Marshalls

Creating safer spaces

White Paper

In collaboration with:

Landscape Institute

October 2022

Marshalls

Much has been written about placemaking and the benefits of a well-designed space, from social to economic.

But what about safer spaces?

Creating safer spaces

Under the National Planning Policy Framework[1], the Government has outlined a multifaceted approach to designing and creating better spaces that enhance the lives of individuals, while supporting communities, services, the economy, and – importantly – the environment.

Specific areas of focus include developing and promoting healthy and safe communities, as well as preserving the vitality of town centres.

Many reports evidence the benefits of developing better places that promote inclusivity, health, wellbeing, connectivity, creativity, entrepreneurship and more. This can only be achieved if people feel safe while engaging with public spaces, whether by day or at night.

Marshalls recently conducted research that revealed 77% of people think about their safety when out and about in public, at least some of the time. And at night, people are nearly four times more likely to be concerned about their safety and wellbeing in certain locations.

So is enough currently being done to make sure people both *feel* safe, and *are* safe, when they're out in public? Are public realm projects being designed with both night and day in mind, and is enough thought being given to the darker hours in particular? And how can biodiversity be balanced with safety, creating spaces that are friendly to humans and to wildlife, with no compromise on either side?

This paper identifies seven design pillars to support the creation of safer spaces from day to night, drawing on the results of a piece of research carried out by Marshalls.

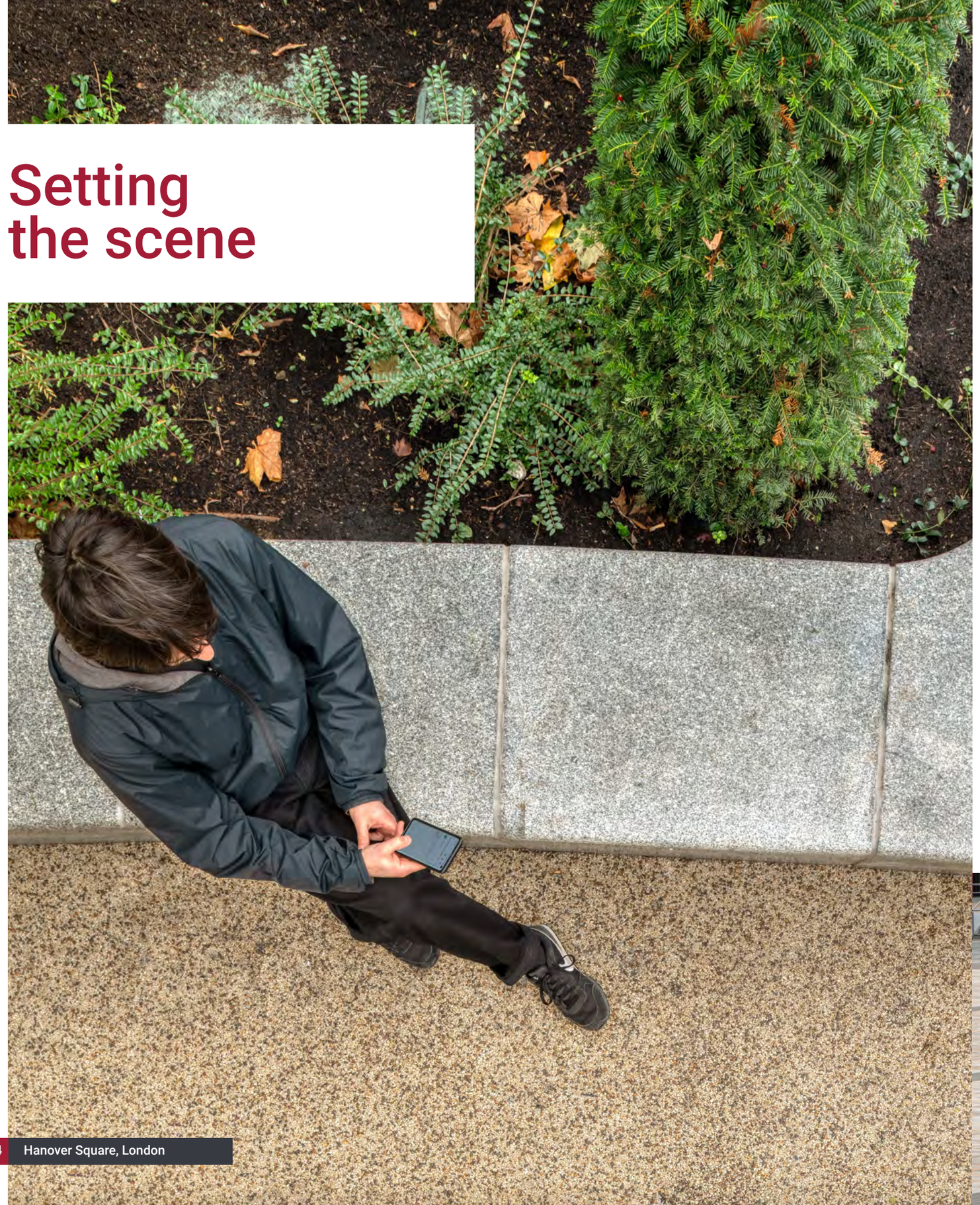
The Safer Spaces Survey captures views from a diverse range of people on where they feel the most and least safe, how this impacts their interaction with the urban realm, and what we can do as an industry to improve public experience.

