

Restorative Spaces Glasgow

Creating Sensory Safe
Spaces in Glasgow

Project Documentation

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Preface

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Abstract

Urbanisation is causing large groups of people to move into urban areas and cities have had to rapidly expand to accommodate this spike in population (Ritchie, 2024). Neurodiverse people are being pushed into these unpleasant environments and find that their needs are not being accounted for in the design of these cities (Idox, 2018). There is a major issue in cities needing to expand, but not considering how they are impacting the day-to-day well-being of their citizens.

For city residents, the daily noise and chaos of the city can lead to the feeling of a lower quality of life (Beale-Elis, 2017). This issue is what inspired me to find how cities can improve the sensory experience that city residents may experience day to day. There is no reason that cities cannot be accommodating and comfortable for everyone.



Image Source: Unsplash

My Connection

Throughout my life, I have been very fortunate to be able to live in and travel to a variety of cities around the world (Canada, Mexico, USA, UK, and parts of EU). Although they were all very different and had their own style of urban planning, there was always one issue that I had in all of them: feeling overstimulated. The feeling of a city being too loud and busy created a sense of hostility that would cause me to mentally shut down and create a bad image of the city.

In my undergrad for user experience design, the idea of creating a deep understanding of your users' pain points and needs is very important to me. The rise in the feeling of overstimulation in cities, even with people who are not neurodivergent, shows that it is crucial that this issue needs to be addressed in order to improve the quality of life within cities.



Glasgow, Scotland



Toronto, Canada



Monterrey, Mexico

Initial Research

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Research Question

Why are cities so overwhelming to people, especially neurodivergent people? What are some of the main cases of overstimulation and how can it be addressed?

Research Space

It is important to establish the main areas of focus that I aim to learn about through my research.



**The
Senses**



**Neurodiversity
Awareness**



**Communal
Change**

Research Space



The Senses

Overstimulation is the feeling of being overwhelmed through one or multiple senses (The Autism Service, 2024).

Which senses are contributing to the feeling of overstimulation are not always the same. (Slocombe, 2023), so when conducting my research, I will need to always tie back to how different senses are being addressed, and not lean more on one sense over others.

Research Space



**Neurodiversity
Awareness**

The topic of overstimulation may be a vulnerable topic for people with neurodiversity (Aldred, 2024). During my research and future engagement I will remain cautious about how I frame the experiences and vulnerability of neurodiverse people.

If I am to engage with people within this group, it would be helpful to have a mediator that can help form trust between the participant and myself.

Research Space



**Communal
Change**

As previously mentioned, everyone experiences overstimulation. Finding information and solutions that have benefited a community as a whole is important.

Urbanisation has affected everyone within society (Mattern, 2008). Therefore communicating and gathering experiences from the general public could bring up many more unique experiences and raise awareness of the issue to everyone.

Desk Research

For my desk research, I first focused the topic of overstimulation in general. I looked at scholarly and professional online articles. These dissected and explained the causes and effects of feeling overstimulated. I then looked at articles created by or with neurodiverse people that recounted their experiences with overstimulation within cities. Many of these articles listed both physical and cognitive contributors, and all of them revolved around 4 main senses. These were sight, sound, smell, and feel.

I began to find many articles listing specific features and areas within a city that can be an attack on the senses. Looking further into these features, I came across the topic of urbanisation and the rapid expansion of cities. Having gained this knowledge, I felt that I could now connect many insights from my research to this issue of large spikes in urban population.



Context: Urban vs. Rural

Before further discussing urbanisation, the difference between urban and rural areas needs to be defined.



Urban

Used to describe densely and highly populated areas characterized by a built-up infrastructure. More simply put a large city (Defra Rural Statistics, 2015).



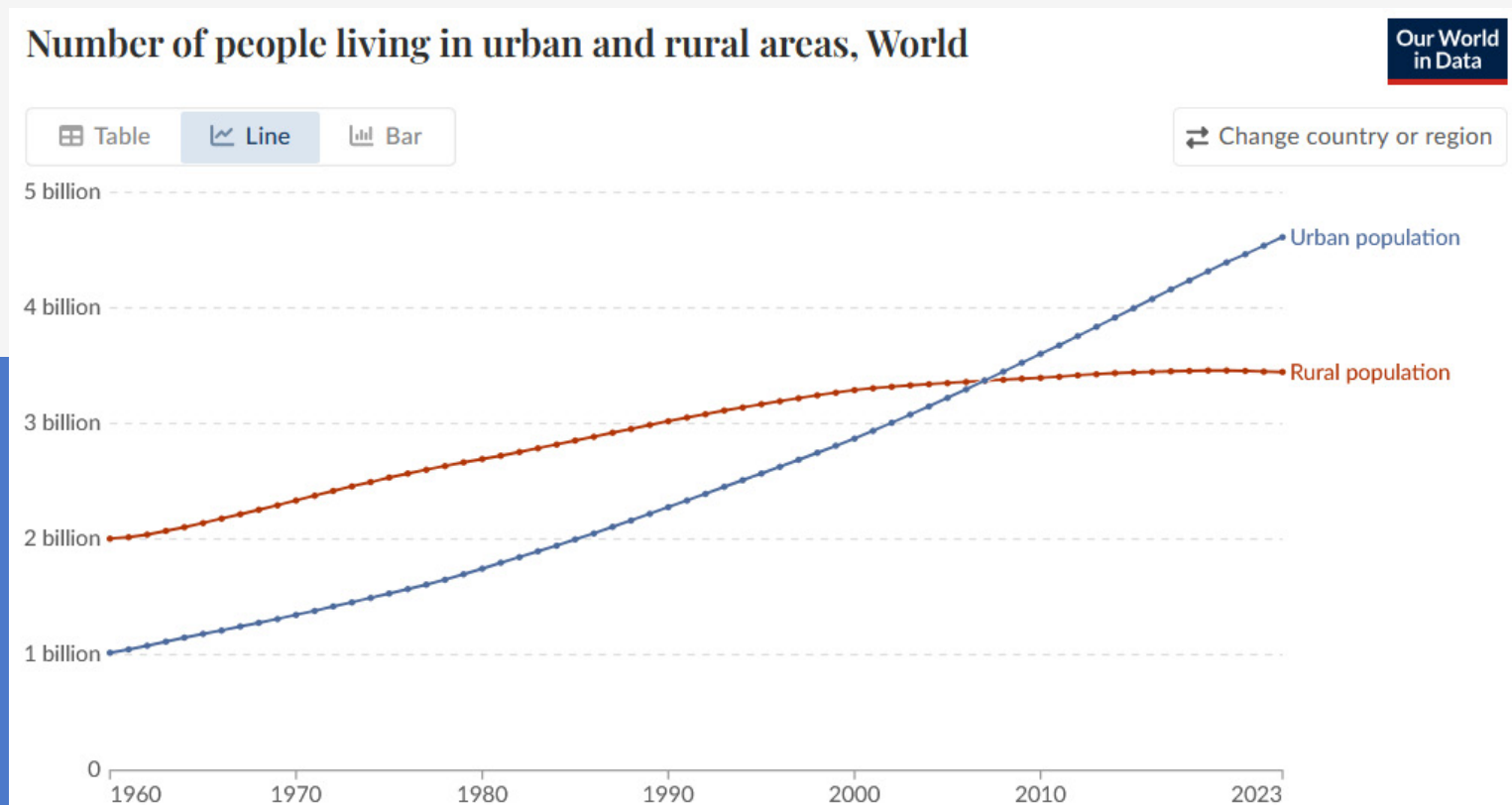
Rural

These areas have a much lower population density, typically a population under 10,000 people, and with a lower height built infrastructure (Defra Rural Statistics, 2015).

Context: World Population Growth

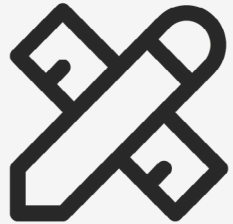
The population growth between urban and rural areas in the world were fairly similar pre 1980. But from 1980 onwards, the growth of the population in urban areas was beginning to exceed the growth of rural areas, with the world's urban population then surpassing the rural in 2008.

