Designing a Socially Inclusive Public Realm based on the Experiences of Persons within the Autistic Spectrum (AS)

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I take full responsibility for any shortcomings in this dissertation.

Abstract

The built environment should strive to accommodate and enhance the human experience by fostering mental, physical and social wellbeing. Sensory pleasing, accessible, comfortable and enabling spaces are critical to promoting a good quality of life. This dissertation investigates the local reality from the lens of persons within the autistic spectrum, whose experiences are often neglected in architectural design, as observed from the lack of enforced policy and the state of local public spaces uncovered through this study.

Academic literature revealed that atypical detail-oriented perception, experienced by persons within the autistic spectrum, can lead to a high influx of stimuli, elevated sensory stressors and slower global processing. Spatial and design criteria aimed at dissolving these seemingly invisible barriers to neurotypicals were compiled from existing ASD design guidelines and discussed in reference to prominent urban design literature.

The relevance of academic literature conclusions was investigated in the local context through multiple participatory research tools. Interviews with mental health professionals and an online questionnaire provided a general grasp of the local realities, whilst participatory walks with persons within the autistic spectrum with low support needs provided in-depth phenomenological observations in local public spaces in Valletta. Analysed results were discussed, and prevailing themes were extracted. As the culmination of this dissertation, principles were proposed to drive architectural and urban design processes, promoting social inclusivity. These include adopting an inclusive, participatory design process, designing sensory-friendly, flexible and adaptable environments, carefully considering proportions, legible layouts, wayfinding, and factors contributing to a safe environment.

Keywords: autism, perception, public realm, sensory sensitivity, legibility, safety

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Glossary

Term	Definition
AAC	Alternative or Augmentative Communication
ABA	Applied Behavioural Analysis
AASPIRE	Academic Autistic Spectrum Partnership in Research and Education
ASD	Autism Spectrum Disorder
ASAN	The Autistic Self Advocacy Network
CRPD	Commission for the Rights of Persons with Disability
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECoC	European Capital of Culture
EPF	Enhanced Perceptual Functioning
FREC	Faculty Research Ethics Committee
GRASP	Global and Regional Asperger Syndrome Partnership
IDEA	The Individuals with Disabilities Education Act
IPA	Interpretative Phenomenological Analysis
LED	Light Emitting Diode, a source of lighting
LGBTQ+	Lesbian, gay, bisexual, transgender, intersex, queer/questioning persons, and the "+" represents other sexualities or genders such as asexuality, non-binary and pansexuality.
NDD	Neurodevelopmental Disorders
NGO	Non-Governmental Organisation
PECS	Picture Exchange Communication System
PRISMS	A non-governmental organisation based in Malta, providing non-formal learning opportunities for young people.
SWB	Faculty for Social Wellbeing
WHO	World Health Organization

Chapter 1: Introduction - Unveiling the neurodivergent perspective

This chapter sets out the scope of the study through a concise background on neurodevelopmental disorders and then outlines the research motivation, objectives, research questions and dissertation structure.

1.1 Context

Neurodevelopmental disorders (NDD) develop during the early years of a child's development, inferring differences in brain development and functioning, thus impacting various domains of functioning, including cognitive, social-emotional, communication, adaptive and sensorimotor skills, that vary for each type of neurodevelopmental disorder (Sherr, 2016).

The diagnosis of neurodevelopmental disorders has undergone significant redefinition over the years, leading to a better understanding of these disorders (Cainelli & Bisiacchi, 2022). Genetic and environmental factors, neural circuitry and cellular mechanisms have been identified as the main factors that cause NDD. Neurobiological research on NDD has led to improved diagnosis, treatment and support for individuals evident through development and testing of targeted therapies (Sherr, 2016). Neurodevelopmental disorders often co-occur inferring specific or broader effects that may impact different aspects of one's life.

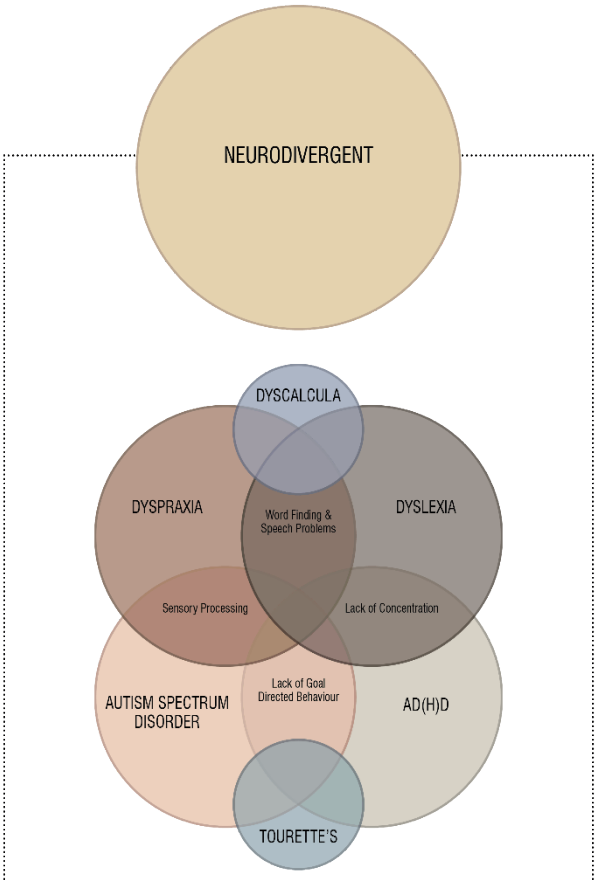


Figure 1: Neurodivergent make-up. (Galea, 2019)

The following are types of NDD:

- Intellectual Developmental Disorders, including global development delay and intellectual disability.
- Communication Disorders, including language disorder, speech sound disorder, childhood-onset fluency disorder, social (pragmatic) communication disorder.
- Autism Spectrum Disorder
- Attention-Deficit/Hyperactivity Disorder
- Specific Learning Disorder
- Motor Disorders

(American Psychiatric Association, 2022)

In line with other socio-political movements that emerged in the late 20th century, the neurodiversity movement also gained momentum during the 1990s. The movement posits that variations in neurological development and functioning across individuals are natural and valuable, rather than necessarily pathological, thus, aiming to embrace neurological differences through acceptance and inclusion.

The term "neurodiversity" was first coined by Judy Singer in her undergraduate thesis in 1997, intersecting with the broader disability rights movement, emphasising that disability arises from the interaction between an individual and an unaccommodating environment rather than being an inherent defect. While some neurodiversity proponents view autism as a disability, the movement advocates for recognition of cognitive variations and equal rights, supporting a shift from the medical model to a social model, focusing on removing barriers by adapting environments to support diverse needs to ensure full societal participation (Harris, 2023; Leadbitter et al., 2021; Baumer & Frueh, 2021; Shakespeare, 2014; United Nations, 2006; Oliver, 1996).

In fact, WHO (2001) underlines that disability stems from the interplay between health conditions and contextual factors, reflecting Bronfenbrenner's Ecological System Model (1979) illustrated in Figure 1, theorising that the environment, spanning across the immediate settings (microsystem) to broader societal contexts (macrosystem), influence human development in a bidirectional manner.

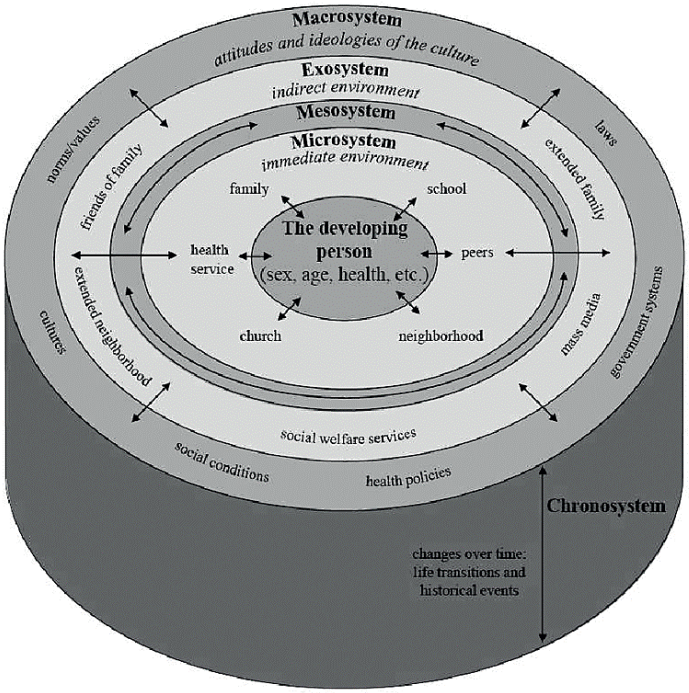


Figure 2: Bronfenbrenner's Ecological System Model (1979) illustrated in Janousch (2022)

1.2 Research motivation

This research builds upon previous dissertations within the Faculty of the Built Environment discussing mental health and well-being in relation to the built environment, specifically, Salerno (2018) and Galea (2019), the latter paving the way for this research exploring one of her recommendations for further research, to “Expand theoretical research outwards onto public spaces” (Galea, 2019, p.103).

The overarching motivation of this dissertation is to raise awareness and educate critical stakeholders by unveiling local realities of persons within the autistic spectrum within the public realm. Participatory data and academic literature will drive the drafting of design principles that can hopefully guide designers and policy makers to morph the local public realm into socially inclusive, enabling environment for everyone.

1.3 Personal motivation

I am interested in exploring our complex interrelationship with the built environment that culminates in a subjective experience for each individual. I am investigating the subject from the lens of persons within the autistic spectrum, motivated by my personal experiences and discussions revolving around this topic during lectures that raised my awareness and interest for further exploration. This dissertation provided me the opportunity to delve deeper into the varying components that play a part in sculpting the experience of persons within the autistic spectrum and stressing the critical role designers play in creating a better sense of well-being for all by adopting good design principles.

1.4 Research objectives and research questions

This research investigates the impact architectural design has on the human experience within public spaces, particularly for persons within the autistic spectrum. The built environment comprises varying levels of perceived sensory stimuli morphing how we navigate through spaces, whilst defining our ability to interact with the physical and social dimensions. A disabling public realm can provoke social exclusion; therefore, to promote the design of socially inclusive public spaces, the dissertation will aim to answer the following research questions:

i. What are the main factors ensuring a comfortable, nurturing, enabling public environment for individuals within the autistic spectrum according to existing autism-friendly design guidelines?

ii. What is the local reality? Do public spaces provide an enabling experience for persons within the autistic spectrum?

iii. What are the main negative and positive factors contributing to experiences within specific public spaces?

iv. What principles should we adopt to design enabling public spaces for persons within the autistic spectrum in the local context?

1.5 Dissertation structure

The study will employ a deductive qualitative, and participatory approach, detailed in the summaries of each chapter below and outlined in Table 1.

Chapter 2: Understanding interrelationships between persons within the autistic spectrum and the environment

This chapter discusses characteristics of ASD, the local context and atypical perception that gives rise to a different experience of spaces. Design criteria are then extracted from ASD design guidelines and discussed in relation to urban design principles.

Chapter 3: Unveiling local experiences

This chapter outlines the qualitative research methods adopted that will test the applicability of design principles extracted from ASD design guidelines within the local context. Research tools adopted include professional interviews, an online questionnaire and participatory walks followed by an informal interview.

Chapter 4: Compiling realities

This chapter presents and discusses data collected in the various participatory research tools.

Chapter 5: Emergent themes

Emergent themes extracted from the previous chapter are discussed, from which principles going forward are proposed.

Chapter 6: Conclusion – Aligning design principles

Concludes with an overview and recommendations for further research.

Table 1: Dissertation structure. (Author, 2024)

1.6 Note on Language

First-person language is adopted, aligning with this study's qualitative, critical and reflective nature (Webb, 1992).

This research adopts person first language when referring to persons within the autistic spectrum through recommendations made by SWB FREC to avoid unintentional stigmatization and ensure more accurate and respectful representation (Buijsman et al., 2022). I rejected the use of functioning labels because they do not accurately represent the diverse abilities and challenges faced by individuals on the autism spectrum. Instead, language that refers to support needs provides a clearer, more respectful understanding of each person's unique requirements and promotes a more inclusive and supportive approach (Rudy, 2023).

Chapter 2: Understanding interrelationships between persons within the autistic spectrum and the environment

Chapter 2 discusses ASD in relation to the local context and neurobiology, directly influencing sensorial sensitivity, resulting in a different experience of spaces. Spatial and design criteria are extracted from ASD design guidelines, supported by urban design principles.

2.1 Autism Spectrum Disorder

2.1.1 History of ASD diagnosis and relevant statistics

A compiled historical timeline presented in Appendix A exhibits how research across the past century paved the way to develop global understanding and awareness on autism spectrum disorder. Diagnostic criteria and definitions evolved over time as research advanced and our understanding of ASD improved. ASD, as defined by the DSM-5, entails persistent challenges in social communication and interaction, alongside repetitive behaviours, occurring early in development and leading to significant impairment in various life domains (American Psychiatric Association, 2022). With increasing political clout and public visibility, self-advocates and researchers aim to usher in a day when autism is fully accepted and understood.

The prevalence of ASD in Europe varies from 0.8% from register-based studies to 1.4% from population studies (Sacco et al., 2022). In comparison, an American-based study conducted in 2020 reveals that 1 in every 36 children (2.8%) are on the autism spectrum (Maenner et al., 2023). Wider diagnostic factors and the developed knowledge on detection methodologies may be the cause of higher prevalence of autism, as compared with the prevalence of 0.2% estimate during the 1990s. Sacco et al. (2022), highlights that under diagnosis is prevalent in adulthood and in older age groups due to a research gap and lack of awareness on autism in adulthood, since historically autism was reported as a childhood disorder. Additionally, they suggest that prevalence in males which is 3.5 times higher when compared to females, is attributed to the exclusion of females from autism research, thus requiring a more noticeable presentation for diagnosis.

Warrier et al. (2020) notes that gender-diverse and transgender individuals are more likely to have autism and other mental health conditions, including, anxiety, depression and substance use disorders. The findings could have practical implications in developing research, enhancing the availability of mental health services and providing customised assistance for transgender and gender-diverse individuals.

2.1.2 The local context

Mental health professionals interviewed in this research mainly Prof. Nigel Camilleri and Ms Daniela Calleja Bitar (full interview transcripts are presented in Appendix B) noted a rise of awareness on mental health issues in the local context in the past decade, specifically on ASD. Ms Calleja Bitar noted that digital media is the key tool for increasing awareness and encouraging education on ASD on both global and local scales. Digital media presents varied perspectives and first-hand stories, building empathy and understanding among viewers. Furthermore, the availability of information through web search engines allows for easy study of ASD-related issues, allowing individuals to educate themselves and participate in meaningful debates regarding neurodiversity and inclusiveness (Bakombo et al., 2023).

Newly implemented governmental strategies such as the National Autism Strategy, drafted by the Ministry for Inclusion and Social Well-being in 2021, aim to reduce stigma breaking barriers for people to get a diagnosis, (Sacco et al., 2022) and improve awareness through multimedia campaigns across multiple sectors to reach diverse socio-cultural demographics.

The strategy drives forward education, early interventions, identification, strengthening of support structures and life transitions in line with the suggestions made by Sacco et al. (2022). The strategy proposes the establishment of, "the principle of Universal Design – design that works for everyone – as a core educational value … (encouraging) the development and implementation of support classrooms or units for students on the autism spectrum, within mainstream education" *(Government of Malta, Ministry for Inclusion and Social Well-being, 2021, p 26).*

The Autism Advisory Council was formed as a centralised focal point, to implement, monitor and review the plan. Further proposals that aim to improve the local built environment include:

> *“*
> - *designing a building to be accessible for everyone, including people's sensory needs too, and not only their physical needs;*
> - *making public offices, medical facilities and shops welcoming for everyone;*
> - *ensuring that open spaces and venues for enjoying leisure time can be used by everyone.”*
>
> *(Government of Malta, Ministry for Inclusion and Social Wellbeing, 2021, p 11)*

A local seminar named ‘Cognitve and Sensorial Accessibility - Key Design Approaches’, organised by Aġenzija Sapport held on the 13th of March 2024, opened the discussion between representatives from local stakeholders (the full panel discussion transcription is presented in Appendix A) and provided a snapshot of local realities, some of which are outlined below. Jessica Borg stated that in 2023, the CRPD investigations unit received a total of 246 complaints and 152 routine inspections were carried out to license holders. Dr Alistair De Geatano noted that great strides were made when it comes to physical accessibility, especially with legislation, and the Accessibility Standards for all in the Built Environment, put in force in 2011. However, he emphasised that cognitive and sensorial accessibility guidelines require further investigation and promotion. CRPD partnered with PRISMS, an NGO working with youths and adults on the autistic spectrum on a project named Autism Friendly Spaces, initiated in October 2019. According to CRPD (2022), the initiative aimed at entities within the public or private sector, provides a training course for employees, that covers general information on autism, design recommendations based on the type of establishment and information on sensorial and cognitive needs. Establishments are accredited with the autism friendly mark, when two of the employees undergo training, thereby receiving the autism ambassador award, and the place is accommodated as advised. Another project stemming from the autism friendly spaces aims to make accommodations for individuals on the autism spectrum in places of employment. Despite these two projects having been influential in increasing local awareness on autism, both Elinore Falzon and Dr Alistair De Geatano are sceptical of labelling spaces as ‘autistic friendly’ implying that the rest are not. Most panel members further criticised the lack of over-arching vision and plan shared across all stakeholders (Sant et al., 2024).

Local organisations providing supporting services for individuals on the Autism spectrum in Malta include:

- Richmond Foundation
- Aġenzija Sapport
- Inspire Malta
- The Malta Autism Centre
- The Autism Parents' Association
- 'Hand in Hand'

(Spiteri & Borg, 2019)

During our interview, Ms Calleja Bitar noted that Richmond Foundation provides support services for individuals with a diagnosed mental illness, including people on the autism spectrum who may also have a dual diagnosis. They provide rehabilitation services, assisted living including residential services and programmes, and community support. These aim to aid and foster independence, whilst integrating the individuals back into the community. Their multidisciplinary team designs a self-tailored care plan centred around the individual with the assistance of the client's family or peers, who may also be supported through their services.

Support programs should prioritise the understanding and support of natural autistic developmental processes, coping strategies, autonomy, and well-being quality of life of autistic individuals. This means considering the individual strengths and needs of autistic individuals and promoting their autonomy and self-advocacy (Leadbitter et al., 2021). Maltese autism advocates, are open to aid professionals, to base decisions related to the built environment on real-life experiences and not on assumptions. In fact, an ongoing local project called Activate aims to bridge the gap through open dialogue services between professionals and individuals on the autism spectrum (Sant et al., 2024).

2.2 The Psycho-Socio Dimension and Sensory Sensitivity in ASD

Phenomenology in architecture, is discussed with reference to atypical perception typically present in persons within the autistic spectrum.

2.2.1 Phenomenology of perception

Our understanding of space is deeply rooted in the body's interaction with the environment. Merleau-Ponty (1945) emphasizes the pre-reflective and sensory nature of perception, where architectural spaces are not just seen, but felt and experienced through bodily movements and sensory engagement. The built environment is perceived through a combination of sensory experiences, social interactions, and cognitive processes (Fuentes Farías, 2022). Sensation occurs through the stimulation of one of the six sensory organs, the eyes (seeing), the ears (hearing), the nose (smelling), the skin (touching) the tongue (taste) and proprioception and kinaesthesia (the sense of orientation of the body's position).

Perception involves the selection, organisation and interpretation of the stimuli encountered. Two psychologists in the late 1960s/1970s, proposed two opposing approaches in an attempt to define the process of perception. In 1966, James J. Gibson defined perception as a bottom-up direct process relying only on the stimuli perceived at that moment, whilst in 1970, Richard Gregory opposed this hypothesis, proposing top-down indirect processing making use of pre-existing information and experiences in our brain to organise stimuli features. It is currently agreed that perception involves the interplay of the two types of perception (Singh et al., 2020).

J.J. Gibson (1986) builds on these ideas by introducing the concept of affordances, which refers to the actionable possibilities that the environment offers to an observer. According to Gibson, architectural elements are perceived not just by their physical properties but by what they enable people to do. "It is in the inter-corporality and the encounter with others, as well as in the possibilities of action that are presented in public spaces, buildings, monuments, and the urban layout, that meaning is produced and meanings are constructed." (Fuentes Farías, 2022, p. 20).

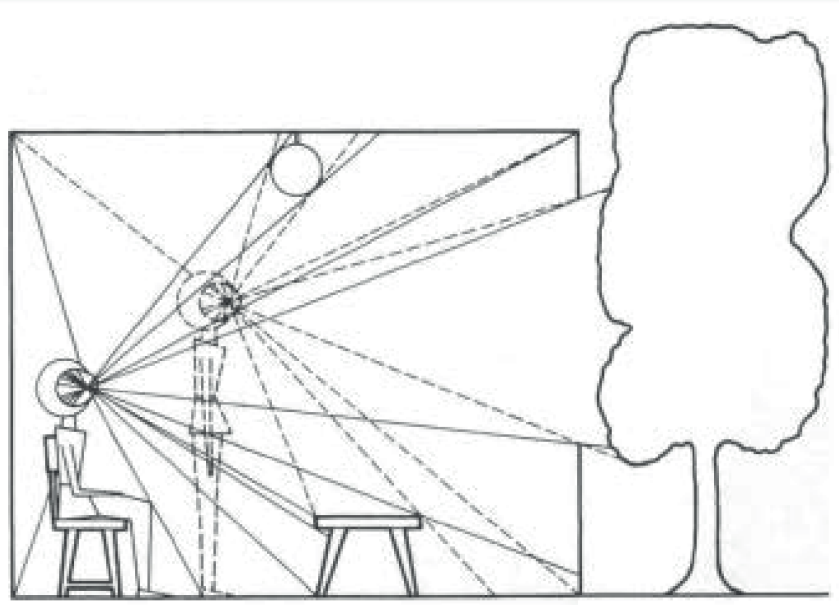


Figure 3: Change of visual perception through movement of the observer (Gibson, 1986, p.72)

The atmosphere of that space, created by the interaction of the perceived object and the perceiver, determines whether a person feels a sense of belonging or alienation. Furthermore, space provides a context to anchor our identity with others, forming “an interactive triangle that includes the self, the other and the space.” (Rezeanu, 2018, p. 50). Attributed memories, meanings and emotions strengthen the sense of place, that defines the intimate relationship between the individual and the specific place. The learnt spatial practices in the parental home can be replicated in other environments through frequent engagement with elements and spaces, forming daily rituals and reinforcing the sense of belonging within the space and the community, if the individual is socially engaged during those rituals (Rezeanu, 2018).

2.2.2 Atypical perception in persons within the autistic spectrum

The public realm can be very difficult to navigate for people on the autism spectrum as high streets, eateries, supermarkets, retail shops and shopping centres can be conducive to disabling sensory environments due to a high influx of stimuli, absorbed through a detail-oriented perception. Uncontrollable, inescapable, busy input from the physical, social, and sensorial layers comprising the environment, can foster a sense of unpredictability and uncertainty in the individual (MacLennan et al., 2023).

"Atypical sensory experience is estimated to occur in as many as 90% of autistic individuals." (Robertson & Baron-Cohen, 2017, p. 1). Neurobiological studies propose that autism is linked to functional anomalies of brain activation, which cause brain connectivity anomalies (Chang et al., 2014; Baron-Cohen et al., 2009; Pennisi et al., 2020; Robertson & Baron-Cohen, 2017; Robertson & Simmons, 2015). Visual perception involves two crucial neural streams that originate from the occipital lobe of the brain that are the ventral and dorsal pathways. The ventral pathway travels to the temporal lobe and is primarily responsible for identifying objects and visual details, including colour, shape and texture, whilst the dorsal pathway extending to the parietal lobe processes movement and spatial relationships. The distinctions in how these pathways function can lead to a different perceptual experience in individuals with autism. Furthermore, impaired connectivity in both sensory pathways (parieto-occipital tracts) and social-emotional pathways (temporal tracts) are associated with sensorial hyper- and hypo-acuity and social communication difficulties (Chang et al., 2014).

Baron-Cohen et al. (2009) links anomalies in visual thought, imagination, the use of spatial reference frame and the preference for non-social rather than social stimuli with three characteristics of the autistic phenotype, mainly sensory hypersensitivity, attention to details and the likelihood to systemise the world. Thus, defining autism as a distinct cognitive style and not a combination of cognitive deficits. In fact, Pennisi et al. (2020) hypothesise that neuro-connection anomalies are associated with a unique perception of the world, Enhanced Perceptual Functioning (EPF) theory suggesting that individuals with ASD exhibit superior local detail-focused processing abilities, focusing on low-level perception like discrimination and pattern perception. ASD stems from a superiority of low-level perception, leading to increased attention to lower order cognitive processes at the expense of higher order ones, such as social interaction and global processing (Robertson & Simmons, 2015).

Although the distinct sensory perception has been viewed as secondary trait for diagnosis of autism spectrum disorder, “Sensory symptoms have been clinically documented as early as 6 months of age in infants later diagnosed with autism - considerably earlier than children reach key developmental milestones in social cognition, such as joint attention (14-18 months)” (Robertson & Baron-Cohen, 2017, p. 1-2). This led researchers to hypothesise that “Sensory Symptoms not only precede but also are predictive of social-communication deficits and repetitive behaviours in childhood, as well as eventual diagnostic status.” (Robertson & Baron-Cohen, 2017, p. 2). Research highlighting the importance of sensory perception in ASD prompted the addition of “… hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement)” (American Psychiatric Association, 2022, p.57-58) to Criteria B in the latest version of the DSM-V.

As a person with autism is not drawn into social exchanges, their interest may be directed at a detail in the background, developing “a cognitive style of the ‘if x, then y’ type, becoming “more skilled in inferences of physical causation” rather than those present within the social world (Pennisi et al., 2020). This style of thought fosters a creative, analytical visual perspective that offer an alternative means of self-expression and communication (Roth, 2018). Temple Grandin distinguishes individuals on the autism spectrum into four distinct thinking types: the photorealistic visual thinker, the pattern visual spatial thinker, the verbal thinker, and the auditory thinker. According to Grandin, individuals can have a mixture of thinking types that can be harnessed though early exposure to careers or projects (TEDx Talks, 2020).

2.3 ASD Design Guidelines & Public Space Design Theories

This chapter aims to identify specific design criteria that address sensory sensitivity, inflexibility, and different cognitive abilities. As the number of individuals diagnosed with autism spectrum disorder continues to increase, there is a growing imperative to design environments that are inclusive and supportive of the specific needs of this population. These should be integrated from the initial design stages and manifest into a physical, sensory, and social environment that fosters autonomy and independence for all. Barriers seemingly invisible to neurotypical individuals are broken down to allow individuals on the autism spectrum and people with similar manifestations to develop spatial routines that improve their quality of life and sense of belonging throughout all typologies of spaces, spanning from the private to the public and the intermediate layers within (Rezeanu, 2018). Furthermore, by putting cognitive accessibility at the forefront of design, individuals across all cognitive abilities can benefit in their experiences navigating the built environment (Sant et al., 2024).

Tola et al. (2021) conducted an intensive scoping review of peer-reviewed studies published between 2008 and 2019 that developed design guidelines for individuals with Autism Spectrum Disorder across different built environments, identifying a total of 21 studies that fulfilled eligibility requirements. Tola et al. (2021) analysed and categorised the identified factors mentioned in the 21 studies into three main overarching spatial criteria: sensorial sensitivity, legibility, and auxiliary supports, further proposing three additional general criteria. I am presenting this data in Table 2, highlighting the frequency of mentions in studies identified by Tola et al. (2021).

Spatial Criteria	Design Criteria	Number of References
Sensory Stimuli	Low Arousal Environment	21
	Transitory Spaces	12
	Quiet Spaces	15
Legibility	Clear/Simple Spatial Layout	6
	Visual Relation	5
	Predictability and Routine	8
	Circulation and Possibility of Choosing	5
	Proportion and Proxemics	4
Auxiliary Supports	Visual Supports	9
	Wayfinding	6

Identification of a Quiet and Accessible Location	5
Safety and Security	13
Flexibility and Customizing	8

Table 2: Table compiling spatial and design criteria identified by Tola et. al, 2021, by frequency of mentions in studies identified within the same text. (Author, 2024)

Spatial criteria relating to sensory environment stand out in Table 2, reinforcing the importance of sensory stimuli driving perception processes and "Hyper- or hypo-reactivity to sensory input" listed in the DSM-V diagnostic criteria. The tabulated principles "can be used as a knowledge basis in autism-friendly design decision processes, including at the urban scale." (Tola et al., 2021, p. 7). To deepen our understanding, these aspects will be further discussed in relation to critical ASD guidelines and urban design principles below.

Low arousal environments reduce stimuli by optimising visual, auditory, and olfactory sources. Visual clutter, distractions, and highly intricately detailed material finishes are avoided. Preferably, spaces should be naturally lit, and LED lights should be installed rather than fluorescent lights. Photosensitivity and glare can be controlled through lighting systems with adjustability functions, shaded areas, and non-reflective textures. Soft, natural colours and limited colour contrast are advised, shown in Figure 4, with the potential incorporation of plants to delineate different sensory environments. Plants selected should not have prominent smells that may cause sensory overload. Materials and layout are designed to "minimise background noise echo and reverberation" (Mostafa, 2021, p.20), and spaces are well-ventilated.

Figure 4: Proposed palette (Mostafa, 2021)

Transitory spaces allow individuals to rebalance and recalibrate themselves between areas of different sensory stimuli, facilitating sensory zoning and compatible spatial sequencing. These synaptic spaces allow for a spatial connection that facilitates orientation and direction and serve as a functional link between different uses (Brusilovsky & Lagar, 2021). The transition zones are not limited to a corridor-like space but should be woven into the built fabric as sensory gardens or integrated into natural open spaces, as illustrated in Figure 5. Since the travelling experience to get to the public or private space can heighten sensory overload, Mostafa (2021), suggests that zones for recalibration should be integrated within major access points to rebalance ourselves at the beginning of the day.

Figure 5: Proposed spaces of transition. (Mostafa, 2021)

Quiet Spaces, also called escape spaces, offer individuals the opportunity to retreat from overwhelming sensory and social stimuli often present in busy streetscapes and recharge in a calm and soothing environment. Strategies adopted include minimal distractions and partial separation from areas of higher stimulation through architectural elements, furniture, and vegetation. Gaudion & Mcginley (2013) proposed secluded areas within a garden comprised of a natural canopy created by mature trees, with seating underneath and diffused lighting to allow the space to be utilised during evening hours.

Figure 6: Kingwood College Design concept showing the seven green spaces (Gaudion & Mcginley, 2013

"Like the spectrum itself that they can serve, these escape spaces should be designed along a gradient – from the fully enclosed, quiet individual, static escape space to the larger sized more open two person escape spaces that may provide the dual function of calm and safe social interaction opportunity, to the dynamic open but controlled small group escape space that allows more stimulation and a greater possibility of interaction, but in a protected and sensory mitigated manner." (Mostafa, 2021, p. 55)

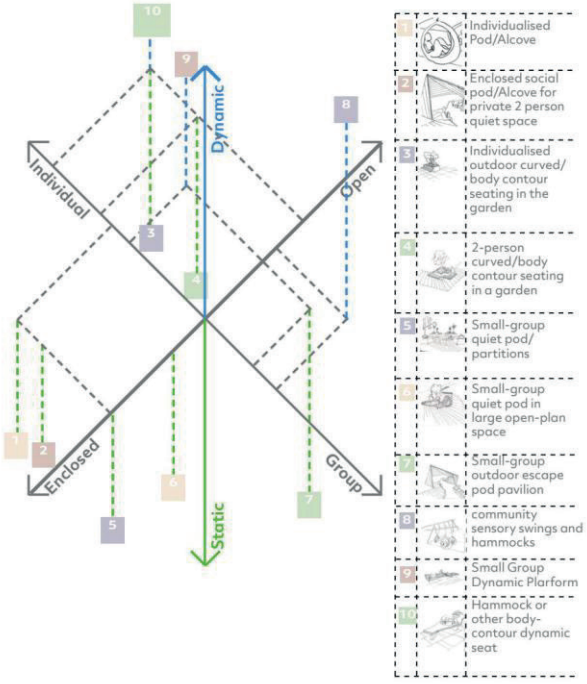


Figure 7: Sensory escape network (Mostafa, 2021)

The legibility of spaces is driven by a **simple, well-defined layout** that adopts visual relations between indoor and outdoor environments. The spatial layout is sequenced to respect the routines and circulation of space. Curvilinear walls are preferred since corners can promote loitering, conveying a sense of restlessness and danger to the user. Architectural elements such as hedges or stone walls can be repeated to generate a **predictable**, consistent pattern. The spatial circulation should allow **choice-making** to accommodate different levels of stimulation and social interaction, thus developing a strategy with a **hierarchy of spaces** configured by stimulation and social interaction levels. Spaces can be organised into sensory cells, especially critical in streetscapes, that currently have no defined barrier between the different types of uses that may be incompatible. The boundary typology can be adopted according to the degree of compartmentalisation required between uses (Tola et al., 2021).

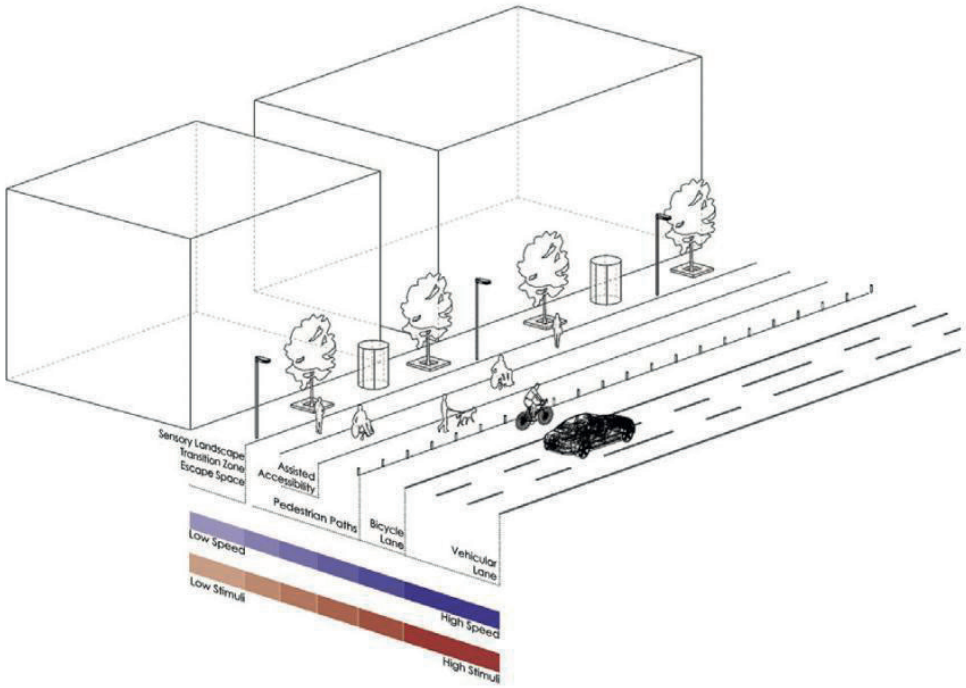


Figure 8: Compartmentalised street section (Mostafa, 2021)

> *"It is also important not to over-design sidewalks with permanent fixtures such as benches, fences, planters, kiosks and other structures that may obstruct spontaneous activity and the easy movement of people. When sidewalks are physically open, vendors, performers and others have the opportunity to shape and organise the spaces to suit their activities, especially by utilising a variety of temporary, moveable elements." (Fernando, 2006, p. 71)*

Open spaces are designed with **the right proportions** and human scale in mind to mitigate the sense of oppression or grandness conveyed by our relation to the physical environment. Human eyesight is restricted to the front of the body and according to Gehl (2010), typically people can:

- Recognise the person at 50-70m
- Read facial expressions and emotions at 22-25m
- Hold a two-way conversation in the 7 to 0.5m range

Since persons on the autism spectrum may struggle with face processing, recognition abilities and auditory issues, these ranges can differ. Therefore, the space and interactable items should provide options that allow for changes in posture or distance to facilitate social interaction (Saitelbach, 2016).

Furthermore, such spaces should include:

- **Visual supports** such as pictograms to help navigate both indoor and outdoor environments. The use of spaces, objects or critical elements, can be translated through images, volumes, colours, and words.

- **Wayfinding** techniques such as marking clear pathways through colour, labels, and vegetation and providing landmarks can facilitate orientation, especially when supported by providing maps to aid the identification of quiet and accessible locations (Tola et al., 2021).

"A landmark is yet stronger if visible over an extended range of time or distance, more useful if the direction of view can be distinguished. If identifiable from near and far, while moving rapidly or slowly, by night or day, it then becomes a stable anchor for the perception of the complex and shifting urban world." (Lynch, 1977, p. 101)

- "The bedrock attribute of a successful city district is that a person must feel personally **safe and secure** on the street among all these strangers" (Jacobs & Epstein, 2011, p.38). Soft edges and multiple uses at ground level ensure street activity and natural surveillance. Clear sightlines, visibility, proper lighting, regular maintenance, and cleanliness reduce perceived and actual danger (Gehl, 2010).

- **Flexibility and customisation** provide the opportunity to configure spaces to support the different needs of individuals within the autistic spectrum. This is achieved through a mix of fixed elements to first experience a sense of security and non-fixed elements that can change the nature of the space, additionally providing the opportunity to learn to overcome rigidity (Sachs & Vincenta, 2011).

Chapter 3: Unveiling local experiences

"I have always believed that autism friendly design cannot be without first listening to the autistic voice. All too many times people are surprised when they ask me "how should we design this for autistic users?" and I respond "ask them". The autistic voice is the expert voice here. The autistic perspective is the one that illuminates autism friendly solutions."

(Mostafa, 2021, p. 3)

3.1 Introduction to methodology

This chapter will build upon the theoretical foundation set up in the previous chapter, by testing and applying critical design criteria through the diverse qualitative research methods, to extract detailed and contextualised experiences. These enable a more profound engagement with participants, uncovering intricate factors impacting their experiences. (Denzin & Lincoln, 2018). This may lead to more user-centred public spaces, based on a participatory design process that place first-hand experiences of persons on the autistic spectrum at the forefront.

3.2 Research approach and technique for analysis

To uncover local perspectives of individuals on the autistic spectrum, the methodology will adopt Max van Manen's (1990) hermeneutic phenomenological approach, adopting a "descriptive or interpretive methodology" (Manen et al., 1990, p.154) paying close attention to how things appear, their self-evident nature whilst acknowledging assumptions held by the researcher as presuppositions, as the process relies on the researcher's interpretation of phenomena (Järvinen et al., 2020). The phenomenological approach aims to develop a "… systematic attempt to uncover and describe the structures, the internal meaning structures, of lived experience." (Manen et al., 1990, p. 10). Data collected through participatory research tools, will be examined through interpretative phenomenological analysis (IPA) with the aim to examine personal experiences through a qualitative approach underlined by phenomenology, hermeneutics and ideography, operating with a double hermeneutic, unveiling the experience of the world through the perspective of participants. IPA encourages a rigorous systematic approach, whilst enabling exploration and creativity (Smith, 2017).

In the study 'Interpretative Phenomenological Analysis (IPA) as a tool for participatory research within Critical Autism Studies: A systematic review', MacLeod (2019) concludes that participatory approaches disrupt power relations as the research environment provides the opportunity for participants to become "co-producers of autism knowledge and theory, rather than passive recipients" (MacLeod, 2019, p. 60), unveiling multi-dimensional identities of individuals within the autistic spectrum. The gathered data will be analysed whilst keeping the context in mind to grasp a full understanding, described through summaries and interpretated

to theorise the experiences and emotions felt by research participants within the public space (Grech, 2019).

3.3 Methodology structure

A multi-method approach was adopted, utilising qualitative research methods to capture diverse sets of data, whilst encouraging greater participant engagement throughout the data collection process. The methodology is structured into two phases. The first phase aims to grasp a general understanding of the local reality whilst, laying the foundation for research methods adopted in the second phase. This phase aims to obtain more detailed, extensive data on the experiences of adults within the autistic spectrum in the local context.

Previous dissertations within the same faculty that adopted a phenomenological approach were reviewed to identify the optimal tools for this research (Grech, 2019; Galea, 2019; Xuereb, 2020; Bajada, 2022). These were supported by additional academic sources that specifically discuss participatory research methods involving individuals within the autistic spectrum (MacLeod, 2019; Mostafa, 2021; Marcotte et al., 2022). The methodology followed by MacLeod (2019), Mostafa (2021) and Marcotte et al. (2022) varied extensively according to the nature of the study, although all started with a thorough understanding of the subject through an extensive literature review. 'The Autism Friendly University Design Guide' (Mostafa, 2021) was based on an intense consultative process that involved the input of various stakeholders involved in the Autism Friendly DCU project, conducting online surveys, focus groups, semi-structured interviews and sensory audits with four students within the autistic spectrum in two DCU campuses. Marcotte et al. (2022), adopted participatory walks in the domestic setting on a one-on-one basis providing in-depth phenomenological observations from participants.

It was critical for the tools to be accessible to participants, whilst allowing extensive data to be gathered that can later be compared and triangulated to obtain a holistic understanding of experiences of persons within the autistic spectrum in the local context. General local participatory data was obtained through research tools adopted in 'The Autism Friendly University Design Guide' (Mostafa, 2021) mainly online questionnaires and professional interviews to allow for the gathering of broader data and experiences from various stakeholders. Detailed account of experiences of persons within the autistic spectrum was captured through an amalgamation of the research tool adopted by both Mostafa, (2021) and Marcotte et al. (2022) through one-on-one participatory walks followed by an informal

interview. Results from these participatory tools were presented, analysed and discussed in the following chapter.

The “sorting, simplification, and generalizations” (Denzin & Lincoln, 2018, p. 1242) of retrieved qualitative data was compiled in the thematic analysis. The results and analysis chapter was inserted into an AI tool, namely an addon called ‘Write for me’ within Chat GPT v.4o. The addon that was instructed to extract emergent themes from the attached file, to assist the compilation of the thematic analysis due to time limitations. Output from the AI tool was critically analysed, paraphrased, corrected and expanded upon by myself, serving as the basis for the proposed principles going forward.

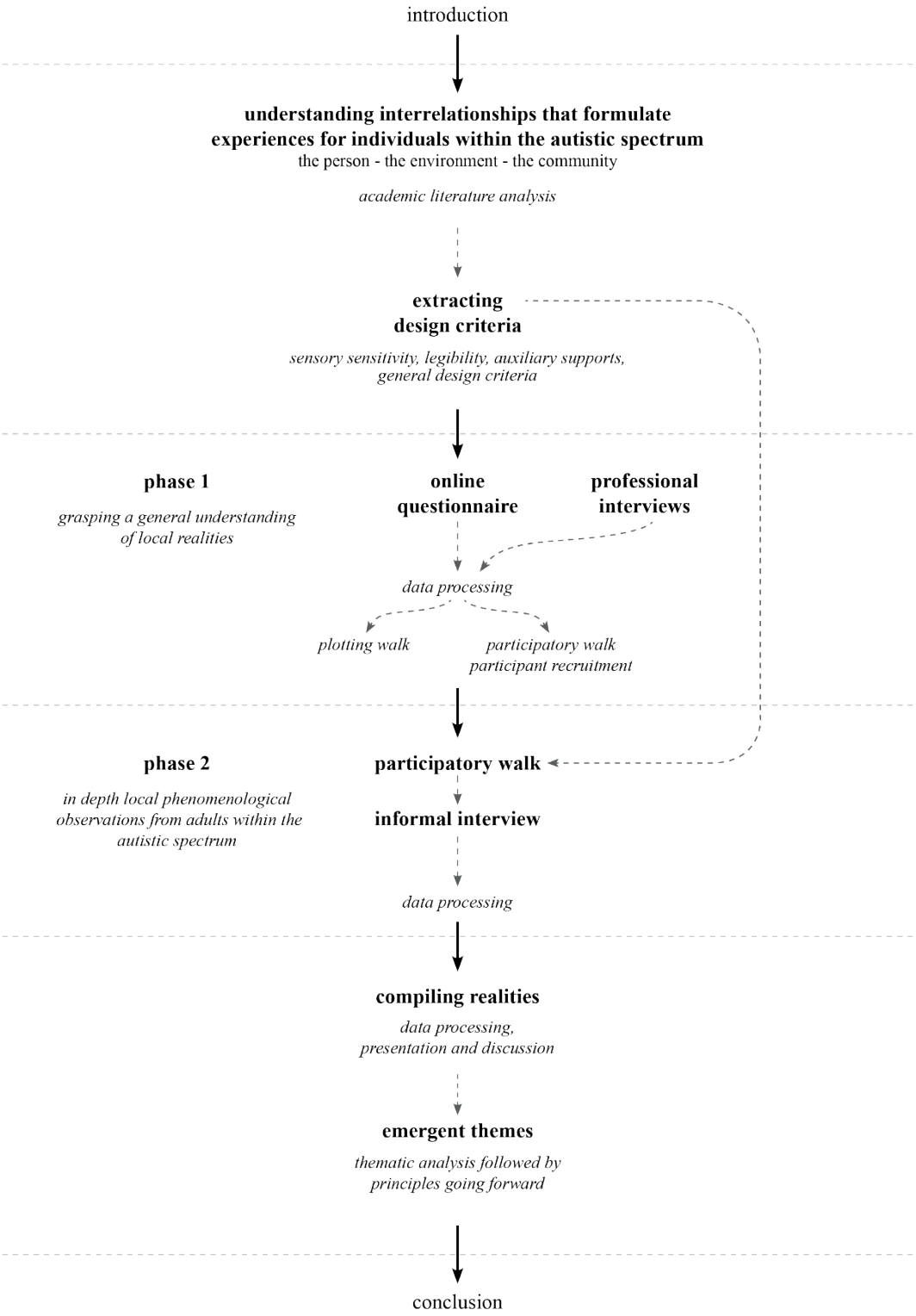


Figure 9: Methodology structure diagram (Author, 2024)

3.4 Contextualising the study

3.4.1 Aim

Design criteria identified in academic literature are adopted in the participatory walk to assess physical and cognitive accessibility across different types of local public spaces. Therefore, it was critical for the location chosen to have a high concentration of pedestrianised areas, and different typologies of public spaces.

The capital city, Valletta was selected as it meets the above listed requirements and further holds a sense of familiarity for the majority of the local population, benefiting data collection from both the online questionnaire and the participatory walk.

The following chapter will briefly discuss relevant historical, political, socio economic literature to provide a general understanding of the complex interwoven realities comprising the Maltese capital.