Marshalls has written this paper in partnership with the Landscape Institute. Landscape architects and designers, local authorities and developers will find this paper particularly relevant to their work.

It may also be helpful for anyone else with a broader interest in designing public landscapes.

1. https://www.gov.uk/guidance/national-planning-policy-framework/8-promoting-healthy-and-safe-communities

Setting the scene



04 Hanover Square, London

What do we mean by spaces?

This paper focuses on spaces such as town centres, public squares, community parks, gardens and waterways.

In the year ending March 2020, 21% of violent incidents took place on the street or in public spaces[2]. It's therefore unsurprising that concerns about their safety whilst in public spaces was on the minds of 77% of people who took part in the Marshalls Safer Spaces Survey[3].

Whilst this paper focuses on public spaces, it is also relevant to those designing commercial and privately-owned spaces. These spaces also have an impact on how safe people feel, especially as they often offer a short-cut to a journey or are seeking to benefit from a more extended visitor dwell time.

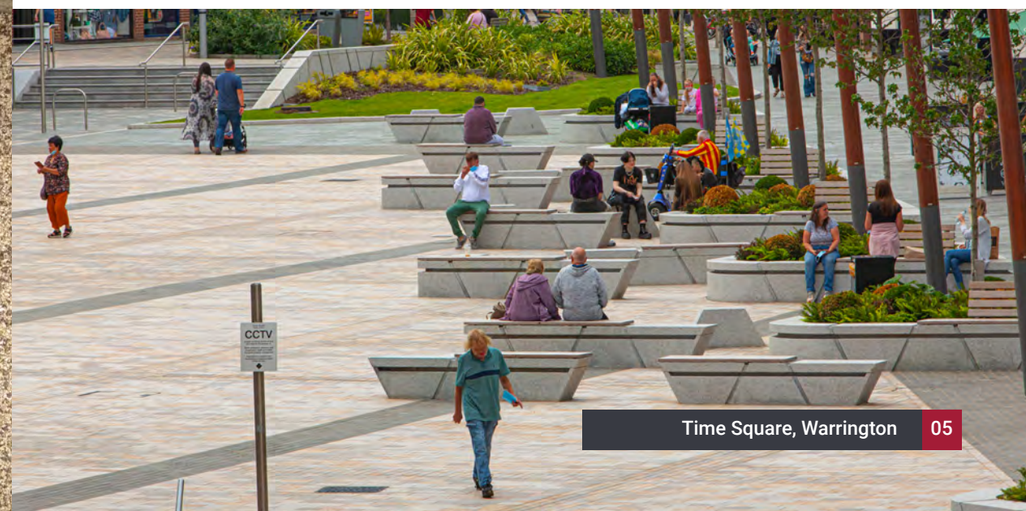
Safer spaces for who?

Recent media coverage has focused heavily on the vulnerability of specific demographics and the Safer Spaces Survey also reflects this.

The majority of women (84%) feel more vulnerable when out and about alone, compared with 44% of men. Minority groups also consider their safety more regularly; gay men are twice as likely to have safety on their minds compared with heterosexual men, and 43% of those with disabilities say they worry about their safety some or all of the time, compared to 27% of those without a disability. Taking age into account, the survey showed that young people tend to consider their safety more frequently than older people; almost 70% of those under 21 thought about their safety all the time, compared to just 10% of those over 60. Almost 15% of over 70s said they never worry about their safety.