From 2008 onwards, the urban population grew at an exponential rate of 2% more each year, where we can now see that in 2023 the urban population is 34% larger (Ritchie et al., 2024).



(Ritchie et al., 2024)

Context: stakeholders



Urban Planners/ Architects

In speaking with them, I will gain expert knowledge into why cities are designed in certain ways, if there is a particular reason that certain features that can be found overstimulating are within cities, and if there are any policies that exist that are either pushed towards or away from a solution to this issue.



City residents/ neurodivergent people

This project is all about the lived experience of the city as a whole, not just my experience. So it is crucial that I engage with a variety of people living within cities and listen to their experiences. This will help me gain a more realistic understanding of what people feel the issue is and help push me towards a solution that people truly want.



Organizations/ Activists

Many of these organizations have already worked on projects that can relate to this topic. Through them, I would be able to gather the information that they have already gathered, question them further on specific information I would like to know, and hopefully even have them as a mediator for engaging with neurodiverse people.

Case Studies



Union Street Co-Design, Dundee

During the Covid-19 pandemic, Union street was converted to a pedestrian street which was received with positive responses.

Co-design sessions were held so locals could share what they hoped to see on the street. From this, the street saw many changes to create a welcoming environment such as:

- Vehicles can only enter at certain times.
- Frames that hide bins and display art.
- Gateways signalling and welcoming.
- Various greenspaces and gardens.

(McIntosh & Kennedy, 2023)



EVE Park, Canada

The Net-zero apartment complex in London, Ontario uses sense of space and biophilic design to create a calming community for their residents.

The buildings were constructed in a spiral form so all apartment entrances are facing each other, promoting a sense of community within the space.

At the centre is a green area with benches and tables to motivate people to be outside and live alongside others. Cars are hidden in parking towers minimizing the space they take up.

(s2e Technologies, 2025)

Expert Interviews

After performing my desk research, I reached out to people with expert knowledge on areas within this topic. This included one-on-one online calls and email communication. These were held as semi structured interviews which allowed for the interview to feel more like a conversation and allow more natural ideas to arise. Some great insights gathered were:



Restorative Opportunities

It is important for people to create opportunities where they can restore themselves.

In these moments, people can disconnect from their chaotic environment and regain their senses.



Wayfinding and Reducing Anxiety

Clear, consistent and multi sensory wayfinding (visual, tactile, auditory) can significantly reduce anxiety and cognitive load, especially in unfamiliar or complex environments.

