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Designing inclusive public spaces: addressing agoraphobia and safety-seeking behaviour through urban design

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ABSTRACT

This research suggests that thoughtful urban design aligning the spatial environment with a human scale can foster a sense of psychological connection and safety for those experiencing 'safety-seeking-avoidance-behaviour', a condition clinically recognised as agoraphobia. It recommends prioritising key spatial themes such as optimising a sense of enclosure, selecting natural and man-made elements, incorporating multiple lines of sight, enhancing activities and seating options, and managing occupancy to promote accessibility and inclusivity. In essence, the paper argues that agoraphobia should be a tangible consideration in urban design to create environments that feel more intimate, accessible, and conducive to human interaction, as opposed to large, impersonal, or overwhelming spaces.

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Safety-seeking avoidance behaviour; agoraphobia; human-scale design; enclosure and boundaries; accessibility, inclusivity and effective crowd management

Introduction

Although often described as a fear of open spaces, agoraphobia is clinically defined as marked anxiety about being in places or situations where escape might be difficult or help unavailable in the event of panic-like or other incapacitating symptoms (Vidler 2002). Agoraphobes tend to avoid situations where they feel trapped, helpless, panicked, or embarrassed. Often, this leads to 'avoidance behaviour', where people avoid places or situations that might trigger panic (Star 2022). Thus, Agoraphobia is often defined as 'safety-seeking-avoidance-behaviour' carried out in specific situations to prevent feared or threatening outcomes (Salkovskis 1991).

Agoraphobia can be experienced on a spectrum of severity, ranging from minor everyday spatial discomfort to being permanently housebound, which is considered a clinical disorder (Bankey 2004). Since the COVID-19 pandemic lockdowns, there have been indications of a rise in agoraphobia cases and increasing severity in those already diagnosed (Bell 2020). The growing prevalence combined with significant relapse rates suggest a need for non-clinical solutions. This is where urban design can play a crucial role in minimising spatial agoraphobic concerns through inclusive design. By creating environments that are more accommodating and less intimidating for individuals with agoraphobia, urban design can provide practical and sustainable solutions to help them gradually reintegrate into public spaces, improving their overall well-being. Although the relationship between urban design and agoraphobia is not thoroughly understood (Tulumello 2017), many studies highlight how emotions such as fear have been overlooked in urban design and stress the importance of investigating this aspect for creating inclusive public spaces (Tulumello 2015).

The COVID-19 pandemic has fundamentally altered how people engage with public spaces, prompting cities like London to implement lasting changes in urban design (Honey-Rosés *et al.* 2021). This shift presents a timely opportunity to re-examine the relationship between individuals and their spatial environments, particularly in light of a notable gap in agoraphobia research: the limited consideration of spatial factors influencing feelings of safety and discomfort. Traditionally studied through clinical and psychological lenses, agoraphobia's interaction with the built environment remains underexplored. Motivated by this gap, the present study seeks to identify features in public spaces that trigger agoraphobic 'safety-seeking-avoidance behaviour' in the general population and to investigate how such insights can inform urban design and placemaking.

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By emphasising spatial configuration as a critical element shaping agoraphobic responses, this research extends beyond medical definitions to propose strategies that foster more inclusive, accessible, and psychologically supportive public spaces, addressing broader social concerns such as gendered geographies, isolation, and inclusivity. This spatial focus forms the core issue guiding the inquiry.

The main objectives of the study can be summarised as follows:

- Analyse how agoraphobia manifests in the contemporary built environment by identifying broad spatial concerns and environmental triggers and consider their implications for architectural theory and spatial practice.
- Examine general patterns of physical and emotional interaction with public spaces, assessing how these everyday experiences shape perceptions of safety, comfort, and inclusion within the wider context of placemaking and urban design.
- Investigate specific spatial features that may be perceived as threatening or uncomfortable and evaluate how such elements contribute to safety-seeking or avoidance behaviours commonly linked to agoraphobic responses.

To meet the objectives, the study asks the following research questions:

- What are the features of urban squares/public spaces that impact user behaviour and movements?
- What features of a public space trigger safety-seeking behaviour, potentially prompting agoraphobic avoidance behaviour, and how relevant are they to urban design?
- How can the human response to the spaces be effectively incorporated into public space design and placemaking?

Agoraphobia and its spatial connections

Most theories so far suggest that agoraphobia is a defence mechanism to a perceived threat, be it external or within. This concept is further developed in the 1800s by William James through his hereditary theory, which links agoraphobia to the primal fear of open spaces observed in animals. He suggests that this survival instinct, inherited by humans, is triggered when a threat is perceived (Cited in Vidler 2002). James questioned whether agoraphobia was once a permanent condition in human ancestors as a form of survival instincts against danger from an attack or a predator. He noted that evolution may have led to a reduced frequency of fear-inducing situations, decreasing the prevalence of the condition in the modern world (Capps 2012).

Although this perspective suggests a decline in agoraphobia over time, the condition emerged during the rapid expansion of major European cities in the late 19th century, prompting numerous theories declaring the transformation of the traditional city into the 'metropolis' as its main cause (Ghazal and Hinton 2016). This radical change triggered dramatic reactions, increasing nostalgia of the past and a desire to return to traditional settings (Ellin *et al.* 2001). Subsequently, several anxiety disorders were discovered, agoraphobia being the most all-consuming one (Vidler 2002). However, while agoraphobia has been linked to the transformation of the modern city, there remains limited research on how specific spatial and architectural features contribute to its development or intensification.

In 1871, psychiatrist Carl Otto Westphal introduced the term 'agoraphobia' in his document 'Die Agoraphobie' (Kuch and Swinson 1992). Originally meaning 'fear of marketplace', Westphal redefined it as a general 'fear of spaces' (Holmes 2006). The document described agoraphobes who experienced severe anxiety symptoms such as heat sensations and trembling while walking in open spaces or across town squares (Vidler 2002). The anxiety seemed to heighten in spaces without immediate boundaries (Trotter 2004). Few agoraphobes experienced anxiety symptoms while crossing a street or an open square if the shops in it were closed. This reaction also occurred while walking along long building facades (Knapp and Schumacher 1988). Westphal observed that these patients preferred travelling with a companion or a physical aid such as an umbrella that partially blocked their vision. Another patient experienced anxiety in large, open spaces in the city but found open nature to be refreshing, suggesting that the condition was specific to the city. This account supported many 19th century psychologists' claims of agoraphobia being an urban disorder (Vidler 2002). While Westphal approached the condition as a neuropathic anxiety disorder, throughout his accounts, he emphasised the impact of Berlin's built environment on his patients, recognising 'space' as a critical factor to agoraphobia (Knapp and Schumacher 1988).

A prevalent theme for 19th century urban writers was the 'estrangement' of modern cities (Vidler 1991). Due to changes in privacy rules and new infrastructure,

modern architects and city planners followed engineers and predetermined that 'form should follow function'. To make cities work as efficient machines, functions were separated through zoning regulations and regional plans, and cities were made more regulated (Ellin *et al.* 2001). Researchers in the Frankfurt School of Social Research, defined the modern city as 'anxiety-inducing', particularly its new forms and spaces such as shopping arcades and hotel lobbies (Williams 2004). These theories treat agoraphobia as a proportionate response to modernity and diminish its irrationality. The perspectives, perhaps, stemmed from a fear of the unknown new future and a longing for the known past.

