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## Gender Neutrality in Public Spaces

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### ABSTRACT

*Public spaces are highly defined by gender conceptions and traditional power structures. How we engage with public spaces changes intuitively with gender. The ideas of space and gender are intrinsically connected. This issue leads to a strong division of the public sphere. While men tend to prefer function and comfort, women lean towards appearance and comfort. The common factor is comfort and is the key to making a gender-neutral space where there is no feeling of dominance. Such situations often lead to discriminatory behavior towards the minority gender. This research describes the necessity to consider the issue of gender dominance in the common spaces to progressively conceptualize the public sphere following the changing society we live in. By understanding the preferences of the vast spectrum of genders we can achieve a more neutral and less of a gender bias environment that encourages equality. The objective of the research paper is to introduce various elements of design such as color, texture, shape, form, and light in specific ways, there are possibilities to achieve a dominance free space. Analyzing the problems faced by different genders in a public space through online surveys and interviews with renowned architects will help us formulate the best-required solutions that would help eradicate gender misconceptions while designing a public space. Avenues for future research are identified to explore gendered practices that hinder the development of women and the LGBTQ community in the society.*

**Keywords**— Gender-Neutral, Space Planning, Design Elements, Stimulation

### 1. INTRODUCTION

One out of many problems observed in today's world is gender inequality, where one gender is dominated over the other, there are few minority genders that do not get proper recognition and are completely ignored in all aspects. To dissolve such an injustice, it is important to design gender-neutral spaces where all the genders are given equal importance and where compromises are not made on the basis of gender. Public spaces where an individual feel unsafe because of their gender, needs to be altered on the basis of gender-neutrality. Color, texture, light, shape, and form are sensory perception, and as any sensory perception, it has effects that are symbolic, associative, and emotional. Color and light are integral elements of our world, not just in the natural environment but also in the man-made architectural environment. And by proper use of the fundamental elements as discussed, how we as architects can change the gender perspective towards a public space to make it safer and gender-friendly, by providing necessary guidelines and incorporating the same in designing a gender-neutral space.

Hence, the goal of these fundamental elements in an architectural space is not relegated to decoration alone. The impression of an element and the message it conveys is of utmost importance in creating the psychological mood or ambiance that supports the context and function of a space.

### 2. AIM

To study the role of architectural design elements such as color, texture, form, and light in influencing the gender perception of a public space.

### 3. OBJECTIVES

- (a) To study the psychological preferences of each gender concerning color, texture, and form through surveys and interviews and to analyze the problems faced by the people in a public space.
- (b) To understand whether the problems faced by the people co-relate with the needs of their gender.
- (c) To generate guidelines for architects and designers to create public spaces where neither of the genders has to compromise.

### 4. BACKGROUND AND NEED FOR STUDY

Public spaces play an important role in our society. It acts as a shared resource of communication, connectivity, and foundation for the community it lives amongst. It creates an opportunity to meet, play, and socialize. While the architecture, the materials used, and the overall design of the space, all have a part to play, intelligent use of color, texture, green spaces, illumination also has the potential to improve visuals and interest. In the Joseph Rowntree Report – The Social Value of Public Spaces – it was noted that ‘People are drawn to, and tend to stay longer in public spaces that offer interest and stimulation’.

Gender-neutral architecture is needed to ensure public spaces and designs do not portray a space on the basis of one’s gender identity and that does not force the society’s rigid gender roles on people. This concept enables all males, females, and the LGBTQ community to feel safe and comfortable in their surrounding environments.

As a diverse and developing country, acceptance of the modern world is hard when the mindset of the people is still on pause. It is our duty as young architects to understand the need and to update the requirements of our developing society and their comfort. This research is to formulate a strong concept of how space can be altered to achieve a balanced and more neutral atmosphere to eliminate gender dominance and the problems faced by the minority on a daily basis.

#### 4.1 Scope

The study is to understand the importance of how color, texture, shape, form, and light can impact the language within a space and be able to design gender acceptable public spaces. As well as education and spread of awareness publicly and to dissolve a sense of gender dominance and to help the designers and architects to keep in track with the needs of our modernizing society.

#### 4.2 Limitations

Religious public spaces and norms are not included in the study.

Lack of exposure towards the minority gender.