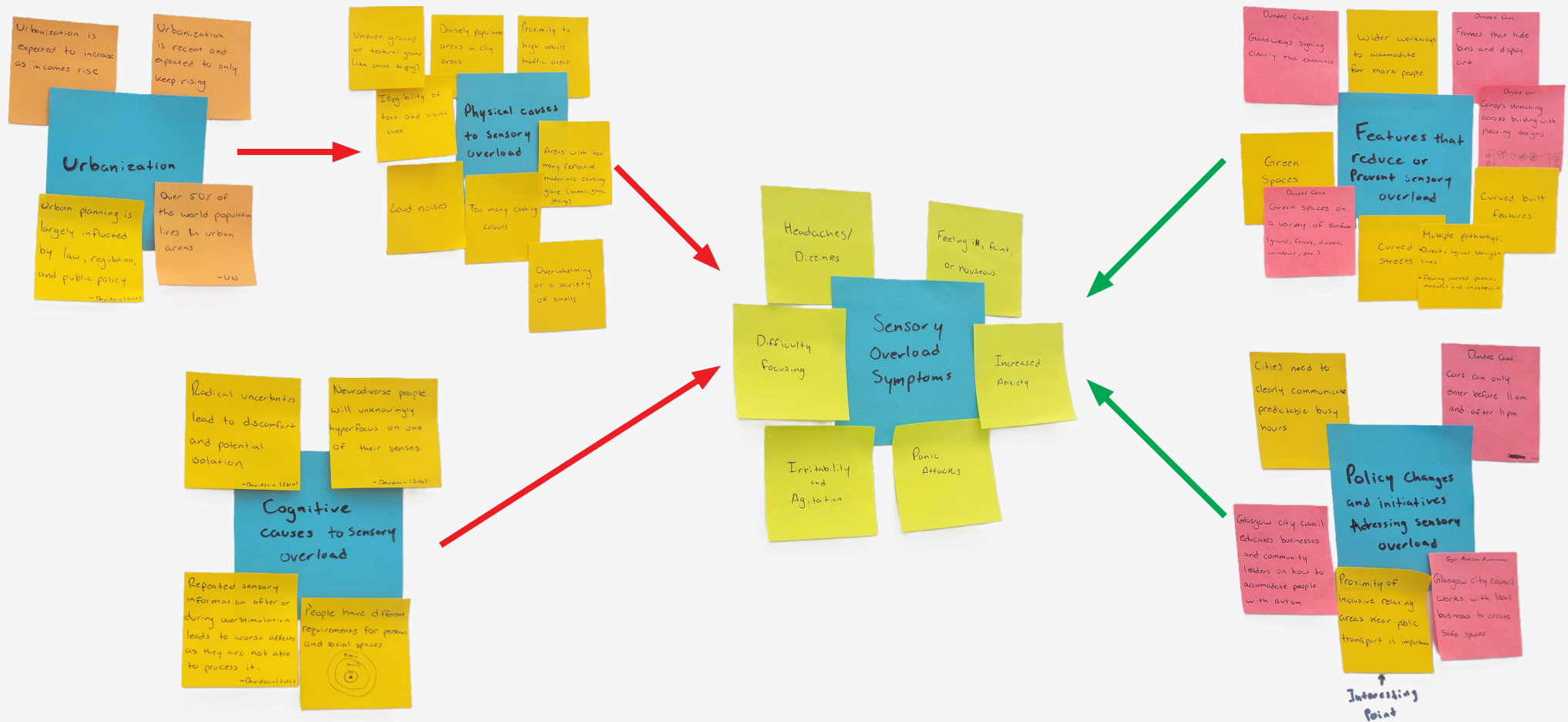


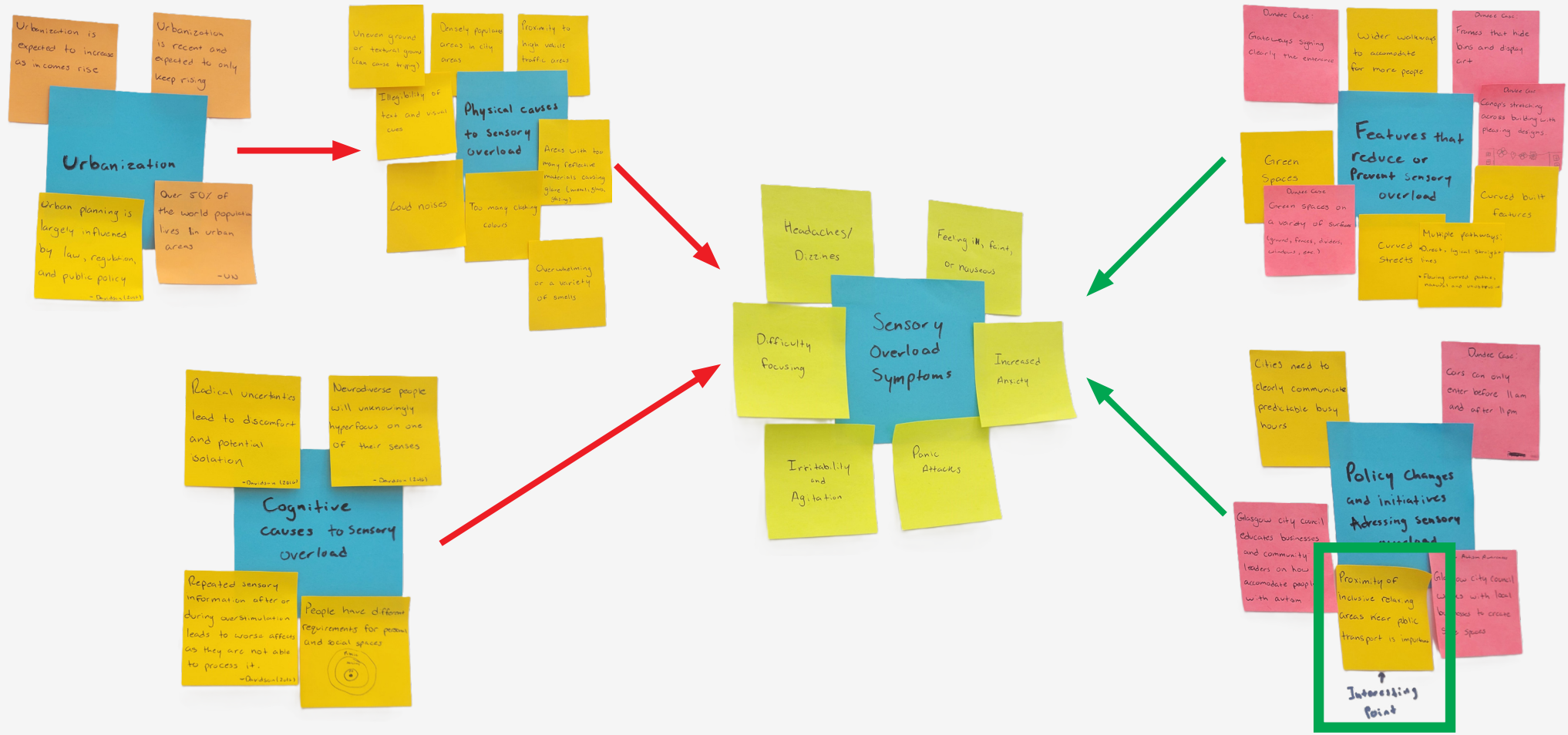
Provision of Quieter, Alternate Routes

Offering quieter or less crowded routes, both externally and internally, can help reduce sensory overload.

Mind Mapping

After my initial desk and primary research, I noted down all of the major findings from my research, then grouped all of my findings together so that I could create larger main insights. These groups helped me envision how different areas of my research affect each other, therefore making it easier to visualize the wider context of my topic.





One of these that peaked my interest was an insight in *BSI: Design for the Mind*, where they argued that the proximity of inclusive relaxing areas near public transport is important as it creates accessible safe spaces. This argument lead into the field study I did soon after.

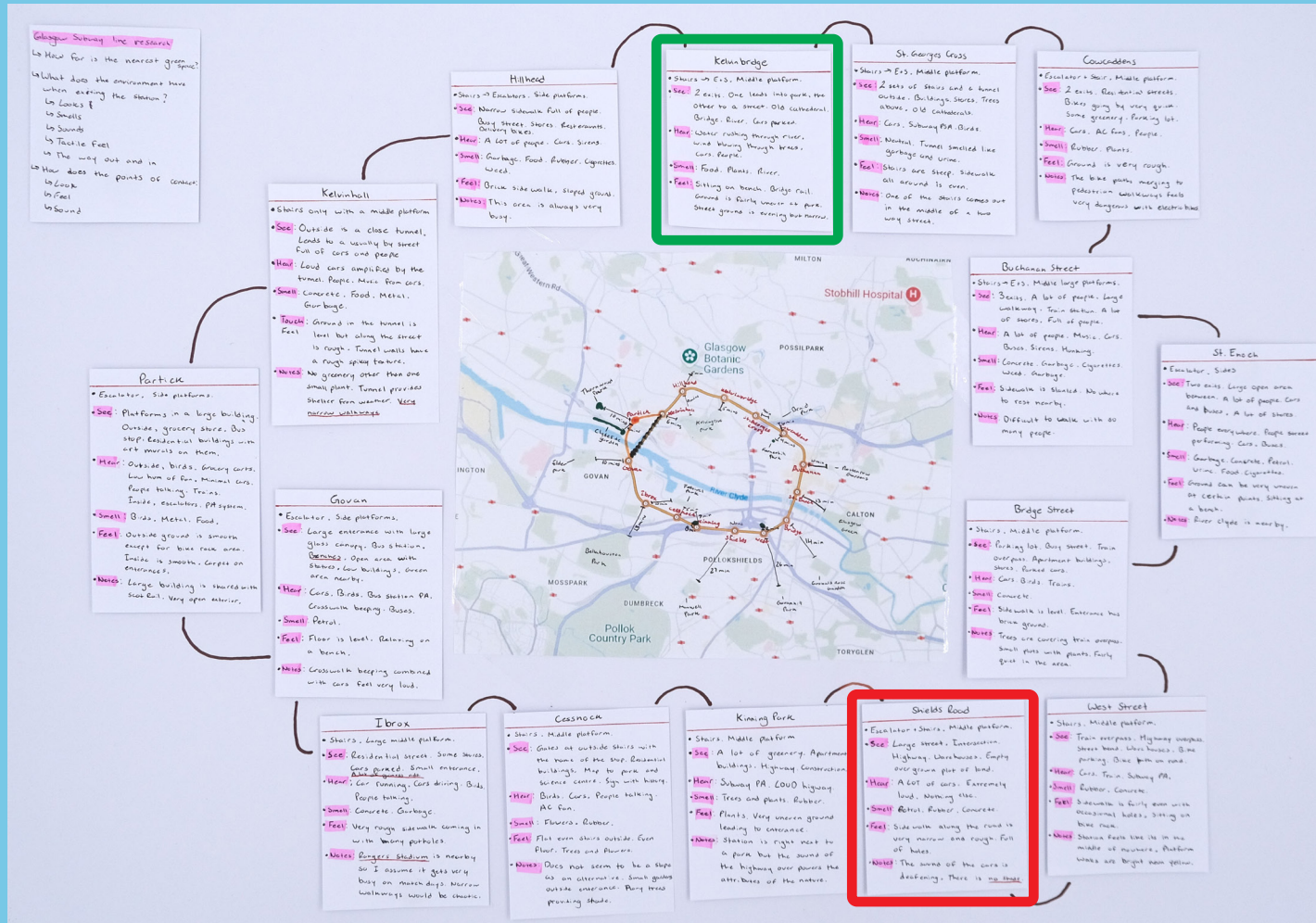
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“...People with sensory and/or information processing differences find travelling on a busy transport network challenging... influencing where they choose to work or to visit on a regular basis.”

- BSI: Design for the mind (2022)

Glasgow Subway Study



Of all of the stops, the worst stop in my experience was Shields road. When you exit the subway on this stop you are met with a small rough sidewalk beside a large busy road, industrial warehouses, and the sound of the nearby highway.

Glasgow Subway Study



Kelvinbridge (best)

See

- 2 exits, one into a park and the other onto a street. Old Cathedral, bridge, river, cars.

Hear

- Water rushing through river, wind blowing through trees, cars, people.

Smell

- Food, plants, river.

Feel

- Bridge rail, ground is uneven at park, street ground is even but narrow.



Shields Road (worst)

See

- Large Street, intersection, highway, warehouses, empty overgrown plot of land.

Hear

- A LOT of cars. Extremely loud.

Smell

- Petrol, rubber, concrete.

Feel

- Sidewalk along the road is narrow and rough, full of potholes.

Engagement Board

After performing my field study, I decided to engage with Glasgow residents, and hear their sensory experiences at two of the stops along the subway, Shields road and Kelvinbridge road. Both of these stops felt like the opposite in how hostile their environment was, making them perfect contrasts for the case of this engagement.