Viennese architect Camillo Sitte approached agoraphobia from an experiential perspective, blaming the lack of aesthetic qualities of urban planning for its cause (Sitte 1965). He opposed the engineered layout of modern cities, which primarily prioritised accommodating the rapid growth, with efficient developments and spacious streets and boulevards. He stressed the importance of aesthetically pleasing experiences for city design, something that the organic geometries of historic cities provided. Sitte argued that a lack of enclosure prevented full appreciation of a space and claimed that spaces with poor aesthetics negatively impacted mental health, subsequently inducing agoraphobia. This correlates with Kevin Lynch's theory in *The Image of the City* (Lynch 1964) based on empirical interviews and mapping, which showed how citizens form mental images of the city to perceive and navigate urban form. He stresses the importance of memorable, navigable cities to support orientation and foster an emotional connection with place (Williams 2004). However, an entirely aesthetic approach may fail to consider the functional concerns of city planning as a whole and provide a biased analysis of subjective beauty.

Sitte also criticised the emptiness and gigantic scale of modern spaces, which he claimed led to a disconnection between people and public squares (Tritsmans and Van Damme 2012). This critique correlates with Westphal's speculations of the 'monstrous width' of town squares causing agoraphobic reactions (Ghazal and Hinton 2016). While the endless spatial options may seem liberating, Westphal's patients found it threatening and preferred to stay along the border of the space (Vidler 2002). This reflects the fear of an agoraphobe of being seen vulnerable. As suggested by psychologists (Neale 1898), for an agoraphobe, being seen meant being 'seen through'- an invasion of the private self, making them seek retreat. Additionally, Sitte claimed that the large open squares, monotonous boulevards and the excessive multidirectional routes created confusion, reducing pedestrians to immobility (Carter 2004). Echoing Sitte (Lynch 1964) claimed that 'orientation' in the 'overt chaos of the modern city' was a fundamental constituent of good city planning and that the lack of orientation caused distress in people. Lynch (1964) argued that this distress was caused by the terror of being lost and stemmed from the necessity that a mobile organism be orientated in its surroundings.

Neuroscientific studies show that entering a space triggers specific cognitive processes in the human brain that influence emotions, personality, and overall health (Berg 2014). Human functioning relies on the capability to process information, enabling individuals to assess current and predict forthcoming situations. The brain collects sensory data, interprets it, and assigns meaning and utility, storing this information as memories for future reference (Robinson and Pallasmaa 2015). Faults in this information-processing system can alter how individuals perceive the world, potentially leading to abnormal spatial preferences or phobias. Sometimes, unpleasant past encounters cause spatial fears; if a person experiences discomfort or has a panic attack in a place, spaces with similar features trigger phobic reactions as a defence mechanism. However, unjustified fears can also occur due to weakened spatial awareness or the psychological relationship between the body and the built environment (Breznitz n.d.).

Existing studies on Agoraphobia, often imprecisely defined as the fear of open spaces (NHS 2022), primarily focus on clinical perspectives that ignore its spatial significance (Bankey 2004). This study shifts the focus towards the built environment, investigating how public spaces are experienced, and how particular spatial configurations may influence perceptions of safety or discomfort. By examining agoraphobia as a spatial phenomenon, the research offers a new lens through which to interpret urban design and placemaking. The paper is structured as follows: the next section outlines the research methodology, which adopts a qualitative approach using thematic analysis. The Results section examines six critical spatial elements that have significant implications for urban design in addressing safety-seeking and avoidance behaviours associated with agoraphobia. The discussion addresses the need to bridge the missing connections between spatial design and psychological experience, highlighting pathways towards more inclusive and agoraphobia-responsive urban environments.

Methods

This study used a two-stage design that combined a targeted literature review with reflexive thematic analysis following the six-phase framework as outlined by (Braun and Clarke 2006). The objective was to derive practice-ready urban design themes that explain how the spatial qualities of public squares relate to agoraphobia and spatial anxiety, and to corroborate them with site evidence.

Stage one: targeted literature review and data compilation

A focused search assembled foundational and contemporary sources on agoraphobia in urban settings, fear and public space, environmental psychology, civic scale, and public realm design. For each source, we extracted bibliographic data, spatial attributes discussed, reported perceptual or affective responses, and avoidance or coping behaviours. Initial open coding grouped terms into three analytic families that guided synthesis:

- Spatial morphology, including scale, edges, boundaries, sightlines, materials, greenery, seating, and crowding.
- Perceptual and affective appraisals, including safety, control, legibility, and refuge.
- Behavioural strategies, including safety-seeking, edge-hugging, scanning for exits, clustering, detours, and avoidance.

Stage two: thematic analysis and cross source synthesis

Field component: photographic survey and non-participant observation

The methodology also included a two-day photographic survey and observational study conducted at Granary Square and Paternoster Square in London (see Figure 1). These spaces were selected for their contrasting spatial qualities and popularity as public gathering spaces- Granary Square features a large, open plaza with a modern design characterised by expansive paving and water features, whereas Paternoster Square is more enclosed, with a defined architectural perimeter and a more traditional, intimate scale. Additionally, both spaces are well-known and heavily frequented public gathering spots, attracting diverse user groups and a wide range of activities.

Observations focused on how people interacted with the setting, including movement paths, use of edges versus centre, seating and dwell patterns, crowd density and flow, scanning for exits, hesitation, detours, and clustering near boundaries. Photographs and field notes were time stamped, and location tagged, then added to the qualitative dataset and coded alongside the literature.

Familiarisation and coding

All literature extracts, field notes, and photo annotations were read repeatedly for familiarisation. We generated initial codes at a semantic and latent level across both sources. Examples included edge refuge, over scaled void, pocket enclosure, exit visibility, shaded refuge, visual dead end, pinch point, and

Figure 1. Granary Square and Paternoster Square in London. Photographs by the author.

flexible seating choice. Codes from the literature and the sites were stored in a common codebook to support constant comparison.

Theme development, review, and naming

Codes were clustered into candidate themes where they described the same underlying mechanism across sources. Convergence between literature and site evidence was used as a threshold for theme retention. Divergent or negative cases were documented in reflective notes and used to refine scope. The six final themes were defined and named as follows:

- Human-Scale Design: Emphasising proportions and layouts that are comfortable and approachable for individuals.
- Enclosure and Boundaries: Designing spaces with clear but non-restrictive boundaries to provide a sense of safety.
- Green/Natural and Man-made Elements: Integrating natural features such as greenery alongside well-considered built elements to create harmonious and calming environments.
- Line of Sight: Ensuring clear and unobstructed views to reduce uncertainty and enhance spatial orientation.
- Activities and Seating Options: Offering diverse activities and flexible seating arrangements to encourage engagement and provide refuge.
- Accessibility, Inclusivity, and Effective Crowd Management: Creating spaces that are universally accessible, socially inclusive, and thoughtfully managed to avoid overcrowding and foster comfort.

Results: spatial implications

The analysis examines the six critical spatial elements, outlined below, that hold significant implications for urban design in addressing safety-seeking avoidance behaviours associated with agoraphobia:

Human-scale design

Human-scale design emphasises proportions that feel approachable and relatable to individuals, which can help reduce feelings of overwhelm or insignificance that arise in large, impersonal spaces. Studies by Blumenfeld (1953) argued that human-scale design should align with the perceptual and physical limits of the human body, particularly visibility and spatial recognition. He emphasised that the visibility of the human figure should guide the dimensions of urban elements. By designing elements like building heights, street widths, and structures that correspond to human proportions, urban spaces can create a comforting, more personal atmosphere that is beneficial to both agoraphobic and non-agoraphobic users. Blumenfeld (1953) also recommended limiting the size of public squares to maintain social cohesion and avoid the sense of desolation that often arises in larger, underused spaces.