2. Source: Crime Survey for England and Wales (CSEW) for year ending March 2020

3. Marshalls Safer Spaces Survey 2022



Time Square, Warrington 05

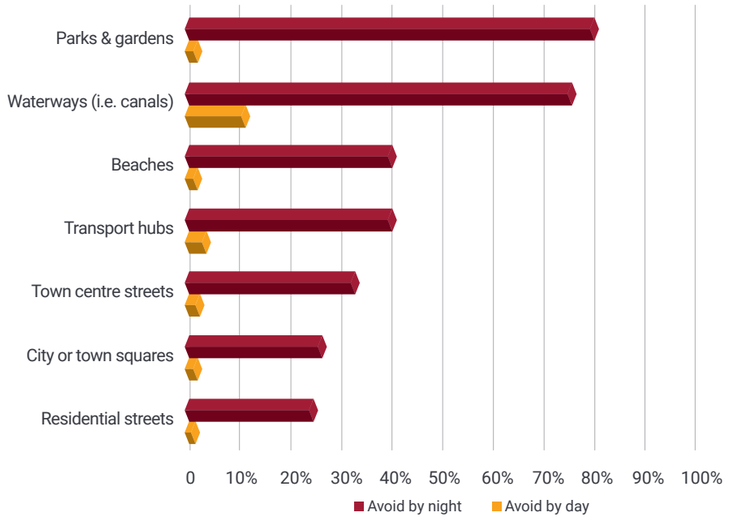
Day and night

In the Marshalls Safer Spaces Survey, 79% of people said they feel less safe when they're out at night than they do during the day.

The results revealed a huge difference between how people view different public spaces at night compared to during the day. Residential spaces were considered the safest of all public spaces, yet nearly a quarter (24%) said they still avoided these streets at night. Waterways, such as canals, were seen as the least safe public spaces during the day; 11% stated they actively avoided such places during this time, however, at night, this figure increased almost seven times to over three-quarters (76%).

Parks and gardens were named as the least safe spaces at night with 80% of people avoiding them during this time, compared to only 2% who would avoid them in the day time. Beaches, transport hubs and town centres were also named as places people would be more likely to avoid at night.

The reasons for people feeling less safe at night were largely down to poor visibility, whereby potential dangers or hazards are concealed or out of sight, as well as a lack of people. There was also a perception that more crime takes place at night, alongside an increase in anti-social behaviour, for example due to alcohol consumption.



Aldgate Square, London

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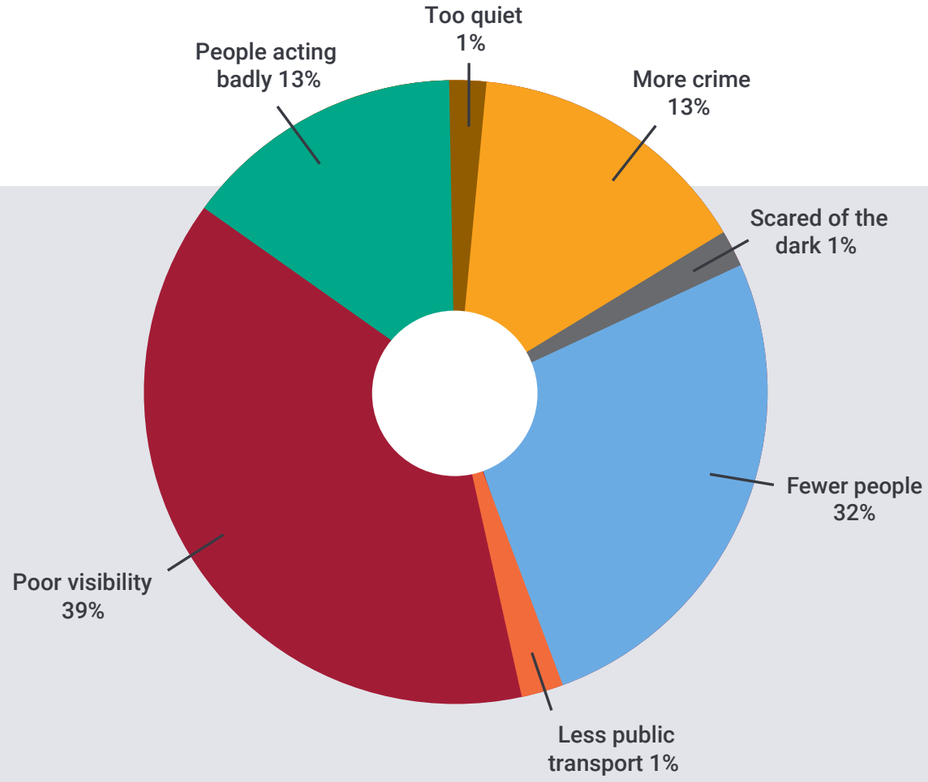
The impact on lifestyles and behaviour

The research showed that, generally, people feel most unsafe on a night out, with 31% of all participants citing this as an activity where they don't feel safe. Other activities that raised safety concerns included waiting for public transport (22%), exercising outdoors (16%), walking the dog (12%) and commuting (10%).