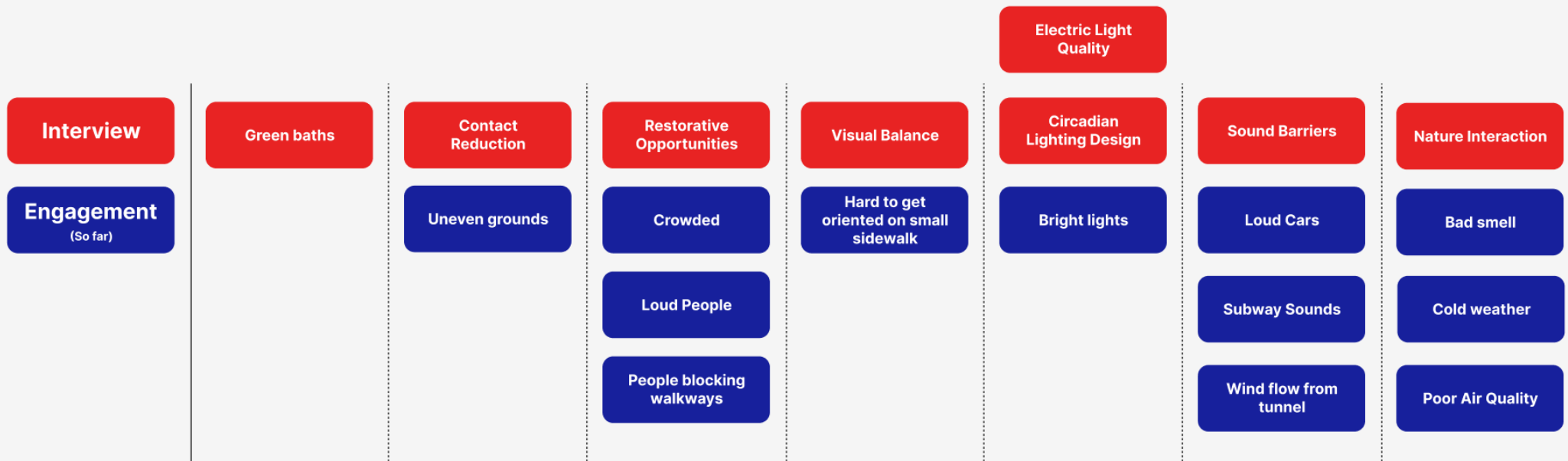
For this engagement, I set up a board asking passers-by if they were feeling overstimulated. If so I would ask them to describe what it was, write it on a sticky note, and post it on the board under one of the senses. In total I had 8 participants engage with this. From this, I was able to back up my findings in my field study alongside the experiences of other residents, solidifying that a change needs to be made in Glasgow towards creating more welcoming environments.



Understanding

After engaging with some people out on the street, I gained a lot of insight on some of the more specific ways that people think, perceive, and engage with their surroundings.

I took all of the points that people listed in my engagement and aligned them with the design practices that were listed by my stakeholders. In this visualisation, I can begin to look deeper into how these relaxation designs align with what is being vocalized.



Second Engagement

For my second engagement, I created a space to focus on an individuals' senses and dissect exactly how these senses react to different factors of a city. During this experience, I had 4 participants sit at a desk and go through tasks. These tasks were to adjust the lamps temperature and brightness to their preference for working and relaxing. They would then listen to an auditory experience where 3 recordings of areas in Glasgow were played and they would talk about what they heard and how they felt.

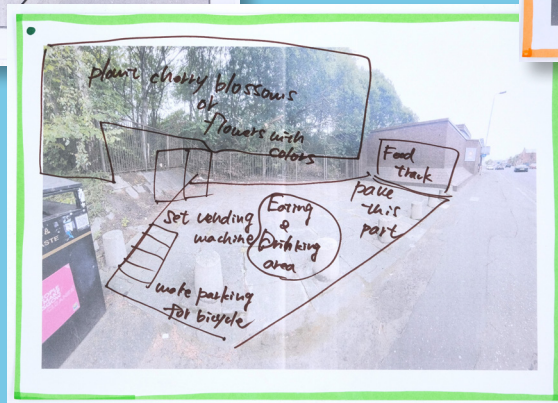
They were then tasked with going through nine different locations and highlight aspects of the area that they liked and disliked. At the end, they were given an image of a large empty plot of land at Shields road and tasked with redesigning this area to one they feel would be more welcoming.



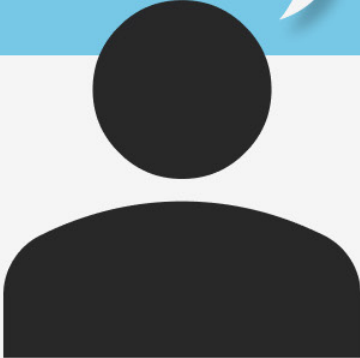
Insights

From this engagement, I was able to test some of the theories and practices that I had found in my research and interviews with experts. This included the use of circadian lighting, contact reduction, sound barriers, nature interaction, and restorative opportunities.

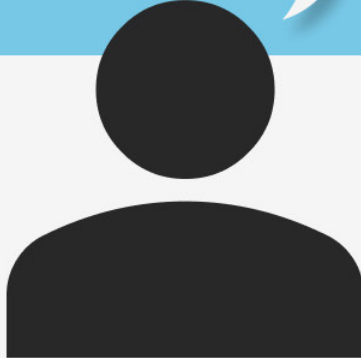
When asked about their redesigns, every participant had mentioned that it was important for them to have somewhere where they are able to stop during their commute, recollect themselves, then continue with their day.




Insights



“When I am out walking in the city I am expected to not relax until I make it to my destination”



“I see so much potential in many empty plots of land, but instead they look scary and uninviting.”



“I feel that when I am in these negative spaces, although there is a lot of people, I always feel isolated and alone.”

These sentiments have rung true with many people that I have talked with throughout this project, so I began to imagine how more restorative opportunities could be created. During my engagement, when proposing the idea of creating restorative opportunities within busy city areas, participants were interested and said they would enjoy to see more spaces like the ones that they designed.

Moving Forward

These engagement methods proved to be extremely pivotal in the advancement of my project, but also in backing up the initial research that I had done. But it has shown me that people want more than just a place to rest. To them, cities have formed a sense of needing to keep moving throughout their day without being able to unwind until the end of their day.

In the future stages towards creating more restorative opportunities, I need to ensure to follow the sentiments shared with me from participants. It is crucial that in my future work, the sensory experience I design also creates a sense of purpose for the people.



Image Source: Carlos Fernandez Mac Gregor

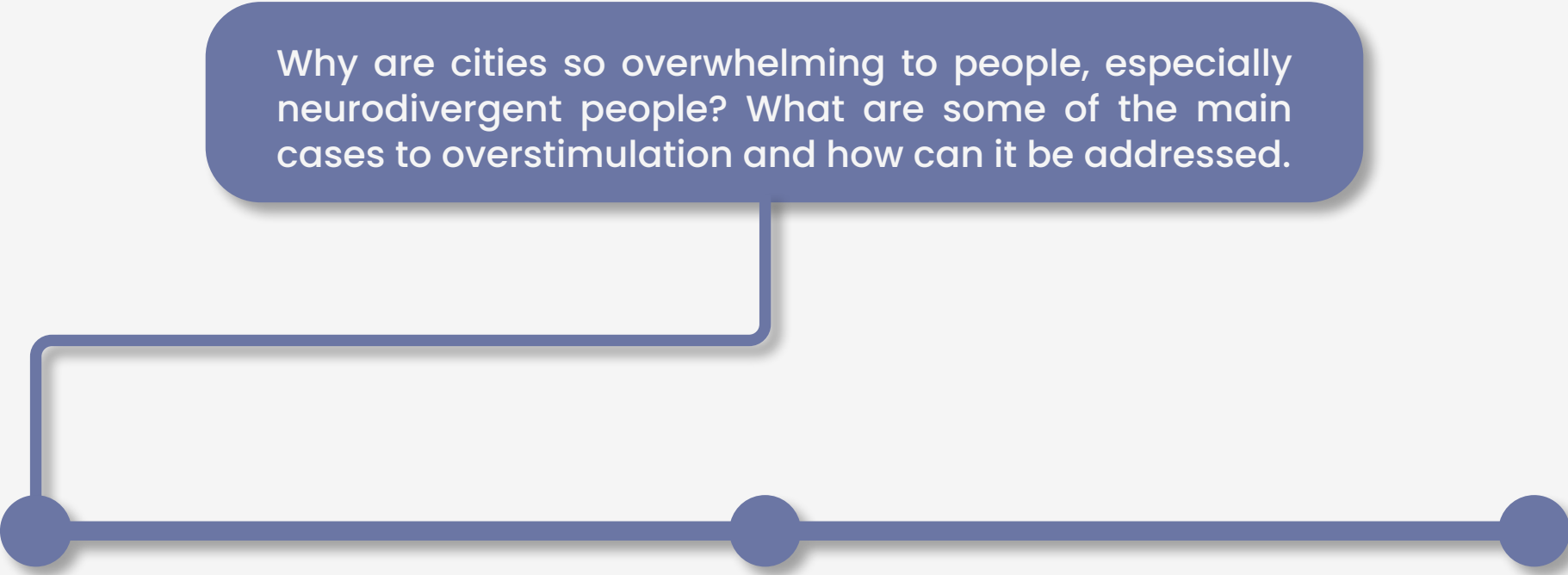
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Redefine Research Question

Throughout the work of my dissertation, the projects research question changed alongside new insights to suit what I wanted to know next.