Consequently, when spaces are designed to a human scale, they naturally invite individuals to engage more fully with their surroundings and with others. Intimate, appropriately scaled spaces encourage social interaction, fostering a sense of community and enhancing the accessibility of public spaces. Studies such as Serageldin (1995) highlight the most valued attributes of urban spaces, which are deeply rooted in Muslim heritage and Islamic cities – such as human scale, presence of water, visibility of others, mixed land uses, and smaller spaces within a larger whole. Such designs are crucial for promoting a positive urban experience, especially for those who may feel anxious or intimidated by vast, impersonal areas.

Human-scale design enables individuals to interpret and navigate their surroundings more easily, reducing confusion and enhancing their sense of control. In such environments, users can quickly locate exits, orient themselves, and assess safety, which is particularly valuable for individuals prone to anxiety or agoraphobia. In the 'Theory of the Human Scale', Tonuma (1981) identifies 'short-circuiting networks that result in the loss of benchmarks', emphasising that clear, navigable spaces reduce disorientation and create a comfortable, secure environment. For example, as shown in Figure 1, the terraced lawns at Granary Square break a large expanse into small pockets with low risers and deep seat-like treads, clear edges and routes, options for sun or shade, and a balance of prospect and refuge, so people feel supported and in control.

Overall, a human-scale approach enhances the inclusivity and accessibility of urban spaces, making them more accommodating to a diverse range of users, including those with sensory sensitivities or physical limitations. By ensuring that elements are easy to reach, understand, and navigate, human-scale design supports usability for individuals of all ages and abilities, fostering more equitable and welcoming public spaces.

Enclosure and boundaries

Enclosure is a crucial urban design feature affecting movement and behaviour in public spaces. Enclosed spaces have set boundaries signifying the existence of the space. Sitte claimed it is one of the defining characteristics of a public space (Mattsson 2019). It creates private areas with distinct limits in contrast to expansive open spaces. Sitte also argued that vast open squares, monotonous boulevards, and excessive multidirectional routes induce confusion, compelling pedestrians into immobility (Carter 2004). Commonly, agoraphobes experience discomfort in large open spaces with no visible boundaries (Trotter 2004). However, equally, small, enclosed spaces with limited exits are perceived as threatening due to the possibility of crowding and difficulty of escape (Thorpe *et al.* 2017). This suggests that users with spatial anxiety prefer environments that offer openness with defined boundaries and multiple escapes.

The enclosure of a space can be influenced by its size, the surrounding objects, and their height. Additionally, the aspect ratio, which is the ratio of building height to street width, can significantly impact the overall character of the space. In compact areas with a high aspect ratio, the surrounding buildings may be perceived as imposing or overwhelming, and the influence of building and surface materials can be more pronounced. In spaces with a balanced aspect ratio, users may experience relaxation and focus on various activities. For example, the widely popular Granary Square in London perhaps works well because it comprises of elements, such as level changes, balustrades and trees within the space, creating partial enclosures and refuge spaces while maintaining openness. These also create multiple exits for people to escape to when needed. In contrast, Paternoster Square in London – despite its appealing blend of classical and modern architecture and features such as the restored Temple Bar and Elisabeth Frink's Shepherd and Sheep sculpture – can feel unsettling due to its relatively enclosed layout, the surrounding tall buildings, absence of natural elements, and the constant presence of overlooking windows, all of which may heighten feelings of exposure and discomfort.

This highlights a broader spatial challenge: when public squares become excessively large or lack features that offer a sense of enclosure or refuge, they risk alienating their users. Iconic spaces like Tiananmen Square or Mexico City's Plaza de la Constitución – once central to civic life – can feel vast and unwelcoming, even inducing agoraphobic responses in otherwise unaffected individuals. Originally expanded for ideological or symbolic purposes, such as Mao Zedong's push to create the world's largest square, these spaces often prioritise scale over human experience. Similar examples, including Merdeka Square in Jakarta or Xinghai Square in Dalian, function more like urban parks than usable city squares, illustrating how extreme openness can be just as discomforting as excessive enclosure. Overall, creating a balance between the level of enclosure and openness is essential for designing public spaces. While the space needs to be open enough to prevent crowding, it must contain enclosed refuge areas and clear boundaries that define the area and maximise its use. This may be achieved from elements, such as rows of trees and subtle-level changes.

Green/Natural and man-made elements

Integrating natural elements like trees, plants, and water features into urban design has proven psychological benefits, including reducing stress and enhancing well-being (Ulrich 1986). For individuals with agoraphobia or general anxiety, natural features can serve as soothing focal points, offering a therapeutic counterbalance to the built environment's intensity and potentially encouraging more positive interactions with public spaces.

The combination of green and man-made elements creates variety and depth within a space, enhancing its visual interest and providing a balanced sense of enclosure without creating complete isolation. This combination allows designers to define specific areas within larger spaces, establishing both open areas and secluded, quieter spots, which can help accommodate a range of comfort levels and reduce feelings of exposure.

Natural and man-made elements offer users a range of spatial choices, from open lawns and shaded benches to secluded nooks and interactive water features. Rittenhouse Square in Philadelphia masterfully balances openness and enclosure through a blend of elements – such as varying vegetation, water features, pavilions, and sculptures – that create distinct zones for activity, passage, and refuge. This diversity allows individuals, especially those who may feel uneasy in overly exposed or crowded areas, to choose a location that meets their comfort and privacy needs. Providing flexible options encourages individuals to use the space in a way that feels manageable and secure, which is particularly beneficial for agoraphobic users.

Thoughtfully placed natural and man-made elements can serve as landmarks or guideposts, aiding individuals in orienting themselves within the space.

Trees, planters, sculptures, and architectural features can help guide movement, making it easier for users to navigate and feel secure. These elements are particularly valuable in large or busy areas, where clear points of reference reduce disorientation and contribute to a sense of control. Rittenhouse Square comprises clear diagonal pathways and architectural landmarks that serve as wayfinding cues, reducing disorientation. As noted earlier, individuals with agoraphobia often struggle with wayfinding and spatial orientation, especially in unfamiliar or complex environments, making the implementation of such clear and supportive design strategies crucial for promoting comfort and accessibility.

Spaces that combine natural and man-made elements often encourage individuals to spend more time within them due to their aesthetic appeal and the sense of tranquillity they provide. This combination can attract a diverse range of users and promote positive experiences, encouraging people to return and engage more deeply with the space over time. For those with anxiety, positive, prolonged exposure can help reduce avoidance behaviours and foster familiarity with the space.

Line of sight and shielding

Optimising lines of sight within the space can help individuals feel more in control of their surroundings and reduce anxiety. A space that exposes one from all angles can lead to feelings of constant judgment and anxiety in agoraphobic individuals, leading to avoidance (Davidson 2003). Typically, in public spaces, some users prefer sitting with their backs to the central focal point, irrespective of the seating arrangement emphasising the centre, reflecting a desire to avoid direct eye contact with people seated on the opposite side. This behaviour is illustrated in Figure 2, where the sketch shows some users preferring to sit with their backs to the central focal point, reflecting a tendency to avoid direct eye contact with nearby others.