3.4.2 The origins of Valletta

Valletta, situated on the Sciberras peninsula, is flanked by two deep natural harbours. Designed by architect and military engineer Francesco Laparelli, the city's layout reflects sixteenth-century military design, featuring deep fortifications resistant to artillery and an iron-grid layout supporting administrative and military functions of the Order of St. John (Cefai & Grima, 2021; Hughes, 1967). The fortifications protected against land and maritime attacks, whilst the shorelines were used for commerce, quarantine, storage, and movement across the harbours (Cefai & Grima, 2021).

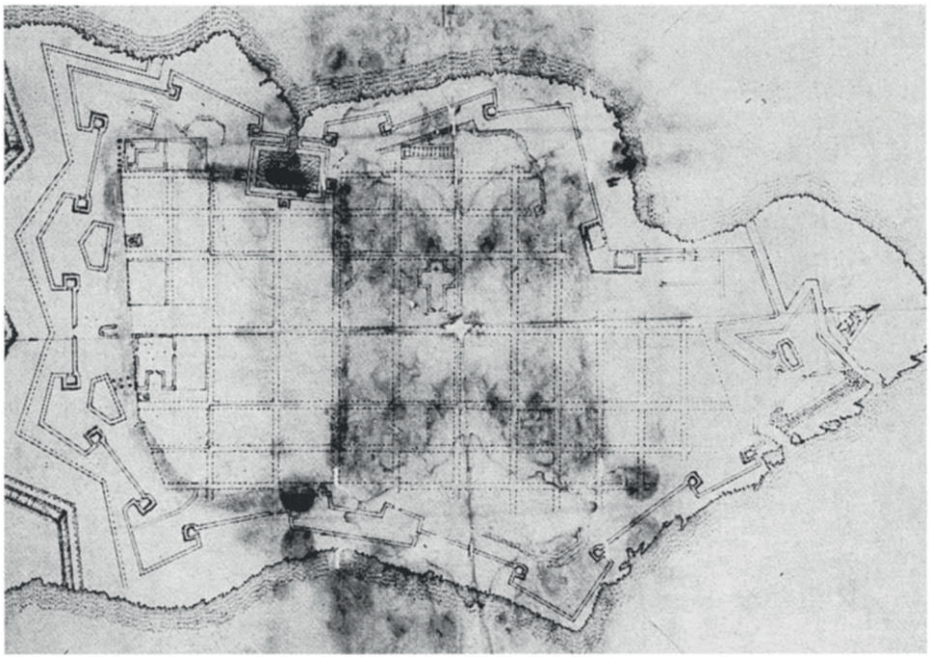


Figure 10: Francesco Laparelli, scheme for a new city, Valletta – Plan D, the refined plan in June 1566 (Digital Source: Jager, 2004, original drawing held in the Accademia Etrusco, Cortona)

3.4.3 Existing socio-economic realities

Valletta's urban fabric reflects the Maltese Islands' evolving political and societal influences since its foundation in 1566 (Cefai & Grima, 2021). During British rule, it became a mercantile city, and post-independence, palaces and auberges adapted to governmental, judicial, office, cultural, retail, and entertainment uses (Zammit, 2022). Rental rates surged between 2013 and 2020 (Vella Falzon, 2021), influenced by Valletta's designation as the European Capital of Culture (ECoC) in 2018. Investment in cultural infrastructure and boutique hotels increased, but strategies focused on commercialization risk declining liveability and displacing communities. A protest on April 5, 2024, highlighted local concerns about public spaces being overtaken by private ventures, deteriorating the city's state (Arena, 2024).

Zammit (2022) attributes community displacement to:

- Commercial Gentrification: Replacement of traditional shops with larger commercial outlets (Vella Falzon, 2021).
- Touristification: Urban space reshaped for tourism, critical for the economy.
- Museumification: Valuing the city as a tourist attraction rather than a liveable space.

Zammit argues that the current strategy prioritizes market forces over liveability, advocating for a long-term vision involving all stakeholders to strengthen Valletta's spatial fabric.

3.4.4 World Heritage Site

Valletta was inscribed on the UNESCO World Heritage List in 1980 under two criteria:

- Criterion (i): It exemplifies late Renaissance urban planning with uniform design, fortified walls, and strategically placed monuments.
- Criterion (vi): It is historically tied to the Order of the Knights of St. John, reflecting significant military and moral influence (ICOMOS, 1980).

In 2023, the World Heritage Committee requested the state party to address conservation issues, including view and height limitations, buffer zones, and compiling a comprehensive management and tourism plan (The World Heritage Committee, 2023).

3.4.5 Guidelines for accessibility in the historic city of Valletta (Cefai, 2021)

Cefai (2021) emphasizes the need for inclusive design in historic cities like Valletta. Guidelines prioritize physical accessibility while respecting the city's historical value. Recommendations include careful selection of materials, clear signage, accessible information, and adherence to physical specifications like minimum door and path widths and slope gradients. These measures aim to balance heritage preservation with accessibility improvements through participatory engagement. The guidelines propose an accessible route 1 shown in Figure 11 based on street topography (identified in gradient analysis exercise illustrated in Figure 12), continuity, consistency and availability of information.

Figure 11: Valletta. Route 1 follows streets where the sloped and surfaces permit universal access. (Cefai, 2021)

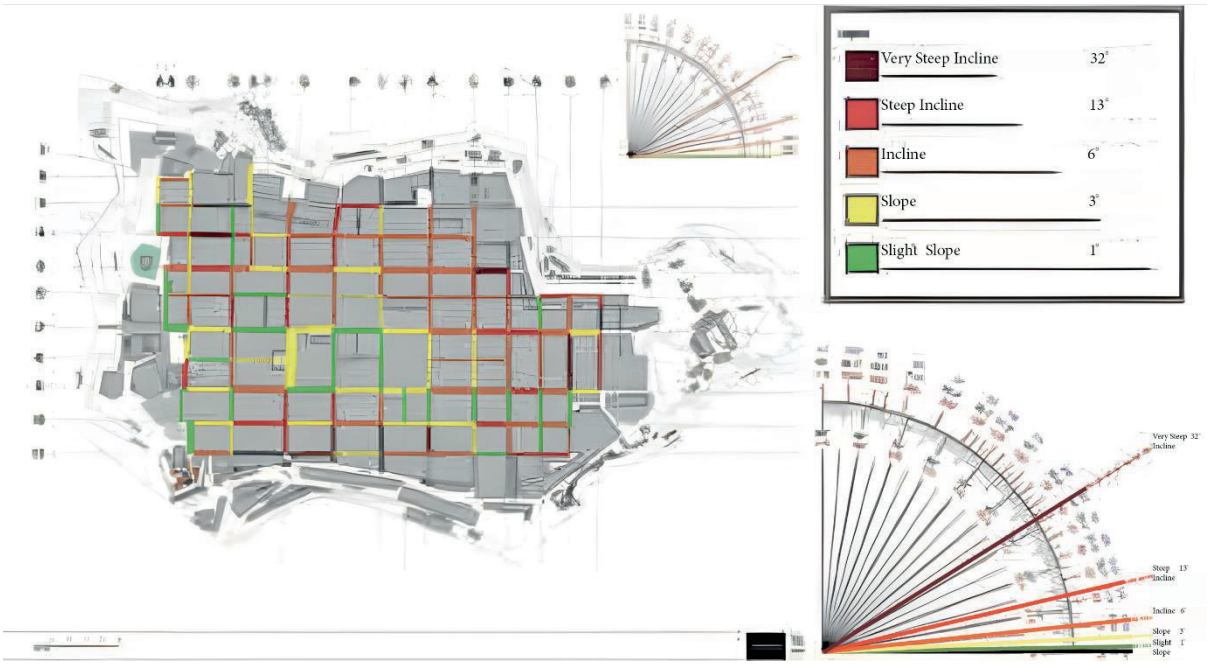


Figure 12: Valletta. Street gradient map commissioned by Valletta Local Council, prepared by i4 architecture. (Cefai, 2021)

The route for the participatory walk plotted in the following sub chapters will cover parts of route 1 illustrated in Figure 11. This provides the opportunity for the comparison of results from this research with the accessibility guideline proposed by Cefai, (2021).

3.5 Design criteria extracted form literature review.

The design criteria in Table 3 will be adopted for the scope of this dissertation. The data presented in the table was compiled by Tola et al., (2021) who categorized design criteria proposed in the 21-peer reviewed ASD design guidelines into three main spatial criteria, mainly, sensory stimuli, legibility and auxiliary supports adding three general design criteria to support more specific criteria.

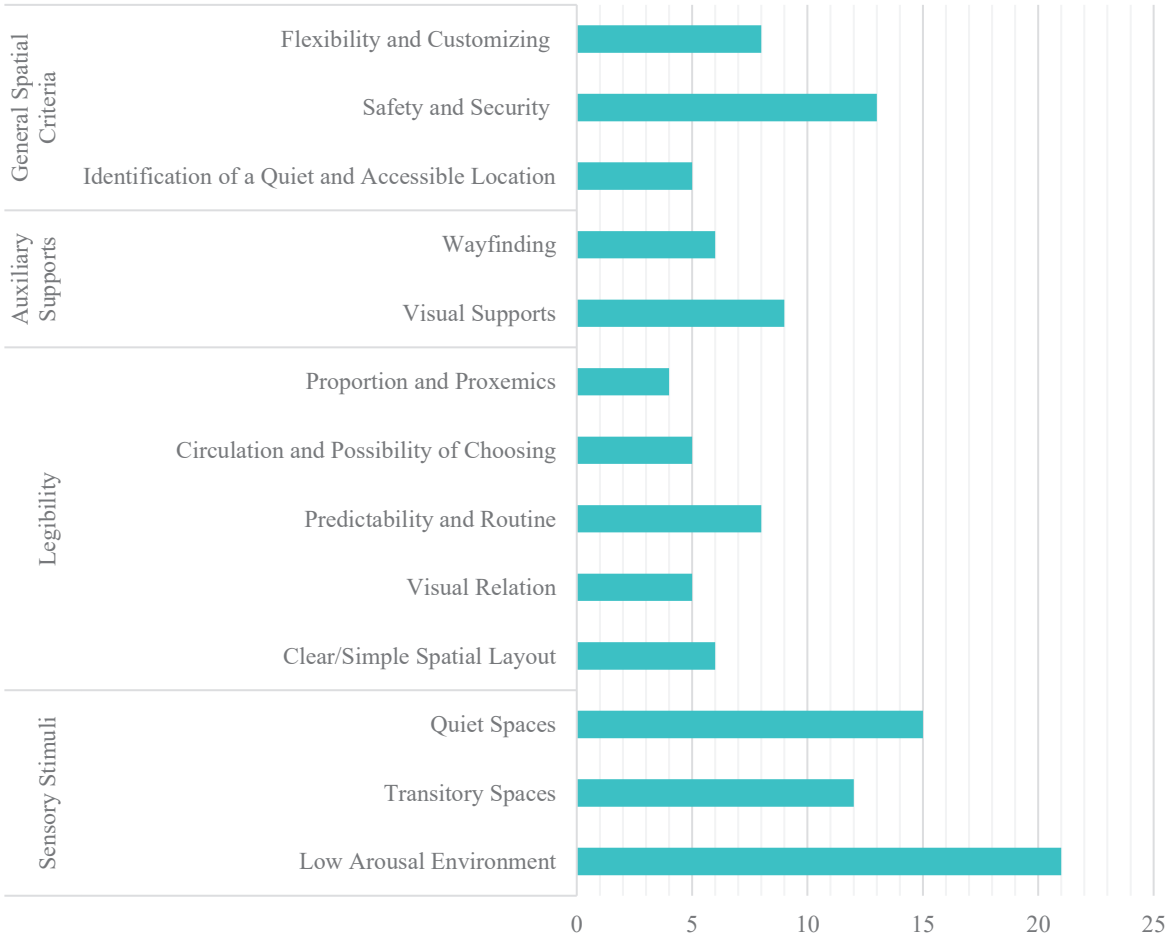


Table 3: Relevance of design criteria based on how many times they were mentioned in ASD Design Guidelines.Data compiled by Tola et al. (2021), Visually presented by Author, (2024)

The methodology aims to assess the relevance of the extracted criteria to the local reality, by gathering the perspective of persons within the autistic spectrum, and their supporting circle that may include their care givers and psychiatric professionals.

3.6 Phase 1: Grasping a general understating of local realities

The first phase of the methodology aims to grasp a general understanding of the local reality, from multiple perspectives of persons within the autistic spectrum, and their support circle that may include their caregivers, and local mental health professionals through professional interviews and an online questionnaire.

3.6.1 Semi-structured interviews with professionals

Scope

Data from psychiatric professionals was gathered through semi-structured interviews “with the purpose of obtaining descriptions of the life world of the interviewee in order to interpret the meaning of the described phenomena" (Brinkmann & Kvale, 2015, as cited in Denzin & Lincoln, 2018, p. 1002). The interview discussions (attached in Appendix B) were structured with the aim to extract contextual data on ASD from professional perspectives to both support the literature review and assist in the interpretation of data acquired from other participatory research tools.

The research method

Each interview took approximately thirty minutes, followed FREC considerations, and was structured into five sections tackling prominent research themes that were encountered in the literature review mainly:

- Discussion on demographic trends of individuals within the autistic spectrum.
- Discussion on professional services their organisation provides.
- Discussion on the impact of external factors and stimuli in the built environment have on the experience of individuals within the autistic spectrum.
- Discussion on the use of public services and events by persons within the autistic spectrum
- Discussion on improvement in social awareness and projects in the local context in relation to the Malta National Autism Strategy, (2021)

The audio-recording was then transcribed and translated to English were necessary. The transcript was shared with the interviewee and any corrections were executed accordingly.

The participants and recruitment

Two participants were approached to be interviewed, based on the following criteria:

- They hold extensive knowledge and experience supporting individuals with mental health issues, including individuals within the autistic spectrum.
- They are currently practicing in the local context.

The research sample comprises of two mental health professionals, with years of experience in the local context. The first interviewee, Prof. Nigel Camilleri is a consultant child and adolescent psychiatrist and clinical lead within the private sector, holding the position of a Visiting Associate Professor at the University of Malta. The second interviewee is Ms Daniela Calleja Bitar the Chief Executive Officer of Richmond Foundation.

The interviewees were initially contacted and informed about the research via email, and upon agreeing to participate, face-to-face interviews were scheduled at their convenience. They were provided with an information letter, consent form, and interview guide beforehand. (copies of each are attached in Appendix B)

3.6.2 Online Questionnaire

Scope

The online questionnaire was adopted as a theoretical sampling research method, to:

- Provide a general understanding on the experiences of individuals on the autistic spectrum in public spaces in the local context.
- Provide a general understanding on the experiences of individuals on the autistic spectrum in public spaces in Valletta.
- Identify specific public spaces to be explored in the participatory walk
- Recruit participants for the participatory walk

The research method

The anonymous online questionnaire was designed to take less than ten minutes to fill in and both an English and a Maltese version were distributed. (a blank copy is attached in Appendix B) All participants were pseudonymised and any recognisable data not included in the dissertation. The questions followed Nicolaidis et al., (2020) suggestions on creating accessible survey instruments for autistic adults and people with intellectual disability. For example, in open ended questions, participants were guided by additional notes to clarify and guide their response and when asked to rate comfort levels, the Likert scale was supported pictograms to visualise different rating options, improving clarity of response options (Nicolaidis et al., 2020).

The questionnaire was divided into five parts:

1. Demographics

Participants first provided general demographic details and indicated whether they were adults on the autistic spectrum or caregivers. Subsequent sections tailored questions based on their selected typology to streamline the process and reduce reading time. Google Forms was used for its question logic feature and its capacity to accommodate an unlimited number of questions.

2. Experiences in public spaces in the local context

This section dealt with the general experiences in public spaces in the local context.

3. Experiences in public spaces in Valletta

This section first gathered general information on participants' experiences in Valletta, then focused on their experiences over the past year in various public spaces such as places of interest, public squares, playgrounds, gardens, and streetscapes. Each subsection recorded the most frequented spaces, participants' comfort levels, reasons for visiting, and allowed for comments on positive or negative experiences. Spaces were presented with accompanying photos to facilitate selection. This data was crucial for mapping the participatory walk route as detailed in the following chapter.

4. Other reasons for visiting Valletta

Participants were provided options to select other activities they participated in Valletta and were asked to provide a general location of where these occurred to support the plotted route in the next chapter.

5. Recruitment for participatory walk and focus group/informal interview

Participants received general information about the participatory walk and were asked if they were interested in joining the walk followed by a focus group or informal interview. Those interested left their contact information. Out of the five who expressed interest, only two agreed to participate in the walk.

The participants and recruitment

The online questionnaire was open to adults within the autistic spectrum and their caregivers. It was shared with groups on the public social media platform Facebook and through gatekeepers within Richmond Foundation.

3.7 Selecting nodes

An extensive list of public spaces in Valletta was drafted and each space was photographed by the author to supplement the online questionnaire. Participants of the online questionnaire were asked to mark which public space they frequented the most, for each typology. The compiled results are illustrated in Table 4 below.

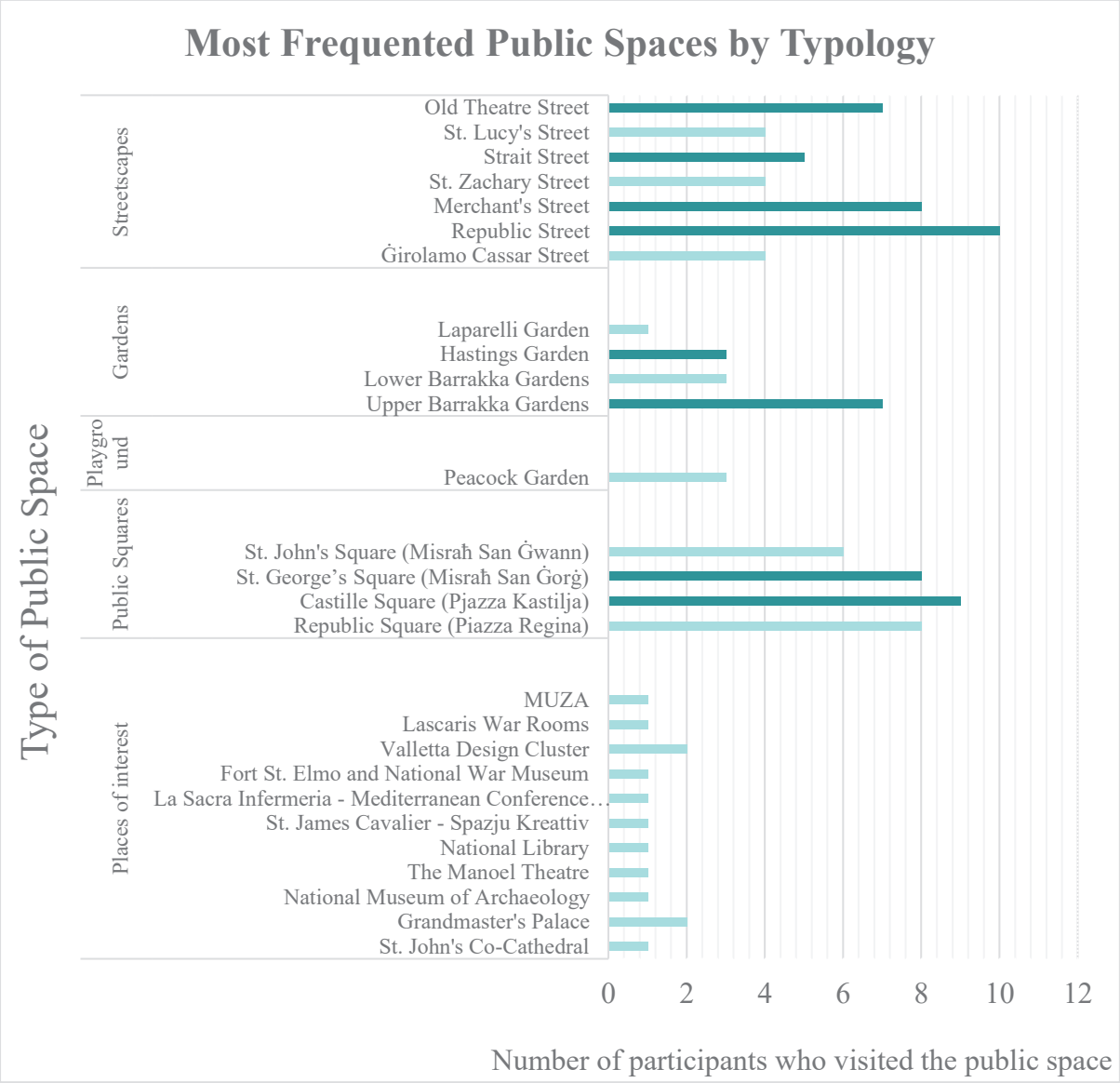


Table 4: Most frequented public spaces by typology, data from online questionnaire (Author, 2024)

The most frequented public spaces shown in Table 5, were selected to be included in the participatory walk to simulate a common visit to Valletta. Two spaces were selected for both gardens and squares to allow for comparison of results in the following chapter. Streetscapes will be compared by similarities of both functions and spatial proportions.

Streetscapes	Gardens	Squares
Old Theatre Street	*Hastings Garden*	*St. John's Square*
Strait Street	*Upper Barrakka Gardens*	*Castille Square*
Merchants Street		
Republic Street		

Table 5: Selected nodes (Author, 2024)

3.7.1 Plotting the route

The best fit route was plotted, as shown in Figure 13. The nodes selected were noted to have varying amounts of stimuli, thus allowing for a comprehensive understanding of public space typologies in Valletta. Triton fountain was selected as a preliminary node that served as the meeting place and allowed for the explanation and trial of the exercise and signing of consent forms. The following pages will discuss the general history, uses and preliminary observations for each node.

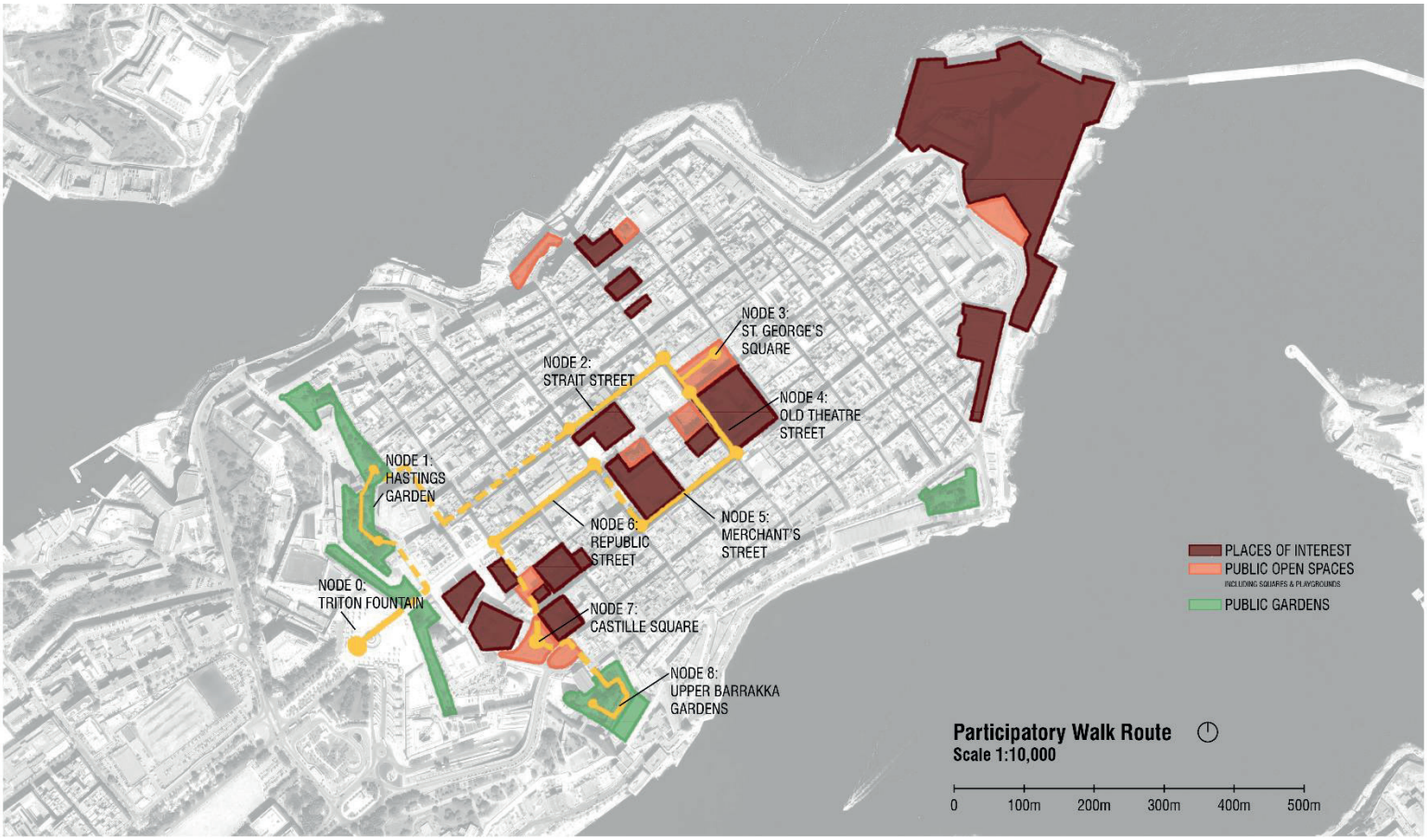


Figure 13: Participatory walk plotted route (Author, 2024)

Node 1: Hastings Garden

The garden stretches along the Bastion of St. John, overlooking onto Floriana, with a commanding view of the Marsamxett Harbour and central conurbation. It is named after the Marquis of Hastings who served as the governor of Malta for 2 years between 1824 and 1826 (Simpson, 1958). The garden is accessed through two gated entrances located at opposite ends of the layout. Tree and vegetation typologies, attract bird and insect species, whilst shading footpaths and benches. The atmosphere in the garden is relatively quiet and relaxing. A café is set up at the centre of the garden.

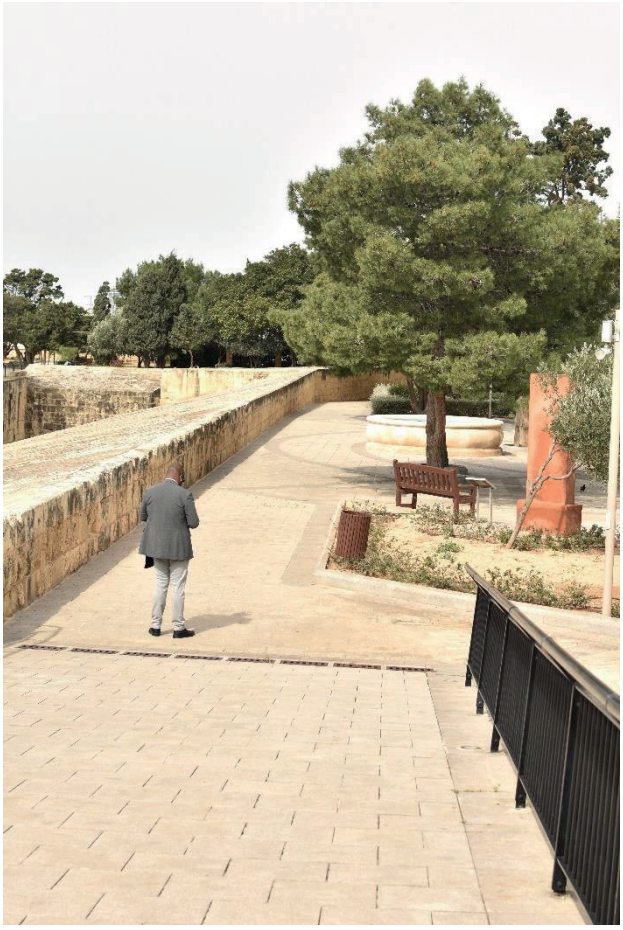


Figure 14: Hastings Garden (Author, 2024)

Node 2: Strait Street

A narrow street, known for its reputation as “Valletta’s red light district throughout the British era”, had suffered from a state of neglect (Micallef, 2009) until renewal in the past decade, revitalising the streetscape with entertainment and eating and drinking establishments which contrast with the courthouse and office blocks in other sections of the street. “The intersection with Old Theatre Street is the liveliest, as it is where the commercial activity is mainly concentrated.” (Zammit & Aldeiri, 2018, p, 64). This area is characterised by rich olfactory and aural stimuli, whilst food establishments sometimes cause pedestrian conflicts when parts of the street are appropriated for outdoor catering. Further there is conflict between pedestrian and vehicular movement at the narrowest part behind the courthouse (Zammit & Aldeiri, 2018). During the day, eateries were noted to be visited by people working in the neighbouring blocks, whilst bustling with night life during evening hours.

Figure 15: Strait Street (Author, 2024)

Node 3: St. George's Square

The square originally designed to hold "… festivities, military parades, and religious rituals, occupied subjects, instilled obedience, and diffused prospective social unrest" (Spiteri, 2021, p. 31). The rehabilitation of the square, completed in December of 2009, converted "a conspicuous car park into a paved, pedestrian space with lights and fountains for people to enjoy." (Ministry of Education, Culture, Youth and Sport, 2010, p. 13).

The pedestrianised square acts as both a space of transition serving as the continuation of Republic Street, as well as a place of meeting and staying. Several benches outline the square's periphery, opening up the central space, commonly observing children playing and running. Little to no shading elements were noted, however, the enclosing facades may provide shade according to the time of day. The open layout allows for the assembly of temporary structures that support local and national events.

Figure 16: St. George's Square (Author, 2024)

Node 4: Old Theatre Street

Previously known as Strada San Salvatore, the street intersects perpendicularly with Republic Street at the centre of the city and provides access to places of importance, including the Grandmaster's Palace, the National Library, the Manoel theatre, St Paul's Cathedral, the Basilica of Our Lady of Mount Carmel and the Food Market. Both ends of the street are characterised by flights of stairs that provide access to the two harbours. The central area spanning from Strait Street, Republic Street and Merchants Street is noted to have the most footfall, where the streetscape is adorned by small eateries.

Figure 17: Old Theatre Street (Author, 2024)

Node 5: Merchants Street

“By the mid-seventeenth century, markets and shops stocked with specific produce were often allocated to particular areas of the city, such as the *piazza dell’ erbe* (herb market) behind the Grandmaster’s Palace in Merchants Street.” (Spiteri, 2021, p. 32)

Nowadays, the streetscape is dominated by outdoor catering tents, forming a continuous, partially segmented barrier. People are limited to navigate their way around obstacles within the restricted footpath or to dine in the outdoor areas. Pedestrians are forced to pass along restaurants encountering a mix of savoury aromas that may affect their experience according to the individual’s preferences.

Figure 18: Merchants Street (Author, 2024)

Node 6: Republic Street

"Republic Street, … is located in the continuity of City Gate, the gateway to the city, and reaches Fort St. Elmo in the lower part of Valletta, through the palace of the Grand Masters, seat of the Presidency of the Republic of Malta. It also runs alongside St. John's Co-Cathedral suitable for parades and religious commemorations, the true "spine" of the capital city." (Franjou & AP Valletta, 2022, p. 76)

The streetscape is characterised by commercial and eating establishments, and its location on the principal axis of the city attracts high pedestrian footfall, that may at times be difficult to navigate. Some eating establishments have been permitted to place outdoor tables, however, these do not seem to significantly take over as much space as those in Merchants Street. Along the street one may encounter buskers or artists, entertaining passers-by.

Figure 19: Republic Street (Author, 2024)

Node 7: Castille Square

The paved open square recently rehabilitated and inaugurated in October 2015, commands views onto the land-front, overlooking Floriana. The project aimed to resolve pedestrian and vehicular conflict, open up pedestrian space and install lighting schemes that highlight details of the surrounding buildings of historical importance (GHRC, 2024). The vast, uninterrupted open space promotes further appreciation of the enveloping structures, predominantly the intricate rhythmic façade of the Auberge de Castille originally designed by Gerolamo Cassar and later remodelled by Domenico Cachia in 1744 (Hughes, 1967). The area attracts groups of tourists and acts as a space of transition connecting Upper Barrakka Gardens with the bustling centre of Valletta. The uninterrupted open space allows for events, political meetings and protests to take place.

Figure 20: Castille Square (Author, 2024)

Node 8: Upper Barrakka Gardens

The garden is located on St Peter and St Paul Bastion. It was converted to a private recreational garden by the Italian Langue (Camilleri, 2021) and was first opened to the public in 1824. The garden was rehabilitated in 2004, introducing "… new paving, 150 new lights, 50 new trees and 55 new benches." (Malta Independent, 2004)

The upper barrakka gardens are notable for the panoramic views of the grand harbour and the noon cannon blast from the saluting battery. The space is adorned with diverse trees and monuments offering areas of quiet and relaxation. The gardens were reconnected to Lascaris Wharf through the Barrakka Lift traversing a vertical distance of "… 58m and facilities access to 42 persons in two cabins at a time in just 25 seconds" (Ministry for the National Heritage, the Arts and Local Government, 2023, p. 9).

Figure 21: Upper Barrakka Gardens (Author, 2024)

The project, completed by AP Valletta in 2013, "… required a certain rigour to resolve the dichotomy between the strong historic nature of the site and the demands for better access placed upon it by cultural and economic considerations" (Archdaily, 2014).

3.8 Phase 2: In-depth phenomenological observations with adults within the autism spectrum

This chapter will discuss the methodology adopted for the participatory walks and the informal interviews. These aim to gather a detailed understanding of experiences of persons within the autistic spectrum in local public spaces, specifically in Valletta. The selected nodes were assessed with participants based on the identified design criteria shown in Table 3.

3.8.1 Participatory Walks

Scope

The participatory walk was adopted to:

- Provide a detailed understanding of experiences of individuals on the autistic spectrum in public spaces in Valletta.
- Assess local public spaces in Valletta based on design criteria illustrated in Table 3.

The research method

Participatory walks have proven valuable to understand the inter relationship between individuals, their environment, and their wellbeing (Evans & Jones, 2011). While its usage has emerged relatively late, participatory research has grown gradually in the field of autism (MacLeod, 2019; Mostafa (2021); Marcotte et al., 2022). Participatory walks are believed to enable meaningful input from people with autism, overcome barriers and allow for an effective translation of experiences whilst walking in a sensorial and socially active environment.

The following are advantages outlined by Marcotte et al. (2022) who adopted a participatory interview as a data gathering instrument with individuals on the autistic spectrum:

- **Easier expression, structuring, and clarification of exercise** as both the participant and the researcher can refer to the external environment, conveying how they would use the spaces themselves, and practically explain architectural concepts that may be too vague, for individuals not accustomed to the field.
- **Reducing any stress related to social interaction**, reducing the need for eye contact between the researcher and the participant.
- Improves accessibility of the exercise **enhances the type of data obtained to be more practical and specific.**
- **Improves the exchange of knowledge** between the participant and the researcher.
- Route informed by data collected in the online questionnaire, ensured that the most **common route for individuals is taken, indirectly participating in the planning of the exercise.**

The data collection method for the participatory walk was slightly adjusted from that initially proposed, since fewer participants consented to take part. Although this limited the data sample size, potentially limiting the applicability of results, it provided the opportunity to collect more detailed observations leading to a better understanding of the individual participant's experience. A few days before the walk, participants were provided with necessary information to familiarise themselves with the process.

The meeting point was set next to Triton Fountain, Valletta, where I explained the walk and the data collection method, before giving the participant the time to sign the consent form. The area near Triton Fountain doubled as the preliminary node, to familiarise ourselves with the process. Data was collected in the guiding document. This document structured the walk, prompted questions and captured more detailed observations. It further enabled easier compilation, analysis, and comparison of data in later stages.

The guiding document (attached in the Appendix B) included the route and information on the front page. The following pages included the data collection tables for each node, ordered according to the route sequence. Participants were asked to note positive and negative stimuli for each node, and then the node was assessed according to the design criteria compiled in table 3. Questions on comfort and the rating of design criteria, were visualised using a Likert scale with pictograms that expressed the different rating options to improve clarity of response options (Nicolaidis et al., 2020). The environment itself guided the conversation, prompting a more detailed discussion of their experience within the different public spaces. Furthermore, photographs were taken to support the observations noted.

The participants and recruitment

Participants for the participatory walk were recruited through the online questionnaire shared through social media and through Richmond Foundation as discussed in chapter 3.6.2. Participation was open to adults above 18 years of age within the autistic spectrum with low support needs. Two participants signed up for the second phase of the research. Both participants fall within the 18-24 age bracket. Pseudonyms, which they had the opportunity to select, were adopted to anonymise the participants' identity. The participants will be referred to as Paul and Hazel throughout the dissertation.

3.8.2 Semi-structured interview with participants of the participatory walks

Scope

The semi-structured interview was held with participants after the participatory walk to:

- Review the data collected during the participatory walk.
- Discuss the most relevant criteria, spatial preferences, identify locations requiring improvement, and discuss solutions.
- Capture the participant's thoughts on the research exercise.

The research method

After completing the participatory walk, the participant identified a comfortable space to take a break and to hold the audio recorded semi structured informal interview. The flexible and adaptable nature of this research tool allowed participants to guide parts of the conversation, expressing their thoughts, providing deeper insight in an informal interview setting to make the process feel less intimidating and more like a natural conversation. First, data collected in the participatory walk was reviewed, any necessary changes were made. It was beneficial to rate the stimuli, comfort levels and time they would spend in the respective nodes after the exercise, as to be able to compare to the overall experience within different nodes. Afterwords, the most relevant criteria, most and least preferred spaces, locations that need improvement, and solutions were discussed to comprehensibly summarise the participant's views on the open spaces they had just experienced.

Further, the participants were asked to leave their thoughts on the research exercise.

The participants and recruitment

Same as 3.8.1

3.9 Data Collection & ethical considerations

3.9.1 FREC Approval

It was critical to obtain FREC approval before starting to collect participatory data. Since the methodology involved four participatory research methods, two of which included the participation of persons within the autistic spectrum, the process for approval and documents submitted to FREC were extensive.

- The first submission was made on the 9th of October 2023, to BEN FREC.
- On October 25th, 2023, the form was returned for revision and redirected to SWB FREC.
- SWB FREC conditionally approved the application on November 17th, 2023, with a feedback sheet listing necessary adjustments and document preparation that were later uploaded and submitted on December 4th, 2023.
- On December 18th, 2023, the form was approved conditionally, pending minor changes.
- The application was approved by SWB FREC on the 16th of January 2024.

3.10 Limitations

Data is not transferable to all individuals on the autism spectrum due to the heterogeneity of individuals on the autism spectrum, especially data gathered from the participatory walk. Participation in the walk was limited to individuals within the autistic spectrum with low support needs to reduce risks that may result from the nature of the research method. Two participants consented to take part in the participatory walk due to time limitations and availability reasons. Since the number of participants did not reach that initially proposed, slight changes in the data collection methods for the walk where made. The participatory walk was held in a one-to-one format and was supported by the guiding document that was compiled at each node respectively. The participant shared their observations about the surrounding built environment and I prompted discussions based on specific stimuli or design criteria. This adapted method allowed for more detailed recording of observations and facilitated a conversational exchange that encouraged further discussion, thereby enhancing clarity and guidance for filling out the observation documentation.

The participatory walks were held on two separate days, a week apart, due to limited availability of participants. Therefore, the participants may have experienced different external environments and stimuli according to temporary changes in use of the spaces within the span of a week. To ensure replicability, the walks were held on the same day of the week and during the same hours of the day. It can be argued that the different atmospheres encountered within the same public space, allowed for more extensive results that reflect the adaptability and changing stimuli within public spaces. This was especially noted in St. Georges Square and in the Upper Barrakka Gardens.

I did not have experiential knowledge on conducting participatory walks with persons within the autistic spectrum. Insight from the dissertation supervisor, interviewed professionals and relevant methodologies reviewed, were deemed sufficient in formulating the necessary basis to approach the selected methodology (Marcotte et al., 2022).

Chapter 4: Compiling realities

4.1 Introduction

Data collected using the various participatory research tools will be presented, analysed and interpreted individually.

4.2 Presentation of results

4.2.1 Comparison of perspectives of mental health professionals

Table 6 illustrates compiled comments from the interviewed mental health professionals, catalogued by the themes discussed. Detailed data is presented in appendix B. Both mental health professionals agree that the built environment influences the experiences of people in general; however, more prominently, persons who are sensitive to sensory input, including persons within the autistic spectrum. They reflected how hectic urban environments may increase tension and anxiety, whilst safe green open spaces can be beneficial for anyone's mental health, serving as areas for re-calibration. Critical principles brought up during both interviews include sensitivity to sensory stimuli, integration of flexible environments, proportions and legibility of spaces.

Both interviewees mentioned that it is critical not to generalise the experiences of persons within the autistic spectrum as these vary according to the extent of sensory sensitivities and personal preferences. They stated that the broader perspectives can be catered for by providing options for space and object typologies one can interact with. Prof. Camilleri emphasised not providing too many options, as this can lead to the person becoming overwhelmed. He further noted that, when spaces allow for other activities to run in parallel to socialising, persons within the autistic spectrum seem to feel more at ease since the external activity reduces social stressors. In terms of proportions, both mental health professionals agreed that spaces shouldn't be too small, whilst in relation to the legibility of spaces, Ms Calleja Bitar noted that chaotic layouts should be clear and intuitive, whilst Prof. Camilleri pointed out the importance of visual supports that can be added when extensive changes cannot be made to a space.

They reflected on participatory design approaches adopted in their respective clinical environments. Prof. Camilleri referred to accommodations implemented in his private clinic, where visual aids were installed, and more sensitivity was applied to music played within waiting areas. Ms Calleja Bitar commented on Richmond Foundation's project with Local Office for Architecture at Dar Tereza and the collaboration with the Faculty for the Built Environment and Project Green at Villa Chelsea, where during the initial design process, architects held workshops with users and professionals. She mentioned that some prominent considerations extracted from that exercise included the importance of a hierarchy of areas with different levels of stimulation and the integration of natural textures and fabrics.

Theme	Interview Observations	
	Prof. Nigel Camilleri	Ms Daniela Calleja Bitar
General Comments		
The built environment directly impacts the person's experience within it.	■	■
Safe, green, open spaces are beneficial for anyone's mental health.	■	■
General Comments on Experiences of Persons within the Autistic Spectrum		
The built environment may have a more prominent impact on persons sensitive to sensory input, including persons within the autistic spectrum.	■	■
Experiences of people on the spectrum differ according to their sensory sensitivities and preferences	■	■
Newer spaces feel overwhelming	■	
Busy streetscapes may increase tension	■	■
Encouraged participatory design process	■	■
Critical Principles		
Sensory Stimuli		
Visuals	■	■
Colour (use of pastels),	■	■
Lighting (natural, calming, avoid clinical environment)	■	■
Homogeneous streetscape		■
Smells	■	■
Noise	■	■
Textures	■	■
Comfortable furniture	■	
Air quality and room thermal comfort		■
Flexible Environments		
Provide options of spaces and objects within the space one can interact with.	■	■
A hierarchy of areas based on the level of stimulation.		■
Do not provide too many options, as one may feel overwhelmed	■	
The space allows for other activities to run in parallel to having a conversation that may reduce stress related to communication	■	
Proportions		
Avoid spaces that are too small	■	■
Legibility		
Intuitive and clear spatial layout		■
Visual Supports	■	

Table 6: Compiled comments from professional interviews, hatched cells indicate that the specific interviewee mentioned this point (Author, 2024)

4.2.2 Analysing and interpreting online questionnaire data

Demographic Data

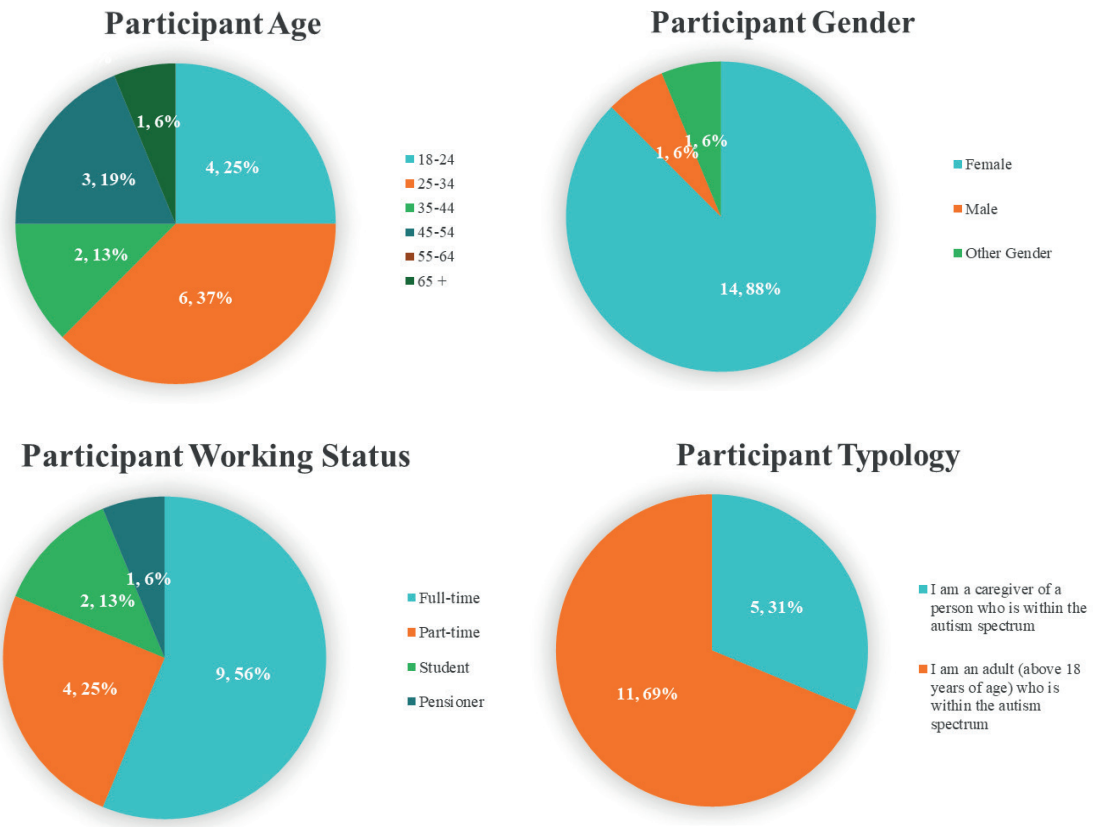


Table 7: General Demographic Data of Online Questionnaire Participants (Author, 2024)

Sixteen people filled out the online questionnaire shared on Facebook and by gatekeepers within Richmond Foundation. Eleven identified as adults within the autistic spectrum, whilst the rest were caregivers of individuals within the autistic spectrum.

Participants came from various age groups but were predominantly under 34 years. Interestingly, fourteen out of sixteen participants identified as female, even though the questionnaire was shared in online social media groups with no gender bias.