My focus began at the general scale of what overstimulation is. My focus was finding real experiences about the topic that would help me find how cities can connect to this issue.



Why are cities so overwhelming to people, especially neurodivergent people? What are some of the main cases to overstimulation and how can it be addressed.

Redefine Research Question

Throughout the mid point of the project I had to decide on what areas I felt I needed to focus on more, be it the larger design of cities or a smaller design that changes the city from inwards out.



Why do many people find cities overstimulating? What is it in the city that they feel causes their overstimulation?

Redefine Research Question

Now in the final prototyping phase, I have honed in the focus of my work into the restorative spaces that I want to design. With this final stage, I aimed to focus on finding how small unused spaces within cities can be re imagined as restorative spaces for the senses.



How can cities provide a restorative space that can help people regain themselves through sensory pleasing design?

Prototype Creation

To more accurately test if the components of a restorative space will have a positive effect on people using the space, I created a small experience that could be taken out and people could interact with.

This prototype consisted of a board that featured greenery, art, sun catchers, sheets with information about how visual and auditory features are being used to calm their senses, a chair so they could be in a relaxed position, and a set of headphones which played audio of wooden wind chimes, metal wind chimes, a Japanese water fountain, and wind wands.



Prototype Engagement

Once the prototype was completed, I went out to Shields road, on the empty plot of land, along with 6 participants who agreed to engage with my prototype. Participants sat down and engaged with my design which tested simplified versions of features that will be included in my final design. From this engagement I was able to gain a lot of useful insight into the creation of a restorative space and how people would interact with it.



Engagement Insights

Of the components tested, these were the main takeaways from each one.

Greenery

All participants agreed that seeing greenery in the city is something that helps them unwind. But as one participant noted, “if it is not well taken care of or severely overgrown, as can be seen here (Shields road), it can make an area feel dirty.”

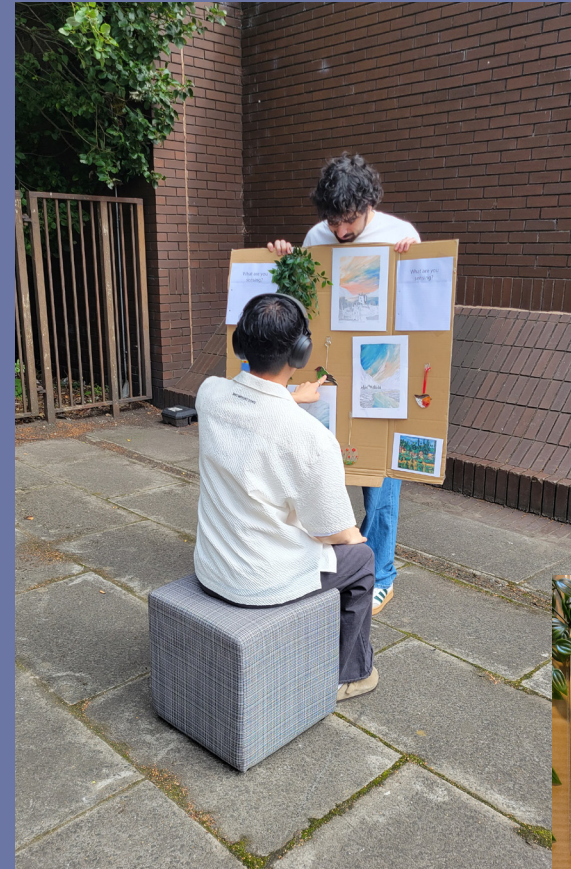


Engagement Insights

Art

The art displayed along with the idea of them being in an outdoor setting, were also met with positive remarks. Participants expressed that they felt “like [they] could get lost in it” and disconnect from their current stressful environment.

It was also expressed that there needed to be a balance when using art. Some participants felt that if there is too much then they can become overwhelmed and pressured to look at each one.

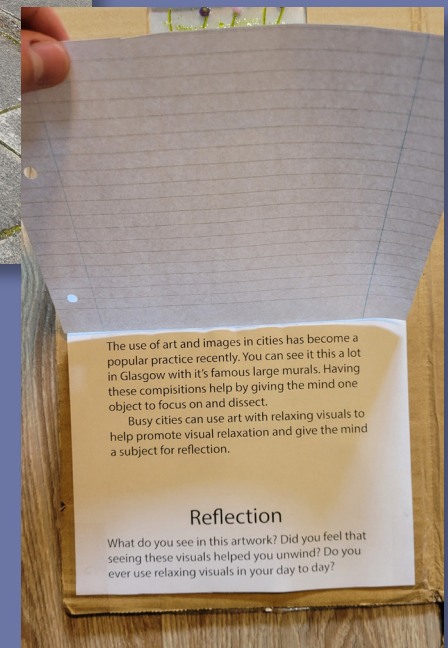


Engagement Insights

Signs

The sensory reflection signs were an important feature in this test. Four participants read every sign that was on display. They enjoyed learning some information about why the components were being used, and mentioned that while they were reading, it was easier for them to disconnect from the busy environment.

The other 2 participants only read one of the signs. When asked why, they said that the information was interesting but they didn't want to read at that moment. When further questioned about the design, one participant noted "I think it is nice having the information covered. Seeing so much text and information around me when I try to relax makes me feel overwhelmed, like I am missing out on not reading this information."



Engagement Insights

Sound

A majority of participants enjoyed the wooden wind chimes but felt that the metal version could be too harsh on the ears. When asked how they would feel if metal wind chimes were part of this space they felt that they would add to the “man made feel of the city.”

The Japanese bamboo fountains were a feature that not many people had heard or seen before. But when participants were asked about it, they found the sound of the running water and the bamboo to be soothing.

For the wind wands, participants enjoyed when the wands created a low quiet hum, but in moments where it got louder they expressed that it became overbearing.



Engagement Insights

Seat

This component was simple and brought a lot of positive feedback from participants, alongside with comments feeling annoyed by how few public benches and seating spaces can be found within the city.



Retrospective

The feedback gained from this prototype was extremely useful in creating my final design. Of all the feedback that I received from the participants, the idea of “over doing it” was very prevalent. For most of the components, people would express that they enjoy the feature, but when there isn’t too much of it.

This insight will be very important for when I create my design. I need to ensure that I have a good balance in what I include. If I am not careful with my design, I can fall into creating a space with too many features that could be stimulating the senses of people visiting.

It does not take a lot to help people unwind, but it can be very easy to overcompensate and make their experience worse.

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Design Standards



With my design, I used the Well Standards to inclusive design as a guideline of what I should aim to achieve.



Restorative Opportunities



Nature Interaction



Visual Balance



Circadian Lighting



Contact Reduction



Impact Noise Management

Glasgow Initiatives



Autism Aware Glasgow

- Starting in 2018, the city council of Glasgow started the Autism Aware Glasgow initiative.
- Through this they aimed to improve the lived experience of residents and visitors in Glasgow that had autism.
- City council worked with local organizations, such as museums and galleries, transport hubs, business organisations, shopping centres, the Hotel Association, arts venues, and the TOA, and provided them training for how their business can accommodate for visitors with autism (Glasgow City Council, 2018).



