Designing Beyond the Binary

Gender Equity in the Built Environment

MITHŪN

WE AREN'T HERE TO TALK SH*T

We *do* want you to design inclusive bathrooms. We really do.

It's important. Bathrooms can be harmful for transgender, nonbinary, gender nonconforming, and cisgender people alike. We should talk about bathrooms and the ways that we as designers can make the experience safer and more comfortable.

Luckily, there are a plethora of data-backed design resources, such as Stalled! to help designers create safer experiences for all users.

This study was born out of our desire to understand how queer people exist in the *various other spaces* of daily life. The lived experiences of LGBTQ+ people is so much more nuanced, colorful, and interesting than just where we go to relieve ourselves. This study aims to shine a light on the ways we show up and express ourselves in all ascpects of our daily life.

Introduction

This research project investigates the spatial lived experience of transgender (trans), nonbinary (enby), gender nonconforming (gnc), and queer communities within the built environment. Our goal is to positively influence the lived spatial experience of these communities by pushing contemporary design processes to be more critical of a harmful gender binary. A queer methodology designed to better understand perceptions of gender in space is comprised of a literature review, national survey, semi-structured interviews, and a medium dose of personal experiences / histories / anecdotal information. We measured a variety of spatial typologies and factors using metrics of perceived safety, emotional comfort, and social belongingness to better understand gendered space and to create design tools that promote gender equity.

Who are we?

Our positionality inherently shapes how we frame, conduct, and interpret this research. K Kaczmarek (he/him), lead researcher and author, identifies as a trans queer man and Jake Minden (he/him), co-researcher and author, identifies as a cis gay man. Both of us are white. Our whiteness brings privileges and blindspots to this research. Our shared queer identity and K's trans identity lend valuable insights and intuition tied to our lived queer experiences. K's trans identity is central to the research lens and analysis, adding a layer of depth to the team's understanding of gender and identity. Our positionality requires ongoing self-awareness surrounding the impact of our identities on the research process. This intentional and grounded reflection leads us to a more thoughtful and ethical research practice.

Our professional design approach is interscalar and interdisciplinary. K is an interior designer and Jake is a landscape architect. Our combined experience touches the design process at scales ranging from interior design and building architecture to landscape architecture and urban design. By thinking across spatial scales, we consider the range of environments that affect and are affected by transgender (trans), non-binary (enby), and gender nonconforming (gnc) individuals and communities.

Acknowledgements

We have conducted this research as guests on the unceded lands and waters of the Coast Salish peoples, who have stewarded this land since time immemorial, and who will continue to steward this land into the future.

In addition to the generous support of the Mithun R+D grant, this research would not have been possible without meaningful contributions from the following people:

Benji
Charlie
Claire
Erin
Kelli
Kera
Katie
Jason
Mark
Matisse
Stephanie

Background

As of the publication of this paper, trans, enby, gnc, and queer individuals in the United States experience high rates of physical and legislative violence, discrimination, bias, and microaggressions. While there is an increase in anti-trans sentiment within non-physical, political, and digital spaces, many negative aspects of one's lived experience occur in designed and built environments.

Built environment designers (building architects, landscape architects, urban designers, and interior designers) are responsible for human health, safety, and welfare in the places they impact. This responsibility extends to all users of a place, independent of gender identity, sexual identity, race, religion, country of origin, or other identifiers. In order to meet the mandate to protect the health, safety, and welfare of all populations, designers must look critically at how our processes impact spatial inclusivity.

Spatial gender inclusivity has largely been studied through a binary conception of gender, highlighting the experience of cisgender (white) women, obscuring the experience of trans, enby, gnc, and queer communities, leaving designers looking to address these inequities without appropriate resources. To bridge this gap, this research analyzes the lived spatial experiences of these communities and quantitatively and qualitatively assesses their levels of comfort, safety, and belongingness within a range of built environments.

In early conversations about this research, other designers expressed a desire to create more gender inclusive spaces, but didn't have adequate language, tools, or understanding. By better understanding the spatial criteria associated with physical safety, emotional comfort, and social belongingness of trans, enby, gnc, and queer individuals and communities, we can effectively communicate best practices and more rigorously design gender-inclusive spaces.

Figure 1 & 2 *Discrete "flower code" historically allowed queer people to safely find others in the community.*

Research Goals

Positively influence the gender inclusivity and gender equity of built space

Our most ambitious goals go beyond the practice of design. We want to impact the lived spatial experience of trans, enby, gnc, and queer individuals and communities. Our built environments and their associated design processes are complicit in violence against these communities. Our objective is to create a safer, more comfortable, and welcoming world for all users of space, regardless of gender or sexual identity.

Encourage a shared vocabulary, awareness, and fluency around topics of gender and queerness related to built environments

Fostering greater empathy within design practice requires professionals to have a common understanding of the cultural and spatial issues faced by marginalized communities.

Collect novel, socially and spatially rich data on the lived experiences of trans, enby, gnc, and queer individuals

The quantitative and qualitative survey data pertains directly to physical characteristics of place. This novel spatial criteria can be used to inform the design process for built environment designers working at various scales.

Shift how designers engage the gender binary within standard design practices

To bend contemporary design practice toward the inclusion of trans, enby, gnc, and queer individuals, we must shift the way we consider gender as it relates to space. Space and gender are mutually constitutive. Spaces are activated through gendered perception, and gender is influenced and expressed differently based on spatial context. A binary spatial paradigm dissolves when understanding of gender and space deepens.

Empower design professionals with gender-inclusive, data-driven design tools

Many designers endeavor to be more inclusive but are ill-equipped. A set of design principles for gender inclusivity, rooted in the lived spatial experiences of trans, enby, gnc, and queer individuals, facilitates understanding and connection that will engender better design outcomes for everyone.

A Few Important Terms

Shared language is key to developing authentic communication with LGBTQ+ communities.

The following terms are often used within the LGBTQ+ community. These terms have *multiple* meanings and evolve over time.

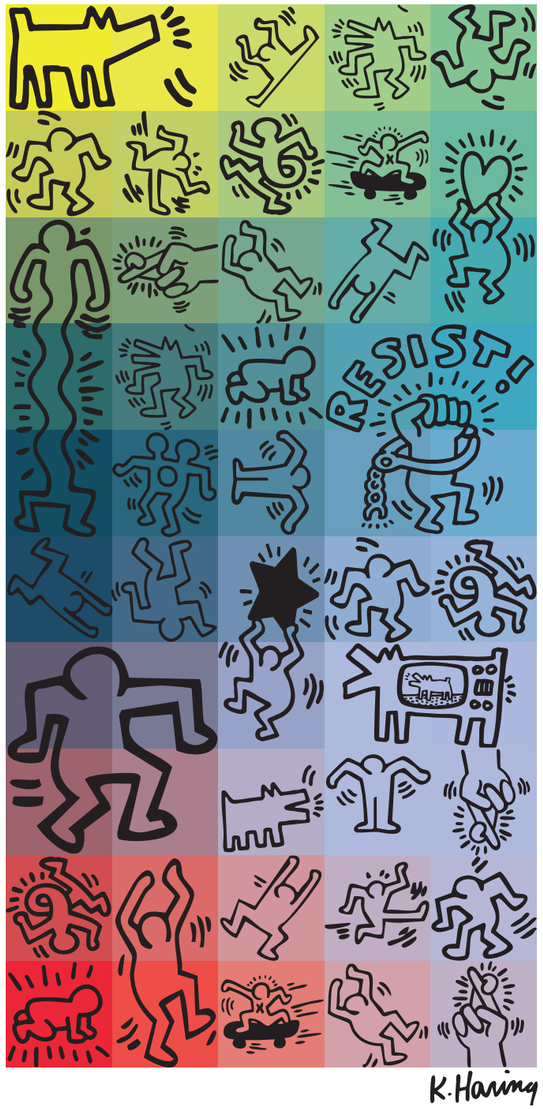


Figure 3 *Inspired from the late Keith Haring, revolutionary work starts with shared understanding- these forms of communication can come through written word, visual language, or a mix of multiple mediums.*

cisgender (cis)

A term for persons whose gender identity or gender expression corresponds to their sex assigned at birth.

gender

Socially constructed roles, behaviors, and attributes given to folks based on their assigned sex. Gender characteristics can change over time and are different between cultures.

genderfluid

Relating to, or being a person whose gender identity is not fixed.

genderqueer

Any type of trans identity that is not always male or female. It is also where people feel they are a mixture of male and female (monro, 2005, P.13). Genderqueer identities are diverse but share dis-identification with rigid gender binaries and in some cases, a direct challenge to the social institutions that perpetuate binaries.

gender binary

A system in which gender is constructed into two strict categories of male or female. Gender identity is expected to align with the sex assigned at birth and gender expressions and roles fit traditional expectations.

gender equity

The process of being fair to all people regardless of gender identity, and importantly, the equality of outcomes and results. Gender equity may involve the use of temporary special measures to compensate for historical or systemic bias or discrimination.

gender identity

An individual's internal sense of their own gender, whether they identify with the gender they were assigned at birth, another gender, or no gender.

gender minority

An umbrella term used to refer to anyone who is not cisgender (e.g., anyone who identifies as transgender or gender diverse).

gender-nonconforming (gnc)

Denoting or relating to a person whose behavior or appearance does not conform to prevailing cultural and social expectations about what is appropriate to their gender.

masc & femme

Denoting or relating to characteristics defined by traditionally binary social standards of gender presentation. Masc and femme do not inherently belong to any specific gender and can be used as an expression by anyone.

non-binary (enby)

Genders that are viewed as somewhere between or beyond the gender binary of man and woman, as well as genders that incorporate elements of both man and woman.

queer

A term often used to express a spectrum of identities and orientations that are counter to the mainstream. Queer is often used as a catch-all to include many people, including those who do not identify as exclusively straight and/or folks who have non-binary or gender-expansive identities. This term was previously used as a slur, but has been reclaimed by many parts of the LGBTQ+ movement.

sex

A multidimensional biological construct based on anatomy, physiology, genetics, and hormones. These components are sometimes referred to together as "sex traits". As is common across health research communities, sex is categorized as male or female, although variations do occur. These variations in sex characteristics are also known as intersex conditions.

sexual minority

An umbrella term used to refer to anyone who is not heterosexual or straight (e.g., gay, lesbian, bisexual, pansexual, queer).