The results showed people changed their behaviour to improve their perceived levels of safety when out in public. The most common change in behaviour was walking a longer route that's busier and/or better lit (64%), followed by crossing the street to avoid others (58%).

Other behavioural changes included telling someone when they've arrived at their destination (57%), avoiding carrying valuables (50%), calling a friend (41%), only wearing one earphone or listening to music at a lower volume (32%), dressing differently (15%), and carrying a personal alarm (11%).

Reasons for safety fears by night



The far-reaching benefits of creating safer spaces

Designing better spaces can improve both physical and psychological safety.

08 South Bank, London

Feeling safe and being safe

The primary benefit of creating safer public spaces is that both physical and psychological safety can be improved, which is reason alone to focus on design interventions that enhance this.

However, in creating environments where people feel safer from day to night, there are also secondary benefits which have a positive impact on wellbeing, cohesion and the economy.

In the Safer Spaces Survey, over 40% of respondents said that proximity and accessibility to busy areas helped to make them feel safer. With this in mind, safety in public spaces is a virtuous cycle – more people venture out in public if they feel safer, which encourages more still to join them.

Another benefit to creating safer spaces is that the vibrancy and liveability – and therefore the economy and reputation – of our towns and cities improves as more people use and pass through public spaces. More people using local businesses and engaging in local services helps to create jobs and thriving communities.

Creating safer spaces can help attract more visitors and tourists from outside of the local area. It can also encourage people to be more active outdoors, supporting their health and fitness, as well as creating less reliance on cars, leading to a reduction in carbon emissions. The research paper *Climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities*, shows that changes in active travel have significant lifecycle carbon emissions benefits[4].

It's vital that we consider all of this not only for when it's daytime, but at night too. People need to feel safe whether it's light or dark in order for public spaces to thrive.

Safety at night impacts people in many different ways. Our Capital is one example; a third of those working in London do so at night, equating to 1.6 million people[5]. On top of that, two-thirds of Londoners are regularly active at night, carrying out activities such as personal errands, socialising, and enjoying cultural facilities[6].

And that's without considering the millions of visitors from around the world who come to the city each year, which stood at 21 million people in 2019[7].

If the spaces we design and build don't enable people to feel safe when it's dark, this can have all kinds of consequences from unfairly impacting those who work at night to restricting the hours to which individuals can run errands like going to the shops. On top of that, if spaces aren't inclusive and don't offer safety when it's dark it can limit who has access to culture, entertainment, exercise, education, and more. And not only does this impact the individual, but organisations and businesses too.

When Mayor Sadiq Khan set out his vision to make London a truly 24-hour city[8], there were several benefits cited for such a concept, including:

- providing vibrant opportunities and flexible lifestyles for everyone
- promoting all forms of cultural, leisure, retail and service activity
- attracting tourists and visitors
- taking into account future global and domestic trends in leisure, migration, technology, employment and economics
- promoting the safety and wellbeing of residents, workers and visitors

While conversations and plans continue to explore how to make cities like London 24-hour, the Marshalls Safer Spaces Survey reveals just how wide the gap is between people feeling safe in public spaces at night compared to during the day.

Therefore, it's critical to review how we design places to benefit individuals, communities and businesses.

4. Brand,C; Götschi, T; Dons, E; Gerike, R; Anaya-Boig, E; Avila-Palencia, I; de Nazelle, A; Gascon, M; Gaupp-Berghausen, M; Iacorossi, F; Kahlmeier, S; Int Panis, L; Racioppi, F; Rojas-Rueda, D; Standaert, A; Stigell, E; Sulikova, S; Wegener, S; Nieuwenhuijsen, M.J; 2021, The climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities, Global Environmental Change,
5. https://www.london.gov.uk/sites/default/files/london-at-night-full-final.pdf
6. https://www.london.gov.uk/sites/default/files/london-at-night-full-final.pdf
7. https://www.cityoflondon.gov.uk/things-to-do/tourism-trends-and-strategies/tourism-statistics
8. https://www.london.gov.uk/sites/default/files/24_hour_london_vision.pdf

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Why now?