Green Initiatives Glasgow

- Glasgow has also heavily invested into many green initiatives, such as the Glasgow Green deal, Sustainable Glasgow Partnership, and the Green New Deal, working towards their goal of becoming a net-zero carbon city by 2030 (Glasgow City Council, 2024 & 2025).
- Many of these initiatives revolve around creating more green public spaces and promoting car free travel.

Glasgow Initiatives



Autism Aware Glasgow

- This initiative was received with a lot of positivity from businesses in the city, with over 100 staff receiving specialist training in just one year (Glasgow City Council, 2019). The success of this initiative proves that Glasgow is open to taking action on creating a more inclusive city.
- While I did reach out to a member of the city council, I did not hear back from them. If I had more time and resources available to me, I believe that I could propose my final design to members of the city and receive further support.



Green Initiatives Glasgow

- While working on my project, I found that Glasgow could serve as a great example as to why restorative spaces are important. The city has shown that they value the quality of life of residents in the city and also its visitors.
- I believe that further development and implementation of my solution could be done closely with the city, creating a final solution that best serves the people of Glasgow.

Empty Space



As I found in my research and engagement methods, there are many small areas within the city of Glasgow that are unused with great potential. A fifth of urban vacant land in Scotland is located in Glasgow (Smillie, 2025).

Many of these spaces have been unused for decades now and are located in busy areas of the city, but the walled off and overgrown visuals have created an unwelcoming and hostile environment for people in that area, which leads to feeling overstimulated (Beale-Ellis, 2017).

This is a major gap where I believe my solution would thrive. The implementation of restorative spaces in these empty areas will remove the unpleasant features in these derelict areas, and instead create relaxing and welcoming experiences for busy residents on their daily routine.

Restorative Spaces Glasgow

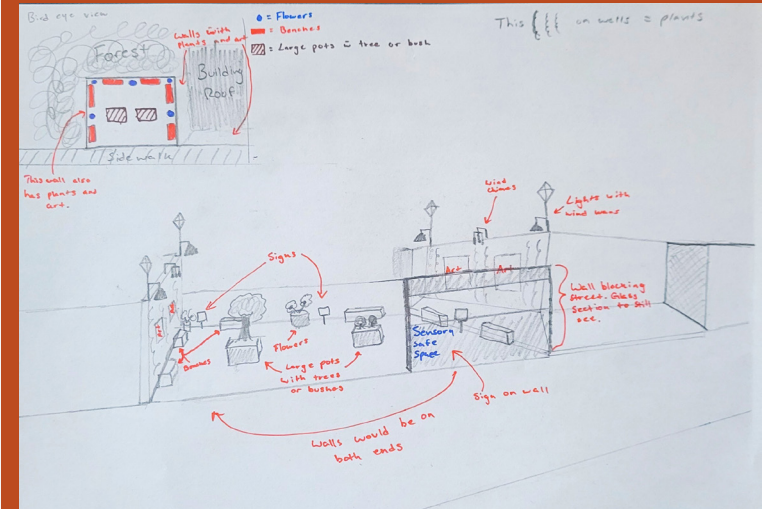
Creating sensory safe spaces for everyone in Glasgow.



Restorative Space

For my solution, I have taken the empty plot of land beside the Shields road subway station, and converted it into a sensory restorative space.

This space has been designed specifically to alleviate the overstimulation people may be experiencing, by including sensory pleasing features that were found and tested during my project.



Restorative Space



Sight

The use of greenery and art creates relaxing visuals that helps people disconnect from the typical busy and grey visuals of the city. While these visuals are prominent in the space, they do not command the persons attention.

Around the space are light fixtures which will adjust it's temperature to follow the circadian rhythm, emitting white lighting in the morning and warmer yellow in the evening and night. The white lighting will help visitors regain focus and energy during the day, while the warm yellow will help them relax and unwind at the end of the day.

Restorative Space



Sound

Creating an effective relaxing sound scape can be difficult within a city. So the auditory features that will be found in these restorative spaces may be dependant on the location. In this example of Shields road, the features used are going to benefit from the airflow created by passing cars of the roads.

Wind wands can be found alongside the walls which will create a low humming sound, similar to that of white noise. This will help cancel out the sound of the passing cars.

Restorative Space



Sound

The second sound feature used in this space are wooden wind chimes. In my engagement method, a majority of participants agreed that wooden chimes were more relaxing than chimes made of metal. These wind chimes will mimic the sound of trees blowing in the wind, creating a more natural sound scape.

Restorative Space



Feel

The main focus on the haptic experience of visitors is providing a more comfortable experience when walking and sitting. In my first engagement, a participant had mentioned that they liked the feeling and look of resin bound gravel when walking outside.

Through research and further inquiry in my engagements, I found that this type of surfacing lasts much longer and can come in different colours, ensuring that the safety and ease of walking here will be superior to traditional concrete.

Restorative Space



Feel

Another haptic experience people will have are with the benches. Participants constantly voiced it is difficult of them to find comfortable places to sit during their commute.

This space provides many benches in which people can sit and relax, but more importantly, these benches are placed so that when someone sits down, they are sitting facing and surrounded by the other sensory features.

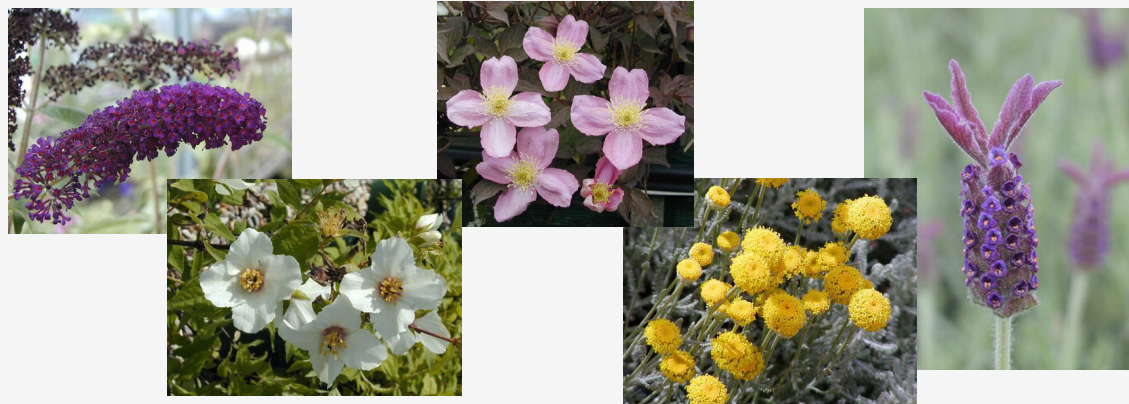
Restorative Space



Smell

The implementation of a variety of flowers and plants create a more soothing and natural smell in these spaces. In my research, flowers that are found to have relaxing fragrances within the UK include buddleja davidii, clematis montana, lavender helmsdale, mock oranges, and cotton lavender (RHS, 2021).

While all of these flowers have pleasing smells, it is also ensured that they are pleasing to look at, adding to the relaxing visual balance of the space.



Restorative Space

What are you sensing?

Sound plays a major part into the state of relaxation that someone is in. Cities can often feel like an overload of man made sound, whereas natural sources of sound often helps one unwind.

In the busy setting of cities, using the natural flow of wind to create relaxing sounds with wind chimes or wind wands can help us reconnect and focus on the nature around us.



Reflection

How does the sound of wind make you feel? Do you feel that you miss the sound of nature when in the city? What are some other sounds that you enjoy hearing?



Learn

Throughout the space there are signs that display information about the various features, how they work, how they help reduce overstimulation, and questions of reflection for the person. These signs are placed in unobtrusive spots and the information is hidden behind a cover.

The information is hidden to prevent creating a point of stress when visiting. Participants in my engagement methods had mentioned that when they see too much text around them they feel that they are being yelled at. So while I would like for people to learn about how the space works, the main goal is for them to feel comfortable and be able to recollect themselves.

Short Term Goals

With the implementation of a sensory restorative space, the immediate desired effect that they will have is that people will use these spaces and engage with restorative thinking. People will become more aware of how their surroundings can cause their overstimulation and now be knowledgeable of spaces that they can access in the case that they feel overstimulated.