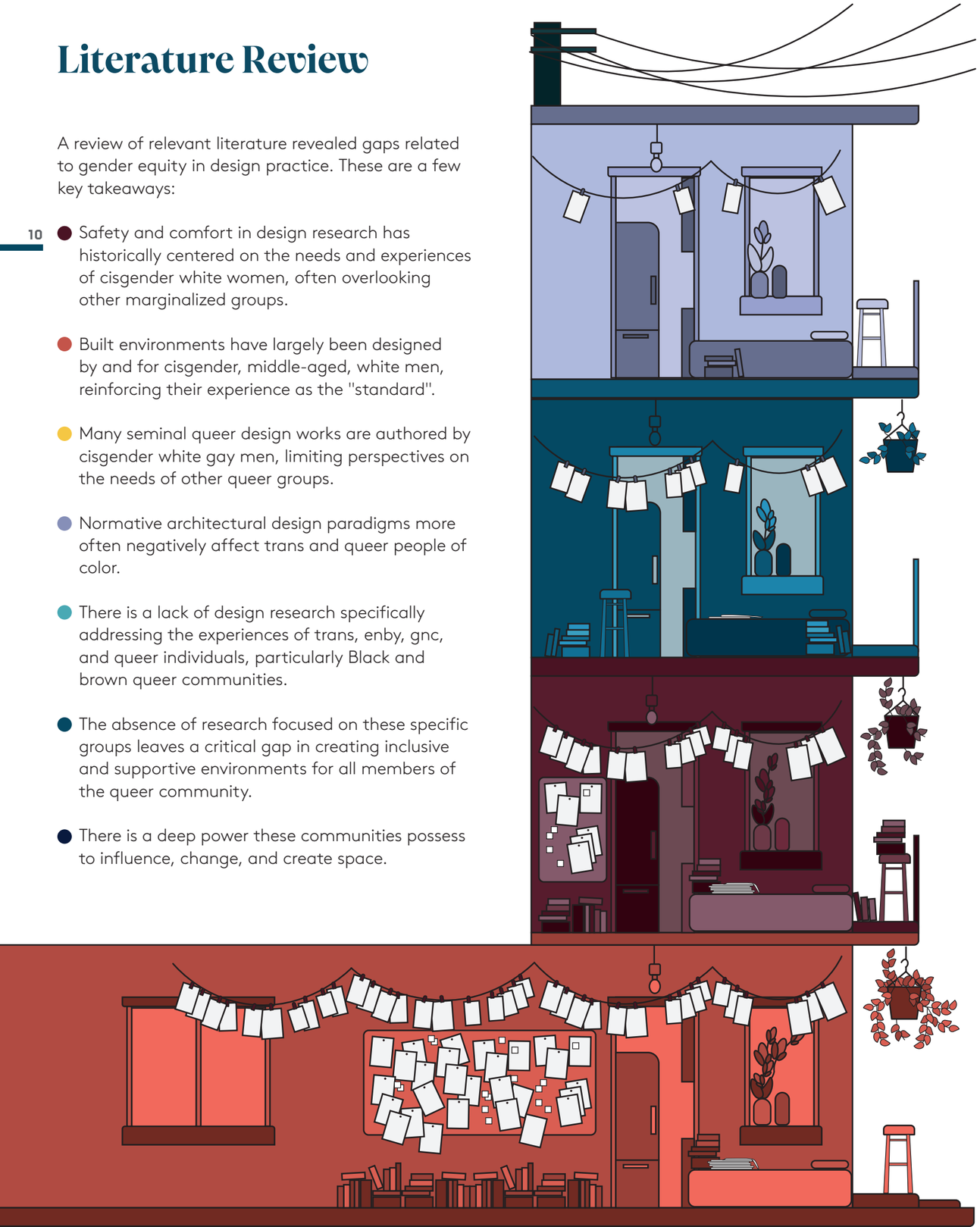
transgender (trans)

An umbrella term for persons whose gender identity or gender expression does not conform to that typically associated with the sex to which they were assigned at birth.

Literature Review

A review of relevant literature revealed gaps related to gender equity in design practice. These are a few key takeaways:

- Safety and comfort in design research has historically centered on the needs and experiences of cisgender white women, often overlooking other marginalized groups.
- Built environments have largely been designed by and for cisgender, middle-aged, white men, reinforcing their experience as the "standard".
- Many seminal queer design works are authored by cisgender white gay men, limiting perspectives on the needs of other queer groups.
- Normative architectural design paradigms more often negatively affect trans and queer people of color.
- There is a lack of design research specifically addressing the experiences of trans, enby, gnc, and queer individuals, particularly Black and brown queer communities.
- The absence of research focused on these specific groups leaves a critical gap in creating inclusive and supportive environments for all members of the queer community.
- There is a deep power these communities possess to influence, change, and create space.



Research Questions

Following this literature review, we reassessed our research questions and realized we didn't know what information to empower designers with, or even if that information existed. It was clear that primary data was needed to better understand the lived spatial experiences of the individuals and communities we were trying to actively support. This led us to develop research questions with a deep focus on the relationship between space and gender. These questions guided our methodology:

1.

What is the lived spatial experience of trans, nonbinary, gender nonconforming, and queer individuals and communities?

2.

How do we incorporate perspectives of trans, enby, gnc, and queer individuals and communities into design practice?

3.

What are the spatial criteria related to safety, comfort, and belongingness?

Safety, Comfort, & Belongingness

To design and conduct research from a queer point of view, we broadened our methodological perspective to answer spatial questions through a human–experience perspective that is more radically inclusive than historic understandings of gender and space. This requires an emphasis on anecdotal and qualitative data, and the intentional centering of trans, enby, gnc, and queer voices.

We evaluated individuals' perceptions of space through the lenses of safety, comfort, and belongingness, as they align with the architectural code of ethics and prioritize human-centered design principles for more positive lived spatial experiences.

Figure 4 *Centering queer voices in the conversation around safety, comfort, and belonging.*

Physical Safety

Perceived physical safety is an individual's subjective feeling or belief about their personal safety in a given environment, situation, or context. It's how safe someone thinks they are, rather than an objective assessment of the actual risk or danger. This perception is influenced by various factors, including past experiences, cultural context, personal beliefs, and external cues.

Emotional Comfort

Emotional comfort refers to the ability of a space to evoke positive emotional responses and to provide a sense of well-being, security, and calm for the people who inhabit or interact with it. It's about how the physical environment makes people feel on an emotional level, beyond just functional or aesthetic qualities.

Sense of Belonging

Sense of belonging is the feeling of being emotionally connected and accepted within a physical space or community. It's the sense that a place feels like "home" or is a space where individuals feel they can thrive, express themselves, and be an integral part of the environment. This feeling can manifest in several ways, often rooted in both the physical attributes of a space and in the social dynamics that unfold within it.

Methodology

Our methodology reflects our goals for the research and is in service to our research questions. It was also important for our methodology to represent a queer way of conducting design research, meaning infusing our personal lived experience as trans and queer researchers into the data. Additionally, traditional research methodologies were used, including a national digital survey, and semi-structured interviews. The following section begins with meaningful conversation then digs deeper into the survey's data aggregation.

Interviews

Interviewing trans and enby designers of built space was critical to add a layer of queer qualitative data to our findings. The interviews added a personal dimension to the research because interview subjects shared both language around space and design, as well as queer lived experience. This shared dual vernacular led to rich dialogue about when and how people authentically exist in space, and how we as designers have the ability to create safer, more comfortable spaces.

The team interviewed five individuals who represent a diverse spectrum of professional designers, including practicing architects, landscape architects, business owners, and students about to enter the workforce. Each interview subject identifies as transgender or nonbinary and participated in an hour-long, semi-structured interview. Embracing a conversational style, each interview offered a unique perspective on what it means to be a trans or enby designer in a world traditionally built by and for cisgender people.

The interviews offered a unique opportunity to explore how gender identity influences the design process. We learned valuable insights about how personal experience shapes one's design approach. Through their daily queer design processes, these designers challenge binary design norms, and inspire built environments that are more empathetic, inclusive, and just. Understanding their contributions not only enriches our appreciation of design, it fosters a more inclusive dialogue about the role of identity in shaping the built environment.