Conversely, others feel safer facing each other as it allows them to have everyone within their field of view. An exposed space offers a clear overview, aiding in safety assessment, exit identification, and easy navigation. Spaces with multiple orientations may cause confusion and insecurity about potential dangers from hidden spaces. This aligns with an urban design study which noted people occupying the edges of public spaces before

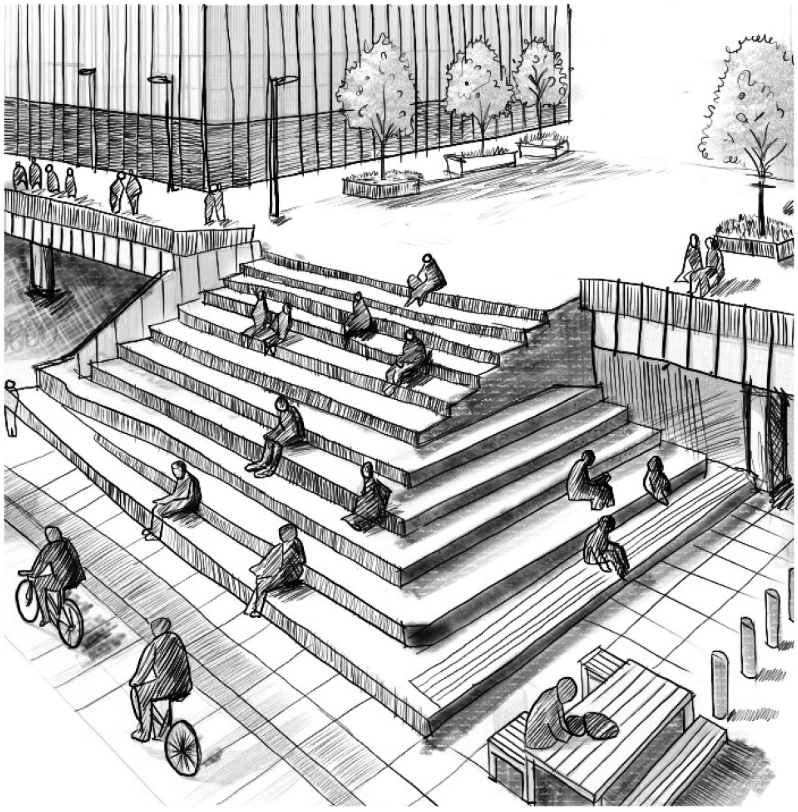


Figure 2. Illustrative sketch by the authors showing the effects of seating in a public space.

the centre, even with evenly distributed seating and planting (Dexigner 2019). The study also revealed a preference for protected refuge spaces with clear sightlines to busy areas, perhaps for individuals to see without being seen. This behaviour was also evident in Granary Square. People were observed to gravitate towards canopies, shaded spots, or create their refuge spaces using elements of the space for partial enclosure and coverage. This aligns with the 'amphitheatre effect' (Whyte 2021) indicating that plazas can unintentionally make individuals in the centre feel exposed and observed by those on the periphery (Mattsson 2019). The design of seating, landscaping, and architectural elements plays a pivotal role in exhibiting the amphitheatre effect.

Overall, the research underscores the significant avoidance of exposed spaces. Successful public spaces incorporate multiple sightlines, using elements like trees and columns for views and shielding. Balancing visibility and shielding are crucial for creating a sense of safety. Additionally, designing seating areas to face multiple directions allows individuals to escape others' line of sight when needed.

Activities and seating options

Apart from improving the quality of the public space, activity can be vital for agoraphobic people as it could help them cope and overcome fears in public environments. Engaging in social and recreational activities could form a distraction or aid, helping manage anxiety and improve well-being, creating positive experiences in otherwise feared public spaces (Anderson *et al.* 2016). The range and number of activities available in public spaces can influence the occupancy and duration of stay.

Danish architect Gehl (2011), through his empirical studies of human behaviour in Copenhagen and other cities, categorised activities in public space into distinct types based on patterns of walking, sitting, and social interaction, as follows:

- Necessary activities: mandatory actions which happen regardless of the quality of the space, such as walking to work.
- Optional activities: non-mandatory actions which depend on the spatial quality, such as people-watching or strolling.
- Social activities: actions which depend on the presence of others, such as conversations with strangers.

Gehl theorises that the time spent doing each of these activities and people's level of engagement increases with the quality of the space. Increased activities also dissipate the crowd's attention, allowing people to walk through the space as spectators without feeling like the centre of focus. Examples of activities in public space may include sensory invitations such as a sensory park for barefoot walking (see Figure 3).

Similarly, providing various seating options can allow agoraphobes to control their immediate environment and create a personal space that feels more secure and manageable, preventing avoidance. As (Whyte 2021) explains, ' … the most striking designs, cannot induce people to come and sit if there is no place to sit'. Seating also provides a stopping point for those who wish to rest mid-journey or get away from the crowd, increasing the inclusivity and age-friendliness of the space. Comparably, some studies show that people in public spaces prefer seating with a sense of backing and no activities behind them, relating back to wanting a sense of seclusion from others' gaze while having clear vision of the space in front (Dexigner 2019). Additionally, flexible seating can enable selective visibility, allowing agoraphobes to turn away from triggering or overwhelming stimuli, contributing to a sense of safety. Since research indicates how people occupy the edges of public spaces first, adding seating along the edges would increase users' convenience (Dexigner 2019).

Accessibility, inclusivity and effective crowd management

While increasing activities might improve the space's desirability, it might also lead to crowding. The research highlights that agoraphobes avoid crowds and prefer open spaces where the crowd could dissipate. This is perhaps because crowding creates unwanted intimacy and a sense of being trapped without an easy way to escape people. An agoraphobe interviewed by (Davidson 2003) clarifies the common misconception of agoraphobia being a fear of open spaces by saying that the phobia is more about being trapped by people.

A recent study collected people's personal space measurements before and after COVID-19 and found that it had significantly increased during the pandemic. This increased personal space requirement was based on the perception of a threat rather than an actual threat, as the study yielded the same results with virtual reality environments, with no threat of infection (Holt *et al.* 2022).

Therefore, occupancy control should be a key aspect of public space design. To navigate crowded spaces, one must determine self-location concerning the surroundings, estimate goal location, select the ideal route to the destination and recognise the target (Zucchelli *et al.* 2021). Therefore, spaces with unclear