General Public Space Data

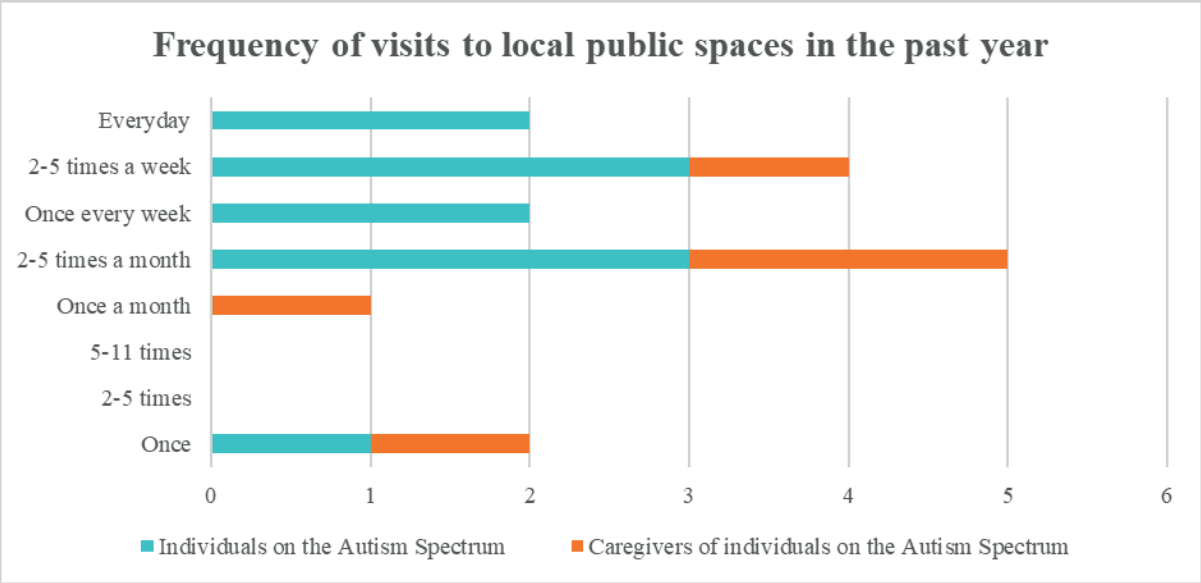


Table 8: Frequency of visits to local public spaces in the past year (Author, 2024)

Most participants frequented public spaces more than once a month, and some visited open spaces multiple times a week or daily. However, it is critical to note that two participants only visited public open spaces once in the past year, which is very concerning. Although reasons for this may be several, it further emphasises the importance of designing more accessible and enabling open spaces.

Table 9 shows that more than half of the participants prefer to spend their time in green open spaces, correlating with notes made by interviewed mental health professionals on the importance of green open spaces and their recuperative effect. It is evident that most seek a quiet space with a calming atmosphere, an environment in line with their interests and that is sensory safe.

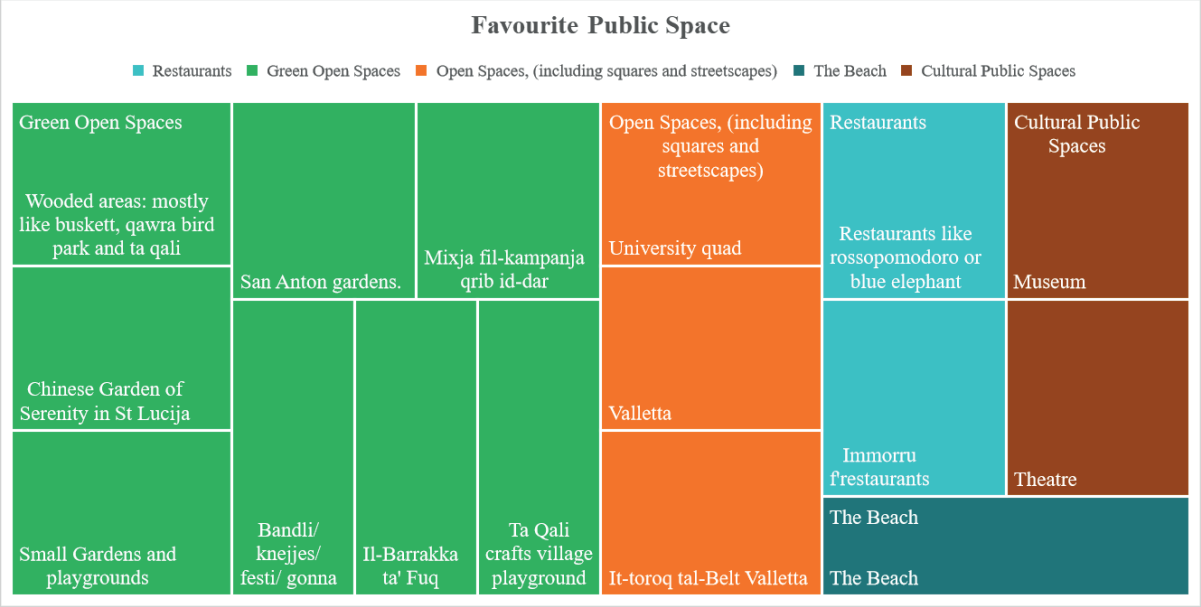


Table 9: Favourite Public Space (Author, 2024)

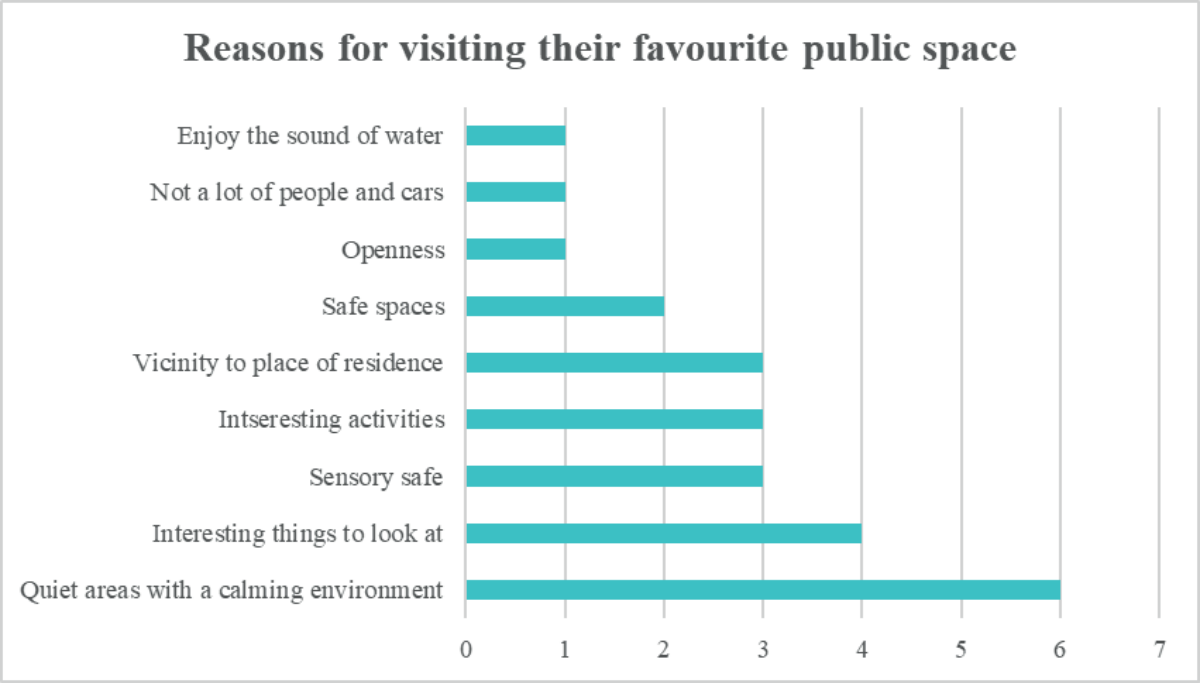


Table 10: Reasons for visiting their favourite public space (Author, 2024)

General Data on visits to Valletta

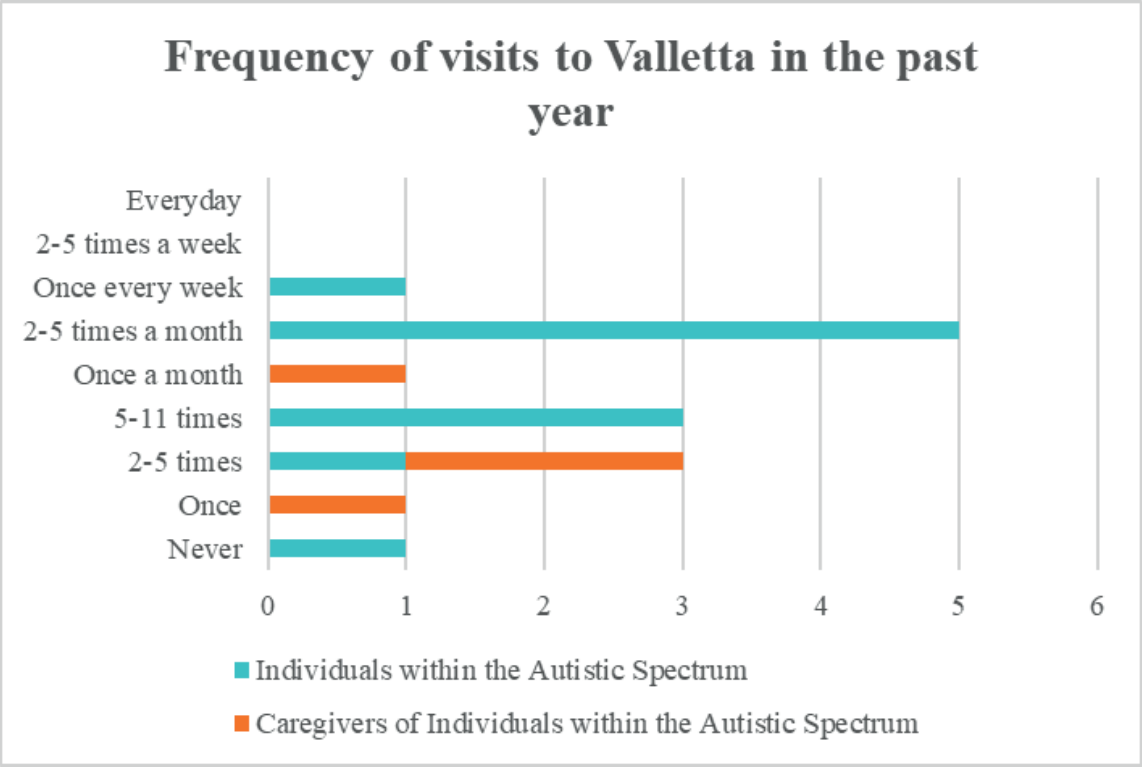


Table 11: Frequency of visits to Valletta in the past year (Author, 2024)

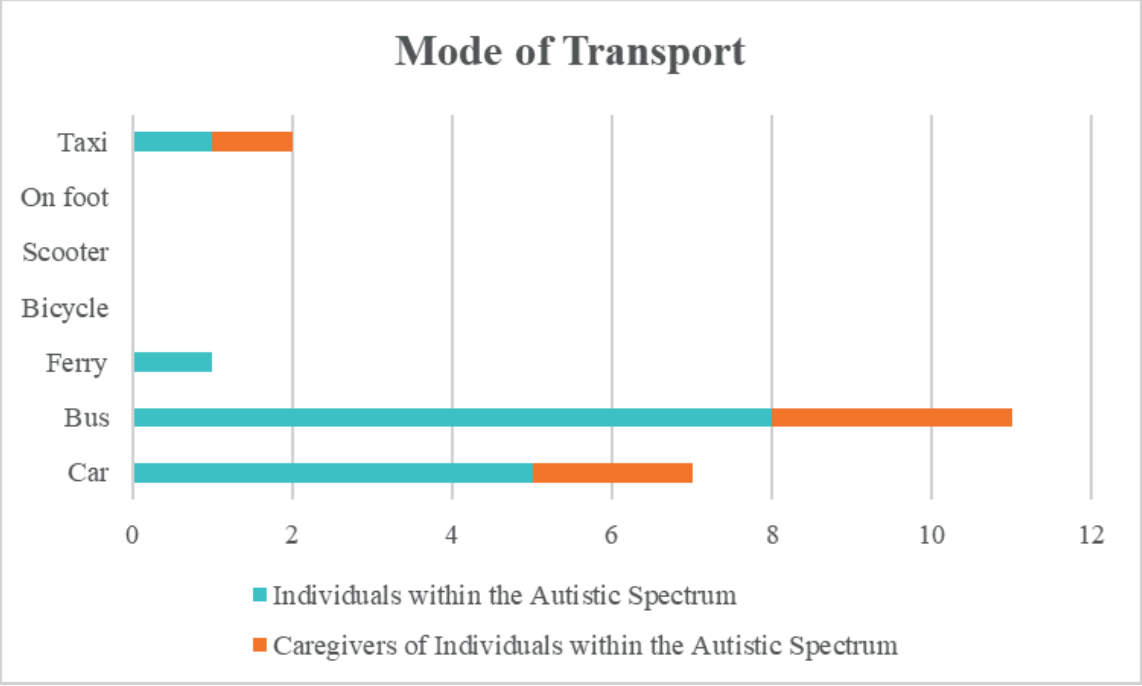


Table 12: Mode of Transport (Author, 2024)

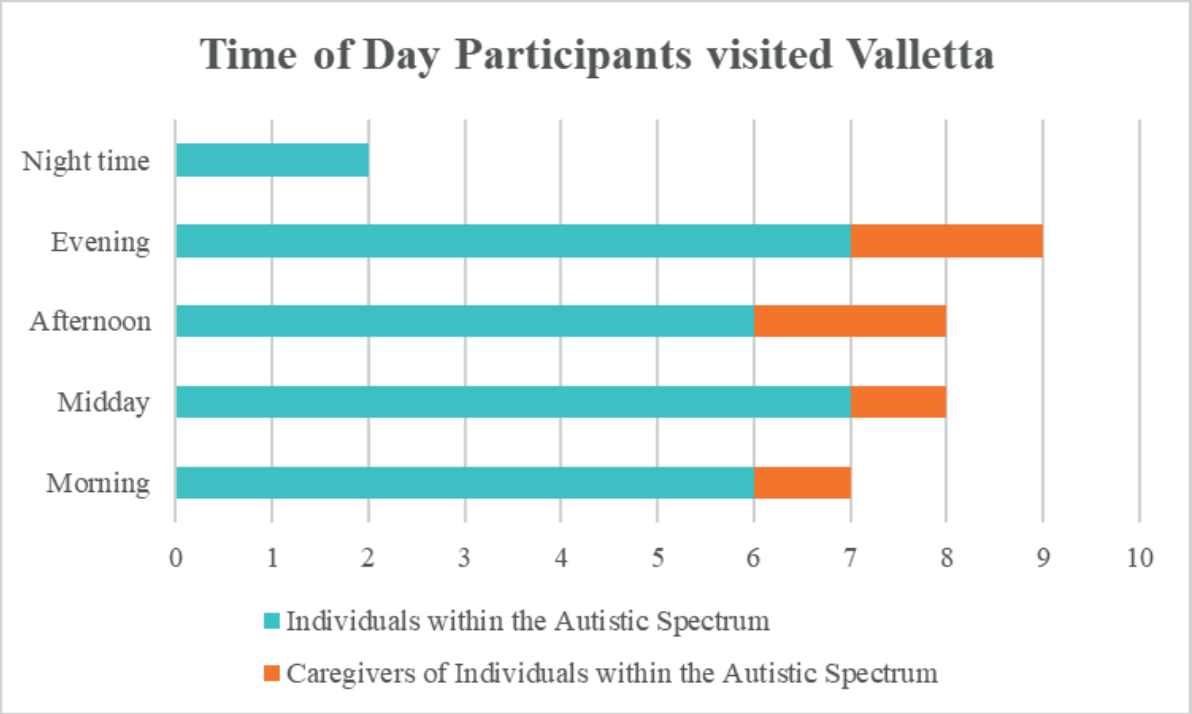


Table 13: Time of Day Participants visited Valletta (Author, 2024)

Most participants noted that they visited Valletta multiple times in the previous year, the majority using the bus or their personal car as a mode of transport. The bus is the most common mode of transport for visiting Valletta amongst persons within the autistic spectrum. This is supported by many bus routes passing through most towns and villages, ending their journey at the Valletta Terminus. In fact, John and Hazel (participants of the participatory walk) noted that they used public transport to reach the meeting point. As noted by Prof. Camilleri, the bus journey may subject individuals within the autistic spectrum to social stressors; however, if the individual becomes accustomed to the process, they may feel comfortable using it regularly. Further, the Tallinja card, as noted by Ms Calleja Bitar, streamlines the process of boarding the bus. Participants have visited Valletta throughout all the times of the day almost equally, with only a few visiting during nighttime, whilst the capital is most frequented during evening hours.

Level of Comfort in Streets

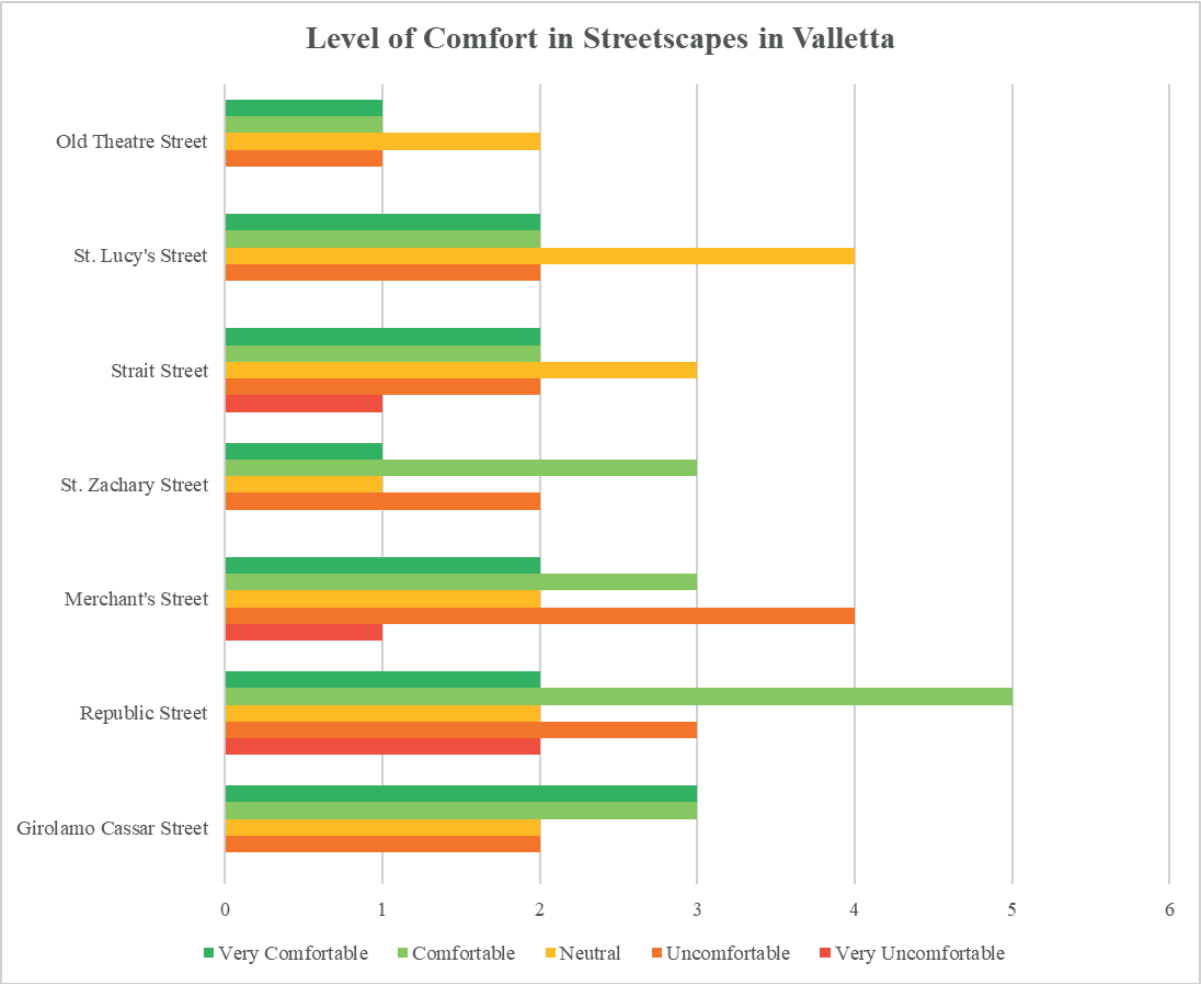


Table 14: Level of Comfort in Streetscapes in Valletta (Author, 2024)

Table 14 illustrates how persons within the autistic spectrum have varying levels of comfort within the same streetscape; therefore, it is difficult to generalise from these results. Four participants commented that they prefer to pass through streets with fewer people and obstacles, and three noted that they avoid overcrowded streets with café tables taking a portion of the street. One participant commented on the overcommercialisation of Strait Street, Republic Street and Merchants Street. Two participants reflected that they pass through pedestrianised streets that have shops that they frequent.

Two participants noted the importance of the sense of safety felt in larger streets frequented by more people. Supporting this claim, another participant commented how as they have grown older, they feel less safe in quiet streets, so when principal streets aren't as crowded, they prefer to pass through them as these provide more safety. The participant noted that they carry headphones wherever they go, which helps them reduce perceived stimuli.

Level of Comfort in Squares

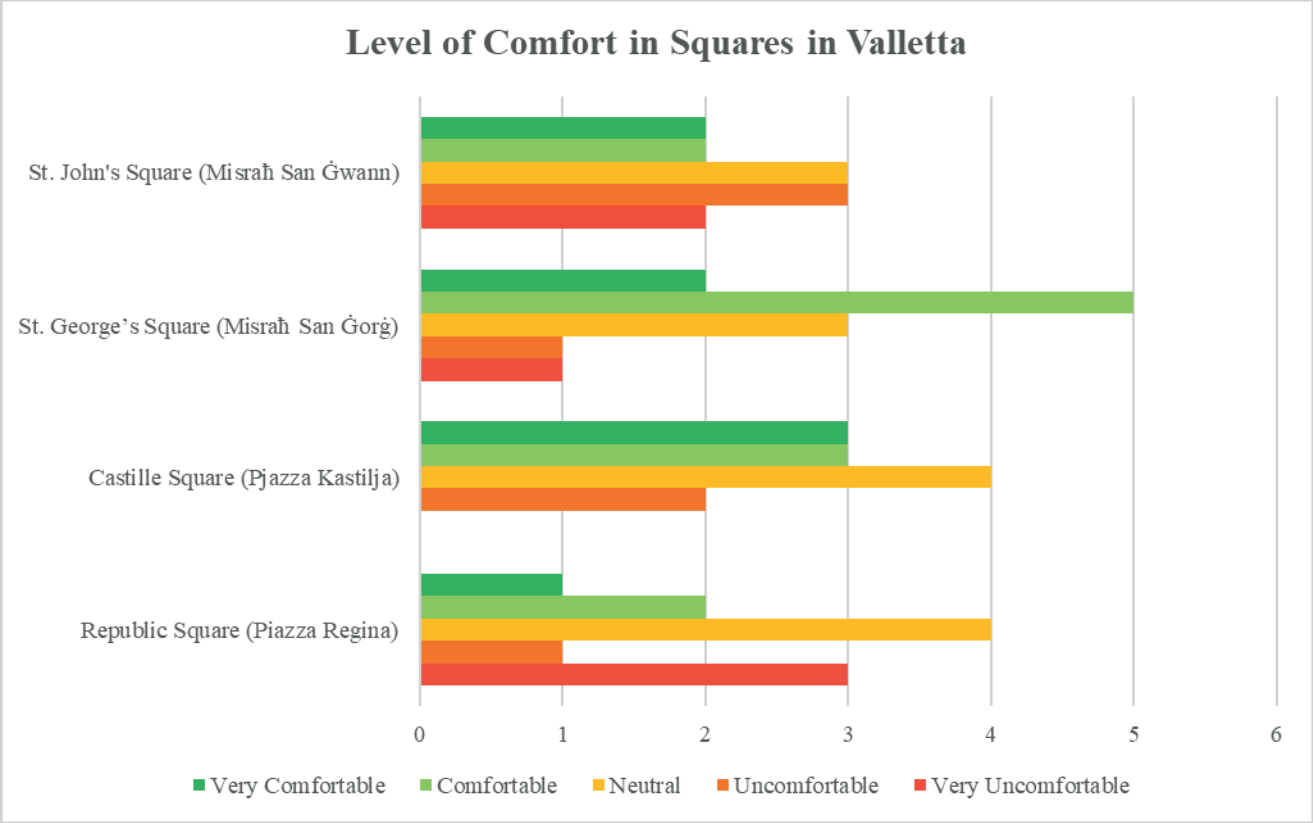


Table 15: Level of Comfort in Squares in Valletta (Author, 2024)

In like with results from the streetscape observations, Table 15 illustrates how persons within the autistic spectrum have varying levels of comfort within the same squares. Therefore, it is difficult to generalise from these results.

Four participants noted that they avoid loud and overcrowded squares, passing through them as a transitory space. Some participants commented on restaurant tables occupying space from squares, and two participants noted that there is too much noise coming from bars at times. This is reflected in the comfort levels attained for St. John's Square and more noticeably in Republic Square, both predominantly occupied by café and restaurant tables.

In comparison, St. George's Square and Castille Square seem to be associated with more comfortable experiences. In fact, one person commented that St. George's Square was less overcrowded and had comfortable seating areas.

Level of Comfort in Gardens

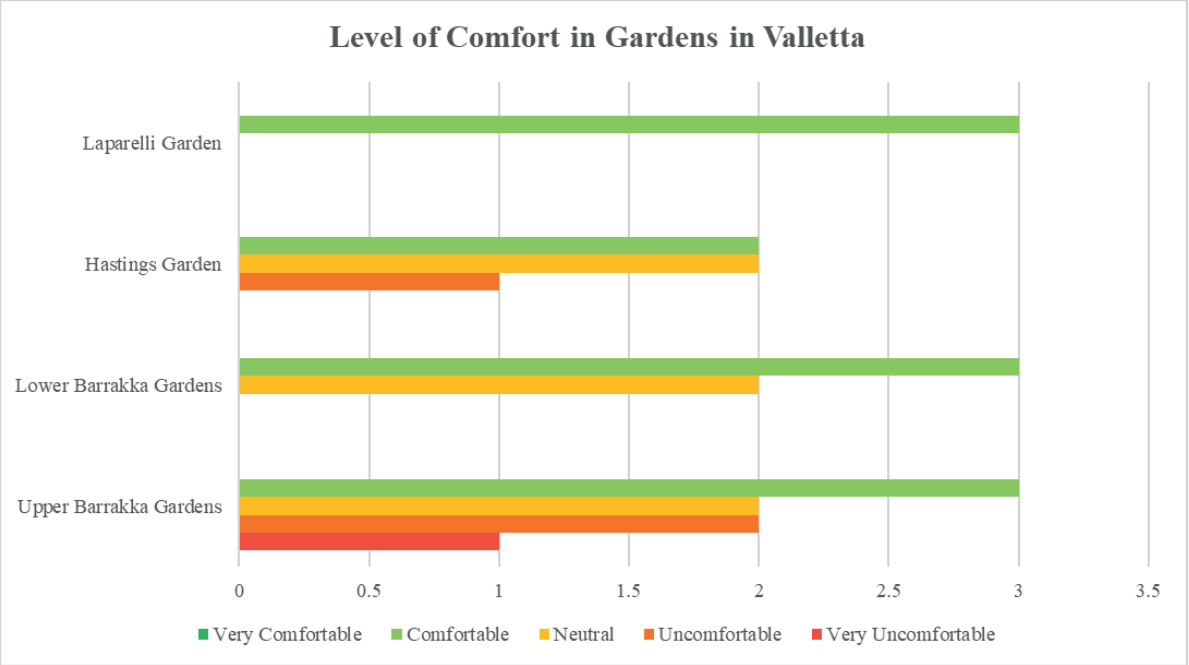
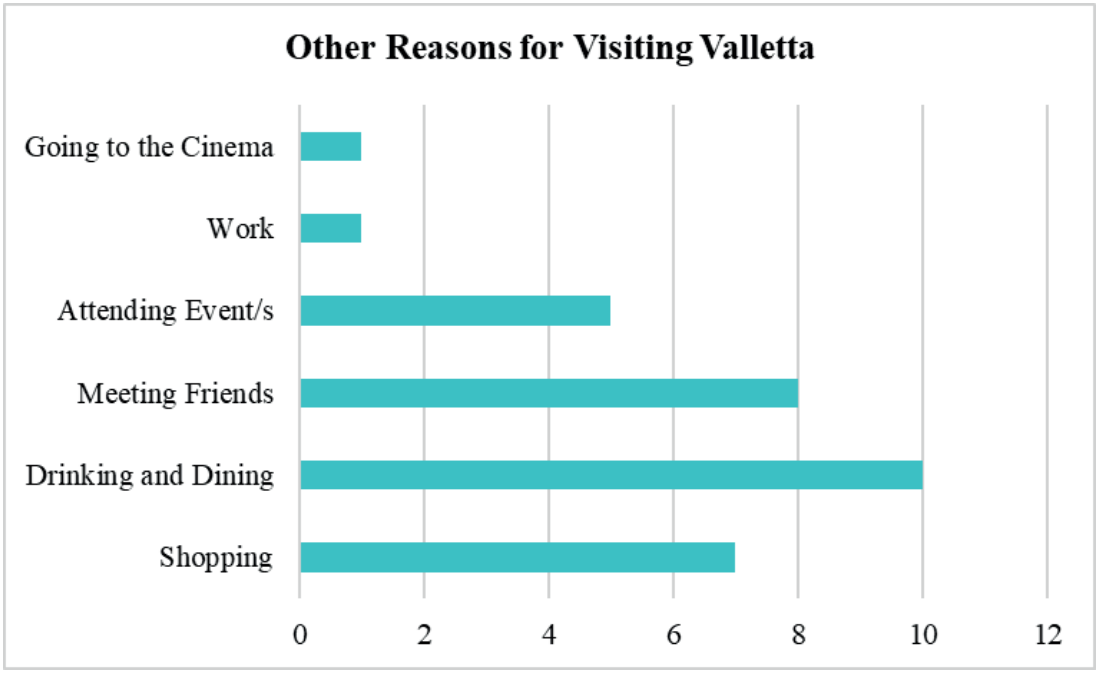


Table 16: Level of Comfort in Gardens in Valletta (Author, 2024)

Participants noted predominantly comfortable experiences in the gardens of Valletta, especially in Laparelli Gardens, which was less busy and quiet during my preliminary observations, probably because accessing it, is not as straightforward as the other gardens. A wider range of experiences were noted in both Hastings Garden and Upper Barrakka Gardens. One participant commented on an alleged indecent exposure in Hastings Garden, which affects their comfort level in the garden. Lower levels of comfort were noted in Upper Barrakka Garden, possibly due to the fact that it attracts many visitors. In fact, a participant said that they enjoy spending time in Upper Barrakka Gardens when it is less crowded.

Other reasons for visiting Valletta



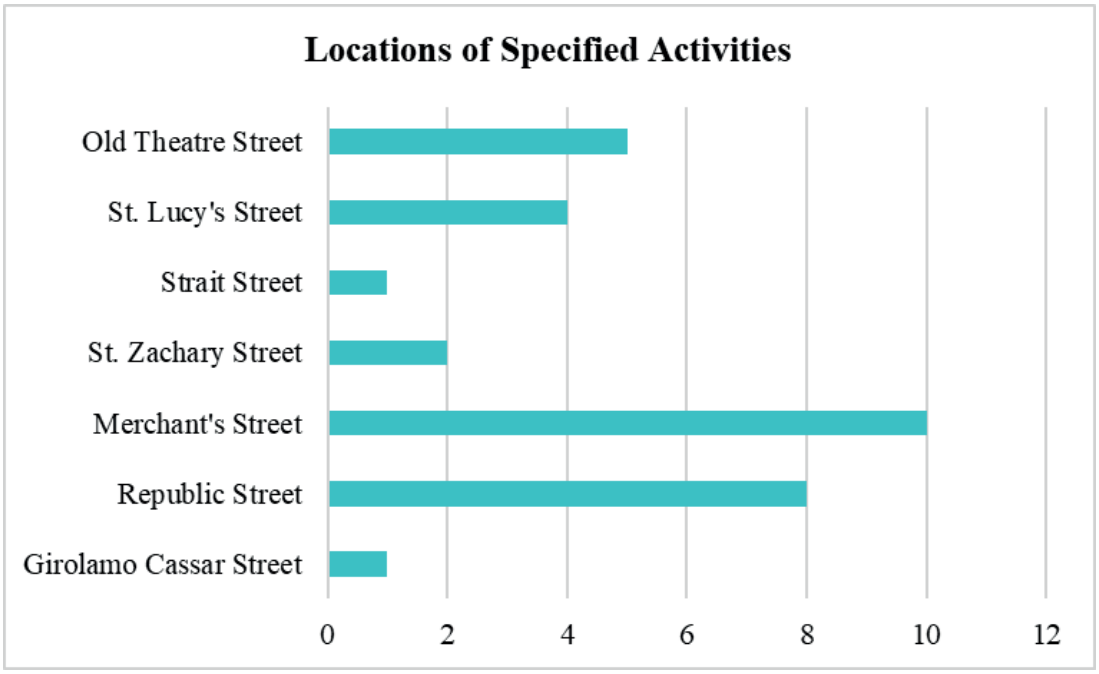


Table 17: Other Activities for Visiting Valletta and their Locations (Author, 2024)

Participants noted that they visit Valletta to dine and drink, meet with friends, shop, and attend events. These results support the notion of over-commercialisation of the city, discussed in the methodology chapter, especially along Republic Street and Merchants Street. These results further supported the node selection process for the participatory walk.

4.2.3 Analysing and Interpreting Participatory Walk Data

General Comments

The participatory walks were held on two separate dates, a week apart, during similar hours of the day. The participants selected the pseudonyms John and Hazel to anonymise their identity throughout the dissertation. Results presented in this section were noted in the guiding document (attached in the Appendix B), and photos were taken to support their observations during the walk.

Observations from both participants for every node are discussed and compared per public space typology. The selection of the nodes is based on phase 1 of the data collection, as discussed in chapter 3.7.

The tabulation key is as follows:

John: **x**

Hazel: **x**

Streetscapes

- Strait Street

Strait Street had several prominent visual, audio and olfactory stimuli that affected John and Hazel's experience. The participants had contrasting reactions to the smell of greasy food; whilst John found it pleasing, Hazel found it unpleasant. Both felt uncomfortable stopping along the street, as stimuli were overbearing due to the small width of the street. In fact, Hazel felt very uncomfortable and would spend up to 30 seconds there, whilst John felt neutral about the street as stimuli experienced cancelled each other out, opting to spend up to 5 minutes there. However, during the informal interview, Hazel said she wouldn't mind visiting bars in the street. Both participants marked legibility criteria as pleasing and straightforward due to continuous visual relation to different street sections. Hazel states that the narrow proportions felt uncomfortable, further noting an echo effect at the narrowest parts, making it hard to focus. Hazel felt safe in the street as it was actively used by people, whilst John didn't feel as safe, especially in the area behind the courthouse, where he perceived a sense of danger, as we noted cars parking near the back entrance of the courthouse.

Stimuli in Strait Street	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Music					X	
Cafeteria					X	
Façade colours						X
The smell of greasy food		X			X	
Irregular steps			X			
Sound of construction work		X				
Smell from welding works		X				
Bird droppings	X					
Busyness can be daunting	X					
Musty smell		X				
Sound of cars	X					
Echo, making it hard to focus		X				
Obstacles make it difficult to walk		X				

Overall Level of Comfort					
	X		X		
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute	Up to 5 minutes	Up to 20 minutes	More than 20 minutes
	X		X		

Table 18: Stimuli and Levels of Comfort: Hastings Garden (Author, 2024)

- Old Theatre Street

John liked the mix of food smells along Old Theatre Street. During the walk with Hazel, several artisan stalls in the section next to Republic Square attracted large crowds that she didn't like, as this restricted movement through the street. This event showcased the flexibility of uses within the street, enabled by its pleasant width. During both walks, plumbing works were in progress just in front of the food market. John commented that the smell of sewage felt really unpleasant, whilst Hazel commented on the lack of safety measures taken to border off the construction works and proposed that there should have been a warning sign. In fact, whilst noting her observation, a member of the public tripped over the temporary boards covering the dug-up trenches, highlighting this comment. Hazel marked the sensory stimuli criteria as unpleasant, whilst John marked them as pleasing and neutral. Both participants rated the legibility and proportions of the street as pleasing or highly pleasing.

Stimuli in Old Theatre Street	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
The food market						X
The mixture of smells reflects diverse uses					X	
Vehicles and pedestrians sharing the same street		X				
Smell of sewage	X					
Busy and crowded		X				
Construction near tables of café, with little safety measures	X					

Overall Level of Comfort					
		X		X	
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute	Up to 5 minutes	Up to 20 minutes	More than 20 minutes
	X		X		

Table 19: Stimuli and Level of Comfort: Strait Street (Author, 2024)

- Merchants Street

Both experiences along Merchants Street were predominantly affected by the restricted pedestrian movement, which directly exposes passers to stimuli from commercial and eating establishments. In this case, John and Hazel liked the smells of food, but they disliked the limited movement and busy crowds. Whilst John noted that he wouldn't mind eating there, therefore spending more than 20 minutes, Hazel stated that she would never eat there because pedestrians pass too close to the tables, and she would feel on edge the entire time. John further noted the difference in stimuli along the street. Hazel noted that the street is too overstimulating and that she usually wears her noise-cancelling headphones and solely focuses on getting through, feeling mentally exhausted by the end. Both participants noted that the layout is unpleasant as one needs to make their way around several obstacles.

Stimuli in Merchants Street	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Variety of tables					X	
Various smells of food					X	X
Exposed to different languages and cultures						X
Limited area for pedestrian movement, not much freedom as restaurant tables and construction extend onto a pedestrian area	X	X				
Too many people, very busy	X		X			
Construction noise	X					
Construction in Valletta			X			
Tourist train interrupting pedestrian movement		X				
Side streets create a break to divert attention				X		
Music is disruptive	X					

Overall Level of Comfort					
	X			X	
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute	Up to 5 minutes	Up to 20 minutes	More than 20 minutes
	X				X

Table 20: Stimuli and Level of Comfort: Merchants Street (Author, 2024)

- Republic Street

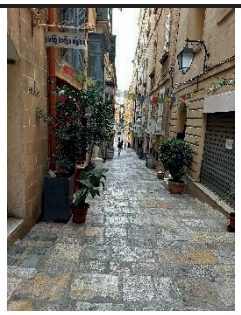
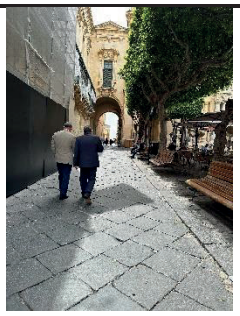
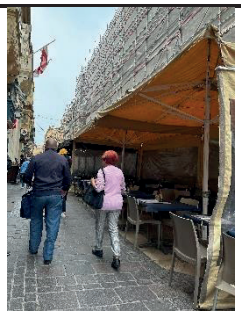
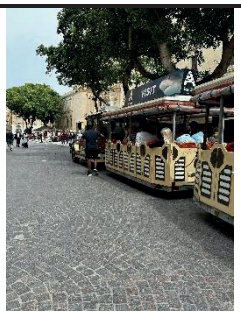
Both John and Hazel noted that making their way through Republic Street felt slightly unpleasant, as one is forced to carefully pave their way through the crowd heading in different directions. Whilst John felt that the sounds were pleasing, Hazel felt that these were unpleasant and noted how she usually visits her favourite shops, which serve as a break from the street's hectic environment. The overall level of comfort noted by participants was contrastingly different. However, it is critical to note that John considered his answer to include time spent within establishments along the street. Both marked legibility criteria as pleasant. Hazel marked sensory environment criteria as unpleasant, whilst John noted it as pleasant. As we passed through the street, John associated positive memories with specific establishments that may have alleviated his focus from other external stimuli. Hazel further compared her experience in Republic Square with that in Merchants Street, noting that although there were many people, it was easier to pass through, most probably due to the broader street width, which has not yet been overtaken by outdoor eating areas. She further noted signs and landmarks as wayfinding elements, whilst John noted the flexible use of the street for events.

Stimuli in Republic Street	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Small shops					X	
Visiting favourite shops serves as a break from the busy street					X	
Noisy area		X			X	
Encountering people from different cultural backgrounds						X
The smell of food from a specific establishment is associated with particular memories						X
Restored facades						X
Unmaintained facades		X				
Too many people			X X			
Shade					X	

Overall Level of Comfort		X			X
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute X	Up to 5 minutes	Up to 20 minutes	More than 20 minutes X

Table 21: Table 20: Stimuli and Level of Comfort: Republic Street (Author, 2024)

- Streetscapes Photographic Observations

John Strait Street				
Hazel Strait Street				
John Old Theatre Street				
Hazel Old Theatre Street				
John Merchants Street				

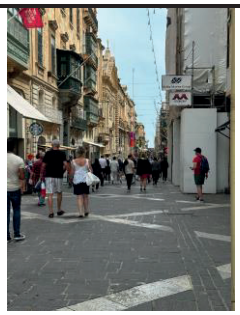
Hazel Merchants Street	N/A
John Republic Street	
Hazel Republic Street	N/A

Table 22: Photographs: Streetscapes (Author, 2024)

- Streetscapes General Conclusions

Although John and Hazel noted significantly different comfort levels, their experience was mainly affected by the perceived intensity of sensory stimuli, street proportions, legibility and safety of the streetscape.

- Intensity, duration, and type of sensory stimuli depend on building typology and proximity to pedestrian movement, which usually reflects width limitations within the streetscape.
- Street proportions, points of attraction and degree of connectivity of the street seemed to determine crowd density and ease of movement.
- Legibility was mostly straightforward to participants due to the axiality of streetscapes, resulting in adequate visual relations, however, the layout was more difficult when obstacles were present.

Gardens

- Hastings Garden

In Hastings Garden, both John and Hazel noted that the natural environment was highly pleasing, and Hazel found the shade provided by trees highly pleasing. They both liked the sound of the water fountain; however, whilst John found the music from the café pleasing, Hazel found it highly unpleasant, noting different responses to stimuli across participants. They both liked how the footpath opens to the view at the midpoint of the garden. John further noted that when he saw the presence of cat shelters in the garden, he felt more comfortable, as he finds cats very soothing.

John concluded that the space felt comfortable, whilst Hazel noted that the garden was very comfortable, and they would both spend more than 20 minutes there. They both found the sensory stimuli pleasing overall, whilst Hazel elaborated that the sensory environment varies according to where you are in the garden, as the layout provides different stimuli environments. Hazel noted that the layout was legible and clear through visual relations between the various sections; however, it didn't feel as intuitive for John. They both indicated that there is not much possibility of choosing for circulation; however, Hazel found the sense of predictability of the footpaths soothing. They both felt that the proportions and proxemics felt highly pleasing. Visual supports were only observed at the entrance. Wayfinding felt highly pleasing due to the strong visual relations. The garden felt safe for both participants and although there wasn't room for flexibility and customisation, Hazel noted that it was not necessarily bad as it fulfilled its function and there are multiple areas to test out.

Stimuli in Hastings Garden	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Butterflies						X
Flowers						X X
Cats						X
Birds						X X
Airplane						X
Sound of the water fountain					X	X
Music from the café	X				X	
Shade						X
The view						X X
Lack of signs to not climb the bastion wall		X				
Music from the busker playing at Valletta City Gate		X				
Development observed from the view		X				

Overall Level of Comfort				X	X
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute	Up to 5 minutes	Up to 20 minutes	More than 20 minutes X X

Table 23: Stimuli and Comfort Levels: Hastings Garden (Author, 2024)

- Upper Barrakka Gardens

The atmosphere in Upper Barrakka Gardens was significantly different on the separate days of the walks since a busker was playing his music in the middle of the garden during the walk with Hazel, negatively impacting her level of comfort. Both John and Hazel noted quiet areas; John preferred the area behind the café, while Hazel favoured the area near the bathrooms. John felt very comfortable around the café since there were several cats, and he felt soothed when petting them. John noted the unpleasant smells of the horses at the entrance and the scent of the midday gunfire explosion; however, these were temporary stimuli and didn't seem to bother him as much in the long run. In fact, he noted that he felt very comfortable in the garden and that he would spend more than 20 minutes there. In contrast, the constant music from the busker felt highly unpleasant to Hazel, negatively impacting her experience in the space. It further distracted her from appreciating the pleasing natural elements, and she didn't feel comfortable spending more than 1 minute in the garden since the music from the busker could be heard from all over the garden.

The legibility of the garden felt pleasing for both participants, but John felt that the layout wasn't as straightforward. Hazel noted visual supports in the garden. John and Hazel felt safe there but stated that it lacked flexibility and customisation.