Survey

Our core research method was a national digital survey that collected spatial quantitative data alongside demographic data. The purpose of the survey was to gather data to answer our research questions and identify what role gender identity played in perceptions of everyday spaces. Survey questions were crafted to be legible to non-design trained users of spaces, while capturing precise data that designers could then effectively translate into actionable design principles.

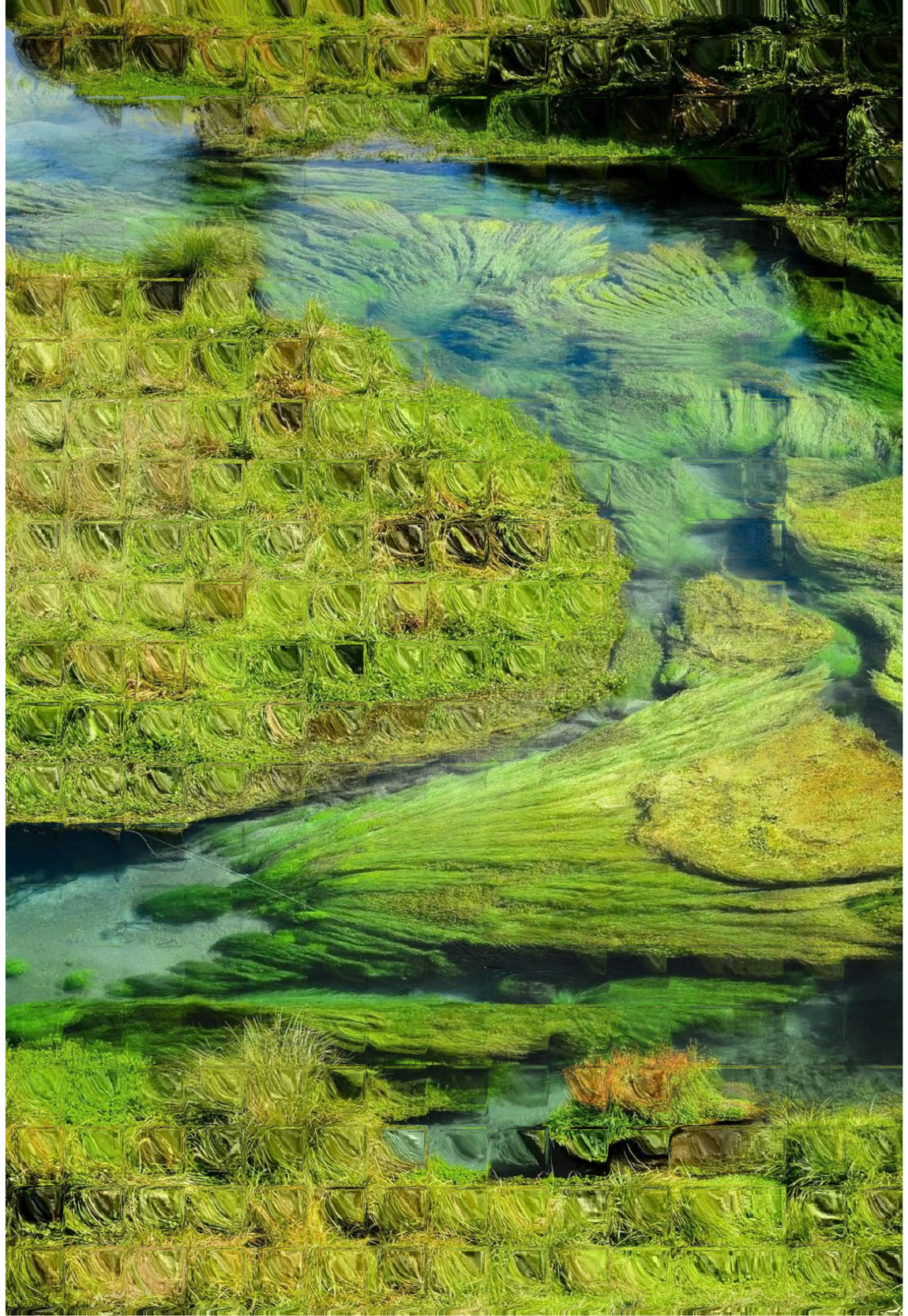
The survey began with demographic questions about gender, sexual orientation, racial and ethnic identity, age, and geographic location. Respondents were then prompted to consider three spaces: one they felt positively about, one they felt negatively about, and an additional space that was not their home where they spent the majority of their time. Respondents then described each space in terms of spatial typology, what materials were present, and various spatial qualities like light, size, sound, and sense of enclosure.

Each space was also evaluated on perceived physical safety, emotional comfort, and social belongingness. A final question asked if each space felt gendered.

Outreach to potential survey respondents lasted for 6 months and included flyers, social media, in-person presentations, and external publications, resulting in over 700 responses. The resulting dataset was cleaned to remove automated bot responses, using a rigorous set of rules to determine interference. These rules were based on a "three strikes" approach, where responses had to have multiple indicators of interference prior to being removed from the dataset. Some common indicators included selecting all gender identities or sexual identities, or groups of entries that were time stamped at identical times.

We Tell Our Own Stories

Human centered design research depends on a human centered approach. Weaving the voices of trans and enby designers of built space throughout the research process served as a reminder of the impact designers have on the daily lives of the people who inhabit those spaces. These short excerpts serve as windows into the lives of designers who bring their full selves into the work, allowing queer voices to flourish.



"I don't know, it felt very queer, something about the intertidal to me is this transitional zone between the wet and dry, the land and the sea. The inability to conform to one or the other. I think it was definitely a part of how I came to understand my gender identity because I was raised in a space that I felt was like the queerest, gayest, nonbinary space that I could be in.

Our understanding of them (intertidal zones) is that they are the most beneficial...when they are allowed to have that natural exchange. And so through cutting those systems in half and through excluding them from how we design and develop, we're just sort of starving ourselves of the possibility of adapting with a rapidly changing climate. So all that to say, I think if we exclude trans and non-binary people in the same way that we exclude and underestimate the power of these intertidal spaces, it's a no-brainer that we're not going to be able to progress and develop in the ways that will save and protect humans."

Interview excerpts from a landscape architect on how their childhood home inspired them.

"I'm of the people who believe that queer space is everywhere and nowhere at once, and that if I'm there, then I'm queering the space somehow. And often I believe it's my presentation that can impact the space, and that can also depend on how I'm feeling that day, and how I'm presenting. Usually, I perceive this as I'm either drawing people towards me or away from me, or how much eye contact is going on. So it's very much about the people that I'm interacting with or not interacting with in a space."

"I think I'm very aware of honoring people's identities and communities and goals of self-expression and self-determination partially because I feel privileged in a way to be very free with my identity. And I'm always thinking, how can architecture or design facilitate that type of freedom?"

Interview response from an architect on how they define queer space.

Gender Aggregation & Power

Gender identity, by definition, exists in a gradient and resists rigid categorization. However, in the early design of our survey and the beginning stages of research analysis, it became clear that there would be a need to aggregate data. In the survey, the demographic question about gender identity contained over 11 gender identity options, a write in response, and allowed multiple responses. This inclusive approach to a question about gender yielded over 300 unique responses, which is a positive outcome in terms of surveying a diverse sample of people, but a challenge for data analysis.

We needed to reduce our demographic data set to a manageable and comparable number of categories. Having fewer gender categories, each with a similar number of respondents, allows for more rigorous comparative analysis, a more anonymous survey approach, and more meaningful and statistically significant findings. The next logical question emerged: How do we ethically and appropriately aggregate respondents on the basis of gender identity?

The team landed on power as a central metric that related to gender, safety, comfort, and belongingness. If we developed a spectrum of proximity to power, aligning groups along this scale would most accurately represent a smaller but still nuanced range of spatial lived experience, based on gender identity.