During the last decade, design and policy focus has largely centred on environmental sustainability in the urban realm, emphasising topics such as improving biodiversity, optimising the circular economy and minimising the carbon impact of new spaces.

Whilst this shift is both welcome and necessary, the features that accompany a biodiverse landscape such as dense shrubbery, tall plants and low, or no, lighting after dusk, can sometimes compromise feelings of safety. As discussed later in this document, clearly seeing the route ahead is a key feature of safe and inclusive urban design and cannot be ignored.

Running parallel to the sustainability shift, the debate around personal safety has intensified. Several high-profile cases have made the spotlight on safety even brighter, whilst political and community discussion has grown around responsibilities and necessary changes to protect people while they are using public spaces.

But while there is a focus on how we can improve our shared, public spaces, the research shows currently not enough is being done to create an inclusive, safe society for all. If we're to achieve wider goals of improving spaces, we need to make sure safety is integrated at all stages of the design process.

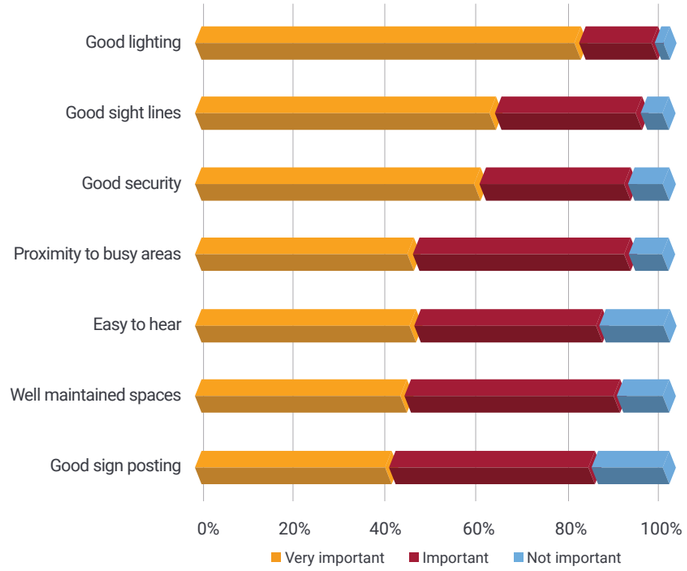
The Government's Safer Streets Fund has looked to address issues in localities by funding initiatives to reduce crime and the fear of it; one phase of the scheme was explicitly aimed at making women and girls feel safer on the streets. A further Safety of Women at Night Fund has enabled new projects such as an increase in taxi marshals at weekends in cities, and investment in bus tracking to reduce the time spent waiting alone at transport hubs. Whilst these latter projects were focussed specifically on a single demographic, the results of the work benefit everyone using public spaces and transport hubs.

Oldham Town Centre

Design pillars for creating safer spaces

Taking into consideration the research findings along with insights from industry partners, Marshalls has developed a series of design pillars that identify the priority areas for consideration when it comes to creating safer spaces.

The recommendations within each pillar provide discussion topics, inspiration and practical advice for individuals, businesses and organisations looking to design and create spaces to help people feel safe at any time of day or night.



Most important factors in improving safety

The elements considered most important for improving safety in public spaces are good lighting and good sight lines/visibility. Being able to see potential dangers and hazards was a key concern of nearly all those surveyed.

Good security, in the form of CCTV cameras, security personnel and other deterrents was also considered very important, as cited by nearly 60% of respondents.

"For anyone of advancing age or infirmity, movements are likely to be slow and less nimble, therefore the possible dangers of uneven ground or unseen miscreants are increased at night when there are fewer people to give help if it is needed."

"Naturally, there's a far higher chance of being mugged or assaulted at night, as it's easier for the potential perpetrators to remain unidentified. Street lighting is often patchy and inconsistent."

01 Eyes on the street

In contrast to how most people want to feel while in the comfort of their own homes, being ‘overlooked’ is a welcome key factor in perceived and actual safety in public spaces.

Walking alone and with fewer people around who could witness or help in the event of an attack, not only increases feelings of vulnerability but may also encourage anti-social behaviour.

The ‘passive surveillance’ of others often signals that an area is safe. Knowing that other people are around is reassuring and comforting, particularly at night.