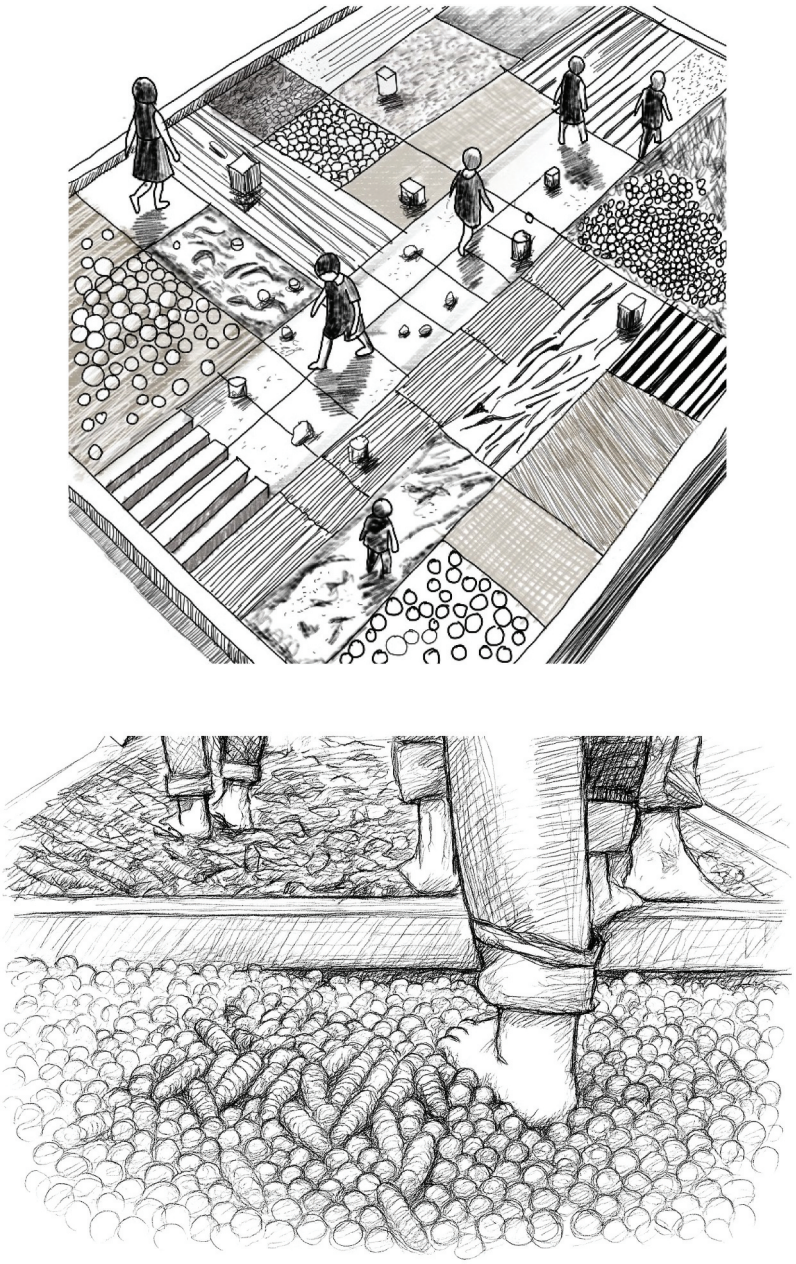


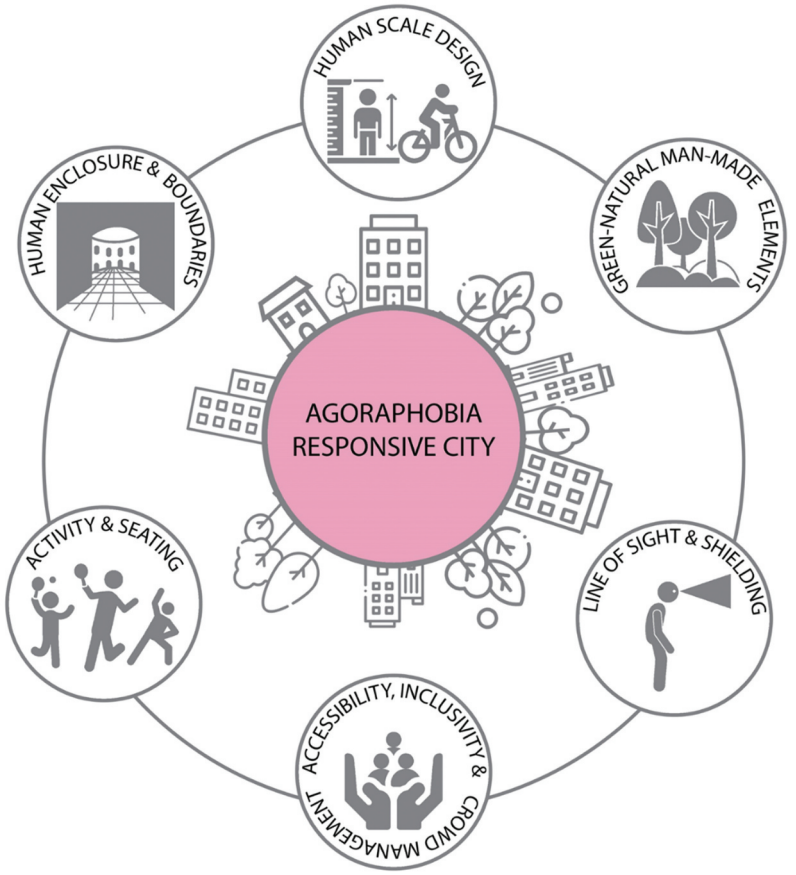
Figure 3. Example of public space activities, such as a sensory park for barefoot walking. Sketch by the authors.

routes can cause confusion of not knowing how to escape, leading to panic and inhibition of movement (Carter 2004). Hence, crowding can perhaps be avoided with clear zoning that allows easy navigation and regulates pedestrian flow. Moreover, effective planning and arrangement of the stationary activities and seating could help prevent oversaturation of certain parts within the space. Similarly, having clear exits and signs, simple routes and unique elements in the square will also simplify the movement and avoid confusion and anxiety.

Discussion: bridging the missing connections towards inclusive and agoraphobia-responsive urban design

As the preceding discussion illustrates, people's emotional and mental engagement with public spaces is complex, and several critical questions remain unresolved. Although significant progress has been made in recent years in understanding agoraphobia and its spatial implications, integrating agoraphobia-responsive design within modernist urban landscapes presents distinct challenges.

These challenges are further compounded by the highly subjective nature of sensory experiences in urban spaces and the complexities of addressing the intersection of mobility and accessibility in agoraphobia-responsive design. Additionally, there has been limited exploration of how cultural context and social dynamics shape emotional responsiveness, an essential aspect of effective agoraphobia-responsive urban design as discussed in the following sections. Figures 4 and 5 (see below) encapsulate these considerations, outlining key design elements – such as enclosure, accessibility, natural



Enclosure & Boundaries
- Raised hedges/tree lines
- Perimeter seating
- Canopies/pergola/awning
- Circular seating/tiered seating
- Transition zones/refuges

Accessibility, Inclusivity, and Crowd Management
- Rotational and seasonal zoning
- Well-distributed entrances & exits
- Flexible, movable seating
- Semi-private clusters
- Signage/visual clarity

Green/Natural and Man-made Elements
- Native plant beds/trees
- Ponds/water features
- Wildlife garden area
- Seating around trees
- Natural play structures

Activities & Seating
- Multi-use activity areas
- Shaded nooks/alcoves
- Modular/movable seating
- Level changes and seating with views
- Backed seating in semi-private zones

Line of Site & Shielding
- Perimeter seating
- Vertical greenery for shielding
- Refuge alcoves with overlooks
- Open/direct exit pathways
- Semi-private zones

Human-scale Design
- Aspect ratio
- Landmarks/sculptures
- Human-scale furnishing
- Way-finding
- Pedestrian-level lighting

Figure 4. Design strategies for an agoraphobia-responsive city (by authors).