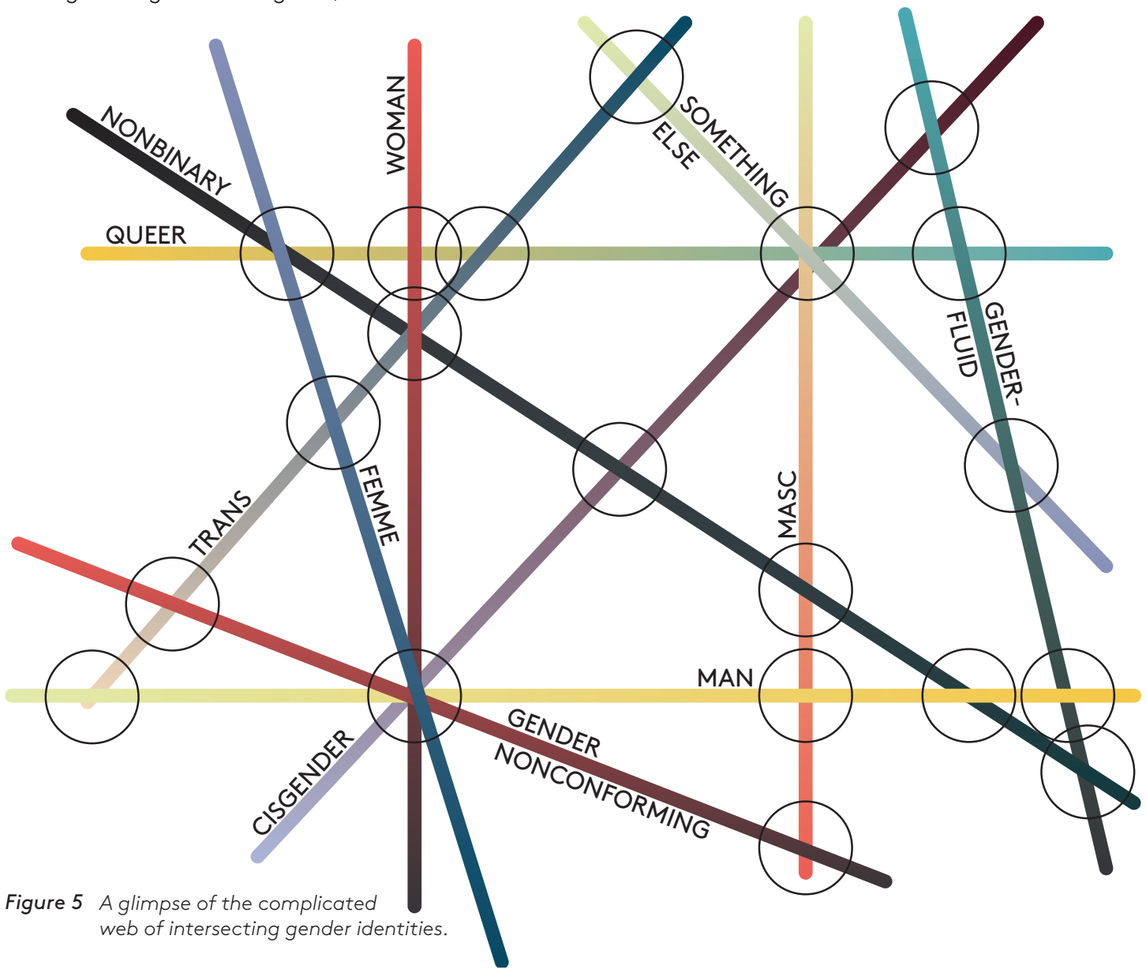


Figure 5 *A glimpse of the complicated web of intersecting gender identities.*

Power refers to the capacity to influence, lead, dominate, or otherwise have an impact on the life and actions of others in society. For our purposes, we understand power in space as the capacity to access and exist in any space with little to no threat of physical violence, emotional discomfort, and social isolation.

When gender and gender expression are layered on to this definition, those with more normative and accepted gender identities experience more power in space. Those with less normative and accepted gender identities, or with a more visible expression of non-normative gender presentations have less power and are less likely to experience physical safety, emotional comfort, and social belongingness.

With this conception of power, gender, and space in mind, we grouped respondents based on how they answered the demographic survey question about gender identity, and which gender identities hold most proximity to power. Through much discussion, research, and our own personal lived experience, four groups emerged. This aggregation method is imperfect and non-static. The rationale behind these groups, as well as the groups and respondents themselves, will change.

Gender Groups

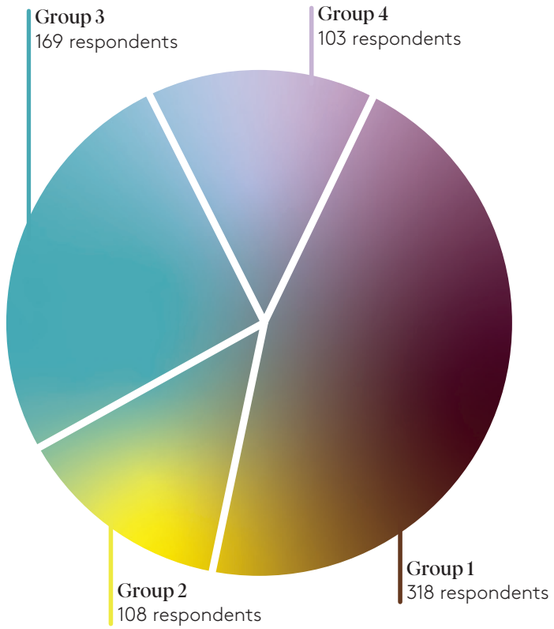


Figure 6 *Gender Group aggregation.*

We defined a spectrum of 'proximity to power', aligning gender identity groups along the scale.

group one

respondents who selected gender options of either woman, man, cisgender, or any combination of those options, and nothing else.

Cisgender individuals experience the closest proximity to power within most built spaces. Workplaces, schools, stores and commercial spaces, transit, parks, and public spaces, are all typically designed with cis-normative assumptions, meaning they cater to the needs and experiences of cisgender individuals. It is important to acknowledge the degrees of power within cisgender identities between men and women. Of course not all cisgender individuals have the same or even similar lived spatial experiences, but in a context of a non-binary conception of gender, cisgender individuals hold the most power. For cisgender people, built spaces are often perceived as positive and neutral because their identities align with dominant gender norms. As a result, cisgender people benefit from a greater sense of safety, comfort, and belonging in many spaces.

group two

respondents who selected gender options of either woman, man, cisgender, queer, masc, and femme, or any combination of those options, and nothing else.

This group identifies as cisgender, but experiences less proximity to power than group one due to an added layer of identity as queer and/or masc, and/or femme. The terms queer, masc, and femme are commonly used in queer communities and are broad terms describing some type of sexual or gender variation signaling a less-dominant identity. Group two is less proximate to power than group one because queer identities have experienced greater marginalization and discrimination in many cultural contexts.

group three

respondents who selected one or more of the following gender options: nonbinary, gender nonconforming, genderfluid, genderqueer, something else, or any combination of those options, including options of woman, man, femme, masc, and queer.

Respondents in group three experience even less power in space than groups one and two because they hold non-cisgender identities, outside of a binary conception of gender. Nonbinary individuals face a distinct set of challenges, as their gender identity does not conform to the male-female binary. This non binary set of identities can create a sense of invisibility or misidentification, as many public spaces are not designed with gender-neutral options, leaving nonbinary people either to adopt a gender expression that fits societal expectations or to navigate spaces where they may be ignored, misunderstood, or questioned. Group three respondents may encounter violence, discomfort, or exclusion in gendered spaces.

group four

respondents who selected a gender option of transgender, along with any other option.

Respondents in group four all identified as transgender, sometimes in addition to another gender identity. Group four respondents have the least proximity to power in space and are most likely to experience physical violence, emotional discomfort, social isolation, and harm in general. This is due to the deep-rooted societal structures and norms that prioritize cisgender identities and bodies. These environments are typically designed with a rigid binary understanding of gender, which leaves transgender individuals marginalized and vulnerable. This marginalization is further exacerbated by widespread social stigma and discrimination, which not only limits their physical access to spaces but also diminishes their ability to exert agency within them. As a result, transgender individuals often experience a lack of control and autonomy over their own movement and safety in built environments, reflecting the broader societal inequities they face.

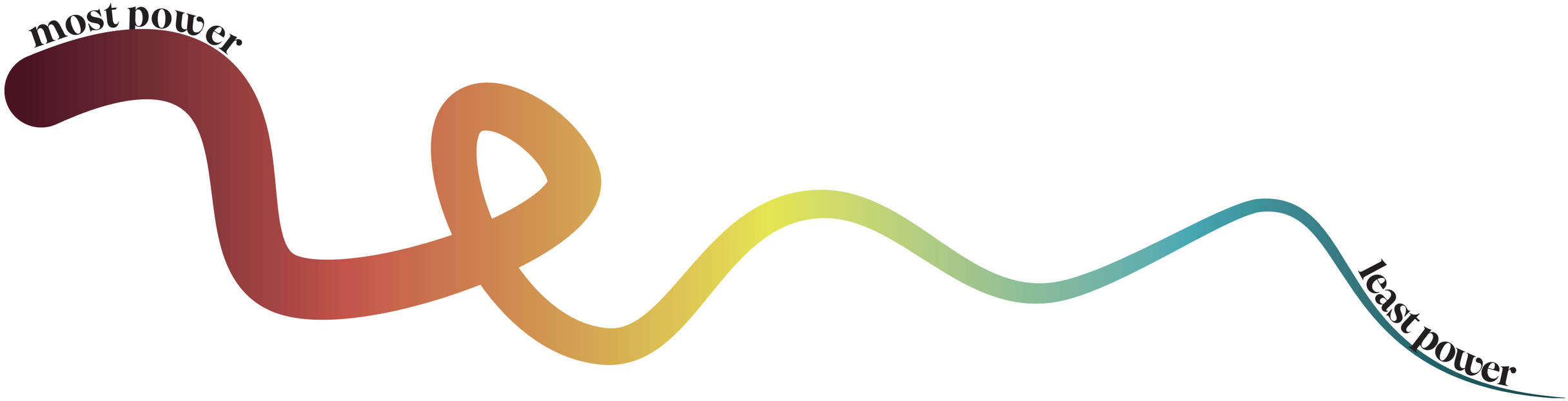


Figure 7 *Gender & Power Proximity Spectrum.*

Findings

As we analyzed our data set, the complexity of our questions started to become evident - how do we take the robust, nuanced lived experience of a wide variety of people and provide actionable design principles that can positively impact trans, enby, gnc, and queer individuals? We found that LGBTQ+ respondents were more likely to perceive a space as gendered. And while we found alignment in the perception of safety, comfort, and belonging across all gender groups, we found specific spatial qualities that have an especially significant impact on LGBTQ+ individuals in the built environment. These findings led to a set of recommendations that can serve as a starting point for positively impacting the spatial experiences of marginalized gender groups.