In Danish architect Jan Gehl’s work, Cities for People[9], the use of ‘soft edges’ to seamlessly transition between public and private areas offers a best practice solution. Here paving, landscaping, furniture, hedges or gates can be used to represent clear boundaries. Private buildings should have as few sides as possible adjacent to the surrounding public streets so that only the ‘active’ frontage is roadside. This prevents barely used sides of the building which may be windowless and may only be in use for fire exits or loading, from creating lonely, unobserved thoroughfares for the public.

14 Exhibition Road, London

Design considerations

Mixed-use schemes

As urban realm is perceived to be safer when occupied, the development of mixed-use spaces should be considered where possible, combining both commercial and residential elements.

Public spaces and footpaths should ideally be overlooked by buildings that are occupied both at night and during the day; the more glazing the better. Cafes or bars designed with large windows, particularly those encouraging on-street gatherings too, can markedly increase the benefit to those passing through.

Shared spaces

Rather than creating different routes for different types of traffic, and risk sending pedestrians into underused areas such as subways, routes should be inclusive where possible. Where pedestrians, cyclists and vehicles can travel safely alongside each other, it ensures continual activity and ongoing observation.

For pedestrians, footpaths should avoid sharp bends and hidden corners and should be designed with surrounding buildings in mind so that they are overlooked.

Maximising observer visibility

While features designed to protect private spaces benefit those on the inside, this can neglect the conditions those on the perimeter need to feel safe. Blocking visibility which might otherwise provide ‘eyes on the street’ has real disadvantages. An example of this is the use of large boundary walls to secure residential complexes, leaving passers-by largely unobserved.

Where defensive planting is used to enhance security, prickly or thorny shrubs should be well maintained to minimise overgrowth that could impede the opportunity for natural surveillance. When it comes to practical recommendations on safety and security features for landscaping in commercial spaces, the Secured by Design (SBD)[10] commercial developments guide (2015) provides some valuable direction.

Creating active streets

In their work A Pattern Language[11], Alexander et al. note that ***“at night street crimes are most prevalent in places where there are too few pedestrians to provide natural surveillance, but enough to make a thief’s while”***. For a true feeling of safety, it’s important to go beyond passive street observation and instead shift focus to creating truly ‘active streets’ – good-quality public spaces that attract people to come and stay. Designing places where a broad spectrum of community groups want to spend more time is the key to a truly welcoming place. Spreading activity through an area rather than creating a critical mass at a central point can prevent crowd-based crime, but this needs to be ‘linked’ through the grouping of active frontages or areas of pedestrian activity.

The concept of the 20-minute neighbourhood demonstrates this well – the idea of a connected and compact area where everything people need for their daily lives is but a short walk away. More people are on the streets together, which results in more familiarity and location connection. As such, the all-important passive surveillance becomes more commonplace.

Cities such as Paris and Melbourne have already trialled the concept. Plan Melbourne (2017-2050) by the Victoria Government is focused around creating well-designed walkable neighbourhoods, with ‘safe streets and spaces’ one of the key features. Pilots that have taken place in different cities will feed in to the strategic plan for Melbourne’s future growth[12].

It should be possible to replicate many of the global design features of a 20-minute neighbourhood to improve feelings of safety across the UK. This includes designing for multiple uses, to give more reasons for people to be in public areas for extended periods, providing room to interact and ‘play’ through green space, and by providing attractive routes to walk, cycle and run. Outdoor areas for people to congregate and rest, whether by day or at night, can also be combined with a robust maintenance programme to ensure spaces are well looked after and appear so. All these factors become essential once safety is a goal.

“ It isn’t just the darkness - it’s that fewer people are around and some areas can become deserted. I generally feel OK after dark if I’m close to busy roads, etc. Similarly, I can feel wary in broad daylight in secluded areas.”

“ The day means people are around and it’s less likely someone will hurt you in front of other people. I feel vulnerable being somewhere secluded and realising you’re possibly alone and unseen by others, or in a place you could become trapped in.”

9. Gehl,J; 2010, Cities for the People, Island Press
10. https://www.securedbydesign.com/images/downloads/SBD_Commercial_2015_V2.pdf
11. C Alexander, 1977, A Pattern Language: town, buildings, construction. Oxford University Press
12. https://www.planmelbourne.vic.gov.au/current-projects/20-minute-neighbourhoods

02 Vision and wayfinding

Seeing potential dangers and hazards was a key concern of nearly all survey respondents, and it's one of the main reasons people feel more vulnerable after dusk, and why designing for the dark is key.