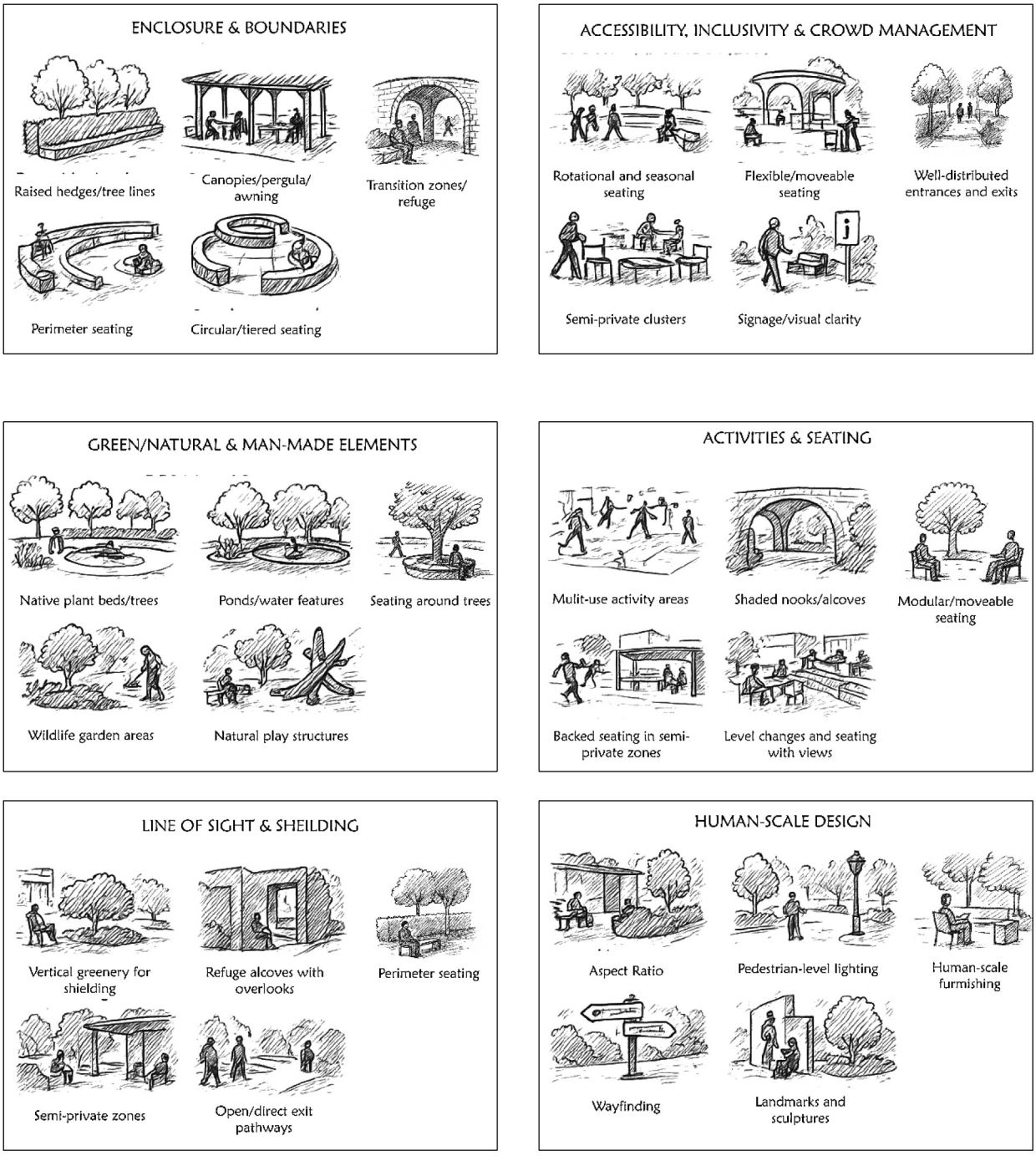


Figure 5. Illustrative sketches of urban design strategies by the authors for agoraphobia-responsive cities across six themes: 1. Enclosure & boundaries, 2. Accessibility & crowd management 3. Green/natural & man-made elements, 4. Activities & seating, 5. Line of sight & shielding, and 6. Human scale.

elements, human-scale proportions, and seating and shielding configurations – that address the multi-faceted needs of individuals with agoraphobia. The figure serves as a conceptual framework, bridging these critical aspects and providing a foundation for inclusive urban design practices.

Challenges of integrating agoraphobia-responsive design in modernist urban landscapes

Implementing agoraphobia-responsive urban design in contemporary cities presents significant challenges, largely due to the legacy of modernist urban planning. This approach prioritises functional segregation and

large-scale infrastructure at the expense of human-centred, intimate spaces. A notable example is Le Corbusier's vision of the modern city, which often resulted in buildings treated as isolated objects, surrounded by expansive but uninviting plazas and unattractive parking lots, creating environments that fail to address the psychological needs of their users (Trancik 1986). Unlike medieval European cities, which naturally evolved with narrow, enclosed streets and small-scale public areas that foster a sense of intimacy, modern cities are characterised by expansive layouts, zoning for specific functions (residential, commercial, industrial), and wide-open spaces that can feel impersonal and overwhelming. These design principles, which prioritise efficiency, vehicle traffic, and high-density buildings/vertical towers with low ground coverage, often conflict with the needs of individuals who experience discomfort in vast, exposed areas without clear boundaries. Retrofitting these urban environments to include smaller-scale, inclusive elements – such as natural refuges, accessible seating, and multiple exit points – requires not only physical changes but also shifts in planning priorities and substantial investment, making it a complex endeavour.

Emotional comfort through sensory modulation

Agoraphobia is closely associated with emotional comfort and psychological well-being. Urban design has the potential to significantly reduce stress and anxiety by incorporating sensory elements such as lighting, textures, acoustics, and greenery, which can create calming environments and foster a sense of safety (Roe *et al.* 2021) in the agoraphobic-individuals. However, achieving emotional comfort through sensory modulation presents challenges, particularly in balancing the diverse and sometimes conflicting sensory needs of individuals within complex urban settings. These challenges must be addressed thoughtfully to ensure urban spaces promote psychological peace for all users. Sensory experiences are highly subjective, and people respond differently to elements like lighting, sounds, and textures. Designing spaces that cater to a wide range of sensory preferences, including those of individuals with heightened sensitivities such as anxiety disorders, autism and agoraphobia, adds complexity to the process. Urban areas, by their nature, are noisy and visually stimulating, which can exacerbate stress and anxiety for some individuals. Mitigating these effects while maintaining the vibrancy and functionality of urban life requires careful planning and innovation.

Incorporating greenery, a proven calming element, is particularly challenging in densely built environments where space is limited and competing land uses prevail. Moreover, urban environments are dynamic, with sensory experiences fluctuating throughout the day or across seasons. For instance, lighting that is soothing during the day may become inadequate or overly harsh at night, and spaces that are quiet during off-peak hours may become overwhelming at busier times. Another challenge arises from the need to reconcile sensory comfort with other urban priorities, such as optimising traffic flow, maximising building density, or meeting economic objectives. Cultural and contextual variations further complicate the process, as sensory preferences and tolerances differ across communities. For example, bright lighting may enhance perceptions of safety in one context while being perceived as harsh and stressful in another. Additionally, implementing sensory-sensitive designs, such as sound barriers, greenery, and specialised lighting, can be costly and resource-intensive, raising concerns about budget constraints and long-term feasibility.

The intersection of mobility and accessibility in agoraphobia-responsive design

Designing pathways, public transit nodes, and streetscapes that accommodate both physical and psychological comfort are essential components of agoraphobia-responsive design. This includes clear wayfinding, smooth transitions, and creating predictable and visually coherent urban environments. The challenges in addressing the intersection of mobility and accessibility in agoraphobia-responsive design involve accommodating both the physical and psychological needs of individuals in urban spaces.

One significant challenge is achieving clear wayfinding. Urban spaces are often complex and can overwhelm individuals with agoraphobia, who may experience heightened anxiety in disorganised or unpredictable environments. Creating intuitive and easily navigable spaces demands the integration of clear signage, logical layouts, and visual cues (Cullen 1961), which may conflict with existing infrastructure or aesthetic priorities. Smooth transitions between different areas or modes of transportation also pose difficulties. For example, moving seamlessly from a public transit node to a pedestrian walkway requires thoughtful planning to avoid creating bottlenecks or disjointed spaces that can amplify feelings of disorientation or vulnerability. Balancing these transitions

with urban density and the need for multi-functional spaces adds complexity to the design process.

Predictable and visually coherent environments, while crucial for reducing anxiety, can be difficult to implement in diverse urban settings with competing demands. The integration of psychological comfort into mobility and accessibility must account for varying cultural contexts, behavioural patterns, and spatial constraints. For instance, ensuring that transit hubs are both functional and calming may require compromises in efficiency or cost. Additionally, inclusivity must be addressed to cater to individuals with varying levels of mobility and psychological needs. This includes accommodating physical disabilities, which often overlap with anxiety-related conditions, while avoiding designs that unintentionally stigmatise or isolate users with agoraphobia.