Stimuli in Upper Barrakka Gardens	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Café area						X
Cats						X
The view						X
The sound of pigeons					X	
Bird droppings	X					
Smell of horses		X				
The smell of midday gunfire explosion		X				
Large crowd		X				
Areas of quiet				X		
Music from the busker	X					
Military march music from speakers near the viewing point	X					

Overall Level of Comfort					
		X			X
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute	Up to 5 minutes	Up to 20 minutes	More than 20 minutes
		X			X

Table 24: Stimuli and Comfort Levels: Upper Barrakka Gardens (Author, 2024)

- Gardens Photographic Observations

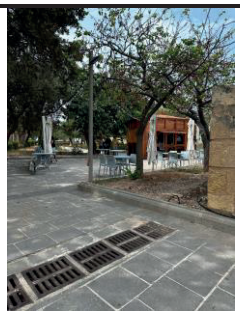
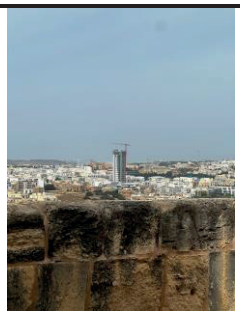
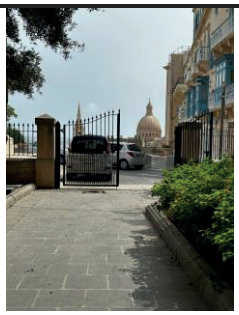
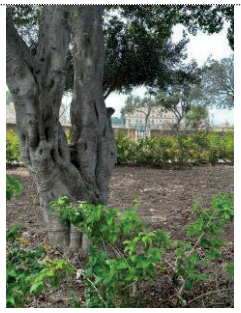
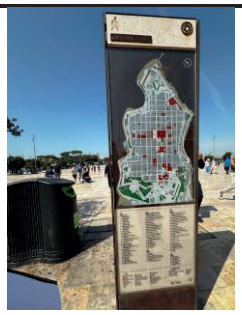
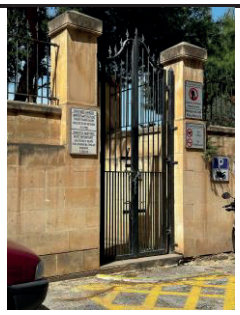
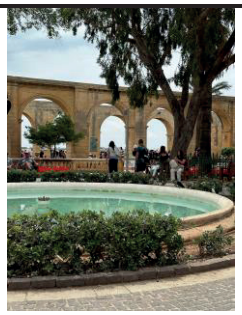
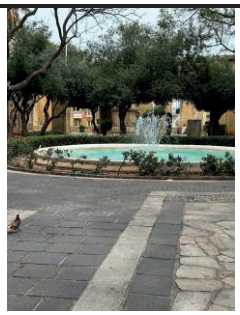
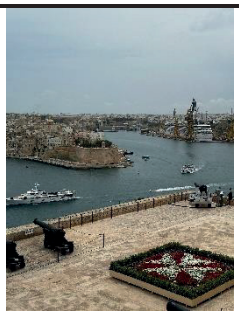
John Hastings Garden				
				
Hazel Hastings Garden				
John Upper Barrakka Garden				
Hazel Upper Barrakka Garden	N/A			

Table 25: Photographs: Gardens (Author, 2024)

- Gardens General Conclusions

Although both participants felt that the garden layouts were legible and safe, the constant negative stimuli recorded during the walk with Hazel took precedence and resulted in a very uncomfortable experience. From this observation, one can conclude that the sensory environment in the open space is very critical and may even take precedence over other design criteria, especially if the stimuli are constant and difficult to control.

Squares

- St. George's Square

Between the two walks, the atmosphere in St. George's Square was transformed through a large temporary installation. During the first walk with John, the installation was still being assembled, and at first, he was hesitant to explore that area as he felt slightly uncomfortable that the layout of the square had changed. However, upon closer inspection, he felt comfortable with the installations and liked the plants that had been installed. However, since it was still being assembled, he didn't like that large vehicles were passing through pedestrianised areas to unload items, and the pavement was dirty. John stated that he enjoyed observing the monuments and buildings enclosing the square as he is fascinated with history; even though he noted multiple negative stimuli, he felt very comfortable and would spend more than 20 minutes in the square.

A week later, when the installation was open to the public, Hazel felt that the plants and trees were pleasing; however, the narrow footpath within the installation was busy with people as they tended to stop to observe the specific plants. Therefore, she felt unpleasant in that regard. She further liked the shade cast from surrounding buildings but commented that she wouldn't stay there for more than one minute since too many people were passing through the area. Sensory stimuli were marked as neutral to highly unpleasant, whilst legibility and safety criteria were pleasing for both participants. Both participants noted a map of Valletta at the end of the square and pointed out that although furniture is not customisable, the open space allows different events to occur.

Stimuli in St. George's Square	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Sound of water fountain						X
Buildings and monuments of historic significance						X
Plants					X	X
Trees of temporary installation			X		X	
Level of restoration of facades		X				
A large vehicle passing through the pedestrian area		X				
Insects and flies	X					
Shade from surrounding buildings					X	
Busy footpaths within temporary installation		X				

Overall Level of Comfort		X			X
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute X	Up to 5 minutes	Up to 20 minutes	More than 20 minutes X

Table 26: Stimuli and Levels of Comfort: St. George's Square (Author, 2024)

- Castille Square

In Castille Square, John noted multiple positive stimuli, such as the historic buildings, the water fountain, and the possibility of choosing, that formulated a very comfortable experience, whilst Hazel noted a few negative stimuli, which included a crowd of people passing in an opposing direction, the cars passing a few metres away and the lack of shaded areas, that resulted in an uncomfortable experience for her. Hazel elaborated that at nighttime, she feels much better in the space. Participants noted most criteria relating to legibility and wayfinding as neutral or pleasing. Both John and Hazel stated that they felt safe, also noting the presence of a policeman. Similar to their experience of St. George's Square, both noted that although furniture is not customisable, the space can host different events. John further commented on the visual connection with the towns across the Grand Harbour.

Stimuli in Castille Square	***Rating***					
	Highly Unpleasant	**Unpleasant**	**Slightly Unpleasant**	**Slightly Pleasing**	**Pleasing**	**Highly Pleasing**
Element of nostalgia						X
Interest in historic buildings						X
Multiple movement choices						X
Water fountain						X
Cobbled tiles					X	
People walking in opposite direction		X				
Cars passing nearby	X					
No shaded areas	X					

Overall Level of Comfort		X			X
The time they feel comfortable spending	Up to 30 seconds	Up to 1 minute X	Up to 5 minutes	Up to 20 minutes	More than 20 minutes X

Table 27: Stimuli and Levels of Comfort: Castille Square (Author, 2024)

- Squares Photographic Observations

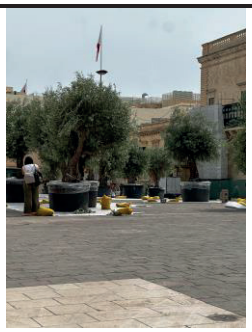
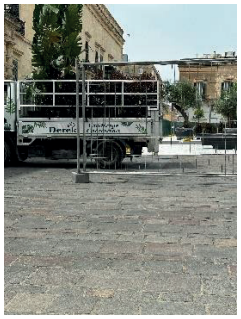
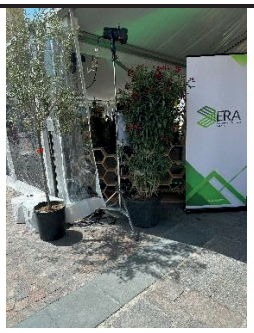
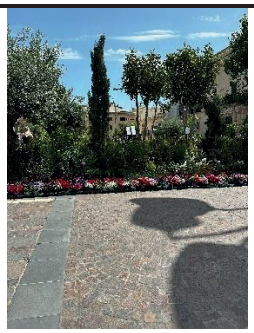
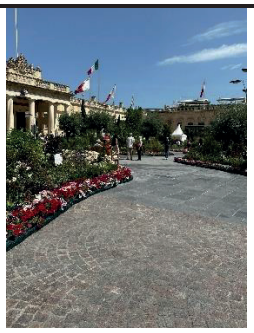
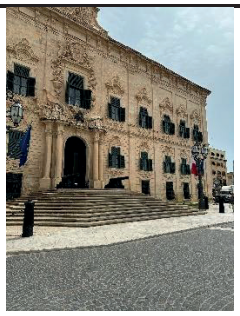
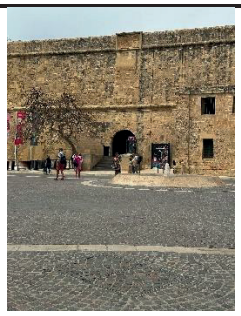
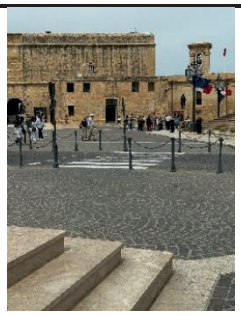
John St. George's Square				
Hazel St. George's Square				
John Castille Square				
Hazel Castille Square	N/A			

Table 28: Photographs: Squares (Author, 2024)

- Squares General Conclusions

Both squares are characterised by a central wide-open space enclosed by intricate architectural buildings of institutional importance. Comfort levels of participants were significantly different, illustrating varying sensory sensitivities and preferences of persons within the autistic spectrum noted in academic literature and by interviewed mental health professionals. Critical factors affecting their experience included temporary events that may have induced varying stimuli, crowds, lack of shade and the lack of quiet areas.

4.2.4 Analysing and interpreting data from the informal interviews

	John	Hazel
Most Important Design Criteria	Noted that all design criteria make a difference but identified the following as the most relevant: - Sensory environment - Visual relations - Safety	- Sensory environment - Clear layout and visual relations - Wayfinding
Most Comfortable Areas	- Hastings Garden - Republic Street	- Hastings Garden

Most Uncomfortable Areas that Require Most Improvement	- Strait Street
	  - perceived lack of safety referring to people entering the courthouse from the back entrance
	  - mix of surfaces
	  - stair tread and riser proportions were not comfortable (gradient too low)
	  - a lot of noise within a narrow space
	  - no area to relax
	(he noted that it would be challenging to improve)
	- Republic Street
		- Merchants Street
		  - She noted that it is one of the principal streets that one navigates to get to other places. Passing through an overstimulating streetscape means that one arrives at their destination uncomfortable. Meanwhile, through a calming environment, one can mentally prepare themselves.
		  - She further noted how it was ruined by outdoor restaurant areas that take up too much space; however, she believes it can be fixed.
		- Strait Street

Proposed Solutions	In response to his observation that walking within Republic Street was not straightforward since people are noted walking in different directions, I proposed that the zoning of the street width could be explored as an option (based on suggestions made by Saitelbach (2016)), which he agreed with.	- Strait Street
		  - Reduce obstacles.
		- Merchants Street
		  - Regulations posing limitations on the extent of outdoor areas are enforced accordingly.
		  - I asked her whether she thinks that the integration of quiet areas within streetscapes would be beneficial, and she responded that:

		- the noise would still permeate through - quiet areas may be appropriated for other uses - the bustling nature is part of some streets' character - She agreed that levels of stimulation should be carefully curated in such streetscapes so as not to be overstimulating. - She proposed that quiet areas should be provided, paying careful attention not to introduce any high levels of stimulation, as noted in Upper Barrakka Gardens.

Table 29: Informal Interview: Comparative Table (Author, 2024)

Chapter 5: Emergent Themes

This chapter will outline the emergent themes from the participatory research tools that correspond to the most prominent and common themes in research on designing environments for persons within the autistic spectrum discussed in the literature review. Results from professional interviews, the online questionnaire and the participatory walk concluded that the experiences of persons within the autistic spectrum vary according to sensitivity to stimuli and personal preferences, as first claimed in the literature review. A more extensive comparison of data from literature review and the adopted participatory research tools is provided in Table 30, found at the end of this sub-chapter. Each individual's sensitivity to the immediate environment is subjective, thereby making each experience of the environment unique.

The emergent themes are:

- Sensory Environment
- Flexible Environments
- Proportions and Spatial Layout
- Safety
- Legibility and Wayfinding

5.1 Theme 1: Sensory Environment

The sensory environment is a fundamental design criterion that significantly influences the comfort and well-being of individuals, particularly those within the autistic spectrum. Observations from the participatory walks, professional interviews and the online questionnaire highlighted how sensory inputs, including visual, olfactory, auditory, and tactile stimuli, can drastically affect comfort levels that vary according to the person's sensitivity to sensory stimuli.

Loud noise, crowded streets, and strong smells were sources of discomfort and anxiety, whilst natural environments and quiet areas provided positive stimuli conducive to a pleasing, soothing and relaxing atmosphere. In Hastings Garden, both participants found natural elements and the sound from the water fountain highly pleasing. At the same time, music from a nearby café was unpleasant for one participant but pleasing for another. Similarly, in the Upper Barrakka Gardens, John felt comfortable in the quiet area around the café populated with cats. In contrast, Hazel was disturbed by constant music from a busker, negatively impacting her comfort level. This observation applies to olfactory stimuli, where Hazel found the smell of greasy food in Strait Street unpleasant, and John found it pleasing. An additional point extracted from both the walk and professional interviews is the importance of thermal comfort.

This highlights the difference in reactions to constant and temporary stimuli, where continuous, uncontrollable stimuli are noted to heavily impact the person's experience. Observations underscore the need for environments to minimize negative stimuli (Mostafa, 2021), to provide options of spaces with varying stimuli intensities, and designing quiet spaces or buffer zones to recalibrate (Gaudion & Mcginley, 2013; Mostafa, 2021).

5.2 Theme 2: Flexible Environments

The need for flexible environments is consistently highlighted as vital for accommodating diverse needs across the autism spectrum. Flexible spaces allow individuals to spend their time in areas that suit their preferences and comfort levels, according to the level of sensory stimulation. These can contain adaptable features, allowing for multiple uses.

Observations revealed that spaces supporting parallel activities, such as having a conversation while engaging in a relaxing activity or focusing on visually pleasing features, can help reduce stress related to social interactions. This was noted in Hastings Garden for both participants of the walk. Flexibility also extends to using objects and furnishings within a space, offering users choices that align with their sensory preferences. Adaptability is essential for creating environments that simultaneously cater to diverse activities. Quiet areas for relaxation can be integrated amidst a busy urban setting, as noted in St. George's Square, where John felt that the seating area was comfortable and he would spend more than 20 minutes there. However, it is critical to note that persons who are more sensitive to sensory stimuli may not feel comfortable in quiet areas with little to no buffer, as indicated in the same location by Hazel, who did not feel comfortable due to the large crowds, noise transmission and appropriation of quiet area for other uses.

In Republic Street, individuals could find quiet shops to retreat from the busy environment, resulting in a more pleasing streetscape than Merchants Street. Therefore, enveloping building typologies determined the hecticness and the availability of quiet indoor public spaces within streetscapes and squares. It is critical that at planning level, a mix of compatible public uses with varying degrees of stimuli are enforced, and their design considers sensory stimuli.

5.3 Theme 3: Proportions and Spatial Layout

Proper proportions and spatial dimensions are crucial in creating comfortable and accessible environments. Both areas of transition and staying should not be too small or cramped as they can convey discomfort due to large crowds, difficulty of movement and elevated sound reverberation and proximity to sensory stimuli as noted in Strait Street and Merchants Street. Adequately proportioned spaces allow for ease of movement and clear sightlines, nurturing a more inviting and less stressful environment as observed in Republic Street and Old Theatre Street.

Academic literature supports the above, noting that well-proportioned spaces can enhance visibility and reduce the risk of accidents, contributing to a sense of security and well-being (Mostafa, 2021; Gehl, 2010). Narrower streets often feel more stressful due to higher pedestrian density and sensory overload. Adequately proportioned spaces also facilitate social interactions by providing enough room for comfortable engagement.

It is critical to note that wide open spaces such as Castille Square had fewer interactable elements, resulting in less enabling spaces, as opposed to gardens, which nurture intimate interactions with both the physical and social environment. This reflects the functional requirements of the respective public space typology.

5.4 Theme 4: Safety

Safety is a critical design criterion that significantly influences the usability and comfort of public spaces, particularly for individuals with sensory sensitivities. As noted in participatory observations below, the actual and perceived sense of safety applies across the physical, social and emotional dimensions.

In Strait Street, John expressed discomfort due to perceived danger near the courthouse entrance, where cars passed by with testifying individuals. Hazel was concerned with the perceived lack of physical safety in Hastings Garden, proposing appropriate signage to prohibit climbing low bastion walls. An online questionnaire participant noted indecent exposure in Hastings Garden, resulting in the lack of public safety, which is highly concerning in quieter spaces with lower footfall. Although the café promotes commercial use in the garden and may increase negative sensory stimuli, it simultaneously introduces a point of natural surveillance that deters public misconduct. Additionally, the presence of police officers enhanced the sense of security in politically charged areas.

In fact, participants noted feeling safer in larger, well-lit streets with clear sightlines and with notable people presence that contributes to a sense of natural surveillance, as also affirmed by Jacobs & Epstein (2011) and Gehl (2010). A compatible mix of building typologies ensures an active public realm and mitigates dead spaces that may contribute to actual or perceived unsafe environments.

5.5 Theme 5: Legibility and Wayfinding

Legibility and wayfinding are essential design criteria that ensure users can easily navigate and understand the spatial organization of urban environments. Clear and intuitive spatial layouts help reduce anxiety and confusion, particularly for individuals who may have difficulty processing complex environments. Mental health professionals highlighted the importance of legible spaces, noting that chaotic layouts should be simplified, clear and intuitive. Visual supports, such as nodes and landmarks, are crucial in aiding navigation and providing a sense of orientation, in line with studies by Lynch (1969) and Passini (1996). These should be further supported by signage that is clear and accessible for all.

Observations from the participatory walks and questionnaire data emphasize the significance of legibility in urban design. Participants often noted varying levels of comfort based on how easily they could navigate through spaces. For instance, John and Hazel found the axiality of Republic Street beneficial for maintaining visual relationships between different street sections, which enhanced their overall comfort. It is interesting to note that axiality is not always regarded as positive, in fact, Arthur & Passini (1992) note that in “symmetrical layouts … situating oneself, wayfinding, and decision making may all be more difficult” (Arthur & Passini, 1992, p.113)

However, participants reported higher levels of discomfort and difficulty in navigation in spaces where obstacles and visual clutter were present, such as Merchants Street and Strait Street. The presence of clear wayfinding elements, including the map present near Triton Fountain and in St. George’s Square, markers at crossroads, and identifiable landmarks, contributed to a more positive experience by providing reassurance and reducing the cognitive load required to navigate the space.

This principle extends to gardens, where layouts significantly influence participants' comfort levels. Participants noted that Hastings and Upper Barrakka Gardens had strong visual relations between different sections. However, whilst Hazel stated that this created a sense of predictability, John noted that the layouts of both gardens were not simple.

5.6 Principles Going Forward

By adhering to the following principles, designers can create an inclusive and enabling public realm that accommodates all users' diverse needs, particularly those with sensory sensitivities. These principles foster environments that are not only functional and accessible but also nurture a sense of agency for everyone.

5.6.1 Inclusive Participatory Design Process

Design processes should engage a diverse range of users, including those with sensory sensitivities, throughout the project cycle. The following principles may be adopted for such inclusive design processes:

- Hold workshops and gather feedback to understand their experiences and preferences.
- Incorporate their input into the design to ensure that the resulting spaces are genuinely inclusive.
- Discuss design iterations with users for further refinement.
- Foster a sense of ownership and ensure that spaces are responsive to the community's needs.

5.6.2 Sensory-friendly environments

Design public spaces sensitive to sensory stimuli, by:

- Reducing sensory stimuli by carefully curating design elements, incorporating natural materials and textures and pastel/neutral/natural colour palettes.
- Introducing features limiting noise propagation, considering absorption and reverberation of airborne and structure-borne sound.
- Introducing natural elements (paying close attention not to introduce vegetation with predominant aromas or prickly textures) and water features.
- Exploiting natural lighting indoors, introduce shading features to improve thermal comfort, and provide control features for heating, ventilation, and artificial lighting.
- Limiting excessive noise and overwhelming sensory input, particularly in areas intended for relaxation, such as gardens.

- Providing quiet zones with an adequate buffer for recalibration.
- Segmenting areas of high stimuli through careful sequencing of public space/ building typologies, providing intermediary soothing transition areas whilst considering the compatibility of uses.

5.6.3 Flexible and Adaptable Spaces

Create flexible environments that offer a variety of spaces and object typologies to accommodate different needs and preferences. This can be achieved by:

- Including areas with varying levels of stimulation, allowing users to choose environments where they feel most comfortable.
- Integrating public building typologies with lower stimuli and preferred interests along busy streetscapes that allow relaxation, paying close attention to retaining low levels of sensory stimulation within.
- Designing spaces that support parallel activities to occur while conversing or providing visually/auditory/tactile/olfactory pleasing features.
- Avoiding overwhelming users with too many options by establishing a clear hierarchy of spaces.
- Including a selective choice of interactable objects and furnishings aligning with sensory preferences.

5.6.4 Proportional, Legible Layouts Incorporating Wayfinding Considerations

Street proportions, points of attraction and principality of streetscapes determine crowd density and ease of movement. Ensure that public spaces are:

- Well-proportioned and avoid cramped, overly small areas and footpaths that can increase anxiety.
- Void of obstacles.
- Designed intuitively, with straightforward spatial layouts to facilitate easy navigation through adequate visual relations between sections.
- Carefully planned spatial organization enhances comfort and usability, making public spaces more welcoming and less intimidating.
- Incorporate visual supports, clear signage, and landmarks to aid wayfinding.

5.6.5 Safety

Prioritize physical and psychological safety in public spaces, nurturing inviting and enjoyable experiences. This can be achieved by:

- Providing compatible diverse mixed uses that ensure active use of public space throughout the day and evening hours.
- Maintaining well-lit and well-maintained pathways, clear sightlines, and predictable environments.
- Addressing safety concerns by implementing proper barriers around potential hazards.

Research Tool / Principles Going Forward	Literature Review	Professional Interviews	Online Questionnaire	Particpatory Walks & Informal Interview
Inclusive Participatory Design Process				
hold workshops/participatory tools to gather feedback	(Evans & Jones, 2011) (Macleod, 2019) (Nicolaidis et al., 2020) (Mostafa, 2021) (Sant et al., 2024) (Cefai, 2021) (Marcotte et al., 2022)	Prof. Camilleri gathered feedback from clients regarding clinic sensory environment. Ms Calleja Bitar noted consultative process with their clients when designing Villa Chelsea in collaboration with Project Green.	The broad feedback gathered form online questionnaire samples was critical to the methodology of following research tools and in the compilation of principles going forward.	The in-depth observations of participants was crucial in this study
incorporate participant input into the design	(Macleod, 2019) (Mostafa, 2021) (CRPD, 2022) (Sant et al., 2024) (Cefai, 2021)	Both incorporated the input from clients.		Both participants looked forward to see results from this study incorporated in local public spaces.
foster a sense of ownership and ensure that spaces are responsive to the community's needs	(Macleod, 2019) (Mostafa, 2021) (Sant et al., 2024) (Leadbitter et al., 2021) (Denzin & Lincoln, 2018) (Marcotte et al., 2022)			
Sensory-friendly Environments				
curate design elements with low sensory stimuli	(Government of Malta, Ministry for Inclusion and Social Wellbeing, 2021) (Mostafa, 2021) (Tola et al., 2021)	Both interviewees mentioned that it is critical not to generalise the experiences of persons within the autistic spectrum as these vary according to the extent of sensory sensitivities and personal preferences. They further commented that overly stimulating environments may increase tension and anxiety, especially for persons within the autistic spectrum.	A sensory safe environment was noted as a prominent factor by online questionnaire participants. Two participants noted that there is too much noise coming from bars found within the squares of Valletta.	Intensity, duration, and type of sensory stimuli depend on building typology and proximity to pedestrian movement, which usually reflects width limitations within the streetscape. Sensitivity to sensory stimuli was noted by both participants, although more prominently by Hazel. This notes the different sensitivities and reaction to sensory stimuli across the autism spectrum. For example, the participants had contrasting reactions to the smell of greasy food; whilst John found it pleasing, Hazel found it unpleasant. Whilst John found the music from the café pleasing, Hazel found it highly unpleasant, noting different responses to stimuli across participants. John and Hazel liked the smells of food in Merchant's Street. Hazel noted that the Merchant's Street is too overstimulating and that she usually wears her noise-cancelling headphones and solely

				focuses on getting through, feeling mentally exhausted by the end. The atmosphere in Upper Barrakka Gardens was significantly different on the separate days of the walks since a busker was playing his music in the middle of the garden during the walk with Hazel, negatively impacting her level of comfort. John noted the unpleasant smells of the horses at the entrance and the scent of the midday gunfire explosion; however, these were temporary stimuli and didn't seem to bother him as much in the long run. Temporary events held in squares may induce new stimuli that can significantly alter the experience of the space.
quiet spaces with an effective buffer	(Mostafa, 2021) (Tola et al., 2021) (Gaudion & Mcginley, 2013)		A quiet space with a calming atmosphere was noted as the most prominent factor by online questionnaire participants. Participants noted predominantly comfortable experiences in the gardens of Valletta, especially in Laparelli Gardens, which was less busy and quiet during my preliminary observations. Lower levels of comfort were noted in Upper Barrakka Gardens, possibly due to the fact that it attracts many visitors. In fact, a participant said that they enjoy spending time in Upper Barrakka Gardens when it is less crowded.	Both John and Hazel noted quiet areas in Upper Barrakka Gardens; John preferred the area behind the café, while Hazel favoured the area near the bathrooms. However, there was no effective barrier against the loud noise from a busker during the walk with Hazel, thus the constant stimuli was unbearable for her, negatively impacting her experience in the garden.
intermediary areas of lower stimuli within spatial layouts	(Mostafa, 2021) (Tola et al., 2021) (Brusilovsky & Lagar, 2021)			Both John and Hazel noted how their favourite eatery and bookshop along Republic Street provides a space where they can relax from the hectic streetscape.
introduce soothing natural elements, natural lighting and shading	(Mostafa, 2021) (Gaudion & Mcginley, 2013)	Both professionals noted that safe green open spaces are soothing for anyone's mental health, serving as areas of re-calibration. Ms Calleja Bitar noted the importance of integrating natural textures and fabrics in interiors.	More than half of the online questionnaire participants noted that they prefer to spend their time in green open spaces, whilst one participant noted that they enjoy the sound of water.	Both participants found natural environments, shading and water elements soothing in the gardens of Valletta.

Research Tool / Principles Going Forward	Literature Review	Professional Interviews	Online Questionnaire	Particpatory Walks & Informal Interview
Flexible and Adaptable Spaces				
hierarchy of public spaces with different levels of stimuli	(Mostafa, 2021) (Tola et al., 2021)	They stated that the broader perspectives can be catered for by providing options for space typologies one can interact with. Noted by Ms Calleja Bitar when discussing the particpatory process adopted by Richmond Foundation and Project Green		Noted during both walks. Hazel remarked how it is important to have dedicated quiet spaces and that integrated quiet spaces in places of high stimulation such as in streetscapes may not work as intended due to appropriation and sound permeability. This contrasts proposals of integrating quiet spaces in areas of high stimulation by Mostafa (2021). Hazel elaborated that the sensory environment in Hastings Garden varies according to where you are in the garden, as the layout provides different stimuli environments, noting that there are multiple areas one can test out.
space supports parallel soothing activities whilst in conversation	(Saitelbach, 2016)	Prof. Camilleri noted how from his experience, physical activity can lessen stress associated with social interaction.		During both participatory walks, participants felt more at ease when conversing whilst walking or making direct reference to their surrounding.
interactable objects designed with sensory sensitivities in mind	(Mostafa, 2021) (Tola et al., 2021) (Saitelbach, 2016) (Sachs & Vincenta, 2011) (Marcotte et al., 2022)	They stated that the broader perspectives can be catered for by providing options for object typologies one can interact with. Prof. Camilleri noted providing soothing equipment in the clinical environment. He further emphasised to not provide too many options as it may become overwhelming.		Hazel noted the use of noise cancelling headphones to aid reduce over stimulation. John noted how animals especially cats in public gardens can be beneficial to calm him.
integrate public building typologies of interest near hectic spaces			Activities and objects of interests were also noted as a factor for choosing their favourite public space. Two participants reflected that they pass through pedestrianised streets that have shops that they frequent.	Both John and Hazel noted how their favourite eatery and bookshop along Republic Street provides a space where they can relax from the hectic streetscape. In St. George's Square, John stated that he enjoyed observing the monuments and buildings enclosing the square as he is fascinated with history; even though he noted multiple negative stimuli.

Research Tool / Principles Going Forward	Literature Review	Professional Interviews	Online Questionnaire	Particpatory Walks & Informal Interview
Proportional, Legible Layouts with Wayfinding Considerations				
well-proportioned spaces, avoid narrow widths and obstacles	(Gehl, 2010) (Cefai, 2021) (Tola et al., 2021)	In terms of proportions, both mental health professionals agreed that spaces shouldn't be too small.	Openess was mentioned as a factor by online questionnaire participants. Four Participants noted that they prefer to pass through streetscapes with fewer people and obstacles. Four participants noted that they avoid loud and overcrowded squares, passing through them only as a transitory space.	Street proportions, points of attraction and degree of connectivity of the street seemed to determine crowd density and ease of movement. Both John and Hazel disliked the narrow proportions in Strait Street, feeling uncomfrtable to stop along the street, Hazel further noting an echo effect at the narrowest parts, that made it hard to focus. During the walk with Hazel several artisan stalls in the section next to Republic Square attracted large crowds that she didn't like, as this restricted movement through the street. Obstacles and erratic people movement in Merchant's Street and Republic Street negatively impacted both participants They both felt that the proportions and proxemics felt highly pleasing in gardens.
layout is clear, intuitive and designed with functionality of the space typology in mind	(Tola et al., 2021)	Ms Calleja Bitar, noted that layouts should be clear and intuitive.		Hazel noted that the layout in Hastings Garden and Upper Barrakka Gardens was legible and clear through visual relations between the various sections; however, it didn't feel as intuitive for John.
visual relations critical for wayfinding	(Tola et al., 2021)			Legibility was mostly straightforward to participants due to the axiality of streetscapes, resulting in adequate visual relations, however, the layout was more difficult when obstacles were present. In Hastings Garden visual supports were only observed at the entrance, however, wayfinding still felt highly pleasing due to the strong visual relations.
framing landmarks, provision of visual supports and signage	(Tola et al., 2021) (Lynch, 1977) (Cefai, 2021)	Prof. Camilleri noted the imporved wayfinding in the clinic through signage and visual supports, when extensive changes are difficult to implement.		Both participants noted that signage aids navigation especially in unfamiliar envirnoments. John noted the church steeple as a landmark, Hazel noted that improvements can be made to the maps in Valletta, as fonts are too small and at times text is not readable as it intersects with other map layers.

Safety		Both professionals noted that safe green open spaces are soothing for anyone's mental health		
well-lit and well-maintained pathways	(Gehl, 2010) (Jacobs & Epstein, 2011) (Tola et al., 2021)			During both walks, plumbing works were in progress just in front of the food market. John commented that the smell of sewage felt really unpleasant, whilst Hazel commented on the lack of safety measures taken to border off the construction works and proposed that there should have been a warning sign, as it was a tripping hazard as noted on site.
clear sightlines and predictable environments	(Gehl, 2010) (Jacobs & Epstein, 2011) (Tola et al., 2021)		One participant commented on an alleged indecent exposure in Hastings Garden, which affects their comfort level in the garden.	Hastings Garden felt safe for both participants due to strong visual relations that provided a sense of predictability and controlling sightlines.
compatible mixed uses that ensure active use of public space throughout the day and evening hour	(Gehl, 2010) (Jacobs & Epstein, 2011)		Two participants noted on the importance of the sense of safety felt in larger streets frequented by more people. Supporting this claim, another participant commented how as they have grown older, they feel less safe in quiet streets, so when principal streets aren't as crowded, they prefer to pass through them as these provide a better sense of safety.	John felt unsafe due to incompatibilty of uses in Strait Street, whilst Hazel felt safe within the same street as it was actively used by people. The café at the centre of Hastings Garden may have increased the sense of safety as it activates a strategic central node with controlling sightlines in the garden.

Table 30:Extensive Comparative Table of Data from Literature Review and Participatory Research Tools (Author, 2024)

Chapter 6: Conclusion - Aligning design principles

"Cities have the capability of providing something for everybody,

only because, and only when, they are created by everybody."

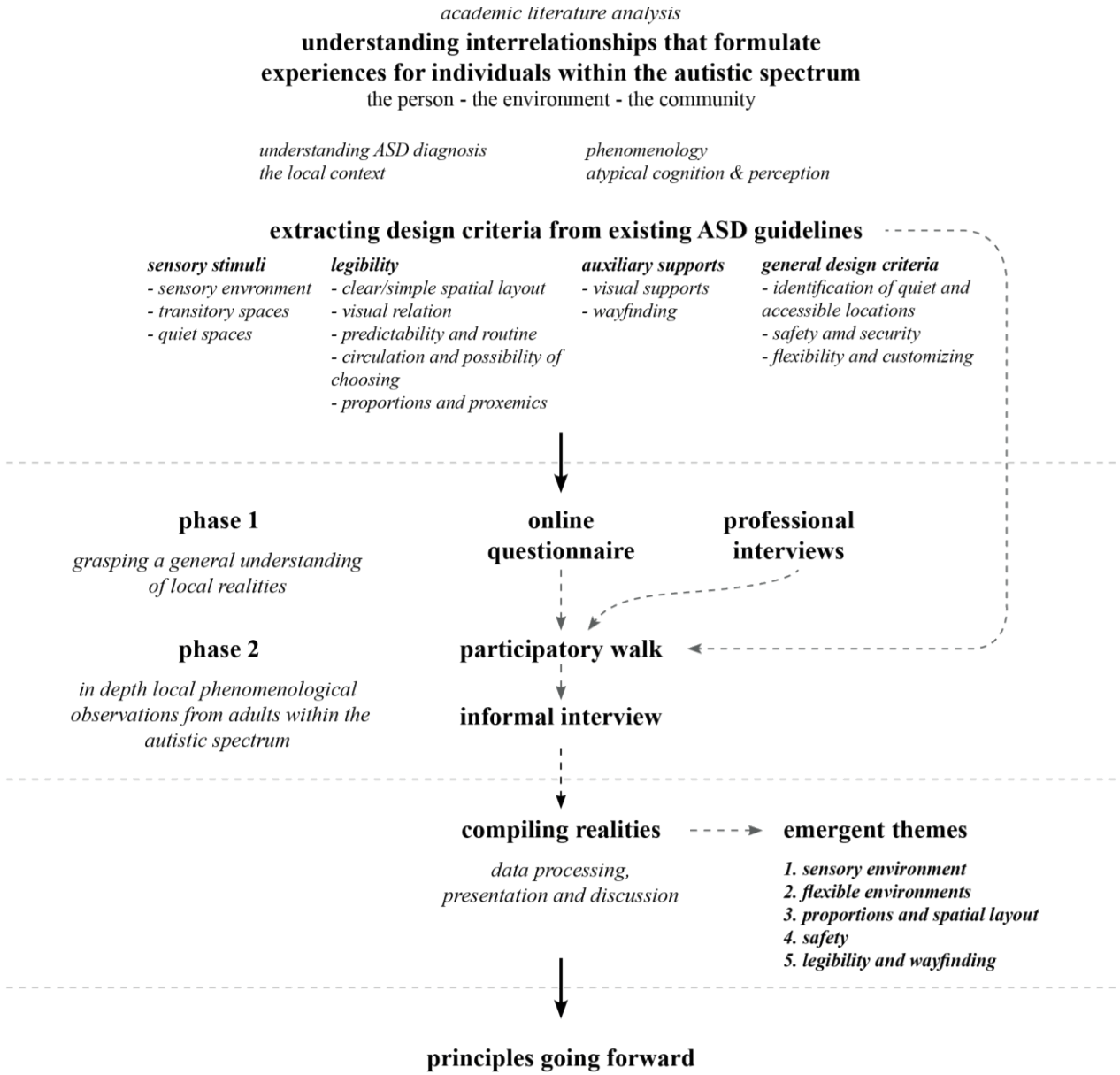
(Jacobs, 1961, p. 238)

6.1 Overview

This dissertation explores the experiences of persons within the autistic spectrum in the local public realm through multimodal qualitative research tools, from which themes and design principles were then extracted to shed light on the design of inclusive and more enabling environments.

A thorough academic literature review built the basis for understanding ASD, atypical perception, and relevant design principles and guidelines, which were tested and applied to the local context through multiple participatory research tools. These provided an understanding of the experiences of persons with the autistic spectrum from different perspectives, concluding that their experiences vary according to sensitivity to stimuli and personal preferences, as first claimed in the literature review. Predominant themes underlined and discussed in detail with reference to extracted observations include sensory and flexible environments, proportions and spatial layout, safety, legibility and wayfinding.

Principles were proposed from the extracted themes. First and foremost, every project should adopt a participatory design process, engaging a diverse range of users, including those with sensory sensitivities, throughout the project cycle. Sensory-friendly environments were most critical going forward, attained by carefully curating design elements considering sensory stimuli these may convey, providing quiet spaces with an effective buffer, introducing intermediary areas of lower stimuli within spatial layouts and introducing soothing natural elements, natural lighting and shading. The design of a clear hierarchy of environments, with various public spaces conveying varied stimuli levels is also deemed important. This allows individuals to choose their preferred environment according to their level of comfort. It is preferable to incorporate parallel soothing activities within spaces to help reduce social stressors during conversations. Public building typologies that align with preferred interests should be integrated along busy streetscapes or squares, providing opportunities for escape and recalibration. Spaces should be well-proportioned, avoiding narrow widths and obstacles that might increase crowd density. The layout must be clear and intuitive, designed to suit the functionality of the space typology. Visual relations are essential for wayfinding, whilst ensuring physical and psychological safety is crucial.



principles going forward

1. inclusive participatory design process

- hold workshops and gather feedback
- discuss design iterations with users for further refinement
- foster a sense of ownership through responsive public spaces

2. sensory-friendly environment

- curate design elements with low sensory stimuli
- quiet spaces with an effective buffer
- intermediary areas of lower stimuli within spatial layouts
- introduce soothing natural elements, natural lighting and shading

3. flexible and adaptable spaces

- hierarchy of public spaces with different levels of stimuli
- space supports parallel soothing activities whilst in conversation
- interactable objects designed with sensory sensitivities in mind
- integrate public building typologies of interest near hectic spaces

4. proportional, legible layouts with wayfinding considerations

- well proportioned spaces, avoid narrow widths and obstacles
- layout is clear, intuitive and designed with functionality of the space typology in mind
- visual relations critical for wayfinding
- framing landmarks, provision of visual supports and signage

5. safety

- well-lit and well-maintained pathways
- clear sightlines and predictable environments
- compatible mixed uses that ensure active use of public space throughout the day and evening hours.

Figure 22: Diagrammatic visualisation of research timeline leading to principles going forward. (Author, 2024)

6.2 Opportunities for future research.

Results from this research build a foundation for further study in designing inclusive public spaces in the local context based on the experiences of persons within the autistic spectrum. As emphasized by Mostafa (2021), it is paramount that any further research includes participatory involvement of the research population.

The following are suggested future research themes:

- Investigate, refine and apply principles going forward to other local public spaces. Refine proposed principles through research studies that adopt higher participation rates to collect broader perspectives from persons within the autistic spectrum with low to high support needs.
- Apply similar research methodology to investigate diverse building typologies within the local context, ranging from commercial, food and drinking establishments, health and governmental services, places of cultural heritage and office spaces.
- Apply participatory research methods to examine the experiences of persons with other mental health disorders in the local context to compile comprehensive guidelines that consider the perspectives of a wider range of the population.

6.3 Afterword

Through this research, I embraced a set of participatory tools to investigate our relationship with the built environment. These tools elevate academic theory to a practical and local context whilst providing a voice to persons within the autistic spectrum, fostering a sense of empowerment, inclusivity and ownership within the local context. These notions reflect the pioneering work of Jacobs (1961) in the field of urban design, where she advocated for participatory approaches to understand cities from the perspective of their inhabitants through community involvement in urban planning.

All participant typologies highlighted the built environment's impact on our daily life, especially for individuals with higher sensitivity to sensory stimuli. The participatory walk allowed me to engage with persons within the autistic spectrum, ensuring a better exposure to, and understanding of, their experiences within the local public realm, specifically in Valletta. Similar participatory approaches can guide policymakers and designers who should strive to understand their users fully and truly address their needs.

I am eager to see future exploration, understanding, and thorough research that builds on this work. I hope the issues highlighted by all participants, especially by individuals within the autistic spectrum, receive the attention they deserve, potentially transforming into the building blocks for future policies that address their needs. By listening to them and incorporating principles in architectural design that consider sensory sensitivities, we can create an enabling environment that fosters agency and promotes a good sense of well-being for everyone.

Bibliography

American Psychiatric Association. (2022). Neurodevelopmental Disorders. In *Diagnostic and Statistical Manual of Mental Disorders: DSM-5-TR* (Text Revision, pp. 36–100). essay, American Psychiatric Association. Retrieved August 18, 2023, from https://www.migna.ir/images/docs/files/000058/nf00058253-2.pdf.

ArchDaily. (2014, July 9). *Barrakka Lift Project / AP Valletta*. ArchDaily. https://www.archdaily.com/522610/barrakka-lift-project-architecture-project

Arena, J. (2024, April 5). *Valletta residents to take to the streets in protest of encroachment*. Times of Malta. https://timesofmalta.com/article/valletta-residents-take-streets-protest-encroachment.1090509

Arthur, P., & Passini, R. (1992). *Wayfinding: People, Signs, and Architecture*. McGraw-Hill, Inc.

Bajada, E. (2022). *In search of the familiar in the (un)familiar : looking for the poetic in the everyday* (dissertation). *University of Malta*. Retrieved 2024, from https://www.um.edu.mt/library/oar/handle/123456789/105056.

Bakombo, S., Ewalefo, P., & Konkle, A. T. (2023). The influence of social media on the perception of autism spectrum disorders: Content analysis of public discourse on YouTube videos. *International Journal of Environmental Research and Public Health*, *20*(4), 3246. https://doi.org/10.3390/ijerph20043246

Baron-Cohen, S., Ashwin, E., Ashwin, C., Tavassoli, T., & Chakrabarti, B. (2009). Talent in autism: Hyper-systemizing, hyper-attention to detail and sensory hypersensitivity. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *364*(1522), 1377–1383. https://doi.org/10.1098/rstb.2008.0337

Baumer, N., & Frueh, J. (2021, November 23). *What is neurodiversity?*. Harvard Health. https://www.health.harvard.edu/blog/what-is-neurodiversity-202111232645

Bronfenbrenner, U. (1979). *Ecology of Human Development: Experiments by nature and Design*. Harvard University Press. https://doi.org/10.2307/j.ctv26071r6

Brusilovsky, B., & Lagar, G. (2021). *Cognitive accessibility, architecture, and the autism spectrum. Keys to design*.

Buijsman, R., Begeer, S., & Scheeren, A. M. (2022). 'Autistic person' or 'person with autism'? Person-first language preference in Dutch adults with autism and parents. *Autism*, *27*(3), 788–795. https://doi.org/10.1177/13623613221117914

Cainelli, E., & Bisiacchi, P. (2022). Neurodevelopmental disorders: Past, present, and future. *Children*, *10*(1). https://doi.org/10.3390/children10010031

Camilleri, M. (2021, January 24). Some curiosities about valletta's landmarks. *The Malta Independent on Sunday*, pp. 20–21. Retrieved May 22, 2024, from https://www.um.edu.mt/library/oar/bitstream/123456789/69844/1/Camilleri_Matthew_Some%20Curiosities%20about%20Valleta's%20Landmark%20Sites_Independent_2021_January_24.pdf.

Cefai, S. (2021). 1. Guidelines for accessibility in the historic city of Valletta. In *Guidelines for accessibility in the historic city of Valletta* (pp. 10–44). essay, Edizioni Caracol. Retrieved May 21, 2024, from https://sira-restauroarchitettonico.it/en/guidelines-for-accessibility-in-the-historic-city-of-valletta-i-access/.

Cefai, S., & Grima, R. (2021). 2. Storytelling and intellectual accessibility in a historic city: the case of Valletta. In *Guidelines for accessibility in the historic city of Valletta* (pp. 45–56). essay, Edizioni Caracol. Retrieved May 21, 2024, from https://sira-restauroarchitettonico.it/en/guidelines-for-accessibility-in-the-historic-city-of-valletta-i-access/.

Cena, F., Mauro, N., & Rapp, A. (2023). How do sensory features of places impact on spatial exploration of people with autism? A user study. *Information Technology & Tourism* , *25*(1), 105–132. https://doi.org/10.1007/s40558-023-00244-1

Chang, Y.-S., Owen, J. P., Desai, S. S., Hill, S. S., Arnett, A. B., Harris, J., Marco, E. J., & Mukherjee, P. (2014). Autism and sensory processing disorders: Shared white matter disruption in sensory pathways but divergent connectivity in social-emotional pathways. *PLoS ONE*, *9*(7). https://doi.org/10.1371/journal.pone.0103038

Christidis, Y., & Quinton, M. (2016). Exploring the Urban Mediterranean Soundscapes in Cyprus and Malta: A Comparative Study . *Interference Journal*, (5), 103–120.

https://www.academia.edu/25841546/Exploring_the_Urban_Mediterranean_Soundscapes_in_Cyprus_and_Malta_A_Comparative_Study

CRPD. (2022, February 16). *Autism-Friendly Spaces*. Commission for the Rights of Persons with Disability. https://www.crpd.org.mt/autism-friendly-spaces/

De Martino, S., Haddod, F., Briffa, V., Camilleri, V., Dingli, A., & Montebello, M. (2016). Living autism: An immersive learning experience. *ICERI2016 Proceedings*, 7041–7049. https://doi.org/10.21125/iceri.2016.0609

Denzin, N. K., & Lincoln, Y. S. (2018). *The sage handbook of qualitative research* (5th ed.). SAGE.

Diagnostic and statistical manual of mental disorders: DSM-5-TR. (2022). American Psychiatric Association Publishing.

Dobbs, D. (2022, November 7). *The new history of autism, part I*. Spectrum News. https://www.spectrumnews.org/news/the-new-history-of-autism-part-i/

Evans, J., & Jones, P. (2011). The walking interview: Methodology, mobility and place. *Applied Geography*, *31*(2), 849–858. https://doi.org/10.1016/j.apgeog.2010.09.005

Fernando, N. A. (2006). Open-Ended Space: Urban Streets in Different Cultural Contexts. In *Loose Space: Possibility and Diversity or Urban Lif* (pp. 54–72). essay, Routledge.

Franjou, F., & AP Valletta. (2022). *Valletta, une promesse de la nuit*.

Fuentes Farías, F. J. (2022). The Urban and Architectural Space: Its Experience and Meaning from a Phenomenological Perspective. *Arquitecturas Del Sur*, *40*(62), 08–23. https://doi.org/10.22320/07196466.2022.40.062.01

Galea, J. (2019). *Designing with Empathy - Independent Living for Individuals with Autism Spectrum Disorder* (dissertation). *(Master's dissertation)*. Retrieved June 5, 2023, from https://www.um.edu.mt/library/oar/handle/123456789/71166.

Gaudion, K. L., & Mcginley, C. (2013). Outdoor Environments for Adults with Autism. *World Health Design*, *6*(1), 66–71.

Gehl, J. (2010). *Cities for people*. Island Press.

GHRC. (2024, April 1). *Castille Square*. Grand Harbour Regeneration Corporation. https://ghrc.gov.mt/projects/castille-square/

Gibson, J. J. (1986). *The ecological approach to visual perception*. Psychology Press.