Due to the present pandemic (COVID-19), unable to implement the live case study.

### 5. METHODOLOGY

- 1. To understand the subject and the meaning of gender neutrality and research for the same.
- 2. To identify the problems faced on a daily basis and the group that is affected the most.
- 3. Study the background and analyze the need for the study.
- 4. To develop a concept to solve the problem
- 5. Decide the aim and objective of the study.
- 6. Data collection, which includes both primary studies and secondary studies. Primary data including online surveys, case studies (in the future), practical documentations. Secondary data including, articles and papers on similar topics.
- 7. Data analysis and filtering.
- 8. Guidelines and recommendations that will help achieve a more gender-neutral design.

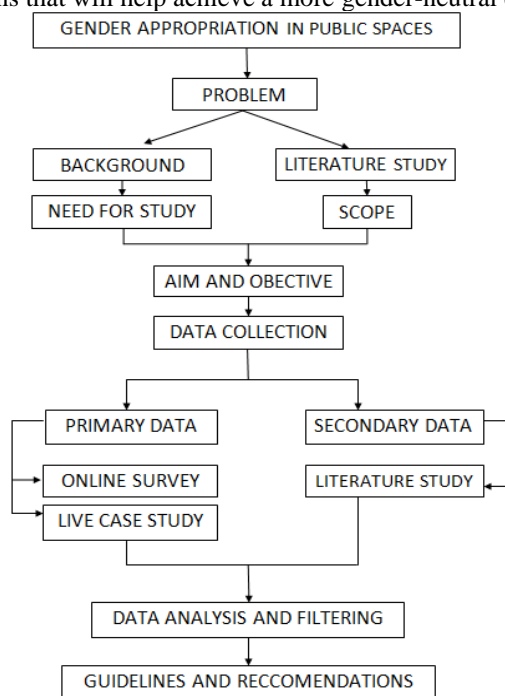


Fig. 1: Methodology Process

## 6. LITERATURE STUDY

**1. What it Means to Build Without Bias: Questioning the Role of Gender in Architecture** Hannah Rozenberg, a graduate of the Royal College of Art, proved, “Biased language leads to biased technology which in turn results in a biased environment” in her final thesis. She supported her theory with references from St. James, an exclusive London neighborhood that houses dozens of gentlemen's social clubs. To interrupt these linguistic architectural binaries, Rozenberg designed a series of spaces in and around St. James' gentlemen's clubs that disrupt the hyper-maleness of the area by correcting a self-developed website that uses an algorithm similar to that of Google Translate to measure a word against the gender with which it is most commonly associated.

### 2. Gender Differences the Meaning of Color for Gender

This article tries to address the different perceptions that men and women have towards color. Through experiments and studies that are discussed in this article like a study on the various analytical survey, the study on the effect of color in 2 opposite environments using electroencephalogram ( EEG ) and pulse rates to record individual subjective emotional feelings, we are informed as to how individuals react to colors and color combinations based in their gender.

### 3. How the use of color improves public space life.

The aim of this article describes how different colors may influence a person's mental or physical state in a public space. Colors also show emotions. Each color has a different psychological influence on an individual and how warm and cool colors have emotions. Secondary surveys were conducted and Primary data were collected through online surveys that help understand color psychology and how each gender reacts to a particular color. According to this survey, Glasgow installed blue lights in certain neighborhoods in the city Of New York in 2000 which also reduced the Crime rate of the city. Life in public spaces can be improved and enhanced by understanding color psychology.

### 4. Texture affects color emotions

In this research, several studies have recorded the color emotions of different people of all gender. They experimented to understand how these color emotions change when a texture is added to the color samples. They used computers for visual surveys where a person had to arrange the colors along with four scales. They observed the arrangement of color by each individual before, and also after adding the texture to the colors, people changed the arrangement. This experiment was repeated after a week for different people to come up with the same result. 25000 people responded. They conclude that when textured samples are used in color emotion studies the psychological responses may be strongly affected by texture.