Survey Demographics

In a 2025 study, only 9.3% of the American population reported having a queer identity. Basically, this was a very queer survey with more than 50% of respondents identifying as queer.

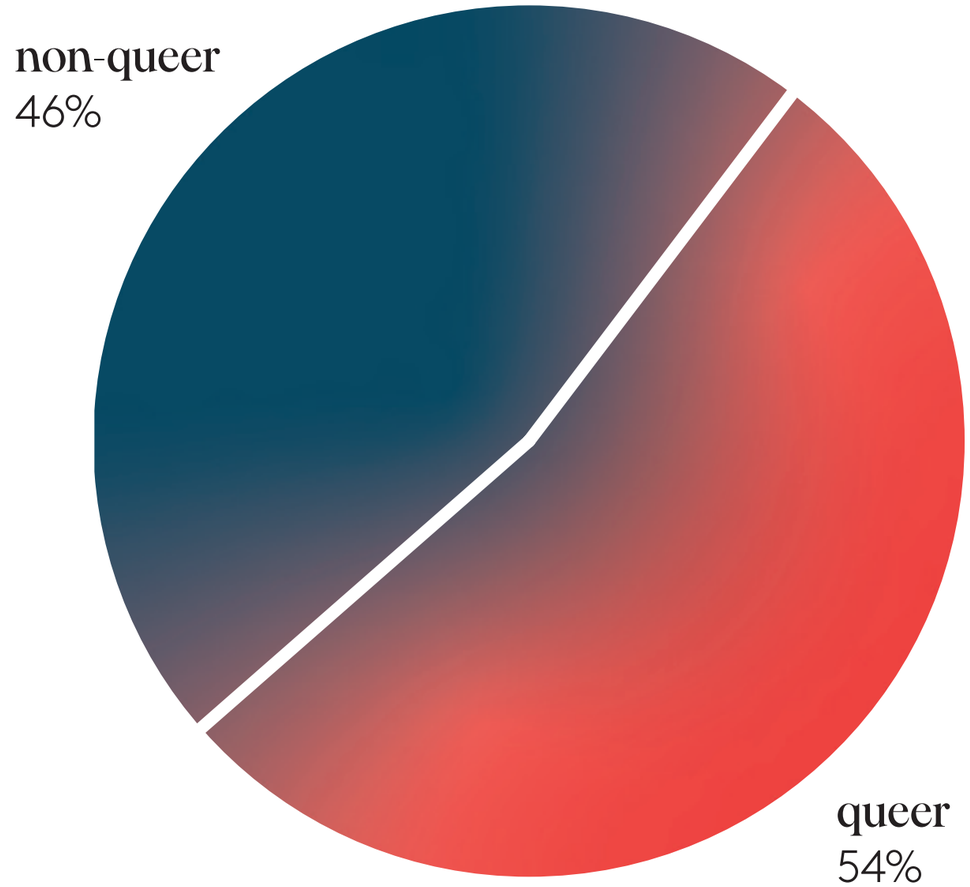


Figure 8 *Queer Survey Respondents Graph.*

Survey Demographics, cont.

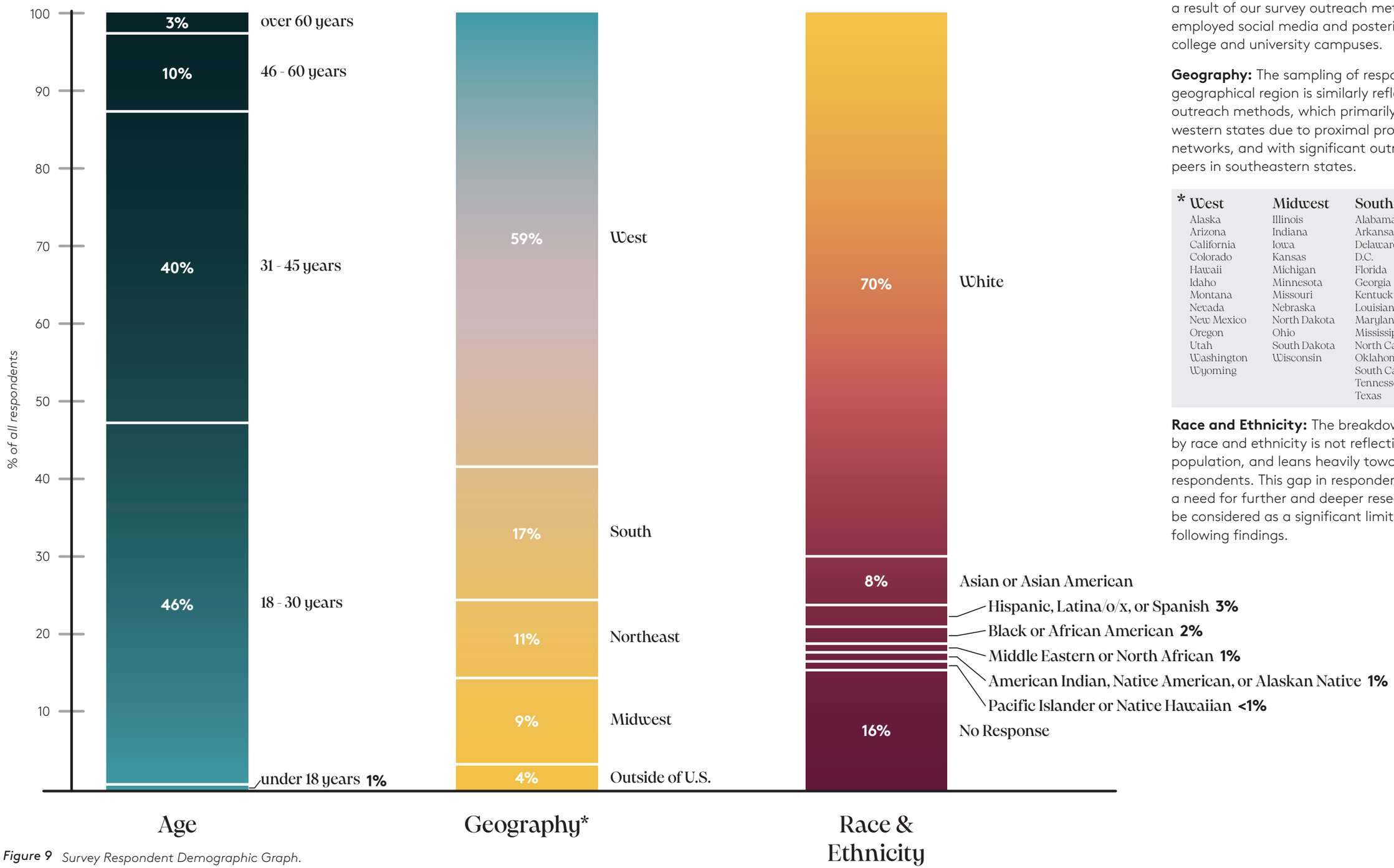


Figure 9 *Survey Respondent Demographic Graph.*

Age: Our survey respondents skew younger compared to the general population. This is likely a result of our survey outreach methods, which employed social media and postering at various college and university campuses.

Geography: The sampling of respondents by geographical region is similarly reflective of our outreach methods, which primarily emphasized western states due to proximal professional networks, and with significant outreach support by peers in southeastern states.

* **West**
Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

Midwest
Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

South
Alabama
Arkansas
Delaware
D.C.
Florida
Georgia
Kentucky
Louisiana
Maryland
Mississippi
North Carolina
Oklahoma
South Carolina
Tennessee
Texas

Northeast
Connecticut
Maine
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont

Race and Ethnicity: The breakdown of respondents by race and ethnicity is not reflective of the national population, and leans heavily towards white respondents. This gap in respondents of color signals a need for further and deeper research, and should be considered as a significant limitation to the following findings.

Finding 1:
Spatial Gender Equity

LGBTQ+ participants were nearly twice as likely to perceive a space is "gendered", primarily reporting positive spatial experiences as "non-gendered" environments.

In the context of this research, gendered space is defined as the projection of an idea, in this case gender, onto a built environment. Previous experiences, contextual clues, and social norms dictate a response that can be exclusive to the individual or paint broad strokes across a group.

An example: In Legally Blonde, Elle subverts the gender expectation of the law office with her overt performance of femininity. The space she inhabits is designed for masculine individuals and her existence in the space creates conflict.

Our first primary finding sets up an important premise for gender equity-related design work. **Places where respondents did not like to be (negative places) were more likely to be perceived as gendered compared to places where respondents liked to be (positive places).** Figure 10 begins to describe the ability to perceive gender in built environments across all gender groups.

79% of places any respondent ***liked to be*** were perceived as **non- gendered.**

79%

Nearly 50% of places any respondent ***did not like to be*** were perceived as **gendered.**

50%

Figure 10 *Perception of gendered space by positive and negative association.*

The survey further revealed that **survey respondents from Groups 2, 3, and 4 are nearly twice as likely to experience space as "gendered" compared to cisgender counterparts in Group 1.**

This is significant because survey respondents from Group 1 are less likely to perceive a place as gendered, and therefore are less likely to be negatively impacted by a gendered place. Respondents from Group 1 are more likely to feel belonging or comfort in a place respondents from Groups 2, 3, or 4 might feel unsafe or uncomfortable in, or excluded from.