Gibson, M. F., & Douglas, P. (2018). Disturbing behaviours: Ole Ivar Lovaas and the Queer History of Autism Science. *Catalyst: Feminism, Theory, Technoscience*, *4*(2), 1–28. https://doi.org/10.28968/cftt.v4i2.29579

Government of Malta, Ministry for Inclusion and Social Wellbeing. (2021). *Respecting Diversity, Safeguarding Equality: Malta's 2021-2030 National Autism Strategy*. Malta National Autism Strategy 2021-2030. https://meae.gov.mt/en/Public_Consultations/MISW/Pages/Consultations/MaltaNationalAutismStrategy20212030.aspx

Grech, A. (2019). *Valuing the familiar : a study on the relevance of familiarity in response to contemporary progress* (dissertation). *University of Malta*. Retrieved 2024, from https://www.um.edu.mt/library/oar/handle/123456789/71194.

Gumtau, S., Newland, P., Creed, C., & Kunath, S. (2005). Mediate – a responsive environment designed for children with autism. *Electronic Workshops in Computing*. https://doi.org/10.14236/ewic/ad2005.14

Harris, J. (2023, July 5). The mother of neurodiversity: how judy singer changed the world. *The Guardian*. Retrieved March 30, 2024, from https://www.theguardian.com/world/2023/jul/05/the-mother-of-neurodiversity-how-judy-singer-changed-the-world.

Harrouk, C. (2019, August 20). *Social Sensory Architecture for children with autism*. ArchDaily. https://www.archdaily.com/923290/social-sensory-architecture-for-children-with-autism

Hope, J. (2022). Advocate for architecture that's ASD friendly. *Disability Compliance for Higher Education*, *28*(2), 1–4. https://doi.org/10.1002/dhe.31347

Hughes, J. Q. (1967). *Building of Malta 1530-1795*. Alec Tiranti Ltd.

Iannelli, V. (2023, December 11). *A History and Timeline of Autism*. Verywell Health. https://www.verywellhealth.com/autism-timeline-2633213#citation-3

ICOMOS. (1980). *City of Valletta: Advisory Body Evaluation*. https://whc.unesco.org/en/list/131/documents/

Jacobs, J. (1961). *The death and life of great american cities*. Random House.

Jacobs, J., & Epstein, J. (2011). *The death and life of great american cities*. Modern Libray.

Janousch, C. (2022). *Conceptualizing and Measuring Psychological Resilience of Lower Secondary School Students: A Variable- and Person-Centered Approach*. https://www.researchgate.net/publication/363545762_Conceptualizing_and_Measuring_Psychological_Resilience_of_Lower_Secondary_School_Students_A_Variable-_and_Person-Centered_Approach

Jäger, T. (2004). The art of orthogonal planning: Laparelli's trigonometric design of Valletta. *Journal of the Society of Architectural Historians*, *63*(1), 4–31. https://doi.org/10.2307/4127990

Järvinen, M., Mik-Meyer, N., & Gill, M. J. (2020). Phenomenological approaches to research. In *Qualitative analysis: Eight approaches for the Social Sciences* (pp. 73–94). essay, Sage. Retrieved August 17, 2023, from https://www.researchgate.net/publication/341104030_Phenomenology_as_qualitative_methodology.

Leadbitter, K., Buckle, K. L., Ellis, C., & Dekker, M. (2021). Autistic self-advocacy and the Neurodiversity Movement: Implications for Autism Early Intervention Research and Practice. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.635690

Loignon, C. (n.d.). *Walking methodologies*. Engage. https://engageplus.org/en/approche.asp?c=4

Lynch, K. (1977). *The image of the city*. MIT Press.

MacLennan, K., Woolley, C., E., Heasman, B., Starns, J., George, B., & Manning, C. (2023). "It Is a Big Spider Web of Things": Sensory Experiences of Autistic Adults in Public Spaces. *Autism in Adulthood*, *5*(4), 411–422. https://doi.org/10.1089/aut.2022.0024

MacLeod, A. (2019). Interpretative phenomenological analysis (IPA) as a tool for participatory research within Critical Autism Studies: A systematic review. *Research in Autism Spectrum Disorders*, *64*, 49–62. https://doi.org/10.1016/j.rasd.2019.04.005

Maenner, M. J., Warren, Z., Williams, A. R., & Amoakohene, E. (2023). Prevalence and characteristics of autism spectrum disorder among children aged 8 years — autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2020. *MMWR. Surveillance Summaries*, *72*(2), 1–14. https://doi.org/10.15585/mmwr.ss7202a1

Malta Independent. (2004, May 10). *Upper Barrakka Gardens Restored*. The Malta Independent. https://www.independent.com.mt/articles/2004-05-10/local/Upper-Barrakka-Gardens-Restored-66400

Mandal, A. (2023, July 7). *Autism history*. Medical News. https://www.news-medical.net/health/Autism-History.aspx#:~:text=The%20term%20autism%20first%20was,admiration%20and%20withdrawal%20within%20self.

Manen, M. V. (1990). Human Science. In P. L. Smith (Ed.), *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy* (pp. 1–30). essay, State University of New York Press.

Marcotte, J., Grandisson, M., Milot, É., & Dupéré, S. (2022). The walking interview: A promising method for promoting the participation of autistic people in research projects. *International Journal of Qualitative Methods*, *21*, 160940692210900. https://doi.org/10.1177/16094069221090065

Mason, A. (2021, December 2). *The impact of noise and soundscape on children with autism in schools*. UCL Institute for Environmental Design and Engineering. https://www.ucl.ac.uk/bartlett/environmental-design/news/2021/dec/impact-noise-and-soundscape-children-autism-schools

Meet the Team. MOVE. (n.d.). https://www.movesemc.com.mt/meet-the-team-1/nigelcamilleri

Merleau-Ponty , M. (1945). *Phenomenology of Perception* (C. Smith, Trans.). https://voidnetwork.gr/wp-content/uploads/2016/09/Phenomenology-of-Perception-by-Maurice-Merleau-Ponty.pdf

Micallef, S. (2009). *Strait Street : intriguing prospects for Valletta's red light district* (dissertation). *University of Malta*. Retrieved May 21, 2024, from https://www.um.edu.mt/library/oar/handle/123456789/80648.

MIELKE, I. (2007). Autism and the imaginative mind. *Imaginative Minds*, 277–306. https://doi.org/10.5871/bacad/9780197264195.003.0013

Ministry for the National Heritage, the Arts and Local Government . (2023). *State of Conservation Report - World Heritage Property "City of Valletta" (C. 131)* .

Ministry of Education, Culture, Youth and Sport . (2010). *State of Conservation Report - City of Valletta (Malta) (C 131)* .

Moniem Ali, R., El-Wakeel, H. A., Al-Saleh, D. F., Shukri, M. I., & Ansari, K. M. (2022). Autism spectrum disorder in architecture perspective: A review of the literature and bibliometric assessment of research indexed in web of science. *F1000Research*, *10*, 1087. https://doi.org/10.12688/f1000research.54437.2

Mostafa, M. (2015). An architecture for autism: Built environment performance in accordance to the autism ASPECTSSTM design index. *Design Principles and Practices: An International Journal—Annual Review*, *8*(1), 55–71. https://doi.org/10.18848/1833-1874/cgp/v08/38300

Mostafa, M. (2018). Designing for autism: An ASPECTSSTM post-occupancy evaluation of Learning Environments. *International Journal of Architectural Research: ArchNet-IJAR*, *12*(3), 308. https://doi.org/10.26687/archnet-ijar.v12i3.1589

Mostafa, M. (2020). Architecture for autism. *Autism 360°*, 479–500. https://doi.org/10.1016/b978-0-12-818466-0.00023-x

Mostafa, M. (2021). Autism Design and Architecture For All: Architecture for a Differently Abled World. *IQD*, (65), 62–71. https://www.researchgate.net/publication/358388818_Autism_Design_and_Architecture_For_All_Architecture_for_a_Differently_Abled_World

Mostafa, M. (2023). *A CASE FOR SENSORY DECOLONISATION, AUTISTIC ESCAPE*. ASPECTSS* Architecture for Autism. https://www.autism.archi/2023biennale-sensorydecolonisation

Mubashir, S., Farrugia, M., Corette, L., Pessia, M., & D'Adamo, M. C. (2020). Autism spectrum disorder. *Malta Medical Journal*, *32*(3), 56–66. https://www.um.edu.mt/library/oar/handle/123456789/67151

Muratori, F., Calderoni, S., & Bizzari, V. (2020). George Frankl: An undervalued voice in the history of autism. *European Child & Adolescent Psychiatry*, *30*(8), 1273–1280. https://doi.org/10.1007/s00787-020-01622-4

Nicolaidis, C., Raymaker, D. M., McDonald, K. E., Lund, E. M., Leotti, S., Kapp, S. K., Katz, M., Beers, L. M., Kripke, C., Maslak, J., Hunter, M., & Zhen, K. Y. (2020). Creating accessible survey instruments for use with autistic adults and people with intellectual disability: Lessons learned and recommendations. *Autism in Adulthood*, *2*(1), 61–76. https://doi.org/10.1089/aut.2019.0074

Oliver, M. (1996). *Understanding disability: From theory to practice*. St Martin's Press. https://doi.org/10.1007/978-1-349-24269-6

Passini, R. (1996). Wayfinding design: Logic, application and some thoughts on Universality. *Design Studies*, *17*(3), 319–331. https://doi.org/10.1016/0142-694x(96)00001-4

Pennisi, P., Giallongo, L., Milintenda, G., & Cannarozzo, M. (2020). Autism, autistic traits and creativity: A systematic review and meta-analysis. *Cognitive Processing*, *22*(1), 1–36. https://doi.org/10.1007/s10339-020-00992-6

Quirk, V. (2013, October 9). *An interview with Magda Mostafa: Pioneer in autism design*. ArchDaily. https://www.archdaily.com/435982/an-interview-with-magda-mostafa-pioneer-in-autism-design

Rezeanu, C. I. (2018). Introduction to the phenomenological approach to urban, residential, and Domestic Space. *Logos Universality Mentality Education Novelty: Philosophy & Humanistic Science*, *6*(2), 42–56. https://doi.org/10.18662/lumenphs/10

Rivera, H. N. (2020). *Could light colour and source change mood in children with autism?* (thesis).

Robertson, A. E., & Simmons, D. R. (2015). The sensory experiences of adults with autism spectrum disorder: A qualitative analysis. *Perception*, *44*(5), 569–586. https://doi.org/10.1068/p7833

Robertson, C. E., & Baron-Cohen, S. (2017). Sensory perception in autism. *Nature Reviews Neuroscience*, *18*(11), 671–684. https://doi.org/10.1038/nrn.2017.112

Robison, J. E. (2016). Kanner, Asperger, and Frankl: A third man at the genesis of the autism diagnosis. *Autism*, *21*(7), 862–871. https://doi.org/10.1177/1362361316654283

Roth, I. (2018). Autism, creativity and aesthetics. *Qualitative Research in Psychology*, *17*(4), 498–508. https://doi.org/10.1080/14780887.2018.1442763

Rudy, L. J. (2023, October 18). *Are high- and low-functioning autism meaningful descriptions?*. Verywell Health. https://www.verywellhealth.com/high-and-low-functioning-autism-260599

Sacco, R., Camilleri, N., Eberhardt, J., Umla-Runge, K., & Newbury-Birch, D. (2022). The prevalence of autism spectrum disorder in Europe. *Autism Spectrum Disorders - Recent Advances and New Perspectives*. https://doi.org/10.5772/intechopen.108123

Sachs, N. A., & Vincenta, T. (2011). Outdoor environments for children with autism and special needs. *Implications*, *9*(1), 1–7. https://www.researchgate.net/publication/280948490_Sachs_N_Vincenta_T_2011_April_Outdoor_environments_for_children_with_autism_and_special_needs_Implications_91_1-7

Saitelbach, J. (2016). *THERAPEUTIC STREETSCAPES: A New Bell Street Designed to Accommodate Those on the Autism Spectrum* (thesis). Retrieved June 5, 2023, from https://digital.lib.washington.edu/researchworks/handle/1773/36733.

Salerno, G. (2018). *Deciphering Reality: Exploring the Boundaries between Mental Health and Architecture* (dissertation). *(Master's dissertation)*. Retrieved June 5, 2023, from https://www.um.edu.mt/library/oar/handle/123456789/76829.

Sant, C., de Gaetano, A., Borg, J., Falzon, E., Mercieca, A., & Brusilovsky Filer, B. (2024, March 13). *How can the model be beneficial for the Maltese Context?* [Conference

session] Cognitive and Sensorial Accessibility: Key Design Approaches. Naxxar, Malta; Aġenzija Sapport.

Shakespeare, T. (2014). *Disability rights and wrongs revisited*. Routledge, Taylor & Francis Group.

Sher, D. A., & Gibson, J. L. (2023). Pioneering, prodigious and perspicacious: Grunya Efimovna Sukhareva's life and contribution to conceptualising autism and schizophrenia. *European Child & Adolescent Psychiatry*, *32*(3), 475–490. https://doi.org/10.1007/s00787-021-01875-7

Sherr, E. H. (2016). Chapter 36 - Neurodevelopmental Disorders, Causes, and Consequences. In *Genomics, Circuits, and Pathways in Clinical Neuropsychiatry* (pp. 578–599). essay, Academic Press.

Sheykhmaleki, P., Yazdanfar, S. A., Litkouhi, S., Nazarian, M., & Price, A. D. (2021). Prioritising Public Spaces Architectural Strategies for autistic users. *Archnet-IJAR: International Journal of Architectural Research*, *15*(3), 555–570. https://doi.org/10.1108/arch-07-2020-0142

Singh, A., Khosla, M., & Monika, M. (2020). *Unit-2 Sensation and Perception*. eGyanKosh. http://egyankosh.ac.in//handle/123456789/62914

Simpson, D. H. (1958). Some public monuments of Valletta 1800-1955. *Melita Historica*, *2*(3), 150–157. https://www.um.edu.mt/library/oar/handle/123456789/35528

Smith, J. A. (2017). Interpretative phenomenological analysis: Getting at lived experience. *The Journal of Positive Psychology*, *12*(3), 303–304. https://doi.org/10.1080/17439760.2016.1262622

Smith, J. A., & Osborn, M. (2014). Interpretative phenomenological analysis as a useful methodology for research on the lived experience of pain. *British Journal of Pain*, *9*(1), 41–42. https://doi.org/10.1177/2049463714541642

Spiteri, D., & Borg, J. (2019). Autism Spectrum Disorder. How do Maltese Care Services Respond? *MCAST Journal of Applied Research & Practice*, *3*(2), 160–171. https://doi.org/10.5604/01.3001.0014.4394

Spiteri, M. (2021). *The houses of Baroque Valletta, 1650-1750: Property redevelopment from records of the officio Delle case: Socio-Economic Reflections on civil buildings*. Midsea Books.

Steele, K., & Ahrentzen, S. (2016). *At home with autism designing housing for the spectrum*. Policy Press.

TEDx Talks. (2020). *Educating Different Kinds of Minds | Temple Grandin | TEDxCSU*. *YouTube*. Retrieved November 1, 2023, from https://www.youtube.com/watch?v=IqntS1YRRO4.

THE OHIO STATE UNIVERSITY CITY AND REGIONAL PLANNING STUDENTS. (2018). (rep.). *AUTISM PLANNING AND DESIGN GUIDELINES 1.0*.

The World Heritage Committee. (2023). *Decision 45 COM 7B.190 City of Valletta (Malta) (C 131)*. UNESCO. https://whc.unesco.org/en/decisions/8109

Tola, G., Talu, V., Congiu, T., Bain, P., & Lindert, J. (2021). Built environment design and people with autism spectrum disorder (ASD): A scoping review. *International Journal of Environmental Research and Public Health*, *18*(6), 3203. https://doi.org/10.3390/ijerph18063203

United Nations. (2006). *Convention on the Rights of Persons with Disabilities (CRPD)*.

Vella Falzon, V. (2021). *On gentrification and the property market in a dynamic cultural city : the case of Valletta* (dissertation). *University of Malta*. Retrieved May 21, 2024, from https://www.um.edu.mt/library/oar/handle/123456789/89730.

Warrier, V., Greenberg, D. M., Weir, E., Buckingham, C., Smith, P., Lai, M.-C., Allison, C., & Baron-Cohen, S. (2020). Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. *Nature Communications*, *11*(1). https://doi.org/10.1038/s41467-020-17794-1

Webb, C. (1992). The use of the first person in academic writing: Objectivity, language and gatekeeping. *Journal of Advanced Nursing*, *17*(6), 747–752. https://doi.org/10.1111/j.1365-2648.1992.tb01974.x

World Health Organization. (2001). *International classification of functioning, disability and health : ICF.* .

Xuereb, D. (2020). *Narrative(s) : a conversation between space, program & event* (dissertation). *University of Malta*. Retrieved 2024, from https://www.um.edu.mt/library/oar/handle/123456789/71622.

Zammit, A. (2022). Regeneration or speculation? A socio-spatial analysis on liveability within Valletta. In A. Gospodini (Ed.), *Proceedings of the international conference on changing cities V : spatial, design, landscape, heritage & socio-economic dimensions* (pp. 506–515). Volos; University of Thessaly. Department of Planning and Regional Development. Laboratory of Urban Morphology & Design.

Zammit, A., & Aldeiri, T. (2018). Assessing the relationship between community inclusion and space through Valletta 2018 cultural infrastructural projects on various community groups. The impacts of the European capital of culture: final research report. *Valletta 2018 Reports*, 50–72. https://www.um.edu.mt/library/oar//handle/123456789/43259

Zeldovich, L. (2018, November 7). *How history forgot the woman who defined autism*. Spectrum News. https://www.spectrumnews.org/features/deep-dive/history-forgot-woman-defined-autism/

Appendix A

1. Historical Timeline of ASD Diagnosis
2. Transcript of Conference (Sant et al., 2024)

1. Historical Timeline of ASD Diagnosis

1900s	1908:	The word "autism" was first coined by Swiss Psychiatrist **Eugen Bleuler** to describe social withdrawal and disattachment from reality seen in children diagnosed with schizophrenia (Mandal, 2023)
1920s	1926-27:	Two papers published by Russian psychiatrist **Grunya Efimovna Sukhareva**, described autistic features related to social difficulties, repetitive behaviours, and sensorial sensitivity shared by 11 children, 6 boys and 5 girls observed in detailed clinical descriptions. She first coined these observations as 'schizoid psychopathy' and later renamed as 'autistic psychopathy.' (Zeldovich, 2018) (Sher & Gibson, 2023) In this context, the term 'psychopathy' was used to refer to disturbances in mental health and not to refer to psychosis or antisocial psychopaths.
1930s	Early-mid 1930s	Jewish physician **Georg Frankl** and psychologist **Anni Weiss** wrote medical descriptions of socially withdrawn children who exhibited a "disconnect between facial expressions, body language, and speech," (Robison, 2016, p. 869) and "hidden intelligence, fixations and communication impairments," (Muratori et al., 2020, p. 1274)
1940s	1943:	American child psychiatrist **Leo Kanner** defined autism to refer to "… a broadly defined but distinct syndrome that emerges in early development, produces deficits or peculiarities in social interaction, and features repetitive or restricted patterns of behavior, interests or activity." These conclusions were made from clinical observations of 11 children (Dobbs, 2022, p. 4).
	1944:	Austrian paediatrician **Hans Asperger,** backed by the Nazi regime, observed children with relatively good speech patterns, that had difficulty with fine motor movements, observed similarities between the children and their parents, concluding to a genetic link. He laid the groundwork for the

		development of the functioning labels and Asperger's syndrome; the previous DSM diagnosis was named after him.
	1949:	Kanner theorised that autism is caused by a detached parenting, then coined as "refrigerator mothers".
1950s	1952:	Autistic traits were attributed to childhood schizophrenia in the **first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM),** published by the American Psychiatric Association.
	1956:	**Leon Eisenberg**, observations on 63 children with autism were compiled in his book "The Autistic Child in Adolescence".
	1959:	Austrian-born scientist **Bruno Bettelheim** published "Joey: A 'Mechanical Boy'" hypothesised a 9-year-old child named Joey transformed himself into a 'machine' due to the perceived inhumanity of his own family.
1960s	1964:	Psychologist **Bernard Rimland** challenged the "refrigerator mother" theory in the book "Infantile Autism: The Syndrome and its Implications for a Neural Theory of Behavior."
	1964:	**Dr Ole Ivar Lovaas,** started working on Applied Behavioural Analysis (ABA) therapy for children with autism. Although currently, this method forms part of the standard therapy for individuals with autism, autistic self-advocates are rejecting and pushing against this method, as it attempts to change and suppress individuals' inherent identities, causing post-traumatic effects on the individuals. Further, it is compared with conversion therapy for individuals in the LGBTQ+ community, of which Lovaas took part in developing (Gibson & Douglas, 2018).
	1965:	**The Sybil Elgar School** is established to teach and care for children with autism.

	1965:	The first meeting of the **National Society of Autistic Children** (now referred to the Autism Society of America), composed of parents of children on the autism spectrum.
	1967:	Bruno Bettelheim reinforced the "refrigerator mothers" hypothesis in his book "Empty Fortress".
1970s	1979:	**Dr. Lorna Wing and Dr. Judith Gould** jointly introduced the **Triad of Impairments model** for recognising autistic traits. Their research, conducted in an area of London, identified three core domains of deficit that are still used to identify autism today: Social Interaction: Difficulties in understanding and engaging in social interactions. Social Communication: Challenges related to communication, including verbal and non-verbal cues. Social Imagination: Impaired ability to engage in imaginative play and flexible thinking
1980s		Translation of Asperger's work to English and increase in autism research revealed that autism is caused by neurological disturbances and other genetic ailments and not through bad parenting. The first inclusion of infantile autism diagnosis in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III)
1990s	1990:	The Individuals with Disabilities Education Act (IDEA) classified autism as a disability, which made it easier for autistic children to get special education services.
	1996:	Temple Grandin publishes Emergence—Labelled Autistic, a first-person narrative about her experience growing up with autism and her career ascent.
	1998:	The publication of a study by Dr. Andrew Wakefield in the Lancet suggested that autism is caused by the measles, mumps, and rubella (MMR)

		vaccination. Extensive epidemiological investigations refute the notion, which is finally abandoned.
	1999:	The Autism Awareness Puzzle Ribbon is accepted as "the universal sign of autism awareness" by the Autism Society. The autistic community now utilises an infinity sign (black or rainbow-colored) in place of the symbol since it implies that autistic individuals are incomplete and is associated with hate organisations associated with autism.
2000s	2003:	The founding of the Global and Regional Asperger Syndrome Partnership (GRASP), an organisation managed by persons with autism spectrum disorders, including Asperger's syndrome.
	2003:	Stephen Edelson, Ph.D. and Bernard Rimland, M.D. wrote the book Recovering Autistic Children.
	2006:	The Autistic Self Advocacy Network (ASAN) is founded by Ari Ne'eman.
	2006:	Dora Raymaker and Christina Nicolaidis, M.D. founded the Academic Autistic Spectrum Partnership in Research and Education (AASPIRE)
2010s	2013:	Autism spectrum disorder (Asperger's, autism, and childhood disintegrative disorder) is combined in the DSM-5.
2020s	2020:	According to the Centres for Disease Control and Prevention, one in every 54 children has been diagnosed with autism spectrum disorder (ASD). The Centres for Disease Prevention and Control. Information and figures about autism spectrum disorder.
	2020:	102 autism-related genes involved in early brain development have been found through a large-scale genomic sequencing investigation.

2022:	The DSM-V outlines the disorder as a spectrum. Autism Spectrum Disorder (ASD) is defined as a complex heterogeneous neurological disorder diagnosed by the overlapping of symptoms subdivided into two criteria, "… (Criteria A) persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interaction, and skills in developing, maintaining, and understanding relationships … (accompanied by Criteria B) … the presence of restricted, repetitive patterns of behavior, interests, or activities." (American Psychiatric Association, 2022, p. 37)
2023:	One in every 36 children has been diagnosed with autism spectrum disorder (ASD), according to the Centres for Disease Control and Prevention. (Iannelli, 2023)

2. Transcript of Panel Discussion during Conference (Sant et al., 2024)

Conference Title: Cognitive and Sensorial Accessibility: Key Design Approaches

Organizers: Aġenzija Sapport

Date: 13.03.2024

Venue: Hilltop Gardens, Naxxar

Panel Discussion: How can the model be beneficial for the Maltese Context?

Panel Members

Christine Sant [CS] – Moderator, Customer Support & Schemes Manager, Aġenzija Sapport

Elinore Falzon [EF] – Occupational Therapist, Aġenzija Sapport

Dr Alistair de Gaetano [AG] – Warranted Lawyer, works within Directorate for Disability Issues, Chairperson the Autism Advisory Council, involved in the sector for the past 15 years.

Jessica Borg [JB] – EU funds manager within the Commission for Persons with Disability [CRPD], sibling of an adult of a person on the autism spectrum

Dr Alexia Mercieca [AM] – Practicing Architect and Lecturer at the Faculty for the Built Environment, with specialisation in mental health and dementia.

Ms Berta Brusilovsky Filer [BB] – Practicing Spanish Architect, with specialisation in universal and cognitive accessibility, with 13 texts published on the subject.

Discussion

CS: Is the community able to support persons with disability? What is at stake for the Maltese society when we speak about accessibility? Physical accessibility are we there? What about cognitive and sensorial accessibility?

JB: CRPD has a team which focuses on physical accessibility, and they have their own investigations unit who receive complaints on accessibility, when it comes to the physical environment. In 2023, we received 246 complaints on accessibility, 152 routine inspections were carried out to license holders such as restaurants, shops, pharmacies, childcare who have physical barriers when it comes to physical accessibility. There are other remaining cases that were reported to them by people and shared through social media. There is a lot of improvement when it comes to physical accessibility, especially with the legislation which we have, in place which is the Accessibility standards for all in the built environment, put in force in 2019, However when it comes to cognitive and sensorial accessibility kind of new to us. At the moment CRPD, within our own, conferences and events we are taking into consideration, these types of new accessibility, to make them more accessible to persons with autism, and

individuals who are neurodivergent, such as by providing them with a quiet room, to feel more at ease and safe within our conferences. More growth ahead, but we are starting on the right foot since we are aware of the adaptations, we need to start working to be sensorially accessible, so now we aim to collaborate with the different stakeholder so that we actually ensure this.

CS: What is at stake here, why should we move away from physical accessibility as the sole standard? And are we ready to go there yet?

AM: I hope yes, cause it's about time. I think that the most important thing is that accessibility is not just for someone with an impairment but for absolutely everyone. Our brains are constantly responding to what is happening around us. That is the way we function. That is the way we can walk from one place to another because we are constantly processing messages, the colour gives us a message, the shape, landmarks, everything gives us messages, and when a place is a bit more complex like a place Berta was talking before, our brain has to do extra work to help us get from one place to another. And sometimes we would realise that at the end of the day we get home, and we are more tired than usual. Because our brain would have had to do extra work to navigate and help us get from one place to another. We still manage, but it is extra work, where as a person with a disability or an impairment, sometimes it could be displayed either as not actually managing or sometimes displaying what is sometimes referred to unfortunately as challenging behaviour. When I like to argue that it is not the person or the disease, but it is actually the environment. In many cases it will be the environment. The person is naturally responding to their environment, and they are doing so in the only way they know how to, and they do not know how to tell us that it is the environment, that is faulting them. So it is essential to start being more aware of cognitive environments to use these elements that Berta spoke about and which we keep talking about, but we need to integrate them more from the very beginning we cannot finish a building and then stick signs to it, which we were all agreeing on. It is useless, not useless, it is harder. We need to be more aware of these needs from the very beginning and we need to design our building with these needs in mind.

CS: Elenor, if buildings are indeed designed in this way, what would this mean for everyone, especially for persons with disability?

EF: I think everyone's life would be so much easier that there, wouldn't be any problems or worries, if everything is more accessible. It would simplify. We meet people on a daily basis who struggle to get out of their households, obviously my experience is from the lived experiences of some of the people I work with. Being in their personal environment in the services that we offer are even general services accessing health, accessing education, if it is not accessible for you, you can't learn. Like Berta was saying with the language barrier, if this forum was held in a different language, I personally wouldn't understand most of it, and that is just one aspect of communication let alone accessibility.

CS: Allistair, nothing about us, without us, you're as an expert perspective to tell us both as a person with disabilities and also your role at the policy level. Your experiences with accessibility and in this regard with cognitive and sensorial accessibility here in Malta.

AG: So, it is great that we agreed on that. I will say something which I always say that. I may sound as a broken record at this point but still. It is not the organiser's fault but at the end of this panel and as members of the audience, how many of us are actually disabled here? But the thing is this, why don't the disabled people actually step up? To be able to have a voice, but

then again it can be a bit challenging in the same way that like Berta mentioned this morning. It can be a challenge because nobody was speaking about cognitive sensorial accessibility in the field of the built environment. When the actually disabled person is actually speaking about this is even more worrying. So, this is something we have to find a way not only to ensure coproduction, but to bring disabled people like myself to the discussion. Because otherwise it would be for disabled people not by disabled people. And it is also good to look at what there already is, so like Berta has done a lot of work on mapping the situation hats off on that. And here I also want to link to the policy elements. So, Malta policy wise, we were always one of the countries that pushed for standards when it came to accessibility, so when it came to the physical environment Malta had followed the BSI the British Standard institute guidelines of the physical environment way back in 2011, when Oliver was commissioner, then these became national standards in Malta and we also have the force of law. I would love to see the same thing for cognitive and sensorial accessibility. But there is a lot of side rules both locally and on a European level. Few look at the research for example, autism and aging, all the things that Berta mentioned. Recently I was speaking to the department of [unintelligible] at university, there were a lot of the students studying with Professor Mark Formosa, so for their thesis one of the topics, why is nobody including this in their other departments. At European level, there was a report very recently by autistica autistic and research committee in the UK, which spoke about autistic spaces, costs and standards compared to the BSI, [unintelligible] actually research and put her PhD thesis on autistic spaces, in 2014. [unintelligible], in the UK similar work, pertaining to the accessibility of the health care system. And Dublin city University in Ireland, actually is the first sensorial friendly campus. So, there is so much to look at, but the important thing is this, that we break down silos, we work together, there is a very good opportunity at EU level for the Accessibility EU project, on Friday there is an event to this respect, So that about disabled people. Let's stop repeating each other's work and work together, but it also comes to universal design. Let's actually stop looking at what the problem is, or what cognitive impairments, how can we make something that is accessible for everyone, and leave nobody behind, so we spoke about autistic people, deaf people blind people, but then again, the people who are the most vulnerable, how can I actually include them. For example, Berta, and I'll end with this, you mentioned the different areas of the brain, one of the areas which would really like to be focused on is the polyvagal processes, so people who actually go through trauma. So if you have a person who has post-traumatic stress disorder, because she is a woman who was a victim of domestic violence, she is a survivor, how can we actually make sure that domestic violence shelters are also accessible, so there are so many things and at the end of the day. It is important to put these into policy and also have national standards, what is important not duplicate work, to make sure we involve the right people and make effort for that.

CS: Berta you've been all over the world, disseminating the importance of integrating such inclusive designs. What can you tell us about your perspective on the built environment in general and then perhaps, Elenor and Jessica can tell us about any projects that are being done in Malta, but first Berta what do you think about the built environment per se?

BB: Here, in the city I like the skyline, European cities with a lot of traffic need rehabilitation of the roads, I didn't see people walking along the road because it is very dangerous, special intervention of the roads, it is necessary to think from the beginning, analyse how people live,

analyse the brain to analyse the needs of the people. I noted the fire door in front of the lift, people with the wheelchair potentially cannot access it in case of fire.

CS: It is a good point that you are making because this further signifies how much accessibility is not just there for people with disability, accessibility impacts everyone, and everyone can benefit with the built environment being accessible for all at the very first steps when it is being designed. Perhaps Jessica and Elinore, has anything been done in Malta, have you worked on any projects that are pushing for this way forward?

EF: With regards to the agency as such we have recently been involved with other departments as well so when it comes to designing and ensuring emergency strategies, when it comes to any kinds of access not just physical access. Sometimes the little practicalities are forgotten, when we are in the planning stage, so as therapist we are also involved in planning stages when it comes to the built environment. In Malta we have also been seeing the rise of what are called autism friendly hours or autism friendly buildings, which are, very important but at the same time I feel like they are being marketed for a specific label, and unless the people know what autism friendly is, unless you have, maybe an autistic child or an autistic family member, we wouldn't really know what this environment involves. So maybe we need to do a better job at marketing certain initiatives, When I was preparing on this, I was also reflecting on things we do every day, not myself but our service users for example get the bus frequently and there are things we are improving with regards to cognitive and sensorial sensitivities. For example, having the name of the next stop depicted on a screen or having an auditory input as well. But at the same time unless you can plan from ahead, you do not have the access of the route printed on the bus that tells you. Unfortunately, we have also had roadworks constantly and sometimes the bus stop is there and sometimes the bus stop disappears. So unfortunately, we do not have systems in place, where you can look at the screen and it tells, you to go to the next bust stop you need to go there or take this route. I think there have been a lot of projects and here I agree with Allister where everyone is working in silos and they are sporadic, so not a lot of people know about the projects that are being done, we are getting but I think we need to put our heads together and actually make sure that if we are thinking of cognitive and sensorial aspect then we need to think on it from start to finish and not just touch upon certain elements.

JB: As a commission we have been in two projects which are tied to cognitive and sensorial accessibility. We were partnered in a project called the autism friendly spaces which was managed by PRISMS which was an NGO, that work with adults and youths with autism and during this project the aim was to address the needs of persons on the autism spectrum, so they have more safe spaces. The outline of the project included four training modules on what is autism, recommendations to adjust the space accommodate their needs, and also some information on sensorial and cognitive needs and differences. Then we established criteria and guidelines for shops and services so they can be autism friendly, that include raising awareness on autism and different needs and means of accommodation and then we have at least two employees that are autism ambassadors so that , when an autistic individual goes to make use of their services, if they require any assistance they can ask for these two representatives and they can help them according to their needs. Then once they have this online module, they are awarded the autism ambassador award and then the service will be awarded an autism friendly space award. Some of the adjustments, vary according to the type of shop, for example for a supermarket, there would need to be soft light, no load noises are made, for example things are grated from beforehand, to reduce the sensorial impact that would have on the individual,

autism friendly hour, where during that hour cashpoints and machines are either switched off so that there is no additional noise, to help them adjust to other things, providing quiet rooms in these spaces with fidget toys, so that if the person needs to move away from the chaotic noise and calm down they can go to this quiet room and they can go back out when needed. Through the project in Malta we have a variety of entities of stakeholders and organisations which are accredited the autism friendly mark and they are being increased.

Another project which is tied to the success of the first project is the autism friendly spaces the employability twist now. So now we are talking about making employable spaces more autistic friendly for people with autism. This project has just concluded you can say and there are also companies who are adjusting their workplaces so that they can help autistic individual feel more accepted in that work industry. Apart from that, from previously stated as CRPD we are taking into consideration a lot of these adjustments that we mentioned in our own conferences and events, by providing a quiet room and also promoting the autism ambassadors, so for example on our conferences we do have personnel who are responsible and who have normally a tag so that if a person with autism spectrum would like a quiet room then we can guide them towards the quiet room and meet other necessary needs.

CS: And I'm sure that beyond persons with specific needs we can go even further to accommodate the whole population with specific needs or impairments. Perhaps Alexia, coming from such a technical profession but also applying your knowledge and expertise to a person-centred approach why can we all benefit in all aspects, what is in this for Malta and perhaps what is in this for even the private sector and profit-making companies? Is this something that we normally serve and be beneficial to specific individuals or would this be even beneficial on a national level?

AM: As I said it obviously works for everyone. It doesn't mean that a place has to have a label like we were saying if it is designed well it is going to be beneficial for everyone. Taking also from what Alistair said before I also work in the private sector as an architect and coincidentally, we have just completed a project for women who have experienced domestic violence or any form of mental health problems and it is a home in the community to help them integrate. We not only designed the actual house but had meetings with the community beforehand, so before we actually started the work, I mean you know how it is here we are all aware of the situation. When you hang that notice on the wall the neighbour's panic. And I do not blame them. Unfortunately, the story is what it is. So, before that actually happened, we had meetings with the community we went in literally bottom up, had meetings in the piazza right outside the house to actually start introducing it, to start helping with issues of stigma for example when you introduce mental health needs in the community and to show that this was going to be beneficial for all the community. It turned out to be really well in that case because the community actually went beyond what we expected and offered to help. So, they actually came in to help when we were doing the works and they served as our eyes when we weren't there. Like for example, recently when one of the contractors didn't close the door right before he left, they called right away because they were always checking on them. So, they were amazing. So even that if we use the community to bring everyone on board, the issue of awareness is essential and the fact that we can start asking for this level of quality. We need to be able to ask for this quality and we are aware that it can happen, otherwise we cannot then expect to fix it after cause then it becomes more complicated. It is not more expensive. And I think that is very important to stress. A space that has been designed properly and a space that

responds to the needs of all the individuals or the typologies you are expecting, cause in some places we find that for example I work a lot with people with dementia. Some things which are recommended from a physical accessibility point of view do not work at all for them, they are actually deterrent to them. So obviously you have to work with the typologies you are expecting, but it doesn't have to be more expensive. We have had cases like this project we have just finished, and now we are also working with anyone to promote mental wellbeing in the community and mental health that is for everyone not just people with a mental health problem or with a label, but we all need to safeguard out mental health. And again, in this case we have hacked furniture as well, so we made changes to the furniture because you do not always need to buy something with a label that says it works for someone with autism or someone with dementia. Really and truly if you understand the design principles anything can be applied and anything can be designed. So yes, there is hope, I do not like to talk only on problems. It is not far, to achieve we need to be able to ask for it, we need to empower whoever is responsible for these projects to actually expect this good level of design.

CS: So it is definitely doable, there is definitely a vision for it so how can we make this right and here I turn to all panel members, to make it right we need the input of everyone, we need great stakeholder collaboration, so what about any ideas to get this going here in Malta and to make this right from the very first instance when we are thinking about projects, when we are thinking of designing anything for the built environment and public spaces. What can we do to encourage stakeholder collaboration to make sure that whatever we are working on is right from any point of view?

EF: Alexia mentioned money, demolishing and rebuilding as she said can be more expensive, sometimes promoting that it is not going to be so expensive if you start right from the beginning, but also we need to listen to people who need these interventions, they need to tell us what they need cause obviously I experience my life from my perspective and other people experience their life from their perspectives so first I think we need more collaboration with everyone. The second, we lack updated guidelines, possibly we could come together to create some set of guidelines, like there are physical guidelines that I personally think need to be updated we also need to have cognitive and sensorial guidelines related to access. My final point here is, when it comes to adding things, it doesn't really work, so adding a sensory room adding a space, people are not going to spend their whole life in one room, so they are not going to stop from an activity to go in a room just for the sake of calming down. If the environment that they are in allows them to breathe, allows them to concentrate, allows them to dialogue to sit down to enjoy life and to have a good quality of life that would be the most meaningful thing, so thinking and planning together.

AG: To build up on what Elenor was saying, Jessica spoke about autism friendly spaces earlier, it is a great project, I would like to thank the team for all they have done the awareness and their engagement that they have developed through this project was amazing, but at one point we need to come to a point where we no longer need this project, and we no longer need to speak about autism friendly spaces. Speaking as a person with autism myself, it is a bit of an insult to me that actually, ok we are speaking about autism friendly, which means that many other places are not, so everywhere else is not. So, for maybe people who may not experience accessibility, especially since sensorial accessibility is invisible, they can't really understand this. So, we have to get past this. How? So, I will give concrete examples, so before we mentioned, that we are working in silos, so how to get past silos. So, one of the things which

was done in government within the ministry of policy was the start of operations of IDCC, which is the technical department of coordination committee, which was very useful for cross happenings issues. So in this committee there are representatives of different ministries in the entities, so one example when it comes to accessibility is access to the housing guidelines, which were proposed in Malta by the then the disability commission, however, there we have different ministries for example, there is the ministry responsible for planning there is the ministry responsible for construction, there are different government agencies, there is Aġenzija Sapport and there you have all the different stakeholders that are talking to us. So, we have bought in there, because we have actually consulted with everyone and that makes things much easier. I haven't mentioned transport, like Transport Malta were on this committee they have been very vocal, and giving very good input, so if they feel a sense of ownership, it is more likely to actually contribute. But then again you also, need the buy in of the disabled community, this is also done to engage with the autism society committee, but then again, it is important to involve disabled people from the very beginning. As Alexia said, with costs, cost is not really an issue in the longer term. There have been studies many times when it comes to institutionalisation of things there is a very famous report from a US bank, pay now or pay later, or else if we actually looking at accessible spaces, the autistica actually mentioned that if you have to cost things you have to cost two different elements changing environments, changing attitudes, It is much cheaper in the longer term to actually have something that works for everyone. One important thing, I agree with you Elenor we need to update the standards, but we can't go for a cookie cutter approach, If we have studies that worked in the UK , in space, does not mean they are going to work in Malta, we talked to disabled people here, and other stakeholders seeing what works for them in this specific environments in their towns villages and cities and then adapt for that. So, we have something we make sure that works for us, so obviously updated.

JB: I completely agree with both of you. I do think we need to have standards in place with regards to cognitive and sensorial accessibility. Because it is missing and it is very essential that we collaborate with different entities, different experts, but also as Alistair said we cannot forget the individual, we can't forget their family, we have to bring everyone so we can start moving forward. However, we cannot forget that there is no one size fits all approach, and that something which helps an individual cannot help someone else so we kind of have to be a bit flexible regarding for example accessibility that we are going to cater for.

CS: Alexia perhaps you focus a bit more on stakeholder collaboration and what that would mean beyond just collaboration with the disability field, but in general making spaces truly inclusive, that would not need segregation of rooms or spaces.

AM: Ideally, we do not need to add anything else, and rather than being flexible I would add having options accepting that everyone is different as we are. Now I can get up and go to another place if I feel uncomfortable, if the light is bugging me and so on, some people cannot, so giving people these options, including options inbuilt into the environment we design is essential, to allow people to really make their own decisions and use their own space. I think one of the best examples which I keep seeing unfortunately not always working very well is the design of our schools. Why do we design, and this is my … we are talking about stakeholders, we have all been there, we have all been to school, we all have an experience good or bad which we can relate back to. Why is it that in 2024 we are still designing schools where we do not have trees? Why is it that I am in a solid concrete space, with a concrete

playground outside and then I bring multisensory toys, where really and truly the sensory input which a garden can give me, or soil and plants can give me is way higher than a plastic toy can give me. So, this irony that we keep not designing properly but then we add items which have to buy off a book that says they are good for people with autism, when really and truly, the environment can give us this, I mean children are not paying attention, yes because they do not even have a window to look out from. They need to look out to be able to zoom out and zoom back in to pay attention, and this works for everyone else, I have been using the children example cause we have all been to school and we all know what did not work in our schools, cause that stays in your memory, that classroom that didn't make sense and the teacher and so on. But this I think is really a basic example that if we do not come together with that, it is going to be difficult to come together later on. And getting children cultured in the right space is essential cause later on they are going to be asking, they are going to be taking decisions so being aware from a very young age of what works in my environment is really important because that is what I am going to know as right and that is what I am going to ask for later on. So yes, we need to work together, and we need to start from the very beginning.

BB: I think that this society has the culture of money, we are looking for stakeholders with money, especially companies, we need other stakeholders, in the neighbourhood we need the stakeholders, not only the company, not only the money, because what I do in Spain does not need more money. If you start to design in the first moment, you need the same money. Now I am looking for a project in [unintelligible] in Spain and another project in Leon for 153 rooms for people with dementia or cognitive problems and we are starting from the first moment, with this kind of design. We have to start in the schools, in the childhood, not only in the medium or high level, we have to go to the schools, so speak with children, about their childhood, everyone can play in the same place, but to do this we need special design. You have to understand that you have to start with childhood, because we are not working for this moment, but we are looking at the future, for 10, 15, 30 years, solution. We have to speak with young ones because they will be the designers in the future. If they do not understand, the companies will be the same as in this moment.

Q: Thank you Berta, I think that is exactly the point, this sets the tone for the future and initiatives that we are working on today to set the tone for the future, because if we speak about the institutionalisation and if we speak about independent living if we speak about community inclusion, what is at risk and what is at stake if the built environment is not ready for this? So perhaps everyone can give a concluding comment and we can also take some questions from the audience.

EF: We have spoken about community as well, and if people are not selfish and think about others and think about how it is not just about me, my environment only but it is also about other people to make the environment accessible. We can only do this if we include other people, I think that is one of the most important things obviously without having full collaboration, both from a professional perspective and with people within the community we will not be able to succeed and if we do not succeed then the community does not succeed as a whole, not just as an individual.

AG: So, one take away from this, is it was mentioned a lot, even by Berta, that is the environment defines us. I would actually like to mention one instance were actually these guidelines we are actually speaking about have actually been used for many many years, it has

been used by governments when it comes to torture. Think of sensory deprivation, we actually have a person, it is all white there is no sound, windows, there is no light you will eventually break that person, so we have actually seen how we can have standards that work against the person, but then again, if we have this experience why does it not occur to us that if you have a school and you have an environment which is not helping the child, then they will have challenging behaviours so to say and are going to spend a lot of money on therapy, on injuries that learning support educators have because of this challenging behaviour, while actually we can do things very well from the very beginning. So, it is very simple. The issue is not money, educate from the very beginning, but this is something we have been doing a lot just for the wrong reasons and in the same way we do not want to trigger domestic violence survivors, we do not want to trigger children, let us just be human, let's have standards, yes, let us have something built upon our experience. Accessibility is not about how this or that should be, but it is about everyone being able to live in harmony and if you speak to people, involve people at every step it should be pretty simple, but you need the political will and people involvement.

JB: I agree that collaboration is key. This is just the beginning for further collaboration we can do with different entities different stakeholders, different experts, and together we can start creating better environments that do not just help persons with disability but it can help each and every one of us and like that having an accessible space, will have a positive effect on our mental health at the end of the day cause we feel safe in that space and we can have access to society.

AM: I like to think of it as an enabling environment other than just accessible, to actually touch on the abilities of the person. Going back to money, cause the money always hits home, I think it is important to also not especially when it is a care environment when, it is designed appropriately it is also better for the care staff, who have more staff turnover, who have happier staff and in many cases have lower staff ratios to users because the users are becoming more independent because of the environment, and this is not something I am saying but it is proven in different case studies in different care groups. So, the investment makes sense, and it is an investment in knowledge and not even a financial one because ultimately if the staff is happier to go to work then you are going to have them investing more of their time well which is a win win situation. So yes, towards enabling environments, yes towards collaboration and definitely there needs to be political will to take the step.

Q: Berta just a concluding note if you would like…

BB: I can continue on what I was saying, we have to start from the start and all the knowledge we have to put in the start, to change the future, from childhood, with students for example in Spain we do not have this knowledge in the university. The architects know nothing about disability, and do not consider architecture for people but as another form of unfortunately. But there is change in Spain especially in women we are changing people's mind understanding neuroscience, a friend of mine is working in hospital, to change the doctors mind, by educating them …

CS: A great point about the future, and Alexia perhaps what can you tell us on what is being done here at a local level at university?