### 5. Spatial interventions towards the gender-inclusive environment: the case of New Delhi, India.

The author aims to provide urban design intervention strategies to make public spaces safe for women. She recommends the use of safety audits and space syntax. Safety audits are a mapping tool to understand an area in terms of crime and to recognize the problem. Space syntax is a tool that will be used to study the street segments in Delhi. The research was conducted using recorded data from SafetyPin, report reviews from Jagori (NGO), spatial analysis to understand the selected site, mapping to track the moment of woman, and interviews of experts and victims.

**Table 1: Literature case study findings**

S.no	Title of paper/author	Theme	Findings relevant to the research
1.	<b>What it Means to Build Without Bias: Questioning the Role of Gender in Architecture</b> - By Ella Comberg	“Biased language leads to biased technology which in turn results in a biased environment”	As technology becomes more and more relevant to the way architecture is designed and built, the gender-biased architecture will persevere because gender is built into the technology, we use every day. To deal with problems like gender bias in architectural design, the first element that needs to be changed is language. All are meant to represent ways people communicate with one another.
2.	<b>Gender Differences the Meaning of Color for Gender</b> - By Natalia Khouw	To address the different perceptions that men and women have towards color.	Different colors seem to bring out different behaviors and genders associate different colors with different reactions. Sometimes these reactions are the extreme opposites between genders just like their color preferences too.
3.	<b>How the use of color improves public space life.</b> -By Chris Nangle	Different color May influence a person's mental or physical state in a public space	Colors also have emotions and how each color has a different psychological influence on an individual and how public space can be improved by understanding the color psychology.
4.	<b>Texture effect color emotions</b> -By Marcel Lucassen	How color emotion changes when a texture is added to the color sample.	Texture plays an important role in public spaces. Adding texture to the colors does affect the mood of a person. Gender is biased in textures too. Females tend to lean towards the soft texture while men like hard texture. Finding a neutral texture can be useful for our research.
5.	<b>Spatial interventions towards the gender-inclusive environment: the case of New Delhi, India</b> - By Sugandha Gupta	Urban design intervention strategies to make public spaces safe for a woman	Women often feel trapped between two elements. She describes four principles which can be used to eliminate fear from woman's minds- 1) Natural surveillance. 2) Access control. 3) Ownership. 4) Maintenance.

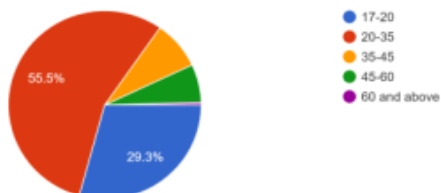
### 7. PRIMARY STUDY

Two questionnaires were given out to the public, one to the common people, and the other to renowned professionals that practice architecture. This way we can analyze and record different perspectives concerning gender, age groups as well as experiences. Overall, we have got 230 responses and 10 responses from professionals.

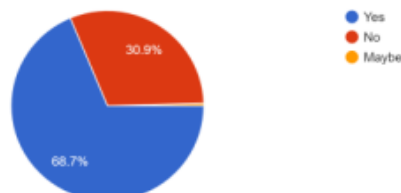
The results have been recorded and show significant results that show that women are more color, texture, and space-conscious than most men. Women tend to judge the appearance of space before encountering it, wherein, men don't notice the small details. From the results, we can identify public spaces that experience the most discomfort from the user's personal experiences.

#### 7.1 Based on public spaces

Age group  
229 responses



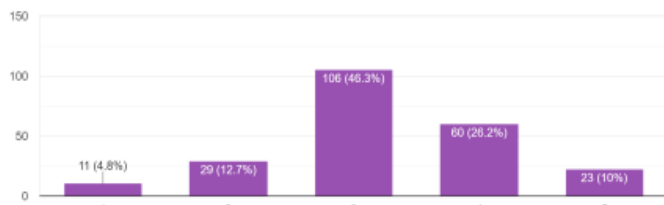
Have you ever felt a public space is being dominated by a specific gender?  
230 responses



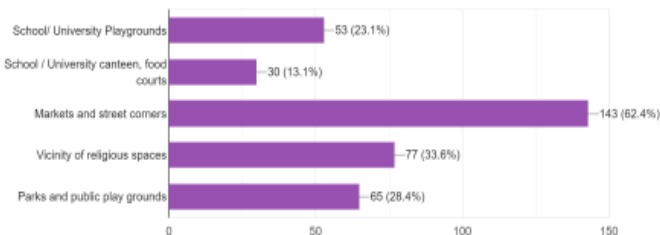
The survey provides a clear understanding of gender domination in public spaces. 68.7% of people feel dominated by the other sex. And almost all of them are uncomfortable in this situation