If individuals with non-dominant gender identities and sexualities are more likely to perceive a place as gendered, and places that are gendered more often hold negative associations, then there is greater risk of those individuals being negatively affected by their built environment surroundings. If we reorient our design practices, applying a queer lens to the design process and creating places that are perceived as gender neutral, we improve the conditions of our built environment for gender-diverse users of space.

% of respondents who perceived a place as gendered

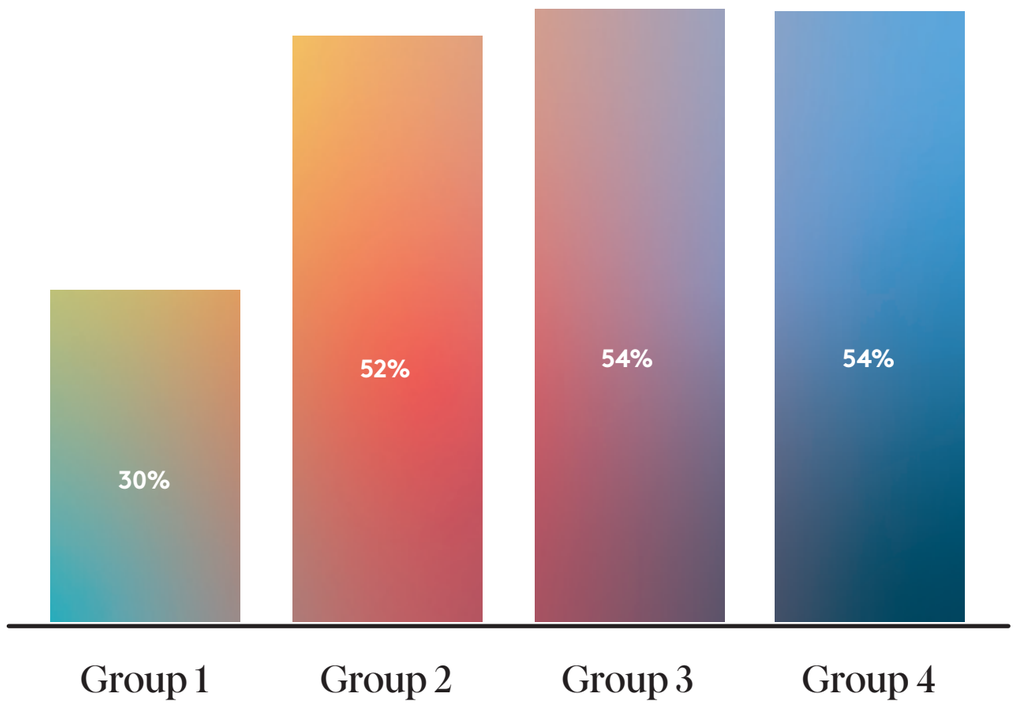


Figure 11 *Perception of gendered space by gender group.*

Finding 2:
Gender Group Alignment

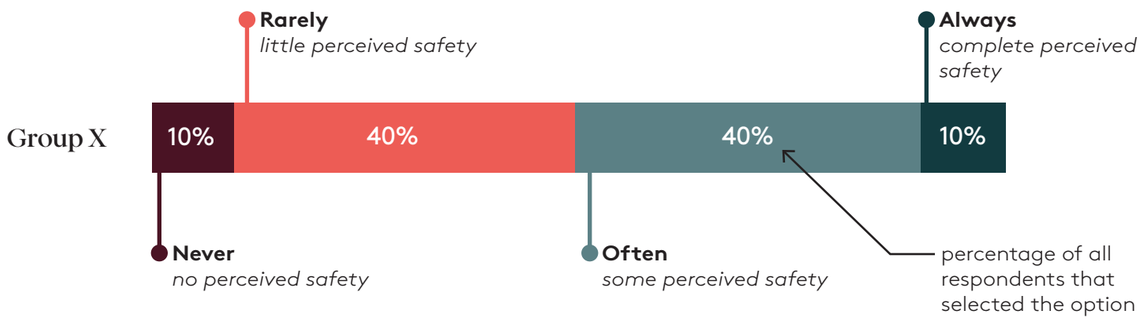
Designing for our most marginalized gender groups does not negatively impact the experience of others.

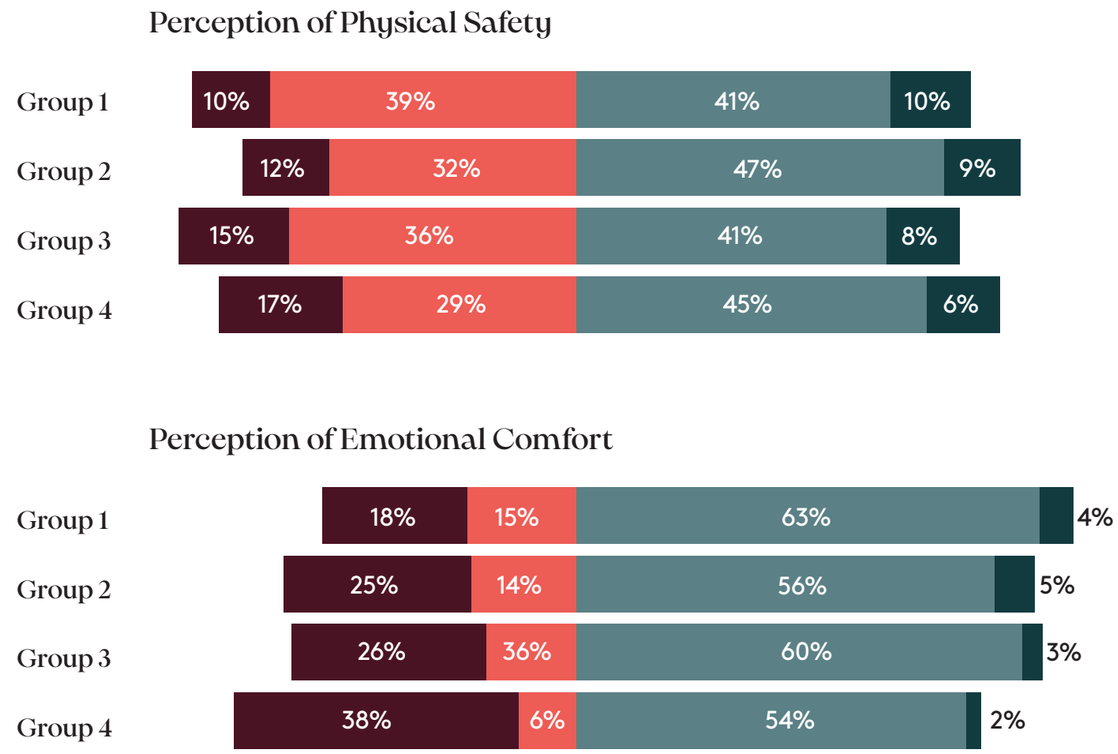
The next primary finding further justifies the importance of gender equity in design practice. Survey respondents, regardless of gender and sexual identity, share more similarities in their experiences and perceptions of space than differences. **Spatial perceptions across gender groups observed no meaningful patterns**. Based on our gender group disaggregation, any differences noted were survey randomness, rather than meaningful variances in respondent's lived spatial experiences.

From this finding we can understand that designing for the most marginalized gender groups will not adversely harm another group. Tailoring our design ethics towards the safety, comfort, and belongingness of trans users of space does not diminish or negate the safety, comfort, and belongingness of cisgender users of space. **Designing inclusively and designing to reduce harm for some, benefits everyone.**

How to read this graph:

Sample Question: Do you feel physically safe in this place?





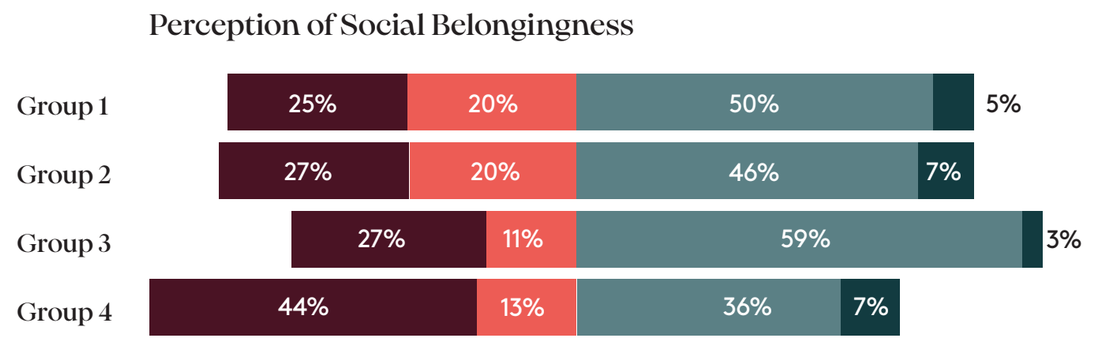


Figure 12 *This graph shows an overall alignment in perceptions of places across all gender groups. A few outliers exist, but no statistically significant differences were reported.*

Finding 3:
Spatial Factors for Equitable Design

In groups 2, 3, and 4, spatial qualities such as amount of light, crowdedness, and loudness impacted how safe or comfortable participants felt.

Spatial perceptions across gender groups demonstrated alignment, rather than statistically significant differences. The following data from this primary finding exclude gender group 1. By excluding gender group 1 (cisgender, heterosexual respondents) we focus our spatial data on all other respondents with non-dominant gender and sexual identities.