AM: On a local level we have been teaching physical accessibility before, we moved to cognitive and sensory as well in the past seven years, I have been doing my research and

teaching it here. We were one of the first ones in the EU to have included cognitive and sensorial accessibility at university level for architects in fact I have colleagues in the UK who are looking at our model to introduce it there and I am working there as well, so yes there is this, our students leave with this knowledge, but then there has to be the will to take on this knowledge in the public sector because if then, we are more accepting of models we have been more accustomed to, unfortunately it dies out fast. You do not have many who are keen to keep going everywhere and complaining like me! But that is why we need the mindset; we need clients who want that level of quality, and we deserve it. It shouldn't be a privilege for the few, it costs the same and it should be in a standard we all expect and we all deserve, because I don't think we deserve just a house, we do not just deserve just a built environment, we deserve a quality built environment, and that is something we need to start expecting and asking for at a political level and from whoever is responsible for our environment.

CS: Excellent, and on your point, I would like to thank the panel members, because it was a discussion where we could individually reflect on what each one of us can do to push this forward within our sectors. If the built environment of the future, will not be ready for the future, what does this mean for dependence and what does this mean for exclusion and segregation and what can we all do to make our sectors more inclusive at the very outset and include this approach at the very initial design stages. Thank you! Perhaps we take some questions from the floor?

P1: Hello, my question is basically we are in one of the most populated countries in the world, so even if a place is perfectly designed, there is still too many people which will affect cognitive and sensorial accessibility. Do you have any practical solutions on how to make a place where there are too many people more friendly and accessible?

BB: I did not understand your question because you must design places with a lot of people and places which are conditioned for less people. You have to put in common the needs of all the people and for example in commercial centre, not all people visit them, now in Spain we have hours for people with autism, at some time of the day, they lower the light and reduce sounds for people with autism. But in the shopping centre there is another problem the solution is not to rest light or sound for example if you design the shopping centre with a lot of colour, they feel overwhelmed, you have to think of the material, the shape, the volume and sometimes some people cannot go, for example people with dementia cannot go since there is no natural light, and they need natural light. For example, this colour [referring to the ceiling rendered to convey a sky texture], this is a good solution but only in the rooms, but not in this case, because this is not the sky. I do not have solutions for 1 million people, I have solution for 150 people.

CS: Maybe we can look at the policy maker on this panel, Allistair what is your perspective on this?

AG: So, I am speaking as an autistic person and also as a person involved in policy, what I would say is this, yes autism hours in shops can be a step especially in existing buildings, but going forward, if we are to change something and if we are going to do something now, we have to take certain realities of certain buildings. I mean let's say we have a hospital, you can't have autism friendly hours in the hospital, In that case you need two things in existing buildings, first of all make it very clear one of the things Berta mentioned with signage, colour schemes, if I need to get to the pharmacy, if I need to get to the diagnostic room or whatever, if there is a lot of people around, remember one of the strengths of autistic people is hyperfocus,

at that point our frontal lobe takes over and we hyperfocus, and if we see that I have to follow this path and to get there, everything else those not make sense to me and I am going to get or whoever is with me, secondly have exit valves, one of the things that was used in London for example, to create more autistic friendly spaces in collaboration with the mayor of London was to have green lungs for example, if you have a building if you have a museum that is being redone, make sure you have spaces where a person can go to if they feel overwhelmed, but integrate those into the architecture, we speak of quiet rooms, those can be a starting point, we can segregate with those. If we make sure either within the existing structure you have these exit valves, even in existing buildings you have these, so there are ways and means, it will never be perfect, I mean overpopulation is an issue, but obviously the more people you have, the less opportunities you have, it doesn't mean that we can't do our very best, especially with essential buildings, to make sure to design them as accessible and inclusive for everyone as possible.

EF: I think as a thing we have been taking on as an agency, considering the institutionalization strategy is that possibly where service users can design and choose their own environments we can go to them and ask them for their opinions and even with regards to existing services, I think something that we have to take on is that if we have a set we need to make sure that we can't have more people than it can actually can take cause then there will be no breathing room. So that can be something we can take on. So, speaking to people who will inhabit certain areas is also very important.

BB: The future is not for the shopping centres, in Spain shopping centres are closing, because people used to go to little spaces in the street, people live in the street in Spain, and we like to go to little spaces to shop, in the shopping centre there are too much people, too much noise, too much money, doesn't work, you have to think in local shops, in neighbourhoods managed by the community, buying products of that same community. You can grow tomatoes in the street, this is in New York in little allotments on the street, but people need to change their mentality and attitudes from that determined by money.

CS: Perhaps we can take one final question perhaps Alistair can make a comment to…

P2: What I wanted to ask is, you saw our centres how we operate, and we have different impairments together, I have two questions mainly. How do you find a balance with the use of colour and imagery on the walls, when you have people who need that kind of input and then in the same place you have persons with autism you will find that overwhelming, so how do you find a balance in the same place, and maybe you can also explain better the use of colours, are there any certain colour which are better to use and which should be avoided?

BB: First of all, you have to understand the people you have and then you have to work with them, asking them, which solutions do you prefer, relate to them what the design aims to do and they sometimes, choose some colour that I would never have chosen, first of all you have to discuss with them for a long time to really understand them and their needs. In Madrid they usually separate people, for example in this place there will be people with physical impairments and in this place cognitive problems, and in this place people with dementia, I think that directors, will have an idea of what their clients would need. So, directors provide information, my knowledge is their knowledge. First of all, I studied the brain, and I made a list of difficulties in the brain, when I understand how the neurological functions in the brain are blocked, I design for these nervous blocks in the brain, neurological, motor functions, I

made patron (factors/criteria) for example I have 100 patrons for dementia I have 50 patrons for autism.

CS: I am aware that Alistair wants to make a comment

AG: Yes, very very briefly, ask us, ask disabled people themselves, the director is an expert and know who her clients are, but then again one of our biggest problems is this, that we have to live with people making assumptions and decisions for us for all our lives, that is why there are problems in the sector, that is why there are problems in general. People think they know what we need what we want and afterwards we have to fix things, so I want to mention this with self-advocacy, we have a project going on called ACTIVATE, part of it is a forum and part of it is ask an autistic, so it bridges professionals with autistic people so if you want to do something ask, but if you want to do something and you do not ask people it would be useless and we would have a mess as we do, thanks.

CS: Thank you! Thank you to our panel members, thank you all as you can see there is a lot more to be said and perhaps, we take the opportunity of the networking lunch to further discuss this together.

Appendix B

1. Interview Guide for Professional Interviews
2. Transcript of Professional Interview – Prof. Nigel Camilleri
3. Transcript of Professional Interview – Ms Daniela Calleja Bitar
4. Catalogue of Interview Notes
5. Combined Information Letter and Consent Form for Professional Interviews

6. Guiding Document for Participatory Walk [English Version]
7. Transcript of Informal Interview – John
8. Transcript of Informal Interview – Hazel
9. Combined Information Letter and Consent Form for Participatory Walk and Informal Interviews [English Version]
10. Blank Online Questionnaire [English Version]

1. Interview Guide for Professional Interviews

Project Title:

Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder

Principal Researcher: Miriana Giordimaina

Interview Guide with Professionals

Demographics

1. From your experience, what are the general trends noted in demographics of persons within the Autism spectrum for example what is the most common age they are diagnosed and is there a noticeable gender prevalence?

2. Was there a noticeable shift in demographics diagnosed in Malta over the past decade, in line with European statistics? *(Statistics: 1990s = 0.2%; 2022 = 1.4%; prevalence in males 3.5 times higher than in females) (Sacco et al., 2022)*

Organisation services

3. What kinds of services are offered to persons within the autism spectrum within your organisation?/
   What kinds of professional services do you offer to people with autism?

4. Are the professional services extended to family and peers?

External Factors

5. Do you think that the built environment has an impact on people's experience in the public realm?

6. From your experience, which are the predominant external factors in the built environment that provide the most positive impact on a person's comfort?

7. From your experience, which are the predominant external factors causing negative stimulation that may disrupt a person's experience?

8. From your experience, where are the most meaningful, comfortable social interactions held and what is the relation of the participant with these places? (eg. Their home, favourite public space/ organisation space)

9. What properties do those places have to foster such interactions? / What elements were introduced to improve their well-being or sense of comfort?

Public Services & Events

10. From your experience, do you know whether persons within the autism spectrum, feel comfortable in public spaces and using public services (eg. healthcare + public transport)? Or do they avoid to make use of such services?

11. Do you know whether public events such as concerts or events that are spread over a locality such as Science in the City, are accessible to persons within the Autism spectrum due to large crowds and intense social or physical stimuli? Are you aware of any measures taken by the event organizers to ensure a comfortable experience for people on the spectrum?

Malta National Autism Strategy

12. Are you aware of any measures that have been implemented/adopted or that are in the process of being implemented/adopted?

13. Have you noticed any improvement in social/cultural awareness due to these measures?

14. Are you aware of any governmental or private projects relating to the design or rehabilitation of a public space, which sought consultation with mental health professionals, where the factors were considered or better informed the design process?

2. Transcript of Professional Interview – Prof. Nigel Camilleri

Date: 04.04.2024

MG: Thank you for taking the time to hold the interview, first we'll look at some questions regarding demographics. From your experience what are the general trends noted of demographics of persons within the autism spectrum? For example, what is the common age that they are diagnosed and are there any noticeable gender prevalences?

NC: Alright so the common age of diagnoses is at around the age of five. Parents are usually aware that there is neurodivergence, differences to maybe their other children or other cousins earlier. But at about five/six is when they get a diagnosis on average and most times men are picked up quicker than women, because women are better at socially hiding it.

MG: And have you seen a noticeable shift in demographics of people diagnosed in Malta over the past decade?

NC: Yes, so there is a large spectrum, yes?

MG: Yes

NC: So, in the past it was thought to be just the people who were non-verbal or with a learning disability, now we are seeing much higher end of the spectrum, so people are higher functioning, living alone, maybe married, also in a job and they start struggling with peers mostly either with colleagues at work or in their relationship. So, this time we are finding adults who are coming even out of interest to get assessed.

MG: What kind of services do you or your colleagues offer to people on the autism spectrum such as therapy forms?

NC: We do the assessment, which is a neuro multi-model assessment. It is a neurodevelopmental assessment where we look at obviously different aspects of the individual not just autism, so it can be any other difficulty. And we are a team, and as a team we all do different parts of the assessments. So there are psychologists who do cognitive assessments, which includes intelligence tests, we have executive functioning that is the ability to plan ahead and to take decisions, and we also have psychiatrists who do their own assessments, we have certain tools, like the ADOS, which is the Autism diagnostic observation schedule, which is done and then as a team, we discuss and see whether the person meets criteria or not and the aim is to look at strengths and difficulties, so we look at the strengths of the person and how they can use them in their favour and difficulties where they can work on, if it might be social interaction or obsessions or repetitive behaviours or communication style. And we have then therapists who work with these people and psychiatrists who would offer medication to treating co-morbidities.

MG: Alright, and do professional services extend to family or peers?

NC: Yes, we do. We believe that children and adults are all the result of our environment and our upbringing, we do recommend a number of times and we do have family therapists

involved and also couple work. It's not always the case that they do take it on, but we do encourage it, yes.

MG: Ok, so moving on to the next part we'll be looking at external factors, do you think that the built environment has an impact on people's experience in the public realm?

NC: Ok, so I am not an expert obviously, I am not an architect, but my impression is definitively. So, when a young person comes into the clinic and I work in more than one clinic or clinic space, it is interesting to note how the child relates to it. So, a number of times, because it is a newer space the child feels overwhelmed, or the adult also feels overwhelmed. And that can result in meltdowns or tantrums. In some cases when the room is smaller or more containing and the colours may be more pastel and calming and the light is more calming, then the child tends to be more contained. But I think that depends on the sensory input of that child. There are other children, when I work also upstairs and I have a much larger room, where certain children who are less sensory seeking, who prefer that large space and feel free as they can walk around, they can pace without being stopped with objects in the room. So they can pace round and round repetitively without needing to feel constrained. I'd image outside, we also have a large sensory overload, noise in the streets, if you go to a playground, they can be noisy, I think open spaces help everyone, even more young people, yes? So that is probably my impression, so open spaces which are safe would help anybody, I think.

MG: Yes, I agree, so this can be related to your answer, the next question is, which are the predominant external factors such as those you commented on such as noise, colour, stimulation or even the size of the room that provide a positive impact on the person's comfort. From your experience or even from your clients' experiences, could you name these predominant factors that maybe cause positive impact/stimuli?

NC: I think my impression is, as I said small and large spaces so that depends on the individual, when they are children I think when it is a purpose built room, so there would be a number of areas which are different for the young person, so some people, might want to, I don't have here but throw themselves on a bean bag, but we do have upstairs, some might be more comfortable sitting on a bean bag, or playing with something which is bouncy and moving around, so having that space and wanting to move around and use that. There are other children who prefer bringing toys out to play with something themselves. So, I think it is having different areas within the same room. Then I think it is the lighting, the pastel colours tend to help as I said, I think mainly that but then obviously there are other senses no, so there are smells, that can bother people or certain noises, textures, chairs, etc.

MG: And relating to it what factors have a negative impact on a person's comfort?

NC: I think negative, what I found is when it is a clinical room, when it is too small and when you bring someone in and there would be too many chairs, and the parents are trying to get the child to sit on the chair so it is not purpose built, it may be a room for adults and adult mental health, and you are trying to get a child to sit on the chair obviously the conversation is boring for the child so the child frustrated as they don't want to be there. They don't know how to express themselves, himself or herself and then you get a meltdown.

MG: From your experience, where are the most meaningful, comfortable social interactions, held with people with autism, so for example, when they are relating their everyday experiences

do you find that there are places where they find themselves to be more comfortable to express for example with their parents or with their friends?

NC: I mean that something which I do find, that with people on the spectrum, sometimes a clinical setting is hard, because the conversation is very abstract and there is also the eye contact which can be uncomfortable. What I find is that, sometimes in parallel or speaking in parallel helps. And I've noticed this as I train athletics, and I noticed that people who I train with, who might be on the spectrum, is that when you are doing the sport, you are jogging in parallel or you are running in parallel, they are more comfortable talking, and the same with children in a playground, if you are not talking to someone face to face and you are playing with something else, so they are doing two things at once, so they are playing with something in the playground and but they are talking to you, they tend to open up a lot more.

MG: So, you were mentioning how, when you are speaking with someone on the spectrum, and them being occupied with another activity helps with them to relax.

NC: Yes, because they are less in the spotlight, cause a lot of people on the autism spectrum struggle with the eye contact and also an element of social anxiety, so if you are not focusing as much on that conversation and not putting as much pressure on it, then you are easing that tension, that anxiety.

MG: If you were to think of the properties those spaces have rather than your interaction with that person, can you note certain elements, for example you were noting where you train, do you think for example being in a natural environment versus an urban streetscape has a difference on the level of comfort of that person?

NC: I think the comfort level for everybody makes a difference, I guess if you go for a walk on Qawra seafront or Sliema promenade, there is probably more space there you can walk in parallel, even if there are people or cars, you can shut them out, this is maybe me. But when sometimes I walk from here Birkirkara to San Gwann or I walk to somewhere else and you are walking through urban streets all the time and urban buildings and you see nothing but buildings, you are already a lot more tense.

MG: From your experience do you know whether persons on the spectrum feel comfortable using public spaces or using public services such as healthcare or other forms of governmental facilities or even public transport?

NC: Ok, I think as we said it is quite hard to generalise … so the more functioning they probably will already be using public services or public transport, what I find is that with youth, especially in youth because of the social awareness, I find people on the spectrum find it much harder to transition, so it would be much harder to transition, if they were transitioning between being given lifts by the parents to going alone on the bus, and they find that transition harder one maybe because of the rigidity in thinking that is part of the autism spectrum. And if you've always done it in a particular way keep doing it in a particular way, but also then the social aspect, so not feeling comfortable talking to the bus driver, if you think you have to talk to the bus driver or if you have a fear of someone on the bus looking at you or someone on the bus talking to you and you don't want to talk to someone else and you don't know how to say anything if don't want to talk to someone else. So, I think yes, I think they do find it harder, I think also the first step of someone for example, mentioned joining a sports club on the autism spectrum probably find it harder going for the first time to start training with someone or

speaking with a coach. Having said that, I think on the positive, one of the strengths of someone on the autism spectrum is that once they do overcome the barrier they tend to stick in and continue, so, once they would join the sports club, they would get very dedicated and would keep that cause they get used to that routine. If they get used to using the bus and they get comfortable with that, then they are very comfortable using the bus. The problem is that then, if the route changes for example or the bus system changes, then that causes a change in that routine and that rigidity.

MG: Do you know whether there are any public events such as concerts city wide events such as those held in Valletta or Birgu, that put in the effort to create a more accessible enabling environment for people on the autism spectrum?

NC: I am not aware of autism friendly spaces within public events in Malta. I am aware that when I went to Reading Festival with my family last summer, there were a number of autism friendly spaces for time out, for people to go to relax in a quiet room/place and there was also set up, and probably it is done in more than one place, one there were headphones so the people could use and also what do they call them, silent discos?

MG: Yes, I have heard of them.

NC: So, you have a disco, so the music is playing through your headphones, and if you take your headphones out, you hear nothing else and people are dancing to it.

MG: Now I'll be asking you questions on the Malta National Autism Strategy, are you aware of any measures that have been implemented or adopted or that are in the process of being implemented?

NC: For the mental health strategy?

MG: The Malta National Autism Strategy, if I'm not mistaken it was published in 2021.

NC: A little bit, so I am aware that they are making autism friendly spaces, autism friendly clinics, so we brought people here to look at our clinic as well to see if they are autism friendly. So the use of having visual aids for example for the toilet to explain, for example use of visual aids in the reception area to have an autism friendly reception area, and we also had parents who have made comments or given their opinions, so there have been times where it might have been too noisy or what music was being played or the sound of the music. So I am aware of the strategy and I am aware that the strategy also includes looking at outdoor and open spaces and having these spaces addressed in playgrounds. That's probably it.

MG: And have you noticed any improvement in social or cultural awareness due to these measures?

NC: I think with time there has been a quite big improvement on the way we address children with what more would say the core autism. I still think there is less understanding of people who are seen as higher functioning, and they are still described as maybe just being strange or odd or quirky. So, I still think that there is less understanding of someone who might be socially awkward and might come across as rude and people may take it personally, rather than, that it is the person's difficulty in expressing themselves, you know? So yes, but I think there is more understanding of, more acceptance within children, and also within the educational system at

schools. So, I think there've been quite a bit of progress and improvement being pushed within a number of schools to accept and include people with difficulties.

MG: Are you aware of any governmental of private projects relating to the design or rehabilitation of a public space which sought consultation with mental health professionals, to consider factors that we mentioned previously such considering lighting or colour etc.?

NC: I think it is still in the early stages, so when I was working within the mental health services in Mount Carmel, I mean there were points where we would think or ask for the opinion of an architect with some expertise and also as part of the association last year we brought to Malta someone who was an architect and also a psychiatrist and I believe mental health services did get advice from this architect. How much is put into place is a bit different, but I think we're on step one where we are maybe thinking of asking for some advice.

MG: Alright, so that brings us to the end of this interview, thank you very much!

NC: Thank you!

3. Transcript of Professional Interview – Ms Daniela Calleja Bitar

Date: 18.04.2024

MG: Thank you for holding this interview. I am going to start by asking some questions on, what kind of services does your organisation provide to people with ASD?

DCB: So primarily Richmond Foundation provides services to people with a mental illness, so people with ASD aren't our primary clients. So, the primary presenting problem of the clients that we work with would be a diagnosed mental illness. But a lot of people have a dual diagnosis, so they would have for example, depression with autism or psychosis and the person has autistic traits or autism as well. So, we do work with people on the autism spectrum. And the services we provide are rehabilitation, we provide assisted living, so residential services and programmes and we provide community support. We also provide housing, so flats where people can go and live independently, where we help them to become as independent as possible and we help them remain in the community and not go back into the hospital and primarily we are dealing with Mount Carmel Hospital here. So that is primarily what we do.

MG: And do your services extend to their family members or peers?

DCB: Yes, so every client has a care plan and when the person comes in we hold reviews with multidisciplinary teams and family members or whoever the client wants involved. So most of the time it is the family of the client. So, the care plan is built with the person in the middle and everybody else around so the professionals and the family members and we obviously support the family members sometimes with the person who is diagnosed with the mental illness.

MG: Form your experience what the general trends noted in demographics of people with ASD, for example what is the common age they are diagnosed and is there any prevalence between genders?

DCB: Again, I am going to speak to you specifically in my field, cause ASD is not my field, ok? But from what I can see now in the recent 10 years is that number one ASD is more recognised so there are people who are in adulthood being diagnosed with ASD right? So, they are placed somewhere on the spectrum of ASD. Now recently in the past 10 years they are being diagnosed at a younger age. There is more awareness, even with parents so I'm talking about the general public. There is more awareness that from a younger age If a child starts flapping you know with their arms that might be a symptom of ASD. There was a point where I think there was over diagnosis, especially with ADHD, with ASD obviously it is more clear cut. The child cannot be too young to diagnose with ASD, cause people have different milestones, people have different ways of development, and you cannot pinpoint exactly where one lies on the spectrum at a very young age.

MG: Alright, and we may have tackled this next question that is have you noticed a shift in the demographics in Malta diagnosed in the past 10 years?

DCB: Yes, I think because there is more awareness on social media has its advantages. This is where social media has helped adults and younger people. Now you know how it is, for example you wake up in the morning and your foot is hurting you and you go on google and

you think you have cancer, and you are going to die tomorrow, right? So, there is that side to internet and to social media. But at the same time, it is useful cause when people speak out, and people start recognising symptoms in themselves, and sometimes with boys and girls it is different. I think that older people, so people who have gone through their lives saying how come I am like this in and the people around me are like that, people are looking for more answers and looking for why. Let me give you an example, like the Big Bang Theory, I don't know if you have ever watched it, and there is Sheldon in the Big Bang Theory, now it has been around for a while now. It has shown a light, one on the normality of having somebody with ASD in a group of friends, right? But at the same time if there are people who are identifying, it has helped. And campaigns even in Malta campaigns and awareness campaigns and politicians taking it up and eve influencers and celebrities taking it up has helped much more.

MG: Yes, I agree, we can look into that further in the last questions on the Malta National Autism Strategy, 2021. We can move on discussing how the built environment impacts people's experience. So, do you think that the built environment in general has an overall impact on people's experience, either considering comfort what kind or agency that environment creates in the person, do you think there is that link?

DCB: In general, so without linking it to autism now, right?

MG: Yes

DCB: Yes, so in general the built environment yes has an impact on people's mental health. In the past decade, because we have seen the boom in construction, we get people contacting us because of construction. So people who are scared, I am going to one extreme ok? so let me give you an example, so just before covid hit there was a building collapse and a woman died, and a couple of weeks later we where all stuck inside, cause construction kept on going, so people were calling us afraid cause their building was going to collapse. So, there is that sentiment about construction and the fact that there is a lack of green spaces and a lock of openness in public spaces has had an impact on people's mental health, so the built infrastructure of Malta is impacting people's mental health. Now even more sensitive to that we would have people who the built environment what the built environment looks like on the sensory perception of that person impacts more right? I cannot tell you if it has an impact on people with ASD, but I'm sure that it will or that it is already happening.

MG: So, from your experience, which do you feel are the predominant external factors that provide a positive impact on the person's comfort in general?

DCB: The person's comfort level?

MG: Yes

DCB: The first think I think we need to consider is the visuals, so for example, when you travel and you go to Paris, there is this homogeneity, this streamlining, this respect to old buildings and to facades and what you look at. In Malta I feel that there only a few roads left that don't have like a hotchpotch of buildings. In urban planning, the consideration of what the road should look like, I think to me is not taken into consideration. Now that is a visual impact. But it impacts your perception of the road you are walking through, so it automatically impacts you. Ask me the question again please?

MG: Which external factors provide a positive impact on a person's comfort?

DCB: Ok. When it comes to the built environment?

MG: Yes, in spaces internal and external

DCB: Yes, thank god we are very lucky cause we always have a blue sky so that already helps. The positive is really hard to pinpoint, which isn't good. The sea, so I think a blue space. I think we do have blue spaces here in Malta, so with the sky and the sea. To me something positive when I think about Malta I think about Gozo. Cause I still feel that Gozo, even though I know it is changing, I still feel that in Gozo when the eye rests onto the horizon there isn't high rise and high rise on an island is a bit different you know? I guess the fact that we are trying to have more green lungs is a positive thing so project green a little bit. I don't know what else, sorry.

MG: It's ok, we can move onto the next one maybe it is easier, because you mentioned you are finding it difficult to come up with positive elements,

DCB: Yes, I'm finding it difficult.

MG: So, what would be the negative things that impact a person's comfort?

DCB: Small spaces, because I feel we are encroaching on each other, I don't know if traffic and these things come into it?

MG: Yes, it relates to noise.

DCB: It is noise it is traffic, pollution. And even like skylines, like me and my son we used to play count the cranes in the skyline 2 years ago you know what I mean?

MG: Yes.

DCB: So that I think the boom of construction and the fact that there is construction everywhere you go, especially if you go to like Sliema, every road is blocked because of construction so it becomes very frustrating, you know. I don't know if that would help.

MG: So, you mentioned visually and noise which are part of the sensory input a person is absorbing and how that person reacts to those has an impact on their comfort. So which kind of places convey a sense of ease for people with ASD allowing for more meaningful social interactions?

DCB: That exist at the moment?

MG: Yes, that exist or from your experience, noting experience of people with ASD, which kind of places allow for more comfortable conversations to take place?

DCB: The more natural the environment, the better. What I mean is not we are in a field, what I mean is even in a room the more there is natural light, the more there are textures that are natural than synthetic, then again in my experience with clients, because I've worked with clients with ASD for many years it is very individual. Cause you may have a person who the second they see pink they become over stimulated. You know, so you have to be sensitive to the person. But in my experience, the more natural the environment is, even texture, visually with colours, the better. I feel better like that, and as well the less chaotic the environment is. So, if you are in a building and the building is a bit chaotic, I think it's less comfortable for people on the spectrum.

MG: So having a clear, so the building itself gives you cues of where you are supposed to go

DCB: Yes, it needs to be intuitive.

MG: Exactly. So, it is about layout as well, it is very important.

DCB: I mean I don't know if it had happened to you, you are in a car park and you are like, where did I park my car. I wonder, if it is happening to me, imagine somebody with a mild intellectual disability not a person with ASD, ok. But it can happen, like you can have a comorbidity, somebody with a mild intellectual disability and ASD as well.

MG: Exactly, so we mentioned layout, we mentioned textures, daylight, I don't know if there is anything else

DCB: Noise, as well. I think as well, the air and the temperature in the room is very critical.

MG: Yes, thermal comfort

DCB: So, if it's too cold or it's too hot in the room. Again, being particular with children with ASD, sometimes having a multi-sensory room can be very very helpful, but it can also sometimes be very overwhelming as well. And having for example, stimming or soothing devices such as a weighted blanket to calm down, by feeling that weight or something that it feels like a hug, you know?

MG: Yes. Alright from your experience do you know if people on the autism spectrum feel comfortable using public services or governmental services or even public transport?

DCB: I don't see that they don't use it. Sometimes what I can understand from my clients is that they need help to navigate the system. Ok, so a lot of what we do sometimes is helping them navigate the system, because the system can be a bit complicated and can be counterintuitive and we get sometimes people being referred there, then being referred somewhere else, and then you are referred somewhere else and people get lost. And what was the second question?

MG: And public transport.

DCB: Public transport seems to be an easier task, especially now with the tallinja card, I think it made it easier for people. What has become a little bit harder are the routes. From what I understand. And now it is linked to technology, so if you do can't use technology you are a little bit screwed. So, it depends how much you can use a mobile and the app and things like that. So, I don't know how that is going to impact. But I know that the tallinja card for example made things easier. Again, it's got to do with literacy as well. So, if you go to Valletta and you need to catch a bus and you can't read the signs, you have a problem there and illiteracy is a problem.

MG: And do you know whether public events in Malta such as concerts or even city-wide events held in Valletta or Birgu are accessible to people with ASD, or provide support spaces such as escape spaces and such?

DCB: I don't know of any now. But I know that, I'm telling you because we are working with project green now, I know that when we asked for them to help us out with Villa Chelsea and when we opened Dar Theresa and they would be opening the garden within the footprint of

Dar Theresa, their considerations have people with ASD. So, using natural textures and natural fabrics and having corners, having least stimulating and a bit more stimulating, but they are not done yet. I don't know if public events are very aware of people with ASD. Unless the event is for people on the spectrum, I don't think they take it too much into consideration to be honest. But I'm not sure.

MG: Ok, so now we can talk about the Malta National Autism Strategy, drafted in 2021. So, are you aware of any measures that have been implemented or adopted through this strategy?

DCB: I don't think so. But it can be a lack of my knowledge.

MG: Or that are in the process of being adopted?

DCB: I think hold on a second (searches for article on phone) I saw an article on the newspaper, give me a second please, I read somewhere that there is an advisory board, I think, but I can't link it to buildings, I know that within the strategy, there was a council now, right?

MG: Yes.

DCB: But I don't know how involved they are with CRPD or with different entities when it comes to the built environment. So, let me give you an example CRPD, you have a new building has to be CRPD compliant right? And it has got to do with accessibility. I don't know if they have widened accessibility to include autism. I don't know. It would be great if we could do that. I mean I really have no idea.

MG: The strategy, it does mention some points on designing buildings that are more accessible for people on the autism spectrum. Now I don't know whether they have been implemented.

DCB: I don't know either, I haven't come across it and we are building something at the moment, and it wasn't mentioned. Accessibility usually considers wheelchair accessibility.

MG: And have you noticed any improvement in the social or cultural awareness with the strategy or the recent decade.

DCB: I think there has been more awareness yes. I think they are doing a good job in that sense; I think in the past couple of years. Of course there was covid, so it all got compounded. But because of covid, even when people were at home, I think people were more receptive to things, even with us, with mental health. And people understand autism more than they understand mental ill health. That is the perception we have here at Richmond. So, people understand that there is a child with autism. With adults it is a little more judgmental, and perceiving them as strange, and with mental illnesses it is the same. But there is more awareness, with diagnosis of children with autism. And there is more understanding and I think more empathy. That I've seen a shift in the past 20 years.

MG: And are you aware of any governmental or private project relating to the design and rehabilitation of public spaces which sought consultation with mental health professionals?

DCB: Yes, project green. They were very, very open to our feedback and they met the service users, and they took on the feedback of the service users. It was a very good consultation, I must admit.

MG: Alright, that brings us to the end of this interview. Thank you very much for taking the time!

DCB: I’m sorry for moving the time, making you wait and making you park here!

MG: Alright it was not a problem.

DCB: Thank you very much!

4. Catalogue of Interview Notes

Question	Prof. Nigel Camilleri	Ms Daniela Calleja Bitar
Does the built environment impact the people's experience in the public realm?	Yes. Relating to the clinic space: Newer spaces may feel overwhelming, that may result in meltdowns or tantrums. Different sensory sensitivity of the persons, relating differently to spaces. Some may prefer more containing rooms, whilst others prefer larger rooms, where they can move around. Importance of colour (use of pastels) and natural lighting to produce calming environments. Relating to the public realm: Public spaces may have a large sensory overload, especially streetscapes. He believes that safe public open spaces can help anyone.	Yes. The built environment has an impact on a person's mental health. Relating to construction she noted how people felt anxious when neighbouring blocks are being demolished and rebuilt especially fuelled by collapses that had occurred. She believes that there is a lack of green open spaces. By promoting and designing accessible green spaces, we can improve people's mental health. Persons with higher sensory sensitivity, that includes persons within the autistic spectrum may be more impacted.
What are the predominant external factors that provide a positive impact on the person's comfort?	Preferred room size relates to the individual's preferences. Multipurpose rooms that allow for flexibility, for example providing bean bags space to move around, playing with bouncing balls playing with toys Lighting Pastel colours Smells Certain noises Textures Chair comfort	The street's visual impact affects a person's perception of the road as one is walking through. Visuals homogeneous streetscape and skyline respect to historic facades The weather, sunny, open blue sky that may relate to natural lighting. The sea Green open spaces
What are the predominant external factors that provide a negative impact on the person's comfort?	Avoid clinical environments Rooms that are too small Too many chairs, overwhelming decision making	Small spaces Traffic noise and pollution Construction
Which kind of places convey a sense of ease for people with ASD allowing for more meaningful social interactions?	Avoid clinical environments, it is too abstract, and persons within the autistic spectrum may feel uncomfortable holding eye contact. Sometimes, doing an activity in parallel to talking like jogging, running and playing may sooth persons within the autistic spectrum as it reduces focus on the conversation and necessary eye contact. Busy urban streetscapes may increase tension in the individual.	Places that relate to the natural environment natural lighting natural textures over synthetic ones colours Although preferences are specific for the individual Intuitive, clear spatial layout. Sounds Air quality and room thermal comfort Multisensory rooms may be soothing to some and overstimulating to others Stimming and soothing devices such as weighted blankets
Do you know whether persons on the spectrum feel comfortable using public spaces or using public services such as healthcare or other forms of governmental	Experiences differ across the spectrum. Individuals who require less support probably utilise both public service or public transport. Difficulty transitioning for example taking lifts from guardians to using public transport joining extra-curricular clubs, However, once they overcome the initial barrier and get used to the routine, they get comfortable using that	Persons on the autistic spectrum seem to use governmental services, however, at times they would require assistance navigating the system that may be chaotic at times. Richmond Foundation provides help with regards to these matters The tallinja card has made it easier to ride the bus, but understanding the routes requires a proficient use of technology and reading signs requires a certain level of literacy.

facilities or even public transport	mode of transport, attending that activity or visiting a place.	
Do you know whether there are any public events such as concerts, city wide events such as those held in Valletta or Birgu, that put in the effort to create a more accessible enabling environment for people on the autism spectrum?	Not in Malta. Referred to his personal experience in Reading Festival last year, where they had accommodations for persons within the autistic spectrum such as quiet places/rooms, and they also held silent discos, where music only plays through headphones.	Not sure, that they consider accommodations for persons within in the autistic spectrum unless the event is specifically organised for individuals on the spectrum. She referred to Richmond Foundation's collaboration with Project Green, in rehabilitation projects in Dar Theresa and Villa Chelsea. They considered the implementation of: natural textures and fabrics a hierarchy of areas based on the level of stimulation.
Are you aware of any measures from the Malta National Autism Strategy, (2021), that have been implemented or adopted or that are in the process of being implemented?	He is aware that there are efforts to design both indoor and outdoor autism friendly spaces. Referred to accommodations implemented in his private clinic, where: they installed visual aids in the reception area. listened to comments of persons making use of their services, regarding sound of music played in waiting areas.	She is aware of the advisory board and council established in the strategy. Not sure on whether accessibility accommodations for persons within the autistic spectrum, have been incorporated into CRPD Guidelines as these where never mentioned in their project in relation to CRPD compliance.
Have you noticed any improvement in social or cultural awareness due to these measures?	He noted a big improvement in children with core autism are addressed, however there is less understanding on individuals on the autistic spectrum that have low support needs. Noted higher acceptance within the educational system	There is more awareness and people have become more receptive of mental health especially during COVID19. She feels that in general, locals have a better understanding on autism in children, than mental ill health. However, there is still a sense of judgement against adults
Are you aware of any governmental of private projects relating to the design or rehabilitation of a public space which sought consultation with mental health professionals?	Stated that still in the initial stages. Referred to a project he had been involved in within the mental health services in Mount Carmel, they had consulted architects with some expertise. The Maltese Association of Psychiatry had invited an architect who is also a psychiatrist, who provided advice to mental health services.	Referred to Project Green who took on the feedback of service users and providers.

5. Combined Information Letter and Consent Form for Professional Interviews

This Informed Consent Form is directed to participants who are invited to participate in an interview in part of my dissertation in part fulfilment of the requirements for the Master of Architecture (Architectural Design) at the University of Malta.

Project Title:

Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder

Research Study Year: 2023/24

Principal Researcher: Miriana Giordimaina
Position: Student at the Faculty for the Built Environment, University of Malta

Project Supervisor: Dr Alexia Mercieca
Position: Lecturer, Faculty for the Built Environment, University of Malta

Part 1: Information Sheet

Dear Participant,

You are invited to participate in a research study on Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder, conducted within the Faculty for the Built Environment, supervised by Dr Alexia Mercieca. The aim of this study is to provide a better understanding of the critical role architectural design plays in creating varying levels of stimuli that influence the human experience within public spaces, in particular, for persons within the Autism spectrum.

Mental Health Professionals specialising in autism spectrum disorder will be contacted through their public contact, which may be email correspondence or social media, and relevant information will be attached.

You are invited to participate in a one-time, audio-recorded, individual and semi-structured interview to provide a better understanding on living with ASD within the local context, based on you experience in the local mental health profession. The interview will take a maximum of 1 hour and you will be free to speak in English and Maltese. The interview will cover questions relating to prevailing demographics of persons within the Autism spectrum, types of locally available support services for persons within the Autism spectrum, critical factors affecting their experience within the public realm, the level of awareness on ASD amongst the general public and on the presence of any local public projects designed with ASD considerations in mind. The participant may ask to censor parts of the interview discussion as to protect confidential information and/or individuals.

If you have any questions about this research, please contact the researcher on [redacted]

Thank you for your time and cooperation.
Kind regards,

Miriana Giordimaina.

Part 2: Consent Form

Dear Participant,

You are invited to participate in an interview as part of my dissertation titled, *"Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder",* in part fulfilment of the requirements for the Masters of Architecture (Architectural Design) at the University of Malta.

Mental Health Professionals specialising in autism spectrum disorder will be contacted through their public contact, which may be email correspondence or social media, attaching relevant information, to participate in an interview..

I, the undersigned, give my consent to take part in the study conducted by Miriana Giordimaina. This consent form specifies the terms of my participation in this research study.

1. I have been given written and/or verbal information about the purpose of the study; I have had the opportunity to ask questions and any questions that I had were answered fully and to my satisfaction.

2 I understand that I am free to accept to participate, or to refuse or stop participation at any time without giving any reason and without any penalty. Should I choose to participate, I may choose to decline to answer any questions asked.

3 In the event that I choose to withdraw from the study, any data collected from me will be erased as long as this is technically possible (for example, before it is anonymised or published), unless erasure of data would render impossible or seriously impair achievement of the research objectives, in which case it shall be retained in an anonymised form.

4 I understand that recruitment was based on the inclusion criteria for participation (specified in the second paragraph of this consent form).

5 I understand that I have been invited to participate in a one-time, individual semi-structured audio-recorded interview. The aim of this interview is to provide a better understanding on the prevailing demographics of persons within the Autism spectrum, types of locally available support services for persons within the Autism spectrum, critical factors affecting their experience within the public realm, the level of awareness on ASD amongst the general public and on the presence of any local public projects designed with ASD considerations in mind.

6 I am aware that the semi-structured audio-recorded interview will take approximately an hour. I understand that the semi-structured audio-recorded interview is to be conducted in a place and time that is convenient for me. I am also aware that whilst the interview guide would be in English, I am free to speak in English and/or Maltese during the interview. Further, I know that my data would then still be presented in English.

7 I am aware that, if I choose to hold the interview online, or if it is not possible to hold the interview face-to-face due to health conditions, Ms Giordimaina will use Zoom and activate the required encryption for 3rd party endpoints sip/h-323 function. I further understand that the interview will only be audio-recorded.

8 I am aware that, by marking the first-tick box below, I am giving my consent for this semi-structured interview to be audio-recorded and converted to text as it has been recorded (transcribed verbatim). **Mark only if and as applicable**

___I agree to this semi-structured interview being audio recorded.
___I do not agree to this semi-structured interview being audio recorded.

9 With respect to zoom audio recording, I am aware that, even though Ms Giordimaina will not be video-recording, I will keep my camera on. I am also aware that Ms Giordimaina will instruct me how to change my zoom name to only display and orally use my pseudonym, so that the audio-recordings as well as the transcripts are pseudonymised. (Unless I agree that my identity/the identity of the organisation I represent may be disclosed in research outputs)

10 I understand that whilst my participation does not entail any known or anticipated risks and all efforts will be made to ensure the questions posed do not cause any psychological distress, notwithstanding, if I feel that the semi-structured interview has distressed me in any way, I am aware that I may make use of the support services information sheet that Ms Giordimaina will give me at the beginning of the interview. I am aware that this document comprises a list of free services. The document also includes fee-paying services which I understand I will have to pay for should I decide not to use free services.

11 I understand that there are no direct benefits to me from participating in this study.

12 I understand that, under the general data protection regulation (GDPR) and national legislation, I have the right to access, rectify and, where applicable, ask for the data concerning me to be erased.

13 I understand that all data collected will be stored in an anonymised form after completion of the study, around September 2024. (Unless I agree that my identity/the identity of the organisation I represent may be disclosed in research outputs.)

14 I have been provided with a copy of the information letter and understand that I will also be given a copy of this consent form.

15 Choose one from below:

___ I am aware that after the interview, Ms Giordimaina will send me my verbatim transcripts for review and that I will have a 15-day window from receipt of transcript to give my feedback. I am aware that, during the interview, I will inform your Ms Giordimaina if I prefer that the transcript would be e-mailed or snail-mailed to me. I am aware that, notwithstanding, I may refuse to review my transcript.

____I am aware that Ms Giordimaina will not be sending me my verbatim transcript.

16 I am aware that, by marking the first tick-box below, I am asking to review extracts from my interview transcript that the researcher would like to reproduce in research outputs, before these are published. I am also aware that I may ask for changes to be made, if I consider these to be necessary

____ I would like to review extracts of my interview transcript that the researcher would like to reproduce in research outputs before these are published.

____ I would not like to review my interview transcript extracts that the researcher would like to reproduce in research outputs before these are published.

17 I am aware that, by marking the first tick-box below, I am giving my consent for *my identity/the identity of the organisation I represent* [select appropriate option] to be revealed in publications, reports or presentations arising from this research, and responses I provide may be quoted directly or indirectly.

____ I agree that my identity/the identity of the organisation I represent [select appropriate option] may be disclosed in research outputs.

____ I do not agree that my identity/the identity of the organisation I represent [select appropriate option] may be disclosed in research outputs. I am aware that my data will be pseudonymised, i.e., my identity will not be noted on transcripts or notes from my interview, but instead, a pseudonym will be assigned.

I am aware that Ms Giordimaina will only use a pseudonym instead of my name in the verbatim transcript I will receive, which pseudonym I will have the option to choose myself. I am aware that extracts from my interview may be reproduced in these outputs using a pseudonym [a made-up name] which I will have the opportunity to choose myself.

The pseudonyms that link my data to my identity will be stored securely and separately from the data, in an encrypted file on the researcher's password-protected computer, and onlyMs Giordimaina, Dr Alexia Mercieca will have access to the data. With regard to the transcripts and recordings, only, Ms Giordimaina, Dr Alexia Mercieca and, if necessary, the examiners of this study, will have access to this information.

Any hard-copy materials will be placed in a locked cabinet/drawer, which only your Ms Giordimaina can access. Any material that identifies me as a participant in this study will be stored securely until the dissertation has been completed and submitted, approximately by September 2024, at which point it will be destroyed. I am aware that my identity and personal information will not be revealed in any publications, reports or presentations arising from this research.

I have read and understood the above statements and agree to participate in this study.

Name of participant: _____

Signature: _____

Date: _____

Principal Researcher: Miriana Giordimaina

Email Address: [redacted]

Contact Number: [redacted]

Project Supervisor: Dr Alexia Mercieca

Email Address: [redacted]

6. Transcript of Informal Interview – John

Participant: John *(pseudonym, chosen by the participant)*

Researcher: MG

Date: 07.05.2024

The informal interview was held in Maltese as the participant felt more comfortable to converse in that language. The audio recording was translated and transcribed in English.

After finalising the participatory walk, and taking a short break, I related the main points that would be discussed during the informal interview, that included, reviewing, and discussing observations compiled in the sheets, identifying preferred and unpreferred spaces and identifying which spaces need improvement and possible solutions. At the conclusion of the exercise, the thoughts of the participant regarding the exercise itself and the aim of the dissertation were gathered.

MG: We can start reviewing the observations gathered during the walk. (flipping through the observation sheets attached to a clipboard) So the public space near triton fountain was utilised as a test run, so we do not need to look at those comments. Then comes Hastings Garden, I think we can start by rating the individual stimuli now what do you think? So, marking if they are slightly pleasing, pleasing or highly pleasing. You mentioned the butterflies on the flowers, the cats …

John: To be fair I look at all of those as pleasing.

MG: Do you think that there are things in particular which, you find more pleasing?

John: I think cats are more pleasing to me.

(During the walk the participant had explained that he visits certain public spaces and gardens because he knows that there are animals, most particularly cats, which he finds very soothing and calming, especially when, he can pet them)

MG: So, we can mark those as highly pleasing?

John: Yes, the others are on the same level as well, even the birds whistling, and the airplane sounds I consider them as highly pleasing.

MG: How about the music near the kiosk?

John: Pleasing.

MG: Butterflies?

John: Highly pleasing.

MG: Sounds of water in the fountain?

John: Pleasing and flowers are highly pleasing.

MG: Ok, and as far as negative stimuli go, you hadn't marked anything, do remember whether there were any?

John: No not really,

MG: And overall level of comfort?

John: Level of comfort was really good.

MG: Should we mark it as pleasing?

John: Very pleasing.

MG: And how much time do feel comfortable spending in that environment?

John: More than 20 minutes.

MG: Next, we can review the design criteria ratings. Sensory stimuli criteria you marked as pleasing.

John: Yes, I think those are correct.

MG: Neutral clear spatial layout, circulation, proportions felt comfortable, visual support we didn't note any, and way finding was comfortable.

John: I think for these we can't really differ from what I had observed.

MG: Yes, you mentioned that there were the views of the Anglican pro-cathedral bell tower, relates to visual relations as well. Then there is safety and security, because we had forgotten to discuss these, how safe did you feel in that space?

John: Very safe, very secure, and customising, I don't think there were any elements with flexibility in mind.

MG: And identification of quiet and accessible spaces, I think the garden was well marked on the map near Triton fountain and that in St. Georges square.

John: Yes.

MG: Now Strait Street, positive stimuli you mentioned music, the cafeteria, the change of uses, some pleasant , familiar smells, negative stimuli include the stairs at the beginning coming from South Street, because you cannot take a normal step, construction work noises and smells coming from welding, and bird droppings, so if we are to assign a grade to all these stimuli, starting with music?

John: Pleasing.

MG: The cafeteria?