#### 7.2 Based on transportation public spaces

Do public transportation hubs like bus stations, metro and train stations show dominance on the basis of gender?  
229 responses



Where have you been subjected to Gender dominance in public spaces ? choose from options below  
229 responses

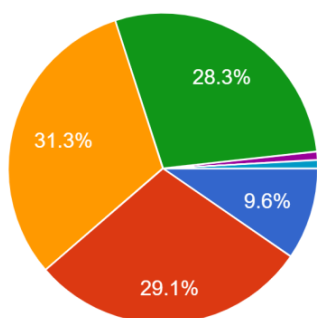


As shown in the results above, this study was more focused on people's views on gender domination in public spaces and transportation hubs. In the survey, most of the people are neutral towards gender dominance in public transportation hubs. Whereas, few people have partially agreed and very few people have strongly experienced gender dominance in such places. Likewise, the majority of the people have experienced more gender dominance at markets and street corners compared to schools / universities. The majority of the people believe that safety in public places is influenced by its surroundings and it's a community in charge. Therefore, we can conclude that most of the people from the survey have experienced gender dominance at some point.

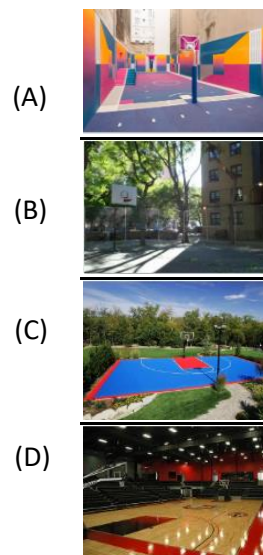
#### 7.3 Based on color

Which basket ball court would you prefer to play in?

230 responses

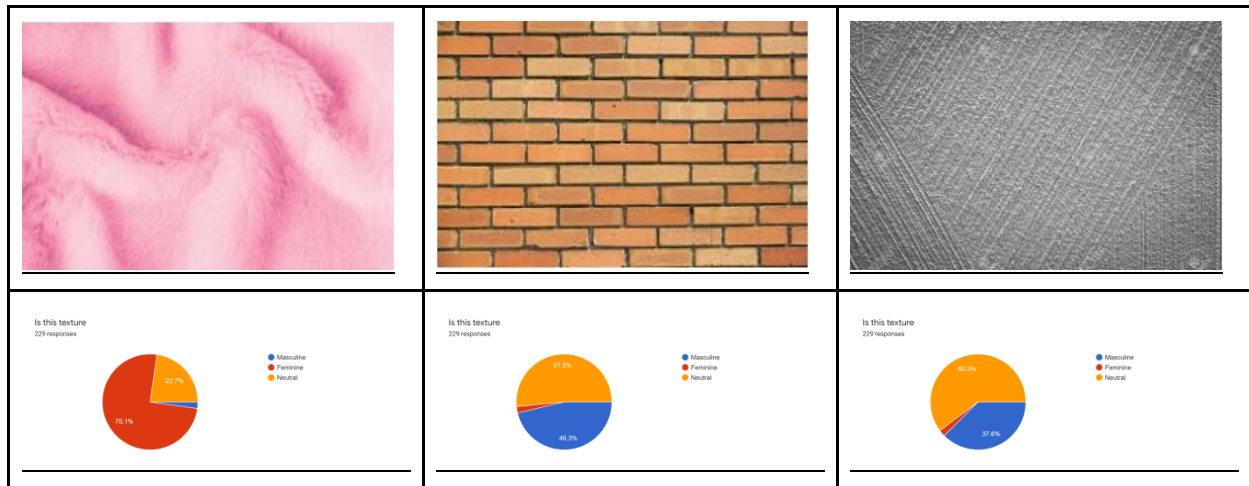


- (A)
- (B)
- (C)
- (D)
- Option 5
- Option 8



The above chart shows that people prefer more bright colored open courts that clearly show people are more liberal and unfastened senses when compared to enclosed spaces with dark and shady courts that do not have an appealing vibe.