The spatial qualities measured in the following graphs provide direction on how to design inclusively. Amount of light, crowdedness, and loudness were qualities that received the most positive or negative ratings from survey respondents, compared to other measured spatial qualities.

The following graphs display how each spatial quality was rated on a scale of 1-5 by survey respondents from groups 2, 3, and 4 - 1 being not present and 5 being highly present. Colored trend lines represent ratings for places. Blue indicates places where respondents want to be and orange indicates places where respondents do no want to be.

Amount of Light

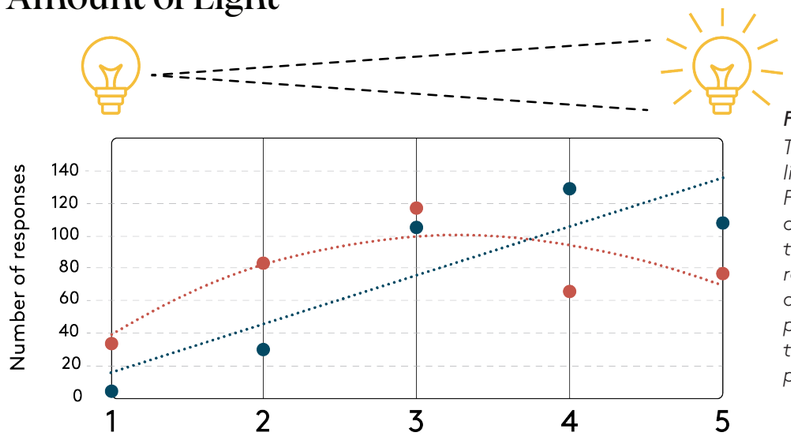


Figure 13
This graph describes the amount of light in positive and negative places. Places with more light, with a rating of 4 or 5 out of 5, are more likely to be positive. The most positive rating was a 4 out of 5 in terms of amount of light, meaning a well-lit place, without being too bright, is the most likely to be perceived as positive.

Loudness

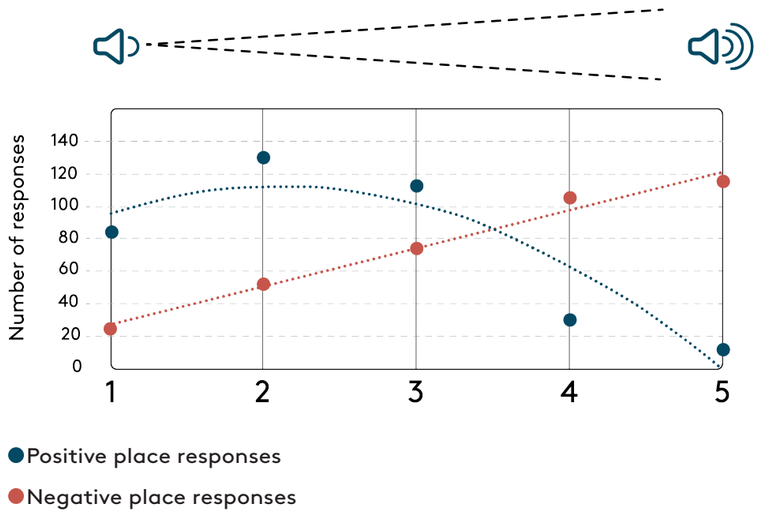


Figure 14
This graph shows how loudness is perceived in positive and negative places. As loudness increases, a place is less likely to be considered positive, with most positive places having a loudness rating of 2 out of 5. So a quiet place is more likely to be perceived as positive. This is confirmed with the negative place responses. As loudness increases in a place, it is more likely to be perceived as negative.

Crowdedness

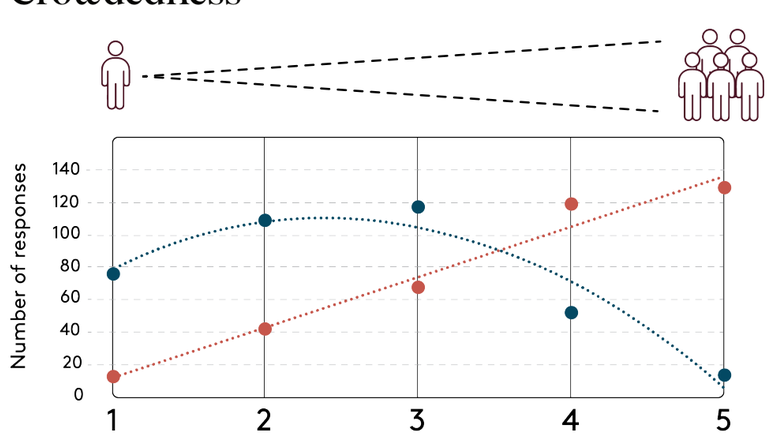


Figure 15
This graph shows the impact of crowdedness on positive and negative place perceptions. The more crowded a place is, the more likely it is to be perceived as negative. The most positive places had a crowdedness rating of 2 or 3 out of 5, meaning the presence of some people, without feeling too crowded is most likely to be perceived as positive.

Finding 4:
Gender-Inclusive Design Principles

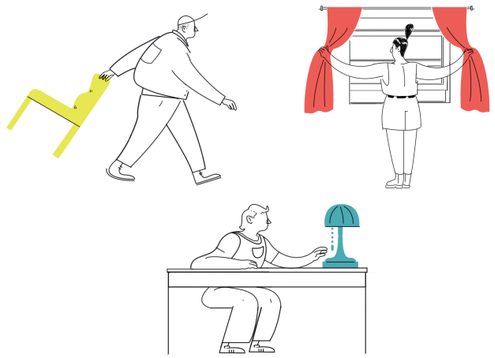
Connecting with nature, editable and flexible spaces, and meaningful engagement within design processes have lasting impacts on LGBTQ+ communities.

A few themes emerged from our broader data analysis, inclusive of qualitative survey responses, interview findings, informal conversations, and personal lived experience. Each theme offers clues to designing the built environment with an ethic of gender equity.

biophilia

Biophilia is a well-understood phenomenon with many known benefits, including improved mental health, improved cognitive function, and enhanced creativity. To that list, we can add gender equity. Survey respondents in groups 2, 3, and 4 reported high levels of perceived safety, comfort, and belongingness when the place featured trees, plants, and water. Respondents across all groups also reported that even when perceived as a negative place, parks are overwhelmingly not gendered spaces.

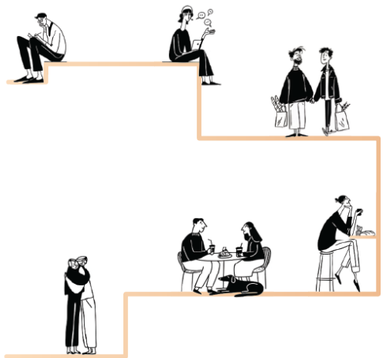
Write-in responses on outdoor spaces included words such as: restorative, dynamic, alive, nurturing, and home.



editability

Another theme that stood out in our analysis was editability. The more a place was adaptable and flexed to the needs of different users, the more likely it was to be a place that people wanted to be in. This allows a wide range of people to feel most comfortable in space.

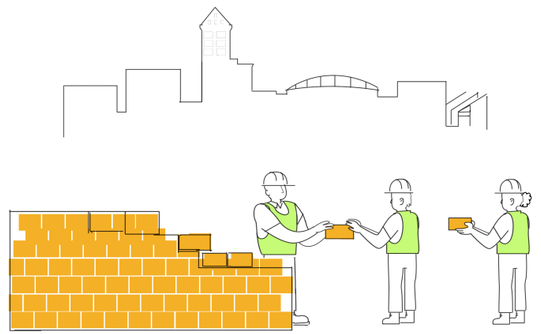
Write-in responses included descriptions such as dividable walls, different age, abilities, gender(s) and background(s) can play together, flexible, and dynamic.



gradients

Thinking in terms of gradients is a useful framing for how to design for gender equity. One size does not fit all! Diversity and flexibility are key. Abrupt transitions force divisions and create binary experiences: in or out, here or there. A gradient allows for more optionality and the agency to change your mind and shift through fluid spatial experiences. Examples of gradients can be indoor to outdoor, soft to hard material, large to small spaces, exposed to enclosed, dark to light, anonymous to known, or individual to communal.

Group 4's write-in responses to positive places included descriptions such as seating at different levels, fluctuating, open and enclosed simultaneously, communal and connected but driven individually.



process

Throughout this research, we have noted aspects of the professional design process that impact spatialized gender equity. Interview data heavily impacted our understanding on the importance of the following:

- When discussing or designing for gender equity, do not assume prior knowledge. Ask questions, establish shared language, and be open to new information.

- Build gender-diverse design teams and consultant teams (beyond tokenism). This is the VERY best way to have gender equity at the forefront of the design.

- Engage gender- and sexually diverse communities in the design process!

The design community has a profound opportunity to be advocates for the removal of barriers that make being transgender, non-binary, and gender nonconforming difficult in the built environment. LGBTQ+ communities have always had the knowledge and ability to fight for our existence, but uniting to work towards a more equitable future leverages all of our collective knowledge to see tangible change happen in our lifetimes.