Sight is a 'distance sense', and the varying average radius thresholds of people delivers different levels of information to the viewer, creating a social field of vision. Identifying shapes and understanding what they are as early as possible creates a greater feeling of safety.

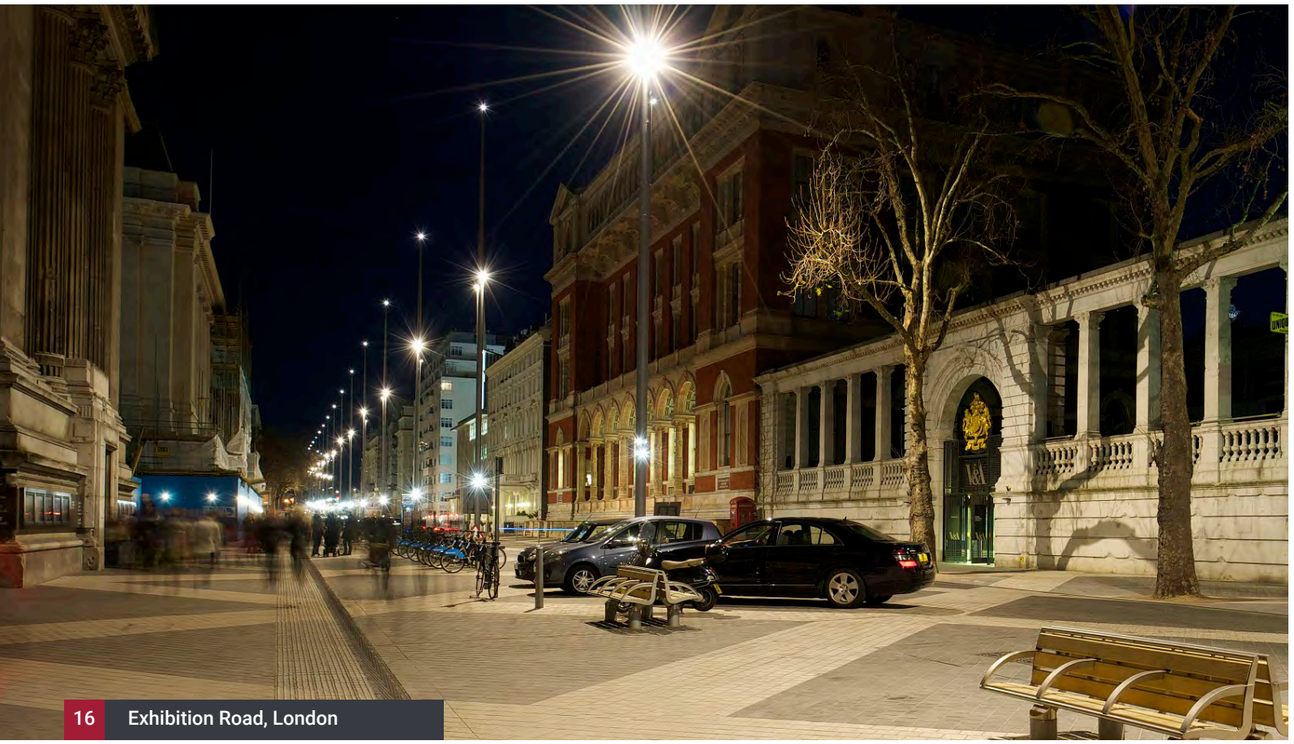
The ability to see what lies ahead is undoubtedly the most significant influencer of perceived safety in public spaces, particularly where there is a lack of familiarity to rely on. The Safer Spaces Survey confirmed this by identifying that good lighting and good sightlines are the most important elements for improving the safety of public spaces, cited by 95% and 90% of people respectively as important features to help them feel safer.

Good visibility enables people to identify and assess risks, and take appropriate responsive action if needed. Clear, open views remove the opportunity for concealment of potential threats so that people using spaces feel more confident. People also need to clearly see their specific route through and, importantly, the way out.

Sightlines are crucial in both breadth and depth and, in the pursuit of interesting design and elaborate features in spaces such as parks, these lines can sometimes be restricted. Examples are corners and winding paths, high walls and fences and large or overgrown greenery. So while it remains necessary to ensure public spaces are attractive and hold points of interest for users, it's also essential to consider how these design features could affect the visibility of main routes and therefore the perceptions of safety.

