Autism Speaks, https://www.autismspeaks.org/
ASLA 2012 Annual Meeting & EXPO. BRIDGING THE LANDSCAPE OF AUTISM, https://www.asla.org/uploadedFiles/CMS/Meetings_and_Events/2012_Annual_Meeting_Handouts/FRI-A8%20Bridging%20the%20Landscape%20of%20Autism.pdf

VIDEO and LECTURE:
Children from the distant planet, https://www.youtube.com/watch?v=jkBY32NZ3IY&list=PLF_6Kc_HWx-6NfRlAs_2ddIXKf-ADVN2a
Wendy Chung, Autism — what we know (and what we don’t know yet), https://www.youtube.com/watch?v=k0MsLTqRLs
Top 5 Facts about Autism, https://www.youtube.com/watch?v=3D0h2JX6eGQ
The Genetics of Autism, https://www.youtube.com/watch?v=ID6h2mm8k4
Environmental Contributors to Autism Spectrum Disorders, https://www.youtube.com/watch?v=Pin3ANnLEmx
Doctors and you: Autism, https://www.youtube.com/watch?v=TP2LMqWfRyU
Asperger Grampa BBC4 The Autism Puzzle, https://www.youtube.com/watch?v=Qm2_Xbc-9ho
The Autistic Me, https://www.youtube.com/watch?v=5sgCuPFeaM
The Human Camera (Autism Documentary) - Real Stories, https://www.youtube.com/watch?v=pHkNgCBh4V4