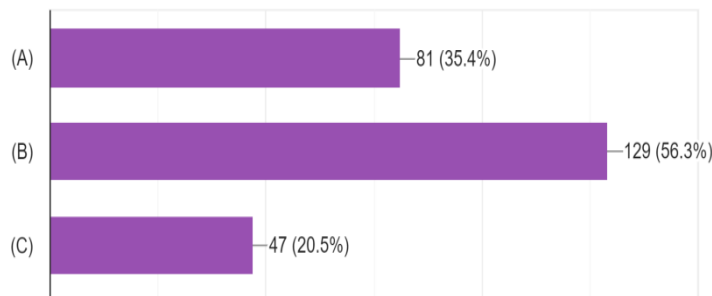
### 7.4 Based on texture



The above charts conclude that texture does affect the psychology of different gender and how genders are biased with texture. According to the above data, the first picture of soft texture with pink color has 75% of feminine characteristics whereas the rough textures with grey color have more masculine characteristics than feminine. It also concludes how the second with 51% and the third picture with 60.3% show a more neutral texture than the first picture with 22.3%. The use of exposed bricks and monochromatic rough grays are considered to be more neutral than pink or masculine bright colors.

Which of these images project gender dominance ?

229 responses



(A)



(B)



(C)

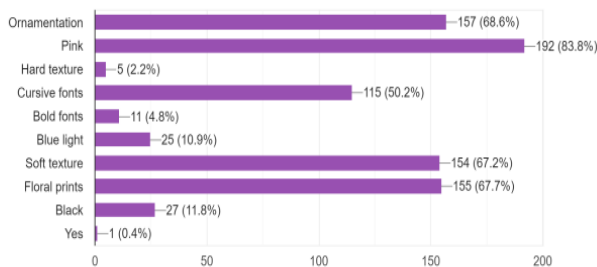


From the above data, we conclude that option A and B shows more gender dominance than C and D. Option A shows more masculine features because of the hard textures and dark colors like black and Persian blue, while option B shows more feminine features because of the white and pink colors and soft nature of the materials present in the pictures.

### 7.5 Based on society ideology

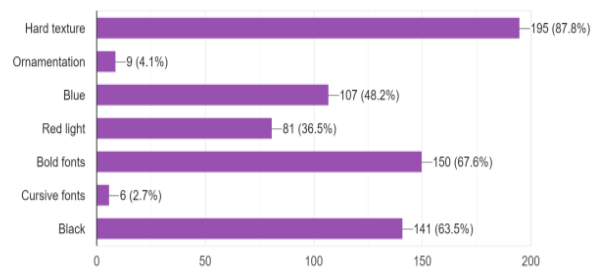
Which of the following elements are perceived as feminine characteristics?

229 responses



Which of the following elements are perceived as masculine characteristics?

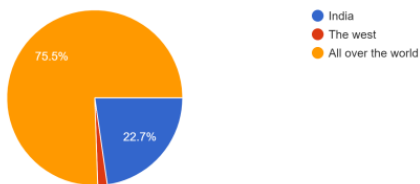
222 responses



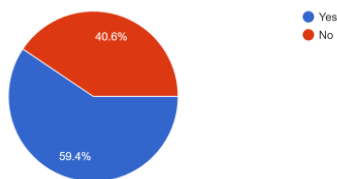
The results show that people characterize not only objects but fonts based on gender. Society brings us up by labeling features that it corresponds with the character of the gender it represents. For example, pink floral designs along with soft textures directly give a feminine expression wherein, hard, bold fonts, and black is considered to be masculine. This shows how the ideology of society has trained people to think.

### 7.6 Based on public knowledge towards the topic

Is gender dominance common only in?  
229 responses



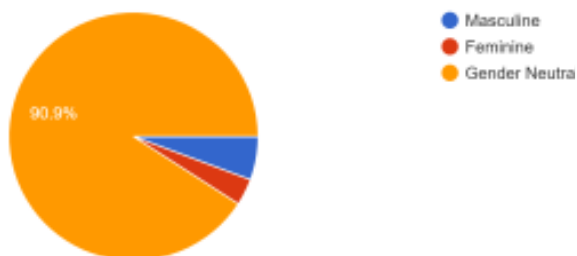
Do you feel the transgenders are being over powered by other genders in a public space?  
229 responses



Here this study is done to understand the amount of knowledge on LGBT existence and gender domination across the world. As the results state that, most people feel the transgender group are overpowered at public spaces. Here we can understand that gender dominance is not only in a particular country like India but it's across all the countries.