John: Pleasing.

MG: The upper passage connecting the first-floor shops?

John: Pleasing as well.

MG: Different colours of the facades?

John: Highly Pleasing.

MG: Noting how its uses changed as well?

John: Very Pleasing.

MG: And smells, that you liked?

John: Yes, those were pleasing.

MG: The stairs?

John Slightly unpleasant.

MG: Construction and welding and its noise?

John: Unpleasant.

MG: Bird droppings?

John: Highly Unpleasant.

MG: Overall Level of Comfort?

John: I think it was neutral.

MG: And how much time would you feel comfortable spending there?

John: I think up to 5 minutes, I don't think I could spend a lot of time there, because the passage feels very narrow and restricted.

MG: Sensory environment, you said it was pleasing, transitory spaces unpleasant, quiet spaces not applicable, layout not applicable, visual relation is pleasing, predictability does not apply, circulation does not apply, proportions were neutral, there aren't any visual supports and wayfinding unpleasant. Identification of quiet and accessible spaces does not apply, safety and security?

John: I mean, I hadn't marked those right, so we are talking about Strait Street right?

MG: Yes.

John: I think it was unpleasant, it is not very safe and secure.

MG: In certain parts there were cars, and heavy vehicles, passing just next to us.

John: And from there pass cars with people to testify in court so that adds another layer to it, so one may think that they would be criminals, one wouldn't like passing from there …

MG: Flexibility and customisation?

John: No there wasn't.

MG: So, we can move to St. George's Square. You mentioned the sound of water in the fountain, how would you rate that?

John: Sound of water is highly pleasing.

MG: Different choices to navigate the space?

John: That was highly pleasing.

MG: The plants that were in the middle of the square?

John: Those were pleasing, but they were temporary, so they wouldn't be there forever…

MG: Exactly, but if we were to still consider them, how would you rate them?

John: Highly pleasing.

MG: The historical aspect?

John: The main guard and the grandmaster's palace are highly pleasing as well.

MG: And the plaques that commemorate events in history?

John: Highly pleasing, I think in general it is one of my most favourite places in Valletta.

MG: Ok, now the next comment contrast with a previous comment, since at first, the temporary installed trees were perceived as negative, since as you see them for the first time, one thinks that the layout has changed and one does not think that they can pass through the square, and as one starts approaching them, I think one starts to understand what is going on and their internal layout within, right?

John: Yes, I agree, I think we were referring to that in the previous comment.

MG: Yes, so at first you noted them as unpleasant?

John: Slightly unpleasant.

MG: But then as one approaches them …

John: You look around and understand the layout, and what you have, they became pleasant.

MG: Then there is the restauration level, certain spaces need to be better maintained.

John: Unpleasant, I felt that it impacted negatively on my experience.

MG: The service vehicles passing through pedestrian spaces?

John: Those were a bit unpleasant.

MG: So you think unpleasant or slightly unpleasant?

John: I think unpleasant, they are a little intimidating.

MG: And flies and insects?

John: Yes personally those were highly unpleasant.

MG: So, the overall level of comfort?

John: I feel very comfortable in that space, and I can spend more than 20 minutes there …

MG: Sensory environment you noted as neutral, transitory spaces and quiet spaces not applicable, clear and simple layout and visual relation you noted as highly pleasing, predictability and routine does not apply, Circulation and possibility of choosing, is not marked yet.

John: Possibility of choosing there isn't much, I mean you can go different routes … But there are different spaces you can pass through, I think that there is possibility of choosing, I think we can mark it as pleasing.

MG: And proportion and proxemics you marked as highly pleasing, no visual supports were noted and wayfinding there was a map as well. And then you mentioned that there is an element of nostalgia in specific spaces.

John: Yes…

MG: And there was also uncleaned soil and leaf cuts on the ground, that you didn't like… identification of quiet and accessible spaces does not apply, safety you marked as highly pleasing, flexibility and customising, we said that it was neutral, because the furniture is not flexible, but as an open space it allows for different events to take place… So, moving on to Old Theatre Street. There you mentioned the political and touristic aspects.

John: Yes, that applies to Valletta in general, I see that as highly pleasing, because I feel I am within a very important space.

MG: The Valletta market?

John: Highly pleasing

MG: Mixture of smells?

John: Pleasing

MG: People and cars sharing pedestrian area?

John: That was unpleasant

MG: And the sewage smells?

John: That is highly unpleasant, I think no one would like smelling that, and even more if you are more sensitive to smells.

MG: Overall level of comfort?

John: I think it was pleasing, but I can't spend more than five minutes there.

MG: Ok, sensory environment pleasing, transitory space pleasing, quiet spaces neutral, clear and simple spatial layout, visual relation pleasing, predictability and routine does not apply, circulation does not apply, proportions, highly pleasing, There weren't any visual supports and wayfinding was pleasing. Safety and security highly pleasing, flexibility and customisation does not apply. Now, Merchant's Street, you mentioned you like the variety of tables …

John: There was also a variety in the way they look, the fact there is a variety of restaurants, I find it interesting, that I find pleasing.

MG: Smells of cooked food?

John: Highly pleasing, unless it is fish or raw meat.

MG: Hearing different languages and cultures?

John: That is highly pleasing.

MG: Restricted space to pass through for pedestrians?

John: Unpleasant.

MG: Noise from construction work?

John: Highly unpleasant.

MG: Development in Valletta?

John: Slightly unpleasant.

MG: At the intersection you noted how the sightseeing train intersects with pedestrians …

John: Unpleasant.

MG: A lot of people passing through a narrow space?

John: Slightly unpleasant.

MG: Overall level of comfort for Merchant's Street

John: I think I would spend 20 minutes there.

MG: Up to 20 minutes?

John: I think more than 20 minutes, I think if I find the right combination of things to do I think I would spend more than 20 minutes.

MG: Sensory environment was neutral, as you said they cancel out each other, transitory spaces and quiet spaces do not apply, clear spatial layout unpleasant, visual relation pleasant, predictability and routine do not apply. Circulation does not apply, proportions pleasant, visual supports not applicable and wayfinding you marked as pleasing. Identification of quiet and accessible spaces does not apply, safety and security pleasing.

John: Yes, those are right, Next Republic Street. When I see the clipboard, I remember that I didn't use to like it, as you would have to flip the pages individually, it reminds me of field works in Valletta. That is another memory in fact …

MG: Mhm. So, in Republic Street, you like the small shops, near that games and music shop.

John: Yes, those were pleasing.

MG: Sounds?

John: Pleasing as well.

MG: Food smells from Mc Donald's and remembering memories?

John: Yes, highly pleasing, I like eating at Mc Donald's.

(During the break between the participatory walk and the informal interview, the participant mentioned how shops of that fast food chain have autism friendly hours which he regularly makes use of. He further proposed that these should not only be restricted to just one hour but extended further throughout the day. Continuing with that note, he also made reference to autism friendly cinema screenings, that although he does not feel the need to make use of, because he usually he feels comfortable attending regular film screenings, he is very pleased

that different types of establishments are making more of an effort. He emphasized how these accommodations should be extended to all establishment typologies.)

MG: There were historical building facades that were well maintained …

John: Yes, I like that very much, that is highly pleasing.

MG: Nostalgia of different shops?

John: Highly pleasing.

MG: People across different cultures?

John: Highly pleasing as well.

MG: The large number of people who are walking in different directions, causing one to find an irregular path to make your way through?

John: I find that slightly unpleasant.

MG: And facades that weren't maintained?

John: Unpleasant, because that negatively impacts the visual environment.

MG: Overall level of comfort?

John: I felt very comfortable overall, I can easily spend more than 20 minutes there are a lot of places one can visit, which I find comfortable.

MG: So, sensory environment is pleasing, transitory and quiet spaces do not apply, clear simple layout and visual relation pleasing, predictability does not applicable, circulation and possibility of choosing does not apply, proportions pleasing, there weren't any visual supports but there were wayfinding elements, identification of quiet and accessible spaces does not apply, safety and security and flexibility and customizing pleasing. Now Castille Square, you noted the sense of nostalgia of how it felt before it was renovated.

John: That is highly pleasant.

MG: You mentioned you liked looking at the façade of the Auberge de Castille.

John: That is highly pleasant as well, there are different possibilities where one can pass through is highly pleasant, the water fountain, the historical monuments were all highly pleasant.

MG: And the cobbled tiles?

John: Pleasant.

MG: And you did not note any negative stimuli, Overall level of comfort?

John: Very comfortable and I would spend more than 20 minutes for sure.

MG: Sensory environment pleasing, transitory spaces and quiet spaces do not apply, the layout was not that clear and simple so you marked that as unpleasant, on the other hand for visual relations, you marked as pleasing because there is a sense of connection both within the public

space itself, but also, you can see the Grand Harbour and Paola Basilica, predictability and routine do not apply,

John: I really like going sightseeing even if I know the place well, it makes me feel better.

MG: Mhm … possibility of choosing and proportions pleasing, you did not note any visual supports but there were wayfinding elements, safety and security was highly pleasing and flexibility and customization is neutral. Ok, so finally the Upper Barrakka Gardens, so first you noted the area near the cafeteria, and the number of cats in the area.

John: Yes, it is highly pleasing, the view is also highly pleasing, sound of pigeons pleasing, … smells of horses unpleasant, bird droppings highly unpleasant, the smell of the midday cannon explosion unpleasant, and the large crowd of people watching the midday canon is unpleasant.

MG: Overall level of comfort?

John: Very comfortable, and I would spend more than 20 minutes for sure.

MG: Sensory environment, transitory spaces and quiet spaces you marked as pleasing, spatial layout is not that pleasant, visual relation pleasing and predictability and routine applies, and it is pleasing, circulation and possibility of choosing and proportions were pleasing. And you did not note any visual supports or wayfinding elements. Identification of quiet and accessible location, it was marked on the map so pleasing, safety and security pleasing, flexibility and customization is neutral. Alright very good, so we reviewed the observations, let me find some of the questions I have prepared.

John: Even the fact that there is a lift here is not conventional. I find it as an unusual feature …

MG: Mhm, but then one needs to consider the accessibility it provides from the wharf to Valletta.

John: Yes, I agree, I have used it multiple times, I am commenting on it as a curious feature.

MG: Yes, I agree, it is slightly unusual to find a lift in a garden. So, to move on with some final questions, from the criteria we considered for each space, which do you find …

John: Important?

MG: Important to you?

John: I think they are all equally important, to be honest, they all make a difference, but I feel that from my experience sensory environment and visual relations may be the most important.

MG: *(Flipping to the sheets to show the other criteria)* Do you consider other criteria as important such as safety for example?

John: Safety as well yes.

MG: And which space did you feel to be most comfortable and pleasing?

John: The space which I liked the most? I don't know … Either Hastings Garden or Republic Street, I don't know which to choose because I like them all.

MG: Ok.

John: Even here the Upper Barrakka Gardens, I like it very much as well.

MG: So, there wasn't a space which you found less pleasing?

John: The place that I found the least pleasing was Strait Street, cause I did not feel particularly good emotions as I was passing through it, and even seeing people entering court, it felt unpleasant.

MG: Ok, and which were the space that you would like to be improved?

John: I think that Strait Street is difficult to improve, but it would be great if there was improvement there. I mean even Republic Street would benefit from some improvement, I think those are the place that require most improvement.

MG: And what factors made you feel most uncomfortable, that you think can be improved?

John: I think in Strait Street the fact that you have a mix of surfaces, even the stairs feel different and the fact there was a lot of noise in such an enclosed space, when it should be calmer, it is not very nice, if were trying to find a quiet space there isn't there.

MG: So, providing quiet spaces.

John: Yes.

MG: And does that apply for Republic Street as well?

John: I think so … Maybe there can be closed spaces that are soundproofed, for people who would want to decentralise, that's what I think.

MG: Ok, so for Republic Street, which is quite a wide street, if it were to be, not zoned but, because of the fact that you mentioned that one has to somehow find a path through the crowd of people moving in different directions, do you think that if the street section were to be organized so that for example the spaces of transition would be clearly marked…

John: Yes, I think that would be beneficial, because you would know from where you should pass, so that would make me feel comfortable, that's what I think.

MG: Ok, and overall, how was your experience in this exercise?

John: In this study?

MG: Yes.

John: At first it felt a bit weird, because I had never participated in a similar study, but I felt good as well. I feel really pleased that I am contributing to research, that will help others, it is like return on investment, because the research is more informed.

MG: And in general, the walk, how it was organised …

John: I think it was well organised, with a different variety of spaces that each conveyed different feeling. The different choices of spaces, I feel is very good.

MG: I think that concludes our informal interview. Thank you very much for accepting and making time to participate in this exercise!

John: Thank you for the opportunity!

7. Transcript of Informal Interview – Hazel

Participant: Hazel *(pseudonym, chosen by the participant)*

Researcher: MG

Date: 14.05.2024

The informal interview was held and transcribed in English.

After finalising the participatory walk, the participant identified an open space that felt comfortable to her to take a short break and to then hold the informal interview. I related the main points that would be discussed during the informal interview, that included, reviewing, and discussing observations compiled in the observations guide, identifying preferred and unpreferred spaces and identifying which spaces need improvement and possible solutions. At the conclusion of the exercise, the thoughts of the participant regarding the exercise itself and the aim of the dissertation were gathered.

MG: We can start by reviewing the observations, so the first node, Triton Fountain served as the test run of the exercise so, in reality, I will not be using these observations, but did you find it helped to getting accustomed to the process?

Hazel: I think so yeah, you did explain the process and what's to come.

MG: Alright so we can start with rating …

(Nearby café, started playing loud music)

Hazel: It's pretty loud.

MG: We can move to another place then if you think it's better.

Hazel: Yeah.

(Moved to a bench away from the noise)

MG: Alright, we can start by rating the positive and negative stimuli, in each space, so the shade here in Hastings Garden?

Hazel: Shade, I find it decent, I find it good, cause of the trees, so I'd say it's highly pleasing.

MG: The natural surroundings the colours, the flowers?

Hazel: Highly pleasing as well.

MG: Sounds of the birds?

Hazel: Birds, good, highly pleasing.

MG: How this area opens to the view?

Hazel: It's visually pleasing as well so I'd say it is highly pleasing as well.

MG: The sound of the fountain?

Hazel: The sound of the fountain is pleasant as well, highly pleasing. You didn't mark the flowers.

MG: I think they were marked on the same box as the others.

Hazel: Ah, okay.

MG: So, the fact that at a point, I think at the first part of the garden, we could still here the busker from City Gate.

Hazel: Yeah, it was unpleasant.

MG: Ok, the cafeteria.

Hazel: Yeah, she turned up the music at one point, so highly unpleasant.

MG: For signs for not to climb onto the bastion walls?

Hazel: Unpleasant as well.

MG: And you noted that the view itself allows you to look over the rest of the urban conurbation, however, the fact that there is a lot of urban development …

Hazel: Yeah, you can't really appreciate it when it is all there, I would say it is pleasant cause it is in a nice area but unpleasant to look at.

MG: So overall level of comfort?

Hazel: I would say it is the second highest.

MG: Ok, and how much time would you feel comfortably spending in this space, so more than 5 minutes, up to 20 minutes , or more than 20 minutes?

Hazel: I would spend more than 20 minutes here. As long as I am in a comfortable space … so as I walk around, I want to test the different areas, if there are sounds, if there is music …

(The sun had just come out and the bench we were on, was in direct sunlight)

MG: Mhm, would like to go to another space that is shaded?

Hazel: Yes.

(Moved to a shaded bench)

MG: Ok, so we covered stimuli.

Hazel: The breeze helps as well.

MG: Mhm … Ok we can go over the spatial criteria, and check whether you agree with them and review them, so sensory environment, you noted as highly pleasing, so all these (design criteria relating to sensory stimuli) were highly pleasing …

Hazel: Yeah they were highly pleasing but I would say depending on where you are as far as the sensory environment, so if you are closer to where the café is, it is not that pleasing.

MG: Mhm, so circulation and possibility of choosing you marked it as pleasing, and proportions and proxemics as highly pleasing, we didn't see any visual supports and wayfinding was highly pleasing.

Hazel: Yeah.

MG: So, it was identifiable from that map near Triton Fountain, the place felt safe and secure and it didn't allow for as much flexibility and customization.

Hazel: But it is not necessarily a bad thing.

MG: Exactly, because you had stated that its intention is to be a garden … Ok Strait Street, you noted negative stimuli, it was very busy and daunting and at one point there was a musty smell, so how would you rate them?

Hazel: What was the first one?

MG: The first one was busy and daunting.

Hazel: Yeah, highly unpleasant.

MG: The musty smell in the beginning?

Hazel: It is noticeable but not very bothersome, so I would say unpleasant.

MG: The sound of cars?

Hazel: Highly unpleasant.

MG: And at certain areas you noted that the space was so restricted that it there was an echo.

Hazel: Yeah, it amplified the sound somehow, so I would say unpleasant.

MG: Ok, in some places it was difficult to walk through … how would you mark that?

Hazel: I'd say it is unpleasant.

MG: And the smell of food?

Hazel: Depending on the food, but then again, there was so much of it that it could overstimulate me, so yeah, I would say, if is the smell of greasy food, I can't stand it but the smell of fish I would enjoy it, of fresh fish.

MG: Ok, so at that point it was more overstimulating and, in that circumstance, how would you rate it?

Hazel: I would say unpleasant.

MG: Alright. Level of comfort?

Hazel: I would get out of there as quickly as possible so ….

MG: Very uncomfortable?

Hazel: Yeah.

MG: And the least amount of time, yeah?

Hazel: Yes.

MG: So, sensory environment and transitory spaces are unpleasant, quiet spaces are highly unpleasant. Clear spatial layout, highly pleasing, you mentioned it was straight forward, relating to its visual relation to the rest of the street, predictability was pleasing as well.

Hazel: I will note, something I didn't notice back there, but now, I would stay there if I'm having a drink because there are a few gin bars there, so if I want to go have a drink, I would stay there …

MG: So, in contrast with Merchants Street, you'd feel safer, having a drink there, rather than in Merchants Street?

Hazel: I know it is strange to say but Merchants Street I feel there is not much … if a place has been recommended to me then I'd go try it, but then yeah, I would go, but as it is I wouldn't go.

MG: Mhm.

Hazel: If that makes any sense.

MG: Yes, it does. Ok so these we agreed on circulation does not apply; proportions were unpleasant.

Hazel: Mhm.

MG: Visual supports there were none, and wayfinding was pleasing. Identification of quiet and accessible spaces does not apply, safety, you marked as pleasing, because there were quite some people passing through, and it doesn't allow for flexibility and customization.

Hazel: Not really.

MG: So, St. George's Square, so you noted that the plants and trees that were temporarily installed were pleasing to look at.

Hazel: Yes, so I would say it is pleasing.

MG: Ok, and the shade from the palace, at that time that we were there?

Hazel: Pleasing.

MG: Ok, and you also noted that the temporary installation, in a sense restricted, the width of the path and therefore, it was more prone to have bottlenecks and people just stopping and not moving forward,

Hazel: Yeah.

MG: That may have interrupted the way we pass through the space yeah?

Hazel: Yeah, it was …

MG: So how would you rate that?

Hazel: I would say it is unpleasant, but there are good things but, then the way it is arranged it is still, it is not as pleasant.

MG: Mhm. Overall level of comfort?

Hazel: I would stay there, based on everything there, but then again it is directly in the sun, so no, unless I really need to sit down, then I would stay there, only if I need to. So, second lowest.

MG: Ok, and how much time do you feel comfortable spending there?

Hazel: Same.

MG: So, up to a minute.

Hazel: Up to a minute, if I have to.

MG: So, for Old Theatre Street you noted that it was busy in that area where there were temporary stalls installed, so in that sense how would you rate that?

Hazel: Unpleasant.

MG: And the tables felt unsafe since there was construction …

Hazel: Oh, yeah … I would say that is highly unpleasant.

MG: Mhm, overall level of comfort?

Hazel: I mean for me it is a place to get to get from one place to another, so I want to get out of there as quickly as possible. So, I would say the second lowest level of comfort, but I want to get out of there as quickly as possible, so the lowest in that regard.

MG: So, sensory environment, transitory space, quiet spaces were all marked unpleasant.

Hazel: Mhm

MG: Clear simple layout, visual relation and predictability they are all marked as pleasing.

Hazel: Yeah.

MG: Possibility of choosing does not apply, proportions and proxemics pleasing, visual support neutral, I think there were some, there was the name of the street.

Hazel: Yeah, there was the name of the street and now I am thinking about it there wasn't a warning sign for the construction.

MG: Yeah, exactly.

Hazel: Was there?

MG: No, there wasn't.

Hazel: So, there was a barrier but …

MG: And I remember at some point, the pavement was covered by some boards of wood, and at some point, a lady was going to trip as well so yeah, there was no warning sign for construction. And wayfinding it was easy?

Hazel: This is Old Theatre Street?

MG: Yeah.

Hazel: Yes, I think so.

MG: Ok so this (identification of quiet and accessible spaces) does not apply, safety and security?

Hazel: Safety and security as regards to people?

MG: In all senses …

Hazel: I think I will change my answer to neutral come to think of it, but you can write it down, as (changed) after more thoughts.

MG: Ok, flexibility and customizing, you noted as neutral. There was an event taking place, there where small stalls installed, and you can only in a sense, change not that much, unless you go for a drink, and you can change the layout of the chairs for example.

Hazel: Yeah.

MG: So, … I think we may have skipped these criteria for St. George's Square, so let's go over them now. Identification of quite and accessible locations, it's not really a quiet and accessible location.

Hazel: No.

MG: So, it doesn't really apply. Safety and security for St. George's Square?

Hazel: There' s people. I suppose the same as Triton Fountain. But I know that doesn't really count because that was a test, but it is the same reasoning.

MG: Mhm. The element of natural surveillance makes it feel safe. So, you'd mark that as pleasing?

Hazel: I'd say pleasing yeah.

MG: And flexibility and customising?

Hazel: For St. George's Square, there are different ways you can navigate around …

MG: Mhm, but if we look at the furniture it is not really flexible …

Hazel: But I suppose that would be wayfinding, wouldn't it?

MG: Exactly, however, the openness in itself, allowed for that event to take place for example, in this case there was the temporary installation of a garden, and it is popularly used for other events, however, as person in the general public you can't really change that much in the space.

Hazel: No … Then again there aren't many open spaces to do such an installation are there?

MG: Mhm, not really.

Hazel: It is like St. George's Square was like the only option?

MG: Yeah, I think considering its openness, it may be the largest open space in Valletta.

Hazel: I think it is the largest yeah.

MG: I think Castille (square) is slightly smaller, yeah, so we mark it as neutral?

Hazel: Yeah neutral. I remember Castille a long time ago, there was a roundabout and there were flowers and trees and now they changed it to that, … sterile.

MG: Mhm … Ok, so now Merchants Street, you noted a nice smell of food, I think there was the smell of fish at some point.

Hazel: I know it is really specific, but it depends on the person walking through.

MG: Exactly.

Hazel: Like for me I like the smell of fish.

MG: Exactly, so, for yourself how would you rate that?

Hazel: I would rate that as pleasing.

MG: And the fact that in themselves the intersections with the side streets at certain points, when there aren't a lot of people passing through, it provides an area to take a break from the busyness of the busy footpath.

Hazel: Yeah, but then in that sense it is a positive for the side streets but a negative for Merchants Street cause it is like, they are there to get away from Merchants Street.

MG: Mhm.

Hazel: I would say it is slightly pleasing then.

MG: So, the busyness of the place and there is not that much freedom?

Hazel: No, there is not that much freedom, I would say that is highly unpleasant.

MG: Construction and the tables extending onto the footpath, taking over pedestrian space?

Hazel: Highly unpleasant.

MG: And the music at some point, it was disruptive?

Hazel: Yeah, that is highly unpleasant.

MG: Ok so overall level of comfort?

Hazel: I'd want to get out of there quickly…

MG: so highly unpleasant?

Hazel: Yes.

MG: And up to 30 seconds?

Hazel: Yeah, and another thing, same reasoning as Strait Street, like if there is a place where to drink, I would perhaps stay there, but then again, being outside and being close to people walking through, it is like you are invading their personal space.

MG: Mhm.

Hazel: Because you have no choice but to do that, and I don't want to be put in that position.

MG: Mhm.

Hazel: So, I would never eat outside in Merchants Street.

MG: Mhm. So sensory environment was unpleasant.

Hazel: Yeah

MG: And you noted as well that it was overstimulating and that usually you would put on headphones and try to get through there as quickly as possible, and focus on getting out of there yeah?

Hazel: Yeah.

MG: So transitionary spaces and quiet spaces, are highly unpleasant. Spatial layout, unpleasant, because there are a lot of things happening within the street.

Hazel: Yeah.

MG: Visual relations, there is some visual relation at some point.

Hazel: Yeah, that didn't change.

MG: Predictability and routine were unpleasant; circulation doesn't really apply there isn't that much possibility for choosing.

Hazel: No.

MG: Proportions and proxemics, you noted as unpleasant, I think also noting the fact that the width of the street has been limited, by the larger area taken over by construction and tables.

Hazel: Mhm.

MG: Visual supports I think there were some, so you marked that as neutral.

Hazel: There were very few, like street name.

MG: Mhm, and wayfinding was pleasing there were those signs. Safety and security you noted as pleasing, but you made a note that you would never eat there since there are many people passing through, that you feel they may encroach onto your personal space.

Hazel: Mhm.

MG: And flexibility and customization …

Hazel: No, not really.

MG: So, unpleasant … So, Republic Street, you noted that there are shops that offer the possibility to take a break from the hectic environment of Republic Street.

Hazel: Yeah.

MG: So how would you rate those?

Hazel: Yeah, I'd say it is pleasing.

MG: Mhm, at certain parts it was shaded, according to the time of day you go there, so how would you rate that?

Hazel: I would say that is pleasing.

MG: This one I can't decipher what we wrote …

Hazel: Busy with …

MG: Yeah, I think it relates to the busy environment of the streets, when you noted that when you look at republic street from near Teatru Rjal, one notes that there are a lot of people passing through and from that angle it looks like that since you are higher up.

Hazel: Ohh.

MG: Since you are at a higher terrain level and you are visually perceiving it, through perception, and visual perspective it looks like it is more busy than it really is.

Hazel: Mhm, Yeah, but then when you actually walk through it is not that bad.

MG: Exactly.

Hazel: And I think I compared it to Merchants Street as well, cause Merchants Street if you see it is busy, then it is busy.

MG: Mhm.

Hazel: Because there is very limited space, whilst in Republic Street, yes there is some limited space, but it is certainly more open than Merchants Street.

MG: Mhm.

Hazel: And, yeah, because at least you can walk through at a normal pace, whereas Merchants Street it is considerably slower.

MG: Mhm.

Hazel: Because of all the people and the limited space.

MG: So, we can mark the busyness of the street, it wasn't that busy, in a sense that you could pass through and not really be as much affected by obstacles or people walking in opposing directions?

Hazel: Yeah.

MG: So how would you rate that?

Hazel: I would rate that as slightly pleasing cause you still need to make your way through, but it is not as bad as Merchants Street, not bad, but not good either.

MG: Mhm.

Hazel: I mean it is not bad but not great.

MG: Mhm, exactly, so this would juxtapose, so there is the element that it is busy but not that busy as Merchants Street, but it is still negative negatively impacts you.

Hazel: It's like it is neutral but leaning towards negative.

MG: Exactly since it is by the design and the fact that it is the principal route through Valletta, so negatively how would you rate that?

Hazel: I would say that it is slightly unpleasant.

MG: Ok and the noise levels?

Hazel: I would say it is unpleasant, it is always unpleasant for noise.

MG: So overall level of comfort?

Hazel: I would say second lowest.

MG: Ok. And how much time would you feel comfortable spending in that space?

Hazel: Not a lot of time, so I would say up to one minute.

MG: Alright, so sensory stimuli, sensory environment unpleasant, transitory spaces unpleasnt and quiet spaces, slightly unpleasant. Legibility, clear and simple layout, visual relation and predictability and routine pleasing.

Hazel: Mhm.

MG: Possibility of choosing does not really apply. Proportions and proxemics felt pleasing.

Hazel: Mhm.

MG: Visual supports were neutral, there were some noted. And wayfinding …

Hazel: It was straightforward and there were signs.

MG: And the landmarks themselves also help …

Hazel: Yeah.

MG: Safety and security, so the large number of people, make the space feel safe.

Hazel: Mhm.

MG: Flexibility and customising is neutral … So Castille Square. We also noted only negative stimuli here, and at the time that we were there it was 12.05 so people were passing through from Barrakka Gardens back to the heart of Valletta.

Hazel: Yeah.

MG: So, there were quite a lot of people passing through, so that you noted impacted your experience negatively and we were passing at an opposite direction to them so it didn't feel really good…

Hazel: Yeah.

MG: So how would you rate that observation?

Hazel: I would say it is unpleasant.

MG: Mhm, and the cars passing near, dropping off tourists.

Hazel: Cars I would say highly unpleasant.

MG: And the fact that there were no shaded areas?

Hazel: Highly unpleasant.

MG: Ok so sensory environment, you noted as neutral, it was loud, bright, however, that depends on the time of day, and you noted that is much more comfortable during the night yeah?

Hazel: Yeah.

MG: And the same reasoning applies to quiet spaces, right? So that was unpleasant at the time we were there. So, clear and simple layout, neutral, visual relation is pleasing, and predictability and routine was neutral. Circulation and possibility of choosing … I mean it is quite open so you can really pass through from wherever you like, however, then at the end of the square there are those, not bollards, but some form of fencing where you have these poles and that chain spanning between them and they are open only in certain spaces not, so it is not fully open.

Hazel: Mhm.

MG: It may be, that if they were to be fully open, cars would probably park onto the square.

Hazel: Yeah, they definitely would.

MG: So, it does help with that, but it restrains the people's movement through the space, because they can only enter through certain spaces, which can create bottlenecks in a sense.

Hazel: Yeah, it's been made a pedestrian area, so most of it is open for pedestrians to go through, so I suppose, it is open to an extent.

MG: So, would you mark that as pleasing circulation and possibility of choosing?

Hazel: I would say neutral.

MG: Ok. Proportions and proxemics, so considering how the width of the square and the height of the building felt in relation to each other and to you as you are experiencing the space…

Hazel: I would say it is pleasing. It's not daunting, because it outlines half of the space so there is Auberge de Castille, then there is St. James Cavalier, and the other building …

MG: Il-Borza, but that is on the other side, yeah.

Hazel: So, the openness doesn't feel as …

MG: Restricting or dominating, so the buildings do not feel as dominating over the square.

Hazel: Yeah.

MG: So, visual supports, do you remember if there were any?

Hazel: I don't remember any visual supports…

MG: Mhm… there was that sign showing the directions where to go, where are the landmarks or the places of interest, so that would count as wayfinding, but I don't think that there were any visual supports.

Hazel: There weren't that many.

MG: So, pleasing, neutral or unpleasant?

Hazel: I would say neutral cause there were none, so I don't have any particular feelings towards it.

MG: Ok … And wayfinding, I think it was quite good right?

Hazel: Yeah, you can see if want to go to Republic Street or if you want to go to Barrakka Gardens.

MG: So, it is pleasing?

Hazel: Yeah, I'd say it is pleasing

MG: Identification of accessible location does not apply. Safety and security felt pleasing, and there was also the presence of policemen.

Hazel: Yeah, there was a policeman yeah.

MG: Flexibility and customizing, I mean there is space for events, however, the general public cannot really customize the space for themselves.

Hazel: Not really.

MG: So those juxtapose again, so should we mark it as neutral?

Hazel: Neutral yeah.

MG: Upper Barrakka Gardens, there were some places that were more quiet than the main areas …

Hazel: There were, but you need to actually look for them.

MG: So slightly pleasing?

Hazel: Yeah slightly.

MG: Music playing by the busker?

Hazel: Highly unpleasant.

MG: There was also near the viewpoint, there were speakers with some marches playing.

Hazel: Yeah, there were like vaguely, military music …

MG: So, you'd say that is highly unpleasant as well?

Hazel: In combination yeah, while it does add to the atmosphere, because there is the gun battery and what soldiers used it for, it is used in the right context but in addition to everything else it is highly unpleasant.

MG: Mhm, and you also noted that especially the music from the busker distracted from appreciating nature and the colours of the flowers, it is like it took over, in a sense, so your brain was focusing on that sound, and it took over, from your overall perception of the space.

Hazel: Yeah, I can't really appreciate it when there are so many things going on.

MG: So overall level of comfort how would you rate it?

Hazel: I'll put it, second lowest, up to one minute.

MG: And overall level of comfort?

Hazel: Second lowest.

MG: Alright, so sensory criteria which had to do with sensory stimuli were all unpleasant.

Hazel: Mhm.

MG: Clear spatial layout, visual relation, predictability were all pleasing.

Hazel: Yeah.

MG: Possibility of choosing, it does allow to choose your own path, proportions and proxemics pleasing as well, visual support, we did note that there were some for the bathroom and for the viewing point. And also, wayfinding there was. It was also identifiable from the maps at Triton Fountain and St. Georges Square, safety and security were pleasing and there wasn't really much flexibility and customisation unless you are at the café for example, you can move around the chair …

Hazel: Yeah.

MG: Otherwise, that is it. So those are reviewed … So, after reviewing those, which criteria, from here (pointing to design criteria listed in the previous table) did you feel that were the most influential when navigating the spaces? So, you have criteria that deal with sensory stimuli, others with legibility and others to do with auxiliary supports, such as visual supports and wayfinding and then there are some general design criteria. So how do feel about those? Were there aspects that stood out most that impacted your comfort in specific spaces?

Hazel: Because there are the visual elements such as the wayfinding and the layout and then in combination with how some spaces were not sensory friendly, because where to go, it means I know where to go to get out, I mean if you notice I am more focused on getting out rather than staying there.

MG: Mhm.

Hazel: Because of the sensory environment. So yeah, if the layout is not clear I think I would panic.

MG: Mhm, so you feel like the sensory environment takes precedence since you perceive things through the senses so, it is the first thing that is most prominent.

Hazel: Mhm

MG: However, the layout and the visual relations, influenced how you navigated the space, so those are also prominent, so much more if you have never been to that space and do not know how to navigate it.

Hazel: Mhm.

MG: And which do you feel were your most preferred spaces?

Hazel: Hastings Garden, definitely.

MG: And your least preferred space?

Hazel: Well, it is a toss-up between Merchants Street and Strait Street, I would say Merchants Street was my least favourite, because I think they ruined it, I think it can be fixed but as it is, it is horrible.

MG: So, you think that that would be one of the spaces that needs to be improved?

Hazel: Yeah definitely, because it is the street that people go through to get to another place, and for me at least I would want to go to a place quiet, calm and mentally prepare myself to go there, and if the space is chaotic, overstimulating and uncomfortable then I'm going to go where I need to go uncomfortable.

MG: Mhm.

Hazel: And I don't want that. So usually I would just avoid it, even if I would have to take a longer route, if it means I would be comfortable.

MG: Mhm, so you feel that Merchants Street would need to be improved. Are there any other spaces you feel need to be improved?

Hazel: Strait Street, it is a narrow street as it is. It doesn't need to be over cluttered with different things.

MG: So those were improvements in streets that are currently restricting the movement through, and the sensory input perceiving as one goes through them. So, what do you think can be done to improve that?

Hazel: Well I think regulations as to how many things people can put out, like take Merchants Street for instance, most of the street is taken up by chairs and tables there is no need to, If it were up to me, there would be no chairs and tables, keep it open and it can be improved, like Republic Street it was busy and there were elements that were overstimulating but it wasn't so restrictive.

MG: So would you think that if there were to be some form of quiet spaces integrated within the street, in a sense would they be beneficial? … It has somehow been tested out in St. Georges Square through the temporary installation, it somehow serves as a testing ground for it. So, if there were to be such spaces, cause one of the options that I have seen proposed is that one would integrate quiet spaces within the street section themselves … and in a sense that would also restrict area people would have to navigate through the space and create bottle necks by taking over parts of the space for quiet areas.

Hazel: Yeah, cause it's like have quiet areas and have noisy areas, where as if you have the quiet area the noises would penetrate through the quiet area, so it is like you haven't got a choice I suppose, and besides there are some streets whose intention of that street is to be bustling, cause again it is a city, it is lived in, you want things to be living. But then you would have places that are quiet like hastings for instance,

MG: Mhm.

Hazel: Having a quiet space integrated with a noisy space, then the noise is going to take over, and it makes the quiet area not so quiet, just like in St. George's Square, while it is intended to

be a quiet area when you can relax, you have chairs and benches, because of Republic Street and by extension, Merchants Street and Old Theatre Street to enter through you still get noise encroaching on the space. So, there is not much chance for an integrated quiet area in those spaces.

MG: Mhm, so I think it can be potentially improved, by maybe restricting the noise in those spaces, by for example posing noise limitations, or as you said, opening areas that are restricting the movement, that is compromising your experience as you are passing through.

Hazel: Yeah.

MG: So, for busy streets you don't think that integrated quiet areas would really solve it.

Hazel: No not really, because as I said if you have a quiet area, it would be invaded by the noisy area, and you can't really help cause sound travels …

MG: Exactly.

Hazel: But then if you have quiet areas like this, keep it quiet, if you have noisy areas that is fine …

MG: Mhm.

Hazel: Like Upper Barrakka can be a quiet space, but then you get the busker and even Hastings Garden here it can be quiet but then you get someone playing music there.

MG: Mhm. Very good, so you noted if we are going to have spaces, they would have a clear rating how busy or how stimulating they are and they are providing that stimulus, and by comforting the space to have lower stimuli, in that sense it becomes redundant, so clearly having spaces that are solely quiet and that are solely busy, that creates a balance, as by trying to have a quiet space in a busy space it doesn't really work.

Hazel: Yeah it doesn't make sense, I'm not sure if you know this but as a studying architect, spaces are built with the intention they are going to be used for.

MG: Exactly, they can change, but yeah.

Hazel: Mhm, they can change but not everyone would quite like it.

MG: Mhm, so overall what do you think of this exercise?

Hazel: I think you had a clear route in mind, to go from meeting at Triton Fountain, then to Hastings then … sorry my memory …

MG: Strait Street …

Hazel: Yeah, Strait Street, then St. Georges Square right? Then Old Theatre, Merchants, Republic, Castille, Upper Barrakka, yeah?

MG: Exactly.

Hazel: Yeah, there was a clear route in mind, and definitely vastly different experiences of sensory stimuli.

MG: Mhm … Ok very good, that concludes our exercise. Thank you very much for taking the time.

Hazel: Thank you so much it was great.

8. Combined Information Letter and Consent Form for Participatory Walk and Informal Interviews [English Version]

This Informed Consent Form is directed to participants who are invited to participate in a participatory walk and a focus group in part of my dissertation in part fulfilment of the requirements for the Master of Architecture (Architectural Design) at the University of Malta.

Project Title:

Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder

Research Study Year: 2023/24

Principal Researcher: Miriana Giordimaina
Position: Student at the Faculty for the Built Environment, University of Malta

Project Supervisor: Dr Alexia Mercieca
Position: Lecturer, Faculty for the Built Environment, University of Malta

Part 1: Information Sheet

Dear Participant,

You are invited to participate in a research study on Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder, conducted within the Faculty for the Built Environment, supervised by Dr Alexia Mercieca. The aim of this study is to provide a better understanding of the critical role architectural design plays in creating varying levels of stimuli that influence the human experience within public spaces, in particular, for persons within the Autism spectrum.

Adults over the age of 18 with high-functioning autism, will be contacted through groups on the public social media platform Facebook and/or contacted through Richmond Foundation, to participate in a participatory walk followed by a focus group or informal interview. The aim of this exercise is to provide a better understanding on the experience of persons within the Autism spectrum within the local public realm.

The exercise will be held in Valletta, in 1 or 2 groups consisting of 5-6 participants. Participants will walk at their own pace along a predetermined route, noting positive and negative stimuli/factors affecting their experience through photographs and notes. Prior to commencement there will be a short familiarization with the toolset to ensure familiarity that will be held on site. A guiding document will be distributed prior to the exercise, that will include the route to follow and a structured form to be filled for each node. This will better guide the participants when taking down notes on their experience and aid the researcher when cataloguing the data obtained. The walk should take 1-2 hours.

The participants will be invited to a focus group or informal interview to discuss their experience of the walk thereafter where they will be free to leave at any point. There is no monetary compensation for participation in the study. The identity and personal information of participants will not be revealed in any publications, reports or presentations arising from this research.

If you have any questions about this research, please contact the researcher on [redacted]

Thank you for your time and cooperation.

Kind regards,
Miriana Giordimaina.

Part 2: Consent Form

Dear Participant,

You are invited to participate in a participatory walk as part of my dissertation titled, *"Shaping a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder",* in part fulfilment of the requirements for the Masters of Architecture (Architectural Design) at the University of Malta.

Adults over the age of 18 with high-functioning autism, will be contacted through groups on the public social media platform facebook and/or contacted through relevant NGOs, to participate in a participatory walk and focus group.

The participatory walk will enable a meaningful input from adults with high-functioning Autism, overcome barriers and allow for an effective translation of experiences whilst walking in a sensorial and socially active environment. The aim of this exercise is to provide a better understanding on the experience of persons within the Autism spectrum within the local public realm.
.

I, the undersigned, give my consent to take part in the study conducted by Miriana Giordimaina. This consent form specifies the terms of my participation in this research study.

2. I have been given written and/or verbal information about the purpose of the study; I have I have had the opportunity to ask questions and any questions that I had were answered fully and to my satisfaction.

18 I understand that I am free to accept to participate, or to refuse or stop participation at any time without giving any reason and without any penalty. Should I choose to participate, I may choose to decline to answer any questions asked.

19 In the event that I choose to withdraw from the study, any data collected from me will be erased as long as this is technically possible (for example, before it is anonymised or published), unless erasure of data would render impossible or seriously impair achievement of the research objectives, in which case it shall be retained in an anonymised form.

20 I understand that recruitment was based on the inclusion criteria for participation (specified in the second and third paragraph of this consent form) and a first-come-first-served basis, namely the first twelve participants who had contacted Miriana Giordimaina.

21 I understand that I have been invited to participate in a participatory walk that will be held in Valletta, where I will walk at my own pace along a predetermined route, noting positive and negative stimuli/factors affecting my experience through photographs and notes. I am aware that a guiding document including the route to follow and a structured form will be provided prior to the exercise, where I will take down my observation notes in English and/or Maltese. A preliminary run of the exercise will be conducted prior to entering Valletta, to accustom myself to the process. The walk should take 1-2 hours. Further, I know that my data will then be presented in English.

22 Choose one from below:

____ I agree to participate in a focus group to discuss the experience of the participatory walk thereafter. This will take up to one hour, and I am aware that I can participate in the conversation in English and/or Maltese. Further, I know that my data will then be presented in English.

____ I agree to participate in an informal interview to discuss the experience of the participatory walk thereafter. This will take up to 15 minutes, and I am aware that I can participate in English and/or Maltese. Further, I know that my data will then be presented in English.

23 I am aware that, by marking the first-tick box below, I am giving consent for this focus group or informal interview exercise to be audio-recorded and converted to text as it has been recorded (transcribed verbatim). **Mark only if and as applicable:**

____ I agree to this focus group or informal interview being audio recorded.
____ I do not agree to this focus group or informal interview being audio recorded.

24 I am aware that the text transcription of the focus group or informal interview will be pseudonymised and any recognisable data will not be included in the dissertation.

25 I understand that there are no direct benefits to me from participating in this study. I understand that this research may benefit persons within the autism spectrum and society in general as it aims to push forward participatory-based design to generate awareness on the effect of the built environment has on people's well-being and experiences within public spaces.

26 I understand that, under the general data protection regulation (GDPR) and national legislation, I have the right to access, rectify and, where applicable, ask for the data concerning me to be erased.

27 I understand that all data collected will be stored in an anonymised form after completion of the study, around September 2024.

28 I have been provided with a copy of the information letter and understand that I will also be given a copy of this consent form.

29 CHOOSE ONE FROM BELOW

____ I am aware that after the focus group or informal interview, Ms Giordimaina will send me my verbatim transcripts for review and that I will have a 15-day window from receipt of transcript to give my feedback. I am aware that, during the focus group or informal interview, I will inform Mr Giordimaina if I prefer that the transcript would be emailed or snail-mailed to me. I am aware that, notwithstanding, I may refuse to review my transcript.
____ I am aware that Ms Giordimaina will not be sending me my verbatim transcript.

30 I am aware that Ms Giordimaina will use a pseudonym instead of my name in the verbatim transcript I will receive, which pseudonym I will have the option to choose myself.

31 I am aware that extracts from the focus group or informal interview may be reproduced in these outputs, either in anonymous form, or using a pseudonym [a made-up name] which I will have the opportunity to choose myself.

32 I am aware that my data will be pseudonymised, i.e., my identity will not be noted on transcripts or notes from the focus group or informal interview, but instead, a pseudonym will be assigned. The pseudonyms that link my data to my identity will be stored securely and separately from the data, in an encrypted file on the researcher's password-protected computer, and only Ms Giordimaina and Dr Mercieca will have access to the data. With regard to the transcripts and recordings, only Ms Giordimaina, Dr Mercieca and, if necessary, the examiners of this study, will have access to this information. Any hard-copy materials will be placed in a locked cabinet/drawer, which only Ms Giordimaina can access. Any material that identifies me as a participant in this study will be stored securely until the dissertation has been completed and submitted, approximately by September 2024, at which point it will be destroyed.

33 I am aware that my identity and personal information will not be revealed in any publications, reports or presentations arising from this research.

I have read and understood the above statements and agree to participate in this study.