Cultural context and social dynamics in agoraphobia-responsive urban design

Agoraphobia-responsive urban design requires a nuanced understanding of local culture and context to effectively create spaces that resonate with and support the needs of diverse populations. Local culture shapes how public spaces are used, valued, and understood (Carmona *et al.* 2010); therefore, a design that works well in one place may be ineffective or even counterproductive in another. For example, in some cultures, open public squares are essential for community gatherings and social cohesion, while in others, smaller, enclosed spaces may be preferred for a sense of privacy and security. Recognising these cultural preferences allows designers to create spaces that feel inviting and safe to local users, including those with agoraphobia.

Implementing these place-based solutions also requires an awareness of the social actors, political dynamics, and resource availability within each context. Local stakeholders – such as community leaders, residents, businesses, and government entities – play critical roles in how public spaces are developed and used (Dempsey and Burton 2012). Agoraphobia-responsive design may sometimes challenge the dominant priorities of powerful social actors, such as commercial developers or local government bodies, who may prioritise economic efficiency or high-density usage over inclusive design features. Political support is often crucial for the allocation of resources and the development of supportive policies, yet the influence of political and economic interests can hinder the implementation of accessible, human-centred design changes.

Moreover, the resources needed to transform existing urban environments or integrate agoraphobia-responsive features from the outset – such as accessible seating, varied activity zones, green elements, and clear navigation aids – may be limited. In many cases, funding is directed towards projects that generate immediate economic returns rather than inclusive urban design. Consequently, the successful implementation of agoraphobia-responsive urban design depends not only on cultural and contextual understanding but also on navigating the complex politics, power dynamics, and resource constraints that shape urban development at the local level.

Conclusion

This study investigates the urban design implications of 'safety-seeking avoidance behaviour' exhibited in public spaces by contemporary society. While existing research has explored the nature of agoraphobia, its spatial dimensions – particularly the emotional and psychological responses individuals have to public spaces – remain underexplored. The literature reveals that even individuals without a formal diagnosis may display avoidance behaviours in scenarios resembling agoraphobic triggers. A notable trend is the avoidance of crowded areas; a behaviour amplified in the post-pandemic context. Additionally, there is a preference for green, open spaces with clear boundaries and diverse activities, as these are perceived as less threatening. Agoraphobes, in particular, often feel discomfort in expansive open spaces without clear boundaries and in confined spaces with limited exits, where fears of crowding and escape challenges are heightened.

The core spatial implications derived from these findings include optimising human-scale design and a sense of enclosure, carefully selecting natural and man-made elements, incorporating multiple lines of sight, enhancing activities and seating options, and implementing effective crowd management strategies to enhance accessibility and inclusivity. By thoughtfully incorporating these elements, designers can successfully transform the vast and overwhelming scale of urban spaces into a more approachable and human-centred experience. For example, the surrounding buildings' materiality and design must match the central space's purpose. An optimal aspect ratio should also be developed with community engagement to prevent overbearing and over-enclosing surrounding buildings. Public squares must include clearly defined zones and green buffers with multiple exits and pockets of smaller refuges. Moreover, different modes and types of seating facing multiple directions should be incorporated to encourage social interaction while valuing privacy.

Public squares must also host varying activities for multiple types of users. Having timely activities to attract different crowds at different times could also help with crowd control. Furthermore, planning must consider developing circulation spaces to match the footfall to prevent overcrowding. Clear wayfinding and signage can also guide people through a space, reducing confusion and stress. Similarly, adding amenities and features, such as water fountains or public toilets, can help to reduce crowding by encouraging people to move through a space more quickly.

In conclusion, integrating agoraphobia-responsive design into modern urban landscapes is a multifaceted challenge, rooted in the legacy of the modernist approach that prioritises functionality and efficiency over human-centred design. Addressing the needs of individuals who experience discomfort in vast, impersonal spaces requires both physical modifications, such as incorporating smaller-scale, inclusive elements, and a shift in planning priorities. These challenges are compounded by the subjective nature of sensory experiences and the complexities of integrating mobility and accessibility in agoraphobia-responsive design. Equally important is an understanding of local cultural contexts and social dynamics, as these shape how public spaces are valued and utilised. Such understanding must be paired with effective collaboration with local stakeholders, careful navigation of political and economic interests, and the allocation of resources to support more inclusive design strategies. Ultimately, agoraphobia-responsive urban design calls for a nuanced, place-based approach that balances modern urban demands with inclusivity and accessibility.

This study highlights the need to embed mental health considerations – particularly agoraphobia-responsive design – into urban policy frameworks. Aligning with the UN Sustainable Development Goals (SDGs), especially SDG 3 (Good Health and Well-being), SDG 10 (Reduced Inequalities), and SDG 11 (Sustainable Cities and Communities), the findings support a shift toward spatial policies that prioritise psychological inclusivity. Public space guidelines and planning codes should incorporate design principles that address spatial anxiety – such as human-scale layouts, sensory-sensitive environments, and clear wayfinding – to ensure urban spaces are accessible and comfortable for all. Integrating these elements into local development plans, design briefs, and procurement policies would not only promote mental well-being but also advance equity and inclusion in the built environment.

Finally, there is often a lack of awareness and training among urban designers and planners regarding the psychological impacts of sensory elements. This knowledge gap can result in designs that inadvertently heighten stress and anxiety for the agoraphobic-individuals. Addressing these challenges requires a thoughtful and interdisciplinary approach, combining innovative solutions with an emphasis on community engagement to create environments that prioritise human well-being while accommodating practical constraints.

Although this study highlights important connections between urban design and agoraphobia-responsive public spaces, it has some key limitations. The research is largely qualitative, drawing on literature and a small-scale observational study of two London locations. This limited scope means the findings may not fully translate to different cultural or spatial contexts. The study also lacks direct input from individuals with clinical agoraphobia, which constrains its psychological depth and limits the accuracy of behavioural interpretations. Moreover, responses to sensory and spatial experiences are highly subjective, varying significantly across individuals and shaped by factors such as gender, disability, and cultural background. These complexities make it difficult to propose universally applicable design strategies. Future studies would benefit from user-based empirical data to better understand lived experiences and to inform more inclusive, adaptable design strategies.

Overall, this paper positions itself as a conceptual and exploratory framework that brings together psychological insights and spatial analysis to foreground agoraphobia as a meaningful consideration in urban design. While not proposing a fixed or universal model, the study offers an initial lens through which the relationship between spatial configuration and safety-seeking behaviours can be understood. The framework is intended to serve as a starting point for future development and adaptation across varied cultural and urban contexts. Acknowledging the limitations of its scope and specificity, further empirical research and interdisciplinary engagement will be essential to refine and expand this approach toward creating more inclusive, accessible, and psychologically responsive public spaces.

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No potential conflict of interest was reported by the author(s).

Notes on contributors

This study began as the March dissertation of Lavanya Palaneer, supervised by Dr Tania Sharmin. Lavanya contributed to the literature review, methodology, initial analysis, and design sketches, while Tania refined the methodology, undertook further critical analysis, led the discussion of findings, and designed the figure on agoraphobia-responsive urban design.

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References

Anderson, J., *et al*., 2016. Lively, social space, well-being activity and urban design. *Environment & behavior*. doi:10.1177/0013916516659108.

Bankey, R., 2004. Review essay: the agoraphobic condition. *Cultural geographies*, 11 (3), 347. doi:10.1191/1474474004eu311ra.

Bell, J., 2020. *Agoraphobia on the rise in the aftermath of COVID-19: uAE experts*. Available from: https://english.alarabiya.net/coronavirus/2020/12/16/Coronavirus-Agoraphobia-on-the-rise-in-the-aftermath-of-COVID-19-UAE-experts.