### 7.7 Based on Green public spaces

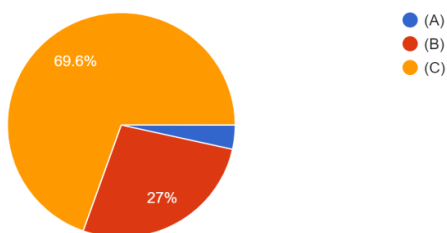
Do you think green natural public spaces are considered to be:  
230 responses



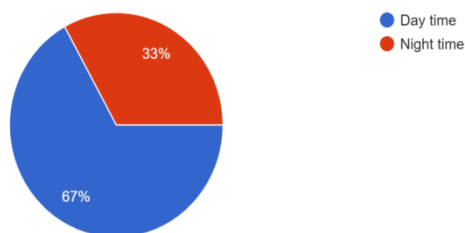
90% of people choose green surroundings. A well-designed green space in and around a public space always creates a gender-neutral space that is appealing to all the genders. 90.9% of people feel green natural public spaces are gender-neutral. Green breathing space is a clear-cut solution to creating spaces that do not portray its surroundings to be biased towards one particular gender.

### 7.8 Based on time and lighting

Which path would you take?  
230 responses



Which time of the day would you mostly prefer to go out to a public space?  
224 responses



Time and lighting play a major role while deciding the safety of one's decisions to go out or activity planned for the given time.



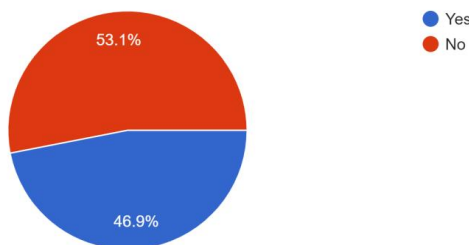
67% of people prefer to go out to a public space during the daytime. They feel safe in the daylight. Nights create an atmosphere of darkness and helplessness. Even during nights, people prefer a well lit public walkway that helps them sight everything around them. It is very important to know the circumstances of our surroundings and that is possible only if the public spaces are designed to create sufficient lighting that reaches out to even the narrowest spaces especially during the night.

**7.9 Based on public exposure on the issue  
Architect's Review**



Public awareness plays an important part in creating gender neutrality spaces. It was found that only 46.9% of the people were aware of the design intervention executed at Church street, Bangalore. It shows that a lack of public consciousness may lead to failure in achieving the desired goal of gender neutrality. The results show that architects, landscape architects, and urban designers play a primary role in designing a public space.

Are you aware of the design intervention that is located in church street, Bangalor  
228 responses



**Table 2: Finding from architect's questionnaire**

S.NO	QUESTIONS	ANALYSIS
1.	How important do you think is the role of a designer to promote vibrant, safe public spaces for the health of a city and its people? Have you had an opportunity to design a public space in an urban context, and if so, would you please elaborate on the success of the design?	The designer's role is important to the extent that he/she does not try to impose his/her vision on the space and its users. This is true of all spaces but particularly valid for public spaces given the multiplicity of users across space and time. The success of designing spaces lies in its freedom of movement and accessibility.
2.	How important is the visual appearance of public space? How do you visualize an appropriate theme for a public space? Do you make a conscious effort to think of Color and texture as important elements in a public space?	Visual appearance is very important because it is usually the first perception of any environment, and this is what creates a first overall impression, positive or negative, of any space. Keeping the functional nature of the space, in a deeper sense concerning the potential life and vitality of that space, as the core concept, and keeping every subsequent design decision, including those of color and texture, in harmony with that core concept, is what must be done in the design and construction of public spaces.