Name of participant: _____

Signature: _____

Date: _____

Principal Researcher: Miriana Giordimaina

Email Address: [redacted]

Contact Number: [redacted]

Project Supervisor: Dr Alexia Mercieca

Email Address: [redacted]

9. Guiding Document for Participatory Walk [English Version]

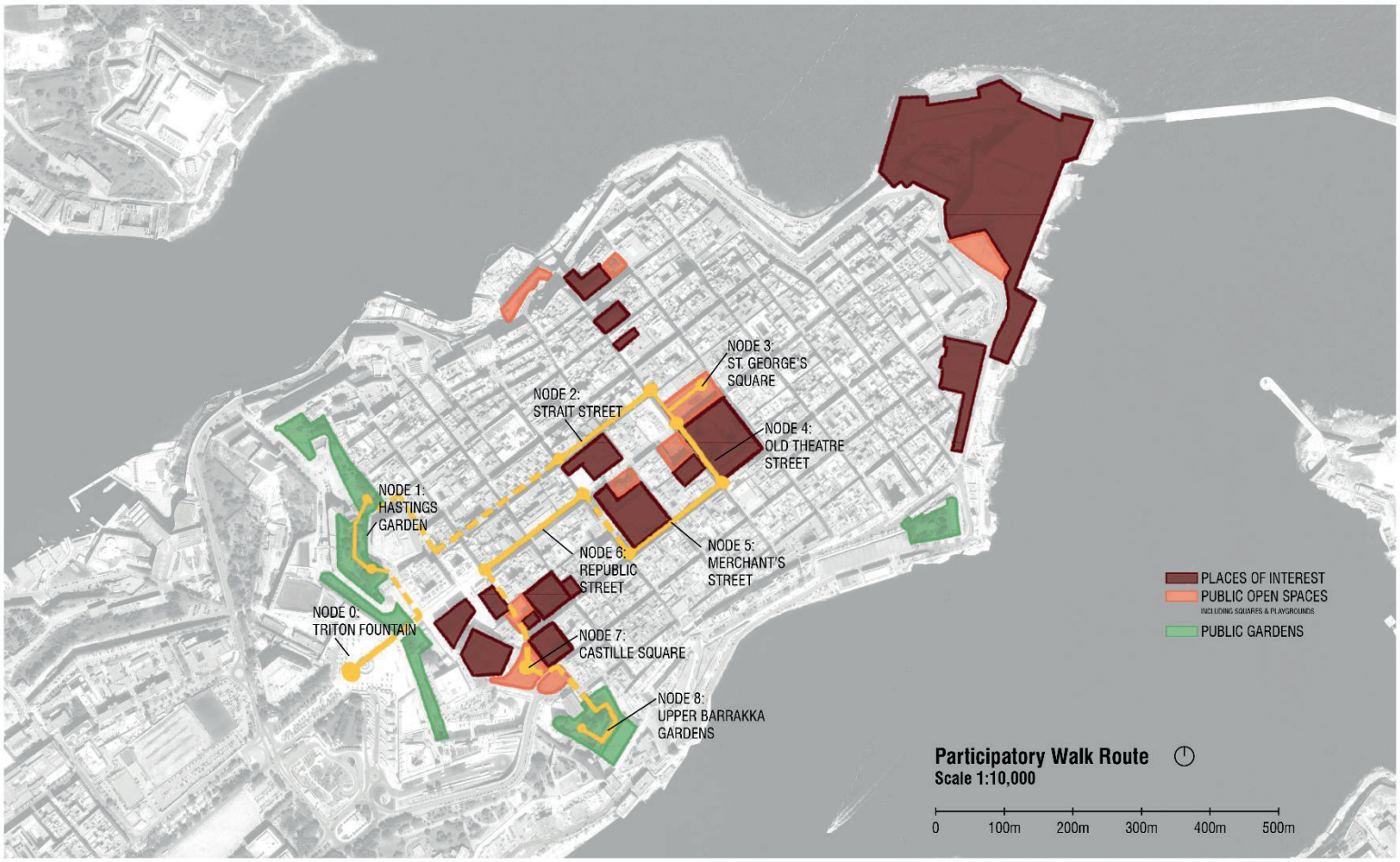
Project Title:

Designing a Socially Inclusive Public Realm based on the Experiences of Persons within the Autistic Spectrum (AS)

Principal Researcher: Miriana Giordimaina

Participatory Walk Tool Set

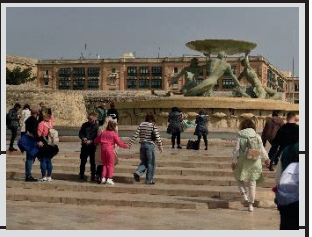
The route to be taken by the participants is outlined based on the results of the online questionnaire. The route passes through eight nodes, that were concluded to be most frequented by participants of the online questionnaire. The numbered and named nodes are illustrated and other places of importance are marked according to the key provided on the right-hand side of the map to aid the participants to navigate the city.



Participants will take note of positive and negative stimuli (left column) and the time they would be comfortable spending for each node. After the walk participants are encouraged to rate each stimulus level and the overall level of comfort of each node. They are required to return the form at the end of the exercise. Participants will be provided with 5 additional pages to fill for the respective nodes if required.

Any images taken to support your observations are to be sent to the researcher within 5 days of the completion of the exercise.

Node 0: Triton Fountain



Positive Stimuli

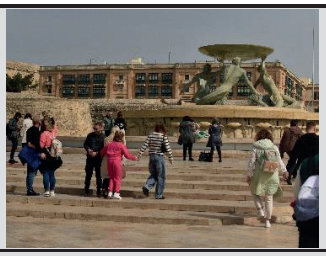
Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

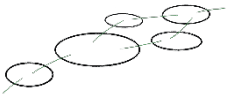
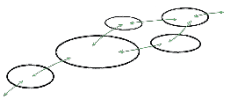
Node 0: Triton Fountain

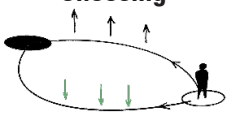


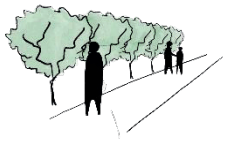
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

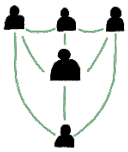
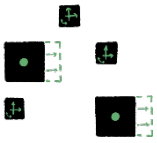
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						

Predictability and Routine	Yes	No					
	Comments						
Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 1: Hastings Garden

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

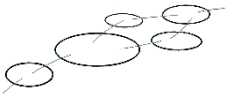
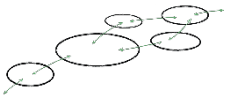
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

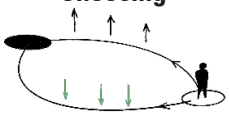
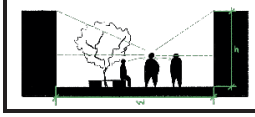
Node 1: Hastings Garden

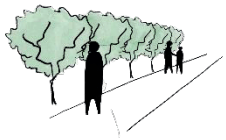
Spatial Criteria: Sensory Stimuli

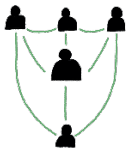
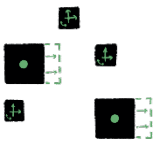
Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Transitory Spaces	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Quiet Spaces	Yes	No	☹	😟	😐	🙂	😀
	Comments						

Spatial Criteria: Legibility

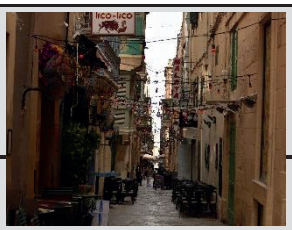
Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Visual Relation 	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Predictability and Routine	Yes	No	☹	😟	😐	🙂	😀

	Comments						
Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics 	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria								
Design Criteria	Applicable		Rating					
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments							
Safety and Security 	Yes	No					
	Comments							
Flexibility and Customizing 	Yes	No					
	Comments							

Node 2: Strait Street



Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

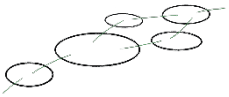
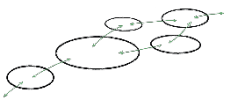
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

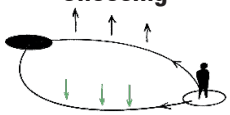
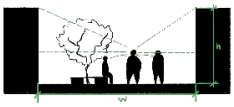
Node 2: Strait Street

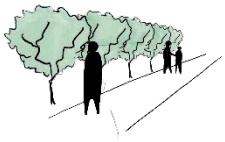
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No	☹	😕	😐	🙂	😀
	Comments						
Transitory Spaces	Yes	No	☹	😕	😐	🙂	😀
	Comments						
Quiet Spaces	Yes	No	☹	😕	😐	🙂	😀
	Comments						

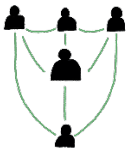
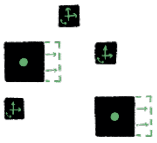
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No	☹	😕	😐	🙂	😀
	Comments						
Visual Relation 	Yes	No	☹	😕	😐	🙂	😀
	Comments						
Predictability and Routine	Yes	No	☹	😕	😐	🙂	😀
	Comments						

Circulation and Possibility of Choosing 	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Proportion and Proxemics 	Yes	No	☹	😟	😐	🙂	😀
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Wayfinding 	Yes	No	☹	😟	😐	🙂	😀
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 3: St. George's Square

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

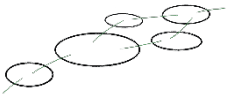
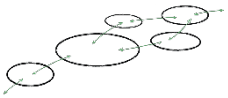
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

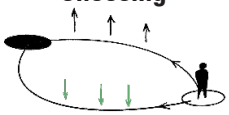
Node 3: St. George's Square

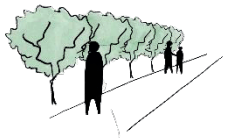
Spatial Criteria: Sensory Stimuli

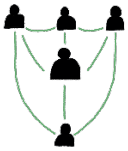
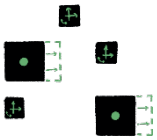
Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					

	Comments						
Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 4: Old Theatre Street

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

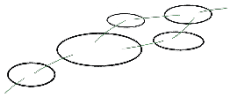
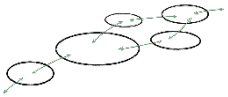
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

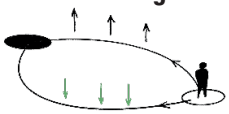
Node 4: Old Theatre Street

Spatial Criteria: Sensory Stimuli

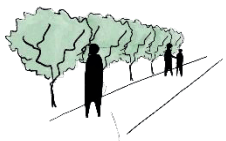
Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

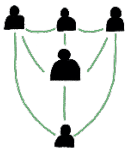
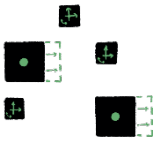
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					
	Comments						

Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria								
Design Criteria	Applicable		Rating					
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments							
Safety and Security 	Yes	No					
	Comments							
Flexibility and Customizing 	Yes	No					
	Comments							

Node 5: Merchant's Street

Positive Stimuli

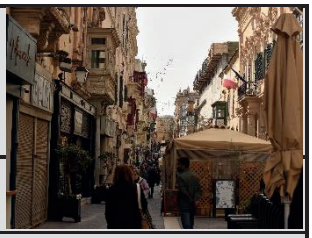
Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

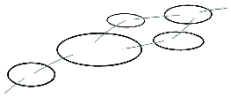
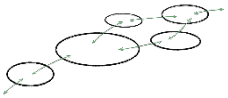
Node 5: Merchant's Street

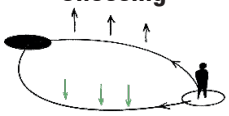
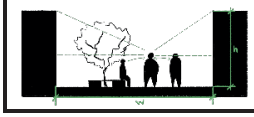


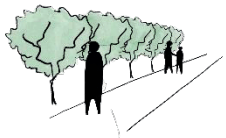
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

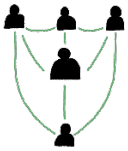
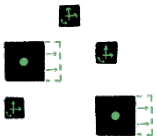
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					
	Comments						

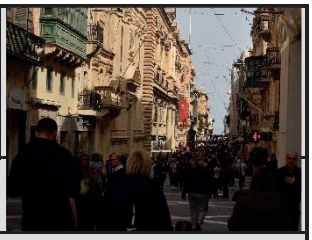
Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics 	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 6: Republic Street



Positive Stimuli

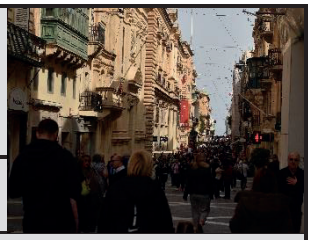
Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

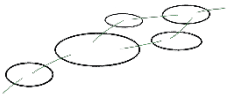
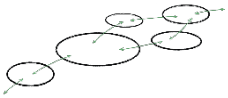
Node 6: Republic Street

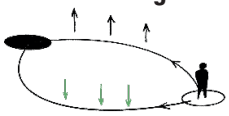
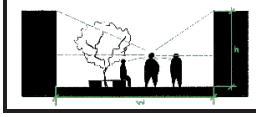


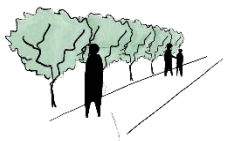
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

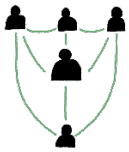
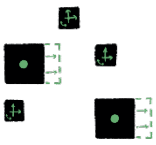
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					
	Comments						

Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics 	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 7: Castille Square

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

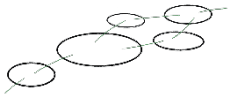
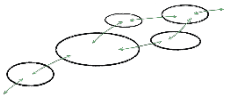
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

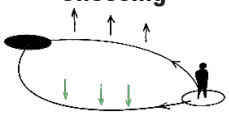
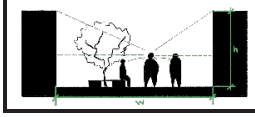
Node 7: Castille Square

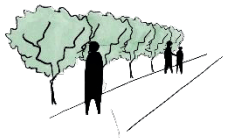
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

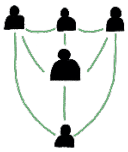
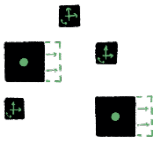
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					
	Comments						

Circulation and Possibility of Choosing 	Yes	No					
	Comments						
Proportion and Proxemics 	Yes	No					
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No					
	Comments						
Wayfinding 	Yes	No					
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node 8: Upper Barrakka Gardens

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

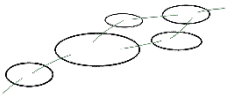
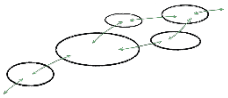
Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

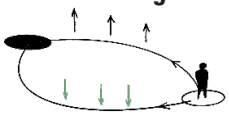
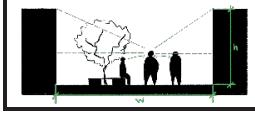
Node 8: Upper Barrakka Gardens

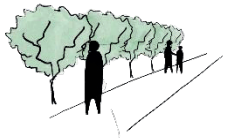
Spatial Criteria: Sensory Stimuli

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Sensory Environment	Yes	No					
	Comments						
Transitory Spaces	Yes	No					
	Comments						
Quiet Spaces	Yes	No					
	Comments						

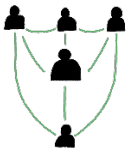
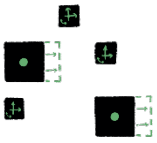
Spatial Criteria: Legibility

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Clear/Simple Spatial Layout 	Yes	No					
	Comments						
Visual Relation 	Yes	No					
	Comments						
Predictability and Routine	Yes	No					
	Comments						

Circulation and Possibility of Choosing 	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Proportion and Proxemics 	Yes	No	☹	😟	😐	🙂	😀
	Comments						

Spatial Criteria: Auxiliary Supports							
Design Criteria	**Applicable**		**Rating**				
			Highly Unpleasant	**Unpleasant**	**Neutral**	**Pleasing**	**Highly Pleasing**
Visual Supports	Yes	No	☹	😟	😐	🙂	😀
	Comments						
Wayfinding 	Yes	No	☹	😟	😐	🙂	😀
	Comments						

General Design Criteria

Design Criteria	Applicable		Rating				
			Highly Unpleasant	Unpleasant	Neutral	Pleasing	Highly Pleasing
Identification of Quiet and Accessible Locations	Yes	No					
	Comments						
Safety and Security 	Yes	No					
	Comments						
Flexibility and Customizing 	Yes	No					
	Comments						

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

Node :	

Positive Stimuli

Type of Positive Stimuli & Appealing Elements (Optional: Reason & emotion induced)	Level of Positive Stimuli		
	Slightly Pleasing	Pleasing	Highly Pleasing

Negative Stimuli

Type of Negative Stimuli & Repelling Elements (Optional: Reason & emotion induced)	Level of Negative Stimuli		
	Slightly Unpleasant	Unpleasant	Highly Unpleasant

Overall Level of Comfort					
How much time do feel comfortably spending in the space?	Up to 30sec.	Up to 1min.	Up to 5min.	Up to 20 min.	More than 20 min.

10.Blank Online Questionnaire [English Version]

Online Questionnaire - Uncovering Experiences of People within the Autism Spectrum in Local Public Spaces, Specifically in Valletta

I am Miriana Giordimaina. I am currently reading for a Master of Architecture (Architectural Design) at the University of Malta. As part of my course requirements, I am conducting a research study entitled, Designing a Socially Inclusive Public Realm based on the Experiences of People with Autism Spectrum Disorder.

The aim of this study is to identify factors that make up local public spaces that influence the level of comfort for people with autism through a people-centred approach.

This online questionnaire is open to adults (above 18 years of age) within the autism spectrum or caregivers of people within the autism spectrum. It should take up to 10 minutes. The compiled data will serve as a guideline to propose solutions to morph these sites into comfortable, nurturing and enabling places for all.

Thank you for taking the time to participate in this online questionnaire.

* Indicates required question

A. Demographics

1. How old are you? *

Mark only one oval.

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65 or older

2. Mark to which gender you identify. *

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Other Gender
- ◯ Prefer not to say

3. What is your employment status? *

Mark only one oval.

- ◯ Unemployed *Skip to question 5*
- ◯ Part-time *Skip to question 4*
- ◯ Full-time *Skip to question 4*
- ◯ Student *Skip to question 4*
- ◯ Prefer not to say *Skip to question 5*
- ◯ Other: _____

A. Demographics

4. Where is your place of employment/ academic institution? *

(the location of your place of employment/ academia is gathered to be compared with the location and frequency of use of public spaces provided in the following sections)

_____

A. Demographics

5. Where is your place of residence? *

(the location of your place of residence is gathered to be compared with the location and frequency of use of public spaces provided in the following sections)

_____

6. Please tick which applies. *

Mark only one oval.

- ◯ I am an adult (above 18 years of age) who is within the autism spectrum *Skip to question 7*
- ◯ I am a caregiver of a person who is within the autism spectrum *Skip to question 11*

B.1 Experiences in Local Public Spaces

7. How many times did you visit local public spaces in the last year? *

(including places of interest, public squares, playgrounds, gardens)

Mark only one oval.

- ◯ Once
- ◯ 2-5 times
- ◯ 5-11 times
- ◯ Once a month
- ◯ 2-5 times a month
- ◯ Once every week
- ◯ 2-5 times a week
- ◯ Everyday

8. Which is your favourite public place? *

_____

9. Why is it your favourite public place?

(considering physical / accessibility / safety / social / sensorial / emotional aspects / views / activities / vicinity to primary residence)

_____

_____

_____

_____

_____

10. How comfortable do you feel in the local public place specified in the previous question? *

Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Level of Comfort	◯	◯	◯	◯	◯

Skip to question 15

B.2 Experiences in Local Public Spaces

11. How many times did you visit local public spaces in the last year with the person with ASD you support? *

(including places of interest, public squares, playgrounds, gardens)

Mark only one oval.

- ◯ Once
- ◯ 2-5 times
- ◯ 5-11 times
- ◯ Once a month
- ◯ 2-5 times a month
- ◯ Once every week
- ◯ 2-5 times a week
- ◯ Everyday

12. Which public place do you enjoy visiting together the most? *

_____

13. Why is it your favourite public place?

(considering physical / accessibility / safety / social / sensorial / emotional aspects / views / activities / vicinity to primary residence)

_____

_____

_____

_____

_____

14. How comfortable do you both feel in the local public place specified in the previous question? *

Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Level of Comfort	◯	◯	◯	◯	◯

Skip to question 18

C.1 (i) Experiences in Public Spaces in Valletta

15. How many times did you visit Valletta last year? *

Mark only one oval.

- ◯ Never *Skip to question 75*
- ◯ Once
- ◯ 2-5 times
- ◯ 5-11 times
- ◯ Once a month
- ◯ 2-5 times a month
- ◯ Once every week
- ◯ 2-5 times a week
- ◯ Everyday

C.1 (i) Experiences in Public Spaces in Valletta

16. What means of transport did you use to get to Valletta? *

(multiple choice, can choose more than one)

Tick all that apply.

- ☐ Car
- ☐ Bus
- ☐ Ferry
- ☐ Bicycle
- ☐ Scooter
- ☐ On foot
- ☐ Other: _____

17. At what time did you visit Valletta? *

(multiple choice, can choose more than one)

Tick all that apply.

- ☐ Morning
- ☐ Midday
- ☐ Afternoon
- ☐ Evening
- ☐ Nightime

Skip to question 21

C.2 (i) Experiences in Public Spaces in Valletta

18. How many times did you visit Valletta together last year? *

Mark only one oval.

- ◯ Never *Skip to question 77*
- ◯ Once
- ◯ 2-5 times
- ◯ 5-11 times
- ◯ Once a month
- ◯ 2-5 times a month
- ◯ Once every week
- ◯ 2-5 times a week
- ◯ Everyday

C.2 (i) Experiences in Public Spaces in Valletta

19. What means of transport did you use to get to Valletta? *

(multiple choice, can choose more than one)

Tick all that apply.

- ☐ Car
- ☐ Bus
- ☐ Ferry
- ☐ Bicycle
- ☐ Scooter
- ☐ On foot
- ☐ Other: _____

20. At what time did you both visit Valletta? *

(multiple choice, can choose more than one)

Tick all that apply.

- ☐ Morning
- ☐ Midday
- ☐ Afternoon
- ☐ Evening
- ☐ Nightime

Skip to question 26

C.1 (ii) Experiences in Public Spaces in Valletta: Places of Interest

21. Did you visit any place/s of interest? (Example. St John's Co-Cathedral, … MUZA, other museums) *

Mark only one oval.

- Yes *Skip to question 22*
- No *Skip to question 31*

Skip to question 22

C.1 (ii) Experiences in Public Spaces in Valletta: Places of Interest

22. Which place/s of interest did you visit the most? *

Tick all that apply.

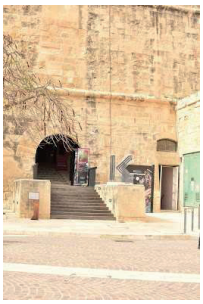
☐ St. John's Co-Cathedral

☐ Grandmaster's Palace (Palace State Rooms and Armoury)

☐ National Museum of Archaeology

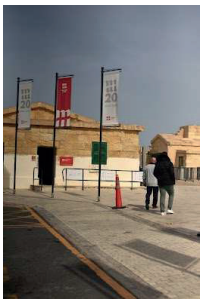
☐ The Manoel Theatre

☐ National Library

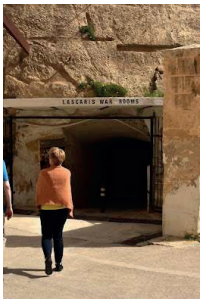


☐ St. James Cavalier - Spazju Kreattiv

☐ La Sacra Infermeria - Mediterranean Conference Centre



☐ Fort St. Elmo and National War Museum



- [ ] Valletta Design Cluster
- [ ] Lascaris War Rooms
- [ ] Other: _____

23. How comfortable do you feel in the place/s of interest you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
St. John's Co-Cathedral	◯	◯	◯	◯	◯
Grandmaster's Palace (Palace State Rooms and Armoury)	◯	◯	◯	◯	◯
National Museum of Archaeology	◯	◯	◯	◯	◯
The Manoel Theatre	◯	◯	◯	◯	◯
National Library	◯	◯	◯	◯	◯
St. James Cavalier – Spazju Kreattiv	◯	◯	◯	◯	◯
La Sacra Infermeria – Mediterranean Conference Centre	◯	◯	◯	◯	◯
Fort St. Elmo and National War Museum	◯	◯	◯	◯	◯
Valletta Design Cluster	◯	◯	◯	◯	◯
Lascaris War Rooms	◯	◯	◯	◯	◯
Added Place of Interest 1	◯	◯	◯	◯	◯
Added Place of Interest 2	◯	◯	◯	◯	◯

24. Why did you visit the place/s of interest specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related
St. John's Co-Cathedral					
Grandmaster's Palace (Palace State Rooms and Armoury)					
National Museum of Archaeology					
The Manoel Theatre					
National Library					
St. James Cavalier – Spazju Kreattiv					
La Sacra Infermeria – Mediterranean Conference Centre					
Fort St. Elmo and National War Museum					
Valletta Design Cluster					
Lascaris War Rooms					
Added Place of Interest 1					
Added Place of Interest 2					

25. Feel free to add any comments on your positive/negative experience in the place/s of interest you visited.

_____

_____

_____

_____

_____

Skip to question 31

C.2 (ii) Experiences in Public Spaces in Valletta: Places of Interest

26. Did you visit any place/s of interest together? (Example. St John's Co-Cathedral, … MUZA, other museums) *

Mark only one oval.

- ◯ Yes *Skip to question 27*
- ◯ No *Skip to question 36*

C.2 (ii) Experiences in Public Spaces in Valletta: Places of Interest

27. Which place/s of interest did you visit the most together? *

Tick all that apply.

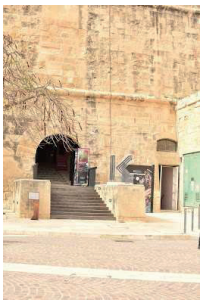
☐ St. John's Co-Cathedral

☐ Grandmaster's Palace (Palace State Rooms and Armoury)

☐ National Museum of Archaeology

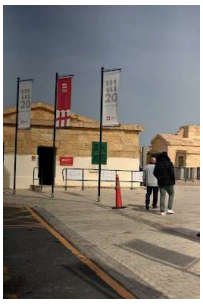
☐ The Manoel Theatre

☐ National Library

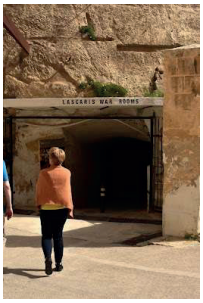


☐ St. James Cavalier - Spazju Kreattiv

☐ La Sacra Infermeria - Mediterranean Conference Centre



☐ Fort St. Elmo and National War Museum



- [ ] Valletta Design Cluster
- [ ] Lascaris War Rooms
- [ ] Other: _____

28. How comfortable do you feel in the place/s of interest you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
St. John's Co-Cathedral	◯	◯	◯	◯	◯
Grandmaster's Palace (Palace State Rooms and Armoury)	◯	◯	◯	◯	◯
National Museum of Archaeology	◯	◯	◯	◯	◯
The Manoel Theatre	◯	◯	◯	◯	◯
National Library	◯	◯	◯	◯	◯
St. James Cavalier – Spazju Kreattiv	◯	◯	◯	◯	◯
La Sacra Infermeria – Mediterranean Conference Centre	◯	◯	◯	◯	◯
Fort St. Elmo and National War Museum	◯	◯	◯	◯	◯
Valletta Design Cluster	◯	◯	◯	◯	◯
Lascaris War Rooms	◯	◯	◯	◯	◯
Added Place of Interest 1	◯	◯	◯	◯	◯
Added Place of Interest 2	◯	◯	◯	◯	◯

29. Why did you visit the place/s of interest specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related
St. John's Co-Cathedral					
Grandmaster's Palace (Palace State Rooms and Armoury)					
National Museum of Archaeology					
The Manoel Theatre					
National Library					
St. James Cavalier – Spazju Kreattiv					
La Sacra Infermeria – Mediterranean Conference Centre					
Fort St. Elmo and National War Museum					
Valletta Design Cluster					
Lascaris War Rooms					
Added Place of Interest 1					
Added Place of Interest 2					

30. Feel free to add any comments on your positive/negative experience in the place/s of interest you visited.

_____

_____

_____

_____

_____

Skip to question 36

C.1 (iii) Experiences in Public Spaces in Valletta: Public Squares

31. Did you visit any public squares? *

Mark only one oval.

- ◯ Yes *Skip to question 32*
- ◯ No *Skip to question 41*

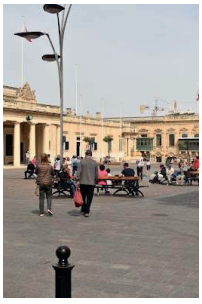
C.1 (iii) Experiences in Public Spaces in Valletta: Public Squares

32. Which public squares did you visit the most? *

Tick all that apply.

☐ Republic Square (Piazza Regina)

☐ Castile Place (Pjazza Kastilja)



☐ St. George's Square (Misraħ San Ġorġ)

☐ St. John's Square (Misraħ San Ġwann)

☐ Other: _____

33. How comfortable did you feel in the public squares you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Republic Square (Piazza Regina)	⬭	⬭	⬭	⬭	⬭
Castile Place (Pjazza Kastilja)	⬭	⬭	⬭	⬭	⬭
St. George's Square (Misraħ San Ġorġ)	⬭	⬭	⬭	⬭	⬭
St. John's Square (Misraħ San Ġwann)	⬭	⬭	⬭	⬭	⬭
Added Public Square 1	⬭	⬭	⬭	⬭	⬭
Added Public Square 2	⬭	⬭	⬭	⬭	⬭

34. Why did you visit the public square specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Republic Square (Piazza Regina)	◯	◯	◯	◯	◯	◯
Castile Place (Pjazza Kastilja)	◯	◯	◯	◯	◯	◯
St. George's Square (Misraħ San Ġorġ)	◯	◯	◯	◯	◯	◯
St. John's Square (Misraħ San Ġwann)	◯	◯	◯	◯	◯	◯
Added Public Square 1	◯	◯	◯	◯	◯	◯
Added Public Square 2	◯	◯	◯	◯	◯	◯

35. Feel free to add any comments on your positive/negative experience in the public square you visited.

Skip to question 41

C.2 (iii) Experiences in Public Spaces in Valletta: Public Squares

36. Did you visit any public squares together? *

Mark only one oval.

- ◯ Yes *Skip to question 37*
- ◯ No *Skip to question 46*

C.2 (iii) Experiences in Public Spaces in Valletta: Public Squares

37. Which public squares did you visit the most together? *

Tick all that apply.

☐ Republic Square (Piazza Regina)

☐ Castile Place (Pjazza Kastilja)

☐ St. George's Square (Misraħ San Ġorġ)

☐ St. John's Square (Misraħ San Ġwann)

☐ Other: _____

38. How comfortable did you feel in the public squares you visited together?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Republic Square (Piazza Regina)	⬭	⬭	⬭	⬭	⬭
Castile Place (Pjazza Kastilja)	⬭	⬭	⬭	⬭	⬭
St. George's Square (Misraħ San Ġorġ)	⬭	⬭	⬭	⬭	⬭
St. John's Square (Misraħ San Ġwann)	⬭	⬭	⬭	⬭	⬭
Added Public Square 1	⬭	⬭	⬭	⬭	⬭
Added Public Square 2	⬭	⬭	⬭	⬭	⬭

39. Why did you visit the public square specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Republic Square (Piazza Regina)	◯	◯	◯	◯	◯	◯
Castile Place (Pjazza Kastilja)	◯	◯	◯	◯	◯	◯
St. George's Square (Misraħ San Ġorġ)	◯	◯	◯	◯	◯	◯
St. John's Square (Misraħ San Ġwann)	◯	◯	◯	◯	◯	◯
Added Public Square 1	◯	◯	◯	◯	◯	◯
Added Public Square 2	◯	◯	◯	◯	◯	◯

40. Feel free to add any comments on your positive/negative experience in the public square you visited together.

Skip to question 46

C.1 (iv) Experiences in Public Spaces in Valletta: Playgrounds

41. Did you visit any playgrounds? *

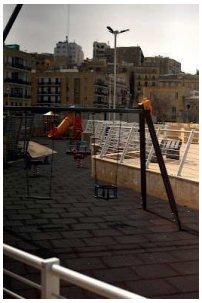
Mark only one oval.

- ◯ Yes *Skip to question 42*
- ◯ No *Skip to question 51*

C.1 (iv) Experiences in Public Spaces in Valletta: Playgrounds

42. Which playgrounds did you visit the most? *

Tick all that apply.



☐ Peacock Gardens (Mandraġġ Playground)

☐ Other: _____

43. How comfortable did you feel in the playground/s you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Peacock Gardens (Mandraġġ Playground)	◯	◯	◯	◯	◯
Added Playground 1	◯	◯	◯	◯	◯

44. Why did you visit the playground specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Peacock Gardens (Mandraġġ Playground)	◯	◯	◯	◯	◯	◯
Added Playground 1	◯	◯	◯	◯	◯	◯

45. Feel free to add any comments on your positive/negative experience in the playground you visited.

Skip to question 51

C.2 (iv) Experiences in Public Spaces in Valletta: Playgrounds

46. Did you visit any playgrounds together? *

Mark only one oval.

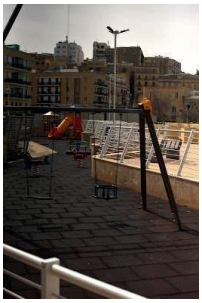
◯ Yes *Skip to question 47*

◯ No *Skip to question 56*

C.2 (iv) Experiences in Public Spaces in Valletta: Playgrounds

47. Which playgrounds did you visit the most? *

Tick all that apply.



☐ Peacock Gargens (Mandraġġ Playground)

☐ Other: _____

48. How comfortable did you both feel in the playground/s you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Peacock Gardens (Mandraġġ Playground)	⬭	⬭	⬭	⬭	⬭
Added Playground 1	⬭	⬭	⬭	⬭	⬭

49. Why did you visit the playground specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Peacock Gargens (Mandraġġ Playground)	◯	◯	◯	◯	◯	◯
Added Playground 1	◯	◯	◯	◯	◯	◯

50. Feel free to add any comments on your positive/negative experience in the playground you visited together.

Skip to question 56

C.1 (v) Experiences in Public Spaces in Valletta: Gardens

51. Did you visit any gardens? *

Mark only one oval.

◯ Yes *Skip to question 52*

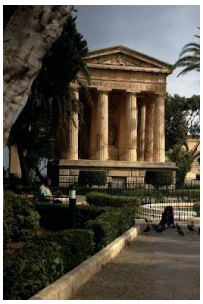
◯ No *Skip to question 61*

C.1 (v) Experiences in Public Spaces in Valletta: Gardens

52. Which gardens did you visit the most? *

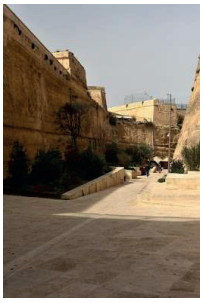
Tick all that apply.

☐ Upper Barrakka Gardens



☐ Lower Barrakka Gardens

☐ Hastings Garden



☐ Laparelli Garden

☐ Other: _____

53. How comfortable did you feel in the garden/s you visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Upper Barrakka Gardens	◯	◯	◯	◯	◯
Lower Barrakka Gardens	◯	◯	◯	◯	◯
Hastings Garden	◯	◯	◯	◯	◯
Laparelli Garden	◯	◯	◯	◯	◯
Added Garden 1	◯	◯	◯	◯	◯
Added Garden 2	◯	◯	◯	◯	◯

54. Why did you visit the garden/s specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Upper Barrakka Gardens	◯	◯	◯	◯	◯	◯
Lower Barrakka Gardens	◯	◯	◯	◯	◯	◯
Hastings Garden	◯	◯	◯	◯	◯	◯
Laparelli Garden	◯	◯	◯	◯	◯	◯
Added Garden 1	◯	◯	◯	◯	◯	◯
Added Garden 2	◯	◯	◯	◯	◯	◯

55. Feel free to add any comments on your positive/negative experience in the garden/s you visited.

_____

_____

_____

_____

_____

Skip to question 61

C.2 (v) Experiences in Public Spaces in Valletta: Gardens

56. Did you visit any gardens together? *

Mark only one oval.

◯ Yes *Skip to question 57*

◯ No *Skip to question 65*

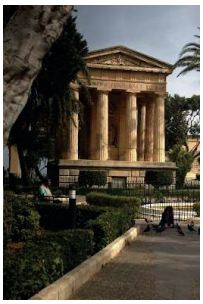
Skip to question 57

C.2 (v) Experiences in Public Spaces in Valletta: Gardens

57. Which gardens did you visit the most together? *

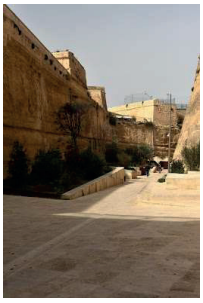
Tick all that apply.

☐ Upper Barrakka Gardens



☐ Lower Barrakka Gardens

☐ Hastings Garden



☐ Laparelli Garden

☐ Other: _____

58. How comfortable did you feel in the garden/s you both visited?

Please only mark the places you have visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Upper Barrakka Gardens	◯	◯	◯	◯	◯
Lower Barrakka Gardens	◯	◯	◯	◯	◯
Hastings Garden	◯	◯	◯	◯	◯
Laparelli Garden	◯	◯	◯	◯	◯
Added Garden 1	◯	◯	◯	◯	◯
Added Garden 2	◯	◯	◯	◯	◯

59. Why did you visit the garden/s specified in the previous question?

Please only mark the places you have visited and ignore the others.

Mark only one oval per row.

	Leisure	Educational	Social	Relaxation	Work/academic related	Passed through to go to another place
Upper Barrakka Gardens	◯	◯	◯	◯	◯	◯
Lower Barrakka Gardens	◯	◯	◯	◯	◯	◯
Hastings Garden	◯	◯	◯	◯	◯	◯
Laparelli Garden	◯	◯	◯	◯	◯	◯
Added Garden 1	◯	◯	◯	◯	◯	◯
Added Garden 2	◯	◯	◯	◯	◯	◯

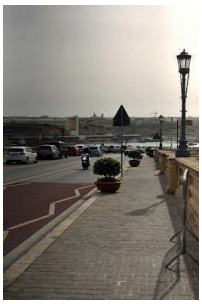
60. Feel free to add any comments on your positive/negative experience in the garden/s you visited together.

Skip to question 65

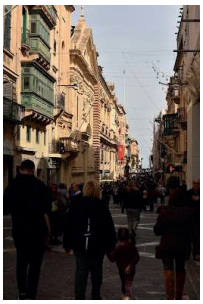
C.1 (vi) Experiences in Public Spaces in Valletta: Streetscapes

61. Which streets do you prefer to pass through? *

Tick all that apply.



☐ Girolamo Cassar Street

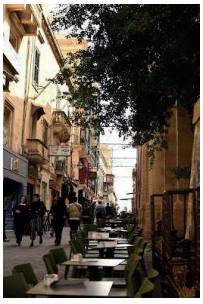


☐ Republic Street

☐ Merchant's Street

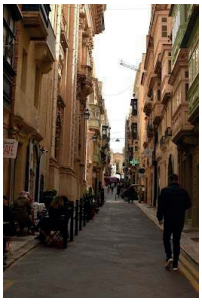
☐ St. Zachary Street

☐ Strait Street



☐ St. Lucy's Street

☐ Other: _____



☐ Old Theatre Street

62. How comfortable did you feel in the streets specified above?

Please only mark the streets you prefer to visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Girolamo Cassar Street	◯	◯	◯	◯	◯
Republic Street	◯	◯	◯	◯	◯
Merchant's Street	◯	◯	◯	◯	◯
St. Zachary Street	◯	◯	◯	◯	◯
Strait Street	◯	◯	◯	◯	◯
St. Lucy's Street	◯	◯	◯	◯	◯
Old Theatre Street	◯	◯	◯	◯	◯
Added Street 1	◯	◯	◯	◯	◯
Added Street 2	◯	◯	◯	◯	◯

63. Why do you prefer to pass through the street/s specified in the previous question?

(considering physical / accessibility / safety / social / sensorial / emotional aspects of the streetscape specified in the previous question)

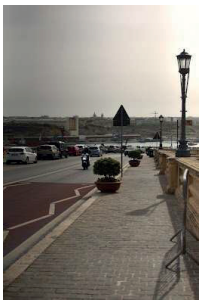
64. Feel free to add any comments on your positive/negative experience in any of the street/s you visited in Valletta.

Skip to question 69

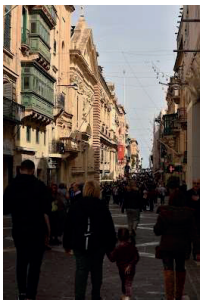
C.2 (vi) Experiences in Public Spaces in Valletta: Streetscapes

65. Which streets do you prefer to pass through together? *

Tick all that apply.



☐ Girolamo Cassar Street

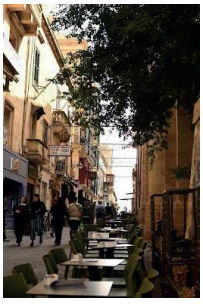


☐ Republic Street

☐ Merchant's Street

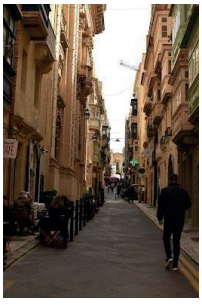
☐ St. Zachary Street

☐ Strait Street



☐ St. Lucy's Street

☐ Other: _____



☐ Old Theatre Street

66. How comfortable did you feel in the streets specified above?

Please only mark the streets you prefer to visited and ignore the others. Comfort is defined as a pleasant feeling of being relaxed and free from pain. (Cambridge Dictionary)

Mark only one oval per row.

	Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
Girolamo Cassar Street	◯	◯	◯	◯	◯
Republic Street	◯	◯	◯	◯	◯
Merchant's Street	◯	◯	◯	◯	◯
St. Zachary Street	◯	◯	◯	◯	◯
Strait Street	◯	◯	◯	◯	◯
St. Lucy's Street	◯	◯	◯	◯	◯
Old Theatre Street	◯	◯	◯	◯	◯
Added Street 1	◯	◯	◯	◯	◯
Added Street 2	◯	◯	◯	◯	◯

67. Why do you prefer to pass through the streets specified in the previous question?

(considering physical / accessibility / safety / social / sensorial / emotional aspects of the streetscape specified in the previous question)

68. Feel free to add any comments on your positive/negative experience in any of the street/s you visited together in Valletta.

Skip to question 72

C.1 (vii) Other reasons for visiting Valletta

69. Have you ever visited Valletta for other reasons than those discussed in the previous sections?

(This may include shopping, visiting eating and drinking establishments, meeting with friends and going to events)

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to question 75*

C.1 (vii) Other reasons for visiting Valletta

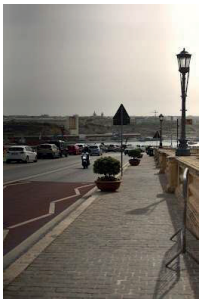
70. Select activities that apply

Tick all that apply.

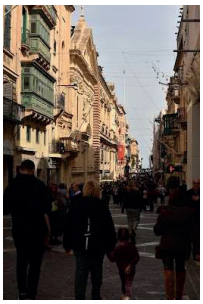
- ☐ Shopping
- ☐ Drinking and Dining
- ☐ Meeting Friends
- ☐ Attending Event/s

71. Please specify the location of the activity *

Tick all that apply.



☐ Girolamo Cassar Street

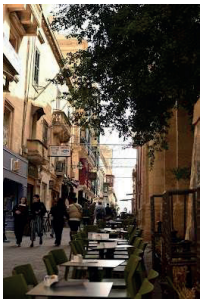


☐ Republic Street

☐ Merchant's Street

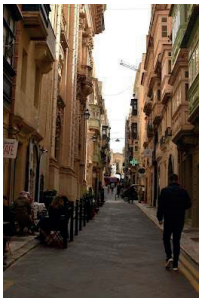
☐ St. Zachary Street

☐ Strait Street



☐ St. Lucy's Street

☐ Other: _____



☐ Old Theatre Street

Skip to question 75

C.2 (vii) Other reasons for visiting Valletta together

72. Have you ever visited Valletta together for other reasons than those discussed in the previous sections?

(This may include shopping, visiting eating and drinking establishments, meeting with friends and going to events)

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to question 77*

C.2 (vii) Other reasons for visiting Valletta together

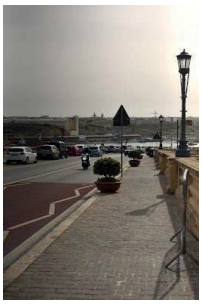
73. Select activities that apply

Tick all that apply.

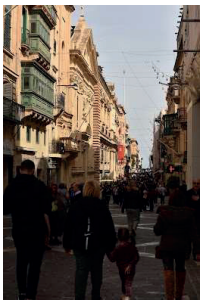
- ☐ Shopping
- ☐ Drinking and Dining
- ☐ Meeting Friends
- ☐ Attending Event/s

74. Please specify the location of the activity *

Tick all that apply.



☐ Girolamo Cassar Street

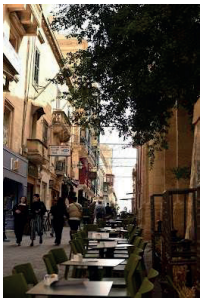


☐ Republic Street

☐ Merchant's Street

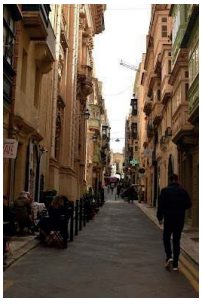
☐ St. Zachary Street

☐ Strait Street



☐ St. Lucy's Street

☐ Other: _____



☐ Old Theatre Street

Skip to question 77

D.1 Participatory Walk & Focus Group

The data collected in
this online survey will be analysed and the best fit route will be plotted to be taken during a participatory walk to simulate a common visit in the locality. Participation is open to adults over 18 years of age with high-functioning
Autism, who will not be recognisable in the dissertation by adopting a pseudonym.

The exercise will be held in Valletta along a plotted route, noting positive and negative
stimuli/factors affecting their experience through photographs and notes. The walk should take 1-2 hours. Results will be discussed in a focus group or informal interview.

75. Are you an adult (above 18 years of age) with high-functioning ASD, interested in participating in the participatory walk & the focus group/ informal interview? *

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to section 37 (E. Thank you for providing your feedback.)*
- ◯ Maybe

D.1 Participatory Walk & Focus Group

76. Please provide a contact email address or social media account below, where I can contact you to provide further information on the participatory walk and the focus group session/ informal interview. *

_____

Skip to section 37 (E. Thank you for providing your feedback.)

D.2 Participatory Walk & Focus Group

The data collected in this online survey will be analysed and the best fit route will be plotted to be taken during a participatory walk to simulate a common visit in the locality. Participation is open to adults over 18 years of age with high-functioning Autism, who will not be recognisable in the dissertation by adopting a pseudonym.

The exercise will be held in Valletta along a plotted route, noting positive and negative stimuli/factors affecting their experience through photographs and notes. The walk should take 1-2 hours. Results will be discussed in a focus group or informal interview.

77. Do you know an adult (above 18 years of age) with high-functioning ASD, interested in participating in the participatory walk & the focus group/ informal interview? *

Mark only one oval.

- ◯ Yes
- ◯ No *Skip to section 37 (E. Thank you for providing your feedback.)*
- ◯ Maybe

D.2 Participatory Walk & Focus Group

78. Please provide a contact email address or social media account below, where I can contact you to provide further information on the participatory walk and the focus group session/ informal interview. *

E. Thank you for providing your feedback.

For more information on the dissertation feel free to contact me on [redacted]

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