Berg, N., 2014. *Three ways neuroscience can inform and improve architecture*. Available from: https://www.architectmagazine.com/technology/three-ways-neuroscience-can-inform-and-improve-architecture_o.

Blumenfeld, H., 1953. Scale in civic design. *The town planning review*, 24 (1), 35. doi:10.3828/tpr.24.1.b453j688031u163k.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3 (2), 77–101. doi:10.1191/1478088706qp063oa.

Breznitz, S., n.d. *What is spatial perception?* Available from: https://www.cognifit.com/science/spatial-perception?srsltid=AfmBOooKgkmU75AtONTS36mGEw3XKJ3JUa1bQCby2E1kT5N7TWuPTDZs.

Capps, D., 2012. The parable of the squirrel: alleviating the anxiety of agoraphobia. *Pastoral psychology*, 61 (4), 589–602. doi:10.1007/s11089-011-0423-y.

Carmona, M., *et al*., 2010. *Public places - urban spaces: the dimensions of urban design*. 2nd ed. London: Routledge.

Carter, P., 2004. *Repressed spaces: the poetics of agoraphobia*. London: Reaktion Books.

Cullen, G., 1961. *The concise townscape*. 1st ed. London: Routledge.

Davidson, J., 2003. "Putting on a face": Sartre, Goffman, and agoraphobic anxiety in social space. *Environment & planning D, society & space*, 21 (1), 107–122. doi:10.1068/d45j.

Dempsey, N. and Burton, M., 2012. Defining place-keeping: the long-term management of public spaces. *Urban forestry and urban greening*, 11 (1), 11–20. doi:10.1016/j.ufug.2011.09.005.

Dexigner, 2019. *Field guide to life in urban plazas: a study in New York City*. Available from: https://www.dexigner.com/news/32354.

Ellin, N., *et al*., 2001. Thresholds of fear: embracing the urban shadow linked references are available on JSTOR for this article: thresholds of fear. *Embracing the urban Shadow'*, 38 (5), 869–883. doi:10.1080/00420980120046572.

Gehl, J., 2011. *Life between buildings: using public space*. 6th ed. Washington, DC: Island Press.

Ghazal, Y.A. and Hinton, D.E., 2016. Platzschwindel, agoraphobia and their influence on theories of anxiety at the end of the nineteenth century: theories of the role of biology and "representations" (vorstellungen). *History of psychiatry*, 27 (4), 425–442. doi:10.1177/0957154X16657710.

Holmes, J., 2006. Building bridges and breaking boundaries: modernity and agoraphobia. *Opticon1826*, 1 (1). doi:10.5334/opt.010606.

Holt, D.J., *et al*., 2022. Personal space increases during the COVID-19 pandemic in response to real and virtual humans IC-psychol. *Frontiers in psychology*, 13. doi:10.3389/fpsyg.2022.952998.

Honey-Rosés, J., *et al*., 2021. The impact of COVID-19 on public space: an early review of the emerging questions–design, perceptions and inequities. *Cities & health*, 5 (sup1), S263–S279. doi:10.1080/23748834.2020.1780074.

Knapp, T.J. and Schumacher, M.T., 1988. *Westphal's die agoraphobie with commentary: the beginnings of agoraphobia*. Lanham, MD: University Press of America.

Kuch, K. and Swinson, R.P., 1992. Agoraphobia: what Westphal really said. *The Canadian journal of psychiatry*, 37 (2), 133–136. doi:10.1177/070674379203700212.

Lynch, K., 1964. *The image of the city*. Cambridge, MA: Illustrate. MIT Press.

Mattsson, J., 2019. *Human behaviour & urban squares a public life study of Kungsträdgården and Sergels Torg*. Stockholm: KTH - Royal Institute of Technology.

Neale, J.H., 1898. Agoraphobia. *Lancet*, 152 (3925), 1322–1323. doi:10.1016/S0140-6736(01)84433-0.

NHS, 2022. *Overview - Agoraphobia*. Available from: https://www.nhs.uk/mental-health/conditions/agoraphobia/overview/#:~:text=Agoraphobiaisafearof,travellingonpublictransport.

Robinson, S. and Pallasmaa, J., 2015. *Mind in architecture – neuroscience, embodiment, and the future of design*. Cambridge, MA: MIT Press.

Roe, J., McCay, L., and McCay, L., 2021. *Restorative cities: urban design for mental health and wellbeing*. 1st ed. London and New York: Bloomsbury Visual Arts.

Salkovskis, P.M., 1991. The importance of behaviour in the maintenance of anxiety and panic: a cognitive account. *Behavioural psychotherapy*, 19 (1), 6–19. doi:10.1017/S0141347300011472.

Serageldin, I., 1995. Architecture and behaviour: the built environment of Muslims. *Architecture and behaviour*, 11 (3–4), 193–206. Available from: https://www.epfl.ch/labs/lasur/wp-content/uploads/2018/05/SERAGELDIN.pdf.

Sitte, C., 1965. *City planning according to artistic principles*. London: Phaidon.

Star, K., 2022. *What is agoraphobia? An anxiety disorder that causes symptoms of fear and prompts avoidance behaviors*. Available from: https://www.verywellmind.com/agoraphobia-101-2584235#:~:text=Agoraphobiaisananxietydisorder,adifficultorembarrassingsituation.

Thorpe, G.L., Sigmon, S.T., and Yoon, K.L., 2017. Agoraphobia and panic disorder. *Reference module in neuroscience and biobehavioral psychology*. doi:10.1016/B978-0-12-809324-5.06314-8.

Tonuma, K., 1981. Theory of the human scale (body measurements). *Ekistics*, 48 (289), 315–324.

Trancik, R., 1986. *Finding lost space: theories of urban design*. 1st ed. New York: Wiley.

Tritsmans, B. and Van Damme, I., 2012. Agoraphobia in a modernizing metropolis? Use, meaning and planning of squares in nineteenth-century Antwerp. *Negentiende Eeuw*, 36, 28–46. Available from: https://demodernetijd.nl/nummers/dne-2012-1/.

Trotter, D., 2004. The invention of agoraphobia. *Victorian literature and culture*, 32 (2), 463–474. doi:10.1017/S1060150304000609.

Tulumello, S., 2015. Fear and urban planning in ordinary cities: from theory to practice. *Planning practice & research*, 30 (5), 477–496. doi:10.1080/02697459.2015.1025677.

Tulumello, S., 2017. *Fear, space and urban planning. A critical perspective from Southern Europe*. Cham, Switzerland: Springer International Publishing. doi:10.1007/978-3-319-43937-2.

Ulrich, R.S., 1986. Human responses to vegetation and landscapes. *Landscape and urban planning*, 13 (C), 29–44. doi:10.1016/0169-2046(86)90005-8.

Vidler, A., 1991. Agoraphobia: spatial estrangement in Georg Simmel and Siegfried Kracauer. *JSTOR*, 54 (54), 31–45. Available from: https://www.jstor.org/stable/488425.

Vidler, A., 2002. *Warped space: art, architecture, and anxiety in modern culture*. Cambridge, MA: Illustrate. MIT Press.

Whyte, W.H., 2021. *The social life of small urban spaces*. 8th ed. New York, USA: Project for Public Spaces, Inc.

Williams, R.J., 2004. *The anxious city British urbanism in the late 20th century*. 1st ed. London and New York: Routledge.

Zucchelli, M.M., Piccardi, L., and Nori, R., 2021. The fear to move in a crowded environment. Poor spatial memory related to agoraphobic disorder. *Brain sciences*, 11 (6), 796. doi:10.3390/brainsci11060796.