3.	Are you aware of Gender dominance in public spaces? What are the strategies to overcome gender biases when designing spaces? What architectural elements do you think affect to compose designed spaces more gender-neutral and welcoming for all genders?	Strategies can at best mitigate gender dominance which is a structural problem across society, it cannot be solved by a few individuals, it needs a transformation of ideologies at a societal level. Lack of awareness is why we must introduce particular architectural elements that can help overcome the problem or even solve it!
4.	How important do you think it is to incorporate the safety of women when planning the design? Can architectural solutions ensure safety for women without dependence on IoT based solutions? Please elaborate.	It is important to consider women's safety in designing a public space by providing lively spaces with potential for many activities, visibility of all spaces without isolated and dark corners, adequate lighting, open, secure, and equitable.
5.	Do you feel that open grounds and green spaces are free of gender dominance? If so, why?	It depends on what type of open ground or green space it is. If it's located in isolation of the city it's unsafe and would have gender dominance. If not or ill-maintained they are hotspots for mishaps. To the vulnerable, all spaces are potential threats whether crowded streets or parks or ground.
6.	Is the concept of gender neutrality important in designing for future cities? Do you take the LGBTQ community and transgender community's needs into consideration while planning?	Gender equality is very important. There are social inequalities that affect behavior and create discomfort. The community at large is still trying to understand LGBTQ concerns. These are in a formative stage. Architecture being a social art these will evolve as LGBTQ come forward more openly to spell out how they look at things and this community can live with dignity. "Cities need to be for all."

**8. DATA ANALYSIS**

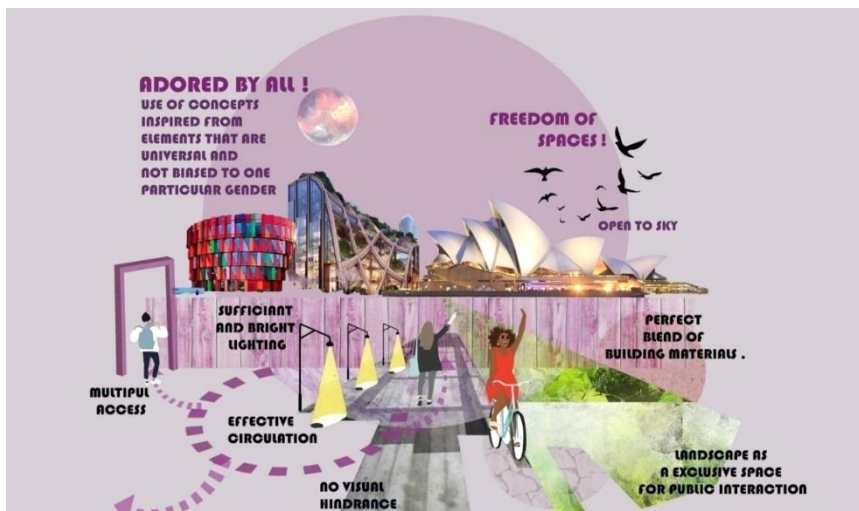
To achieve a desired gender-neutral space it is primary to understand the relationship between gender and spaces. After understanding people's behavior patterns around public spaces, it becomes easier to design an inclusive space.

The problems of the subject are more of a structural problem across society and have made progress through the coming years with awareness. It needs the transformation of ideologies at a societal level. Lack of awareness is why we must introduce particular architectural elements that can help overcome the problem and solve it. Gender inequality has impacted society in numerous ways, one being the safety of women and anyone that perceives the common perception of weakness or abnormal.

**9. CONCLUSION**

Architecture and design being an influential platform across the globe have the potential of shaping one's outlook and their environment in modern urbanization. Each and every day, a new problem develops. Good or bad, problems and opinions are inevitable in our community. Irrespective of the barriers that stop the evolution of design due to society's preferences, ignoring these obstacles does not solve the issue. A gender-neutral space is therefore, a space that is devoid of gender: it is merely a space where one can co exists without having to worry about "fitting in".

This is not to say that everyone should ideally feel comfortable in a gender neutral space; this implies looking deeper into the factors which cause such discomfort and assessing whether people across genders can co-exist without feeling unsafe. Further, our attitudes tend to mirror the physical structures around us; adequate infrastructural changes will go a long way in our efforts to be inclusive towards marginalized communities. Gender Neutrality is a sensitive topic that must be addressed and must be spoken about. Comfort and safety of our citizens is our priority. Diversification of identity in the society it portrays needs to be normalized, taken care of and accepted.





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