The hope is that people can come into these areas, take in their surroundings, relax, improve their mental state in that moment, and feel confident in their ability to continue with their day. This space is created to be as unobtrusive as possible with little to no mandatory points of engagement.

Visitor Journey

Relax

Walk into space and use the facility as they want.

Learn

Interact with signs around the space and learn more about how their senses react to different stimulants that affect their comfort.

Improve

Through this new awareness, they will see their surroundings differently and find new ways to improve their sensory experience.

Long Term Goals

As for my long term goal, I would hope to work more closely with the city of Glasgow to further develop and introduce these spaces into the city. Being able to create more restorative spaces will enable people all over the city to access one of these spaces more easily and frequently. Through the frequent use of these spaces and by reading the signs informing about sensory features, people will become more aware of how easy it could be to implement sensory restorative spaces within the city.

As seen in other cases and discussed by a stakeholder, by creating awareness, people will begin to apply what they learn from these spaces to other areas in Glasgow, discuss about how the practice can be implemented around the city, and support city projects that build towards creating a more sensory mindful city.



Final Reflection

At the end of this project, I have come out more aware of how surroundings can greatly impact how a persons mindset can be affected, but more importantly I learned that when I am creating a design it can be very easy to overdo my design and end up creating something that can have the opposite of the intended effect.

When creating my final prototype and solution, I ensured that all choices and designs were based on my research and not my personal experience. This topic is something that I find important and I know many other people find important as well.

“It is vital for recovery that all individuals reconnect with embodiment to make sense and find meaning and belonging in being alive in the body they have.”

- Aldred, K. L. (2022)

References

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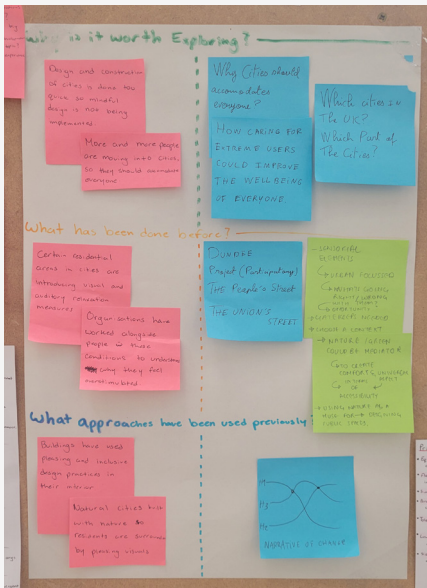
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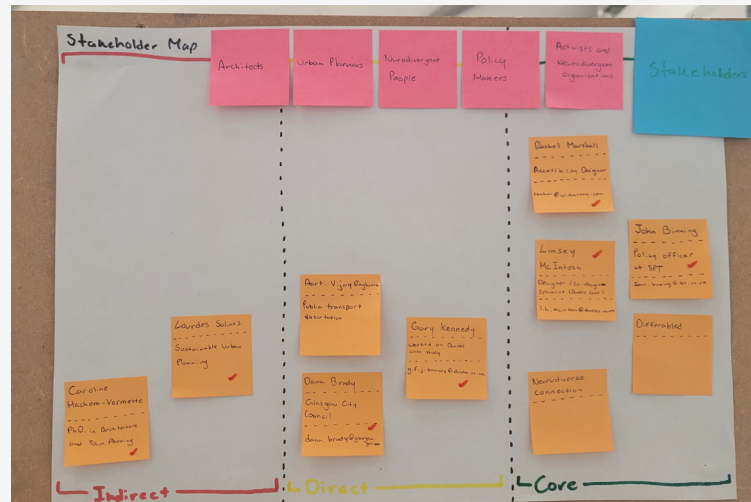
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Appendix



Peer review ideation and feedback.



Stakeholder Map

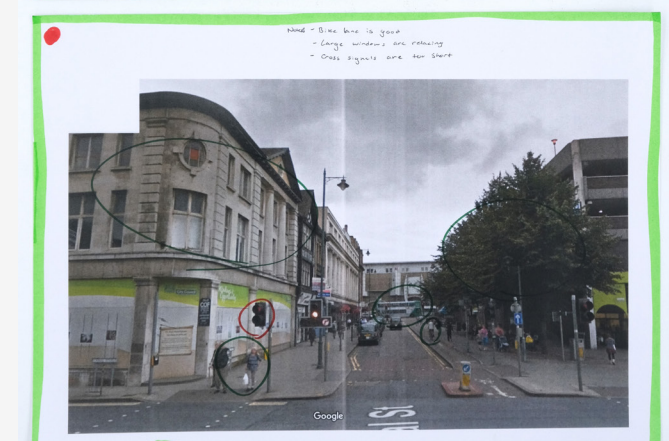
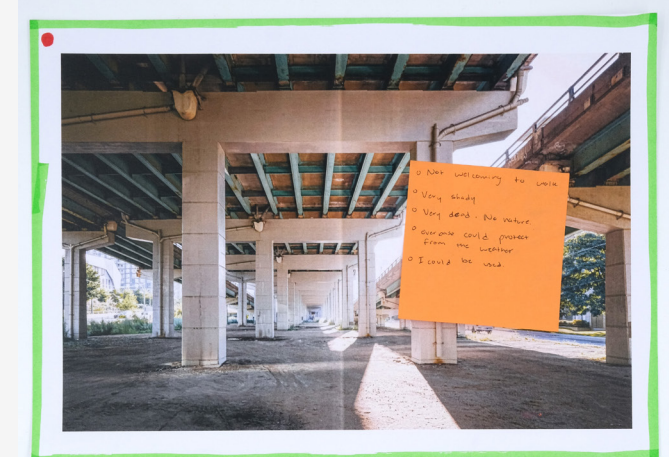
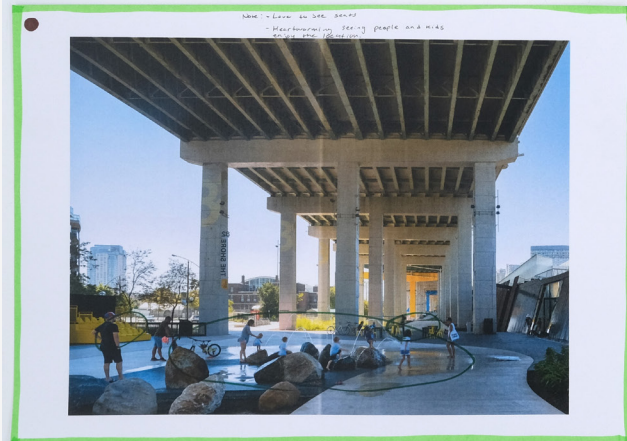