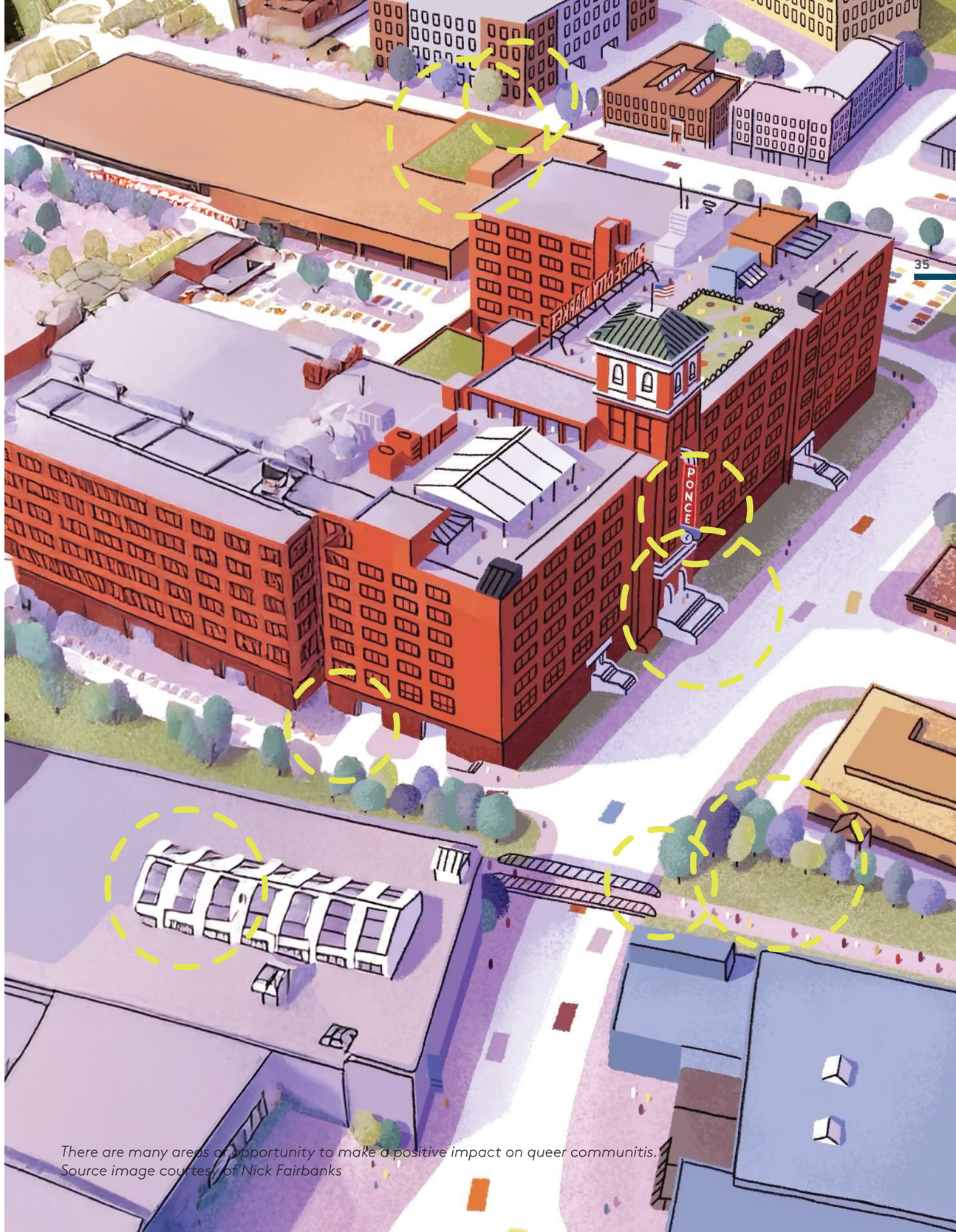
We have the power, vision, and creativity to enact positive change.

This research effort is a tiny step into that change, but it has its limitations. Intersectional approaches are important as gender is one axis of identity. People are complex, and it's critical to understand and accommodate other identities, whether fixed or fluid. This research is limited in its approach to this intersectionality, and we hope this can be built upon to more thoughtfully include race, ethnicity, national origin, age, and other identifiers.

We call for future research to understand how our built spaces can respond in more acute and long-term ways to different forms of violence against trans, non-binary, and queer individuals and communities.

The study of queer identities is inherently messy and ever-changing. If you need a place to start, we recommend:

To design effectively for trans and non-binary communities, create light-filled, quiet spaces that do not appear crowded even when busy, that are filled with natural materials, plants, and trees that are editable and fluid in their programming and form, and include members of the community in the design process.



There are many areas of opportunity to make a positive impact on queer communitis.
Source image courtesy of Nick Fairbanks

Resources

Berliner, J., & Luke, J. J. (2020). To carve out space: Transgender visitors' experiences in museums (thesis). University of Washington Libraries, Seattle.

Cheves, A. (2023, June 14). 9 LGBTQ+ people explain how they love, hate, and understand the word "queer." Them. https://www.them.us/story/what-does-queer-mean

Colliver, B., & Duffus, M. (2021). Queer Space: Toilet Provision, access and inclusion in the West Midlands. Sexuality Research and Social Policy, 19(4), 1483–1495. https://doi.org/10.1007/s13178-021-00658-8

Crawford, Lucas, Dr. (2015) Transgender Architectonics: The Shape of Change in Modernist Space, Taylor & Francis Group, ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/washington/detail.action?docID=4054865.

Daniel, G. (2013). Designing for Gender Equality in the Developing Context: Developing a Gender-Integrated Design Process to Support Designers' Seeing, Process, and Space Making. (thesis) University of Washington.

Dentice, D., & Dietert, M. (2015). Liminal spaces and the Transgender Experience. Theory in Action, 8(2), 69–96. https://doi.org/10.3798/tia.1937-0237.15010

Doan, P. L. (2015). Beyond Queer Space. In Planning and LGBTQ communities: The need for inclusive queer spaces (Vol. 1, pp94-107. 251–258). essay, Routledge, Taylor & Francis Group.

Educational Resources: Terms and definitions. Terms and Definitions | Centers for Educational Justice & Community Engagement. (2024). https://cejce.berkeley.edu/centers/gender-equity-resource-center/resources/educational-resources/terms-and-definitions#:~:text=the%20identifier%20itself.-,G,-Gay

Ferentinos, S. (2018). Beyond the Bar: Types of Properties Related to LGBTQ History. Change Over Time, 8(2), 144–163. https://doi.org/10.1353/cot.2018.0009

"Gender nonconforming." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/gender%20nonconforming. Accessed 2025.

"Gender-fluid." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/gender-fluid. Accessed 2025.

Gorman-Murray, A., & Cook, M. (2020). Queering the Interior. Routledge.

Gorny, R. A., & Heuvel, D. van. (2017). New Figurations in architecture theory: From Queer Performance to becoming trans. FOOTPRINT, (21). https://doi.org/10.59490/footprint.11.2.1897

Huang, Y., & Napawan, N. C. (2021). "Separate But Equal?" Understanding Gender Differences in Urban Park Usage and its Implications for Gender-inclusive Design. Landscape Journal, 40(1), 1–16. https://doi.org/10.3368/lj.40.1.1

Jones, J. M. (2025, September 5). LGBTQ+ Identification in U.S. Rises to 9.3%. Gallup.com. https://news.gallup.com/poll/656708/lgbtq-identification-rises.aspx

Kendall, Emily. "gender binary". Encyclopedia Britannica, 20 Nov. 2024, https://www.britannica.com/topic/gender-binary. Accessed 2025.

Knutson, D., Matsuno, E., Goldbach, C., Hashtpari, H., & Smith, N. G. (2021). Advocating for transgender and nonbinary affirmative spaces in graduate education. Higher Education, 83(2), 461–479. https://doi.org/10.1007/s10734-020-00673-5

Meyer, I. H., & Flores, A. R. (2025, February). ANTI-LGBT Victimization In The United States. www.williamsinstitute.law.ucla.edu. https://williamsinstitute.law.ucla.edu/wp-content/uploads/Anti-LGBT-Violence-Feb-2025.pdf

Monro, Surya. "Non-binary and genderqueer: An overview of the field." The international journal of transgenderism vol. 20,2-3 126-131. 21 Jan. 2019, doi:10.1080/15532739.2018.1538841

Potvin, J. (2016). The Pink Elephant in the room: What ever happened to queer theory in the study of Interior Design 25 years on? Journal of Interior Design, 41(1), 5–12. https://doi.org/10.1111/joid.12068

Sex & gender. National Institutes of Health. (2024). https://orwh.od.nih.gov/sex-gender

UNICEF Regional Office for South Asia. (2017, November). Gender equality: Glossary of terms and concepts. UNICEF Regional Office for South Asia. https://www.unicef.org/rosa/media/1761/file/Genderglossarytermsandconcepts.pdf

Wall, D. (2021, June 19). Sexual and gender minority populations: Fact sheet - ABCT - association for behavioral and cognitive therapies. ABCT. https://www.abct.org/fact-sheets/sexual-and-gender-minority-populations/

Zein, Murib (2020) Administering Biology: How "Bathroom Bills" Criminalize and Stigmatize Trans and Gender Nonconforming People in Public Space, Administrative Theory & Praxis, 42:2, 153-171, DOI: 10.1080/10841806.2019.1659048