Research Mind Mapping



Project Space within Neurodiversity

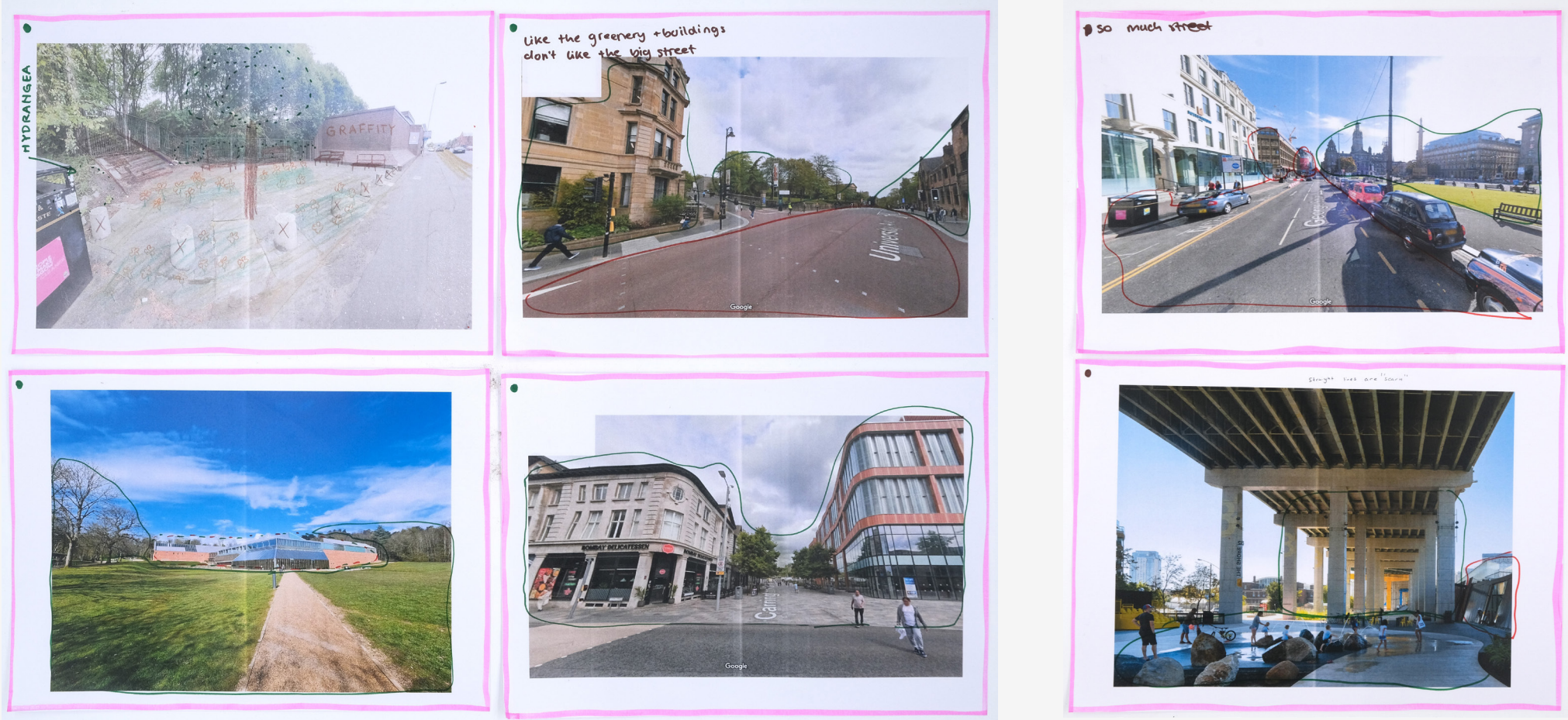
Appendix



Engagement 2: Participant A neutral spaces

Engagement 2: Participant A disliked spaces

Appendix



Engagement 2: Participant B favourable spaces

Engagement 2: Participant B Neutral spaces

Appendix



Engagement 2: Participant B disliked spaces

Appendix



Engagement 2: Participant B favourable spaces



Engagement 2: Participant B neutral spaces

Appendix

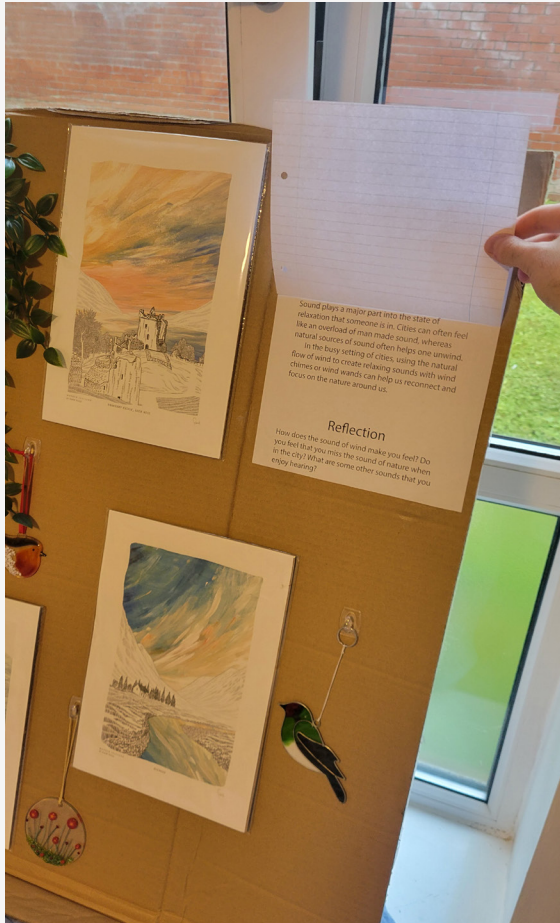


Engagement 2: Participant B disliked spaces

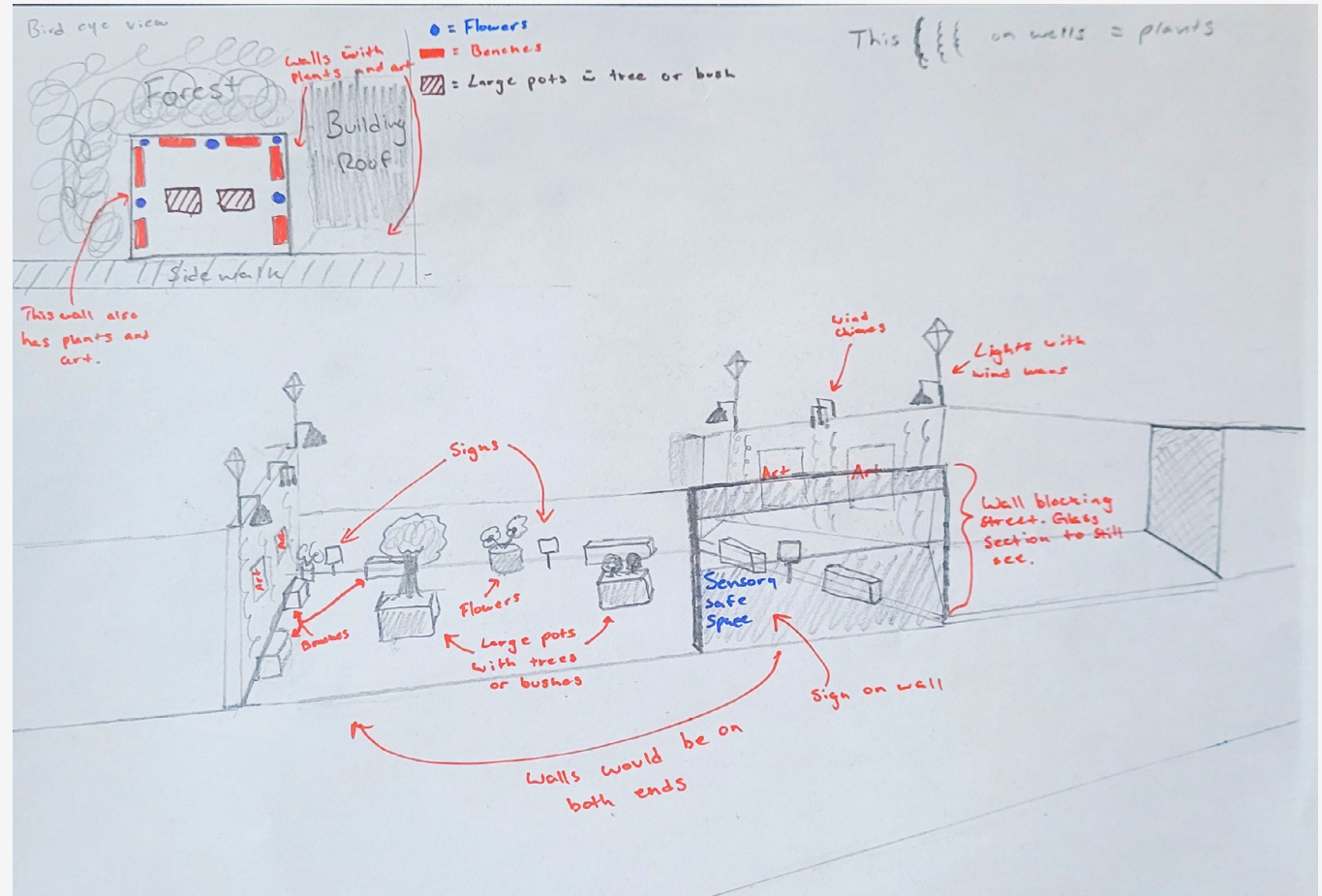


Engagement 3 board

Appendix



Engagement 3 board: sign



Final design concept drawing