Wayfinding is critical to feeling safe in an unfamiliar place and reducing worries over getting lost. Waymarking ensures people can confidently follow an intended route while providing an element of control to the flow of pedestrians, directing them away from hazardous and isolated, run-down areas.

In the Marshalls Safer Spaces Survey, participants highlighted the need for clear visibility to feel safe, whilst citing that darkness often made them feel the most unsafe.



16 Exhibition Road, London

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Design considerations

Lighting

While there is conflicting evidence about whether lighting reduces actual crime levels, it's clear that lighting can significantly alleviate the fear of crime. People often decide whether or not to use a space depending on its lighting levels after dusk.

Lighting that has been strategically designed for the space increases visibility and gives a general impression that an area is well looked after and possibly monitored; once again highlighting the importance of the notion of designing for the dark.

The placement of lighting is a balancing act, combining the need for security with the privacy of nearby residents, whilst also creating ambience. In areas where anti-social crime occurs, designers should consider the different types of lighting used to deter vandalism or destruction of the lights themselves. Tall, traditional street lights are often not the best solution to meet public realm requirements as they can create islands of light in a pool of darkness – this can in turn increase anxiety when moving through the darker areas. In most cases, it's better to have spaces that have consistent lighting levels throughout.

It's beneficial to use lights to guide pedestrians on a route whilst also illuminating entrances, exits and signage in spaces such as parks. Lighting can help reassure pedestrians that they are heading in the right direction, and different levels can be used to subtly signpost people along the safest route where there are several options. Lighting the perimeter edge of a park or square can help users with spatial awareness and enhance their feelings of security.

The style of lighting units used can create a 'sense of place' increasing the familiarity, legibility and coherence within an area. Rachel Kaplan et al. in their book 'With People in Mind'[13] state that ***"people can readily discern the presence of a few distinct regions or areas, and those make it easier to make sense of, or understand, a place."*** Wayfinding is directly linked to lighting for very obvious reasons. Repetition of a specific type of lighting, whether that be in shape or colouring, creates memorable components, which is key to legibility. To quote Kaplan et al., ***"in a legible place, one can imagine finding one's way, not only to a destination, but back again as well. A single landmark or an area that is distinctive makes wayfinding much more straightforward."***

Biodiversity

In a field experiment by Evensen et al.[14] the impact of green space and vegetation on perceived safety was tested using the height of a hedge along a park pathway. The study showed that cutting down the hedge improved the prospect of the immediate surrounding area for female users, making them feel safer in the park.

To support biodiversity without compromising on safety, the use of lower-level hedges along pathways, shrubbery instead of long grasses, planters and large nectar-rich flower beds are all excellent solutions. Selected shrubs such as Cotoneaster give the added benefit of absorbing significantly more air pollutants than many other shrubs, whilst also providing berries loved by birds.

Placement is also key. There is a difference between planting a hedge to promote biodiversity, and perceived safety, as birds will not use greenery for nesting or roosting much below two metres in height.

Larger elements such as taller shrubs and trees therefore, should of course still be utilised in landscape design, but placed further away from more highly trafficked sections of public realm. As well as removing potential places of concealment for would-be attackers close to main thoroughfares, this has the added benefit of keeping birds away from the places where they are most likely to be disturbed by humans.

Wayfinding

Effective wayfinding includes signs, maps and other visual cues to help orient and guide people through a space and to their destination. The best wayfinding systems are those developed uniquely to the topography and orientation of a specific public place, its infrastructure, and surrounding amenities – there is no one size fits all approach.

Best practice spacial planning considerations include the use of signage through to demarcation, pattern breaks and colour contrasts in paving, combined with the use of planting and greenery, which all contribute to communicating the structure and flow of a space.

Safety is enhanced by supporting the free and easy movement of people, particularly at night where they might feel most vulnerable.

Ensuring that routes through an area have a clear hierarchy can help manage user expectations, allowing the landscape to communicate purpose to its audience. Primary routes should be wider, ideally two metres and well lit, combined with narrower pathways for detours and secondary destinations.

It's important to lay primary routes of travel such as arterial pathways along the 'desire lines' of users. This can be determined during the design phase by pedestrian flow modelling.

"I suppose it's the fear of what's lurking in the shadows that makes the night time appear more dangerous."

"As a woman it's a scary world out there. Especially when alone, I make sure I know where all exits are."

13. Rachel Kaplan et al. 1998. With With People in Mind: Design And Management Of Everyday Nature
14. Evensen, K.H.; Nordh, H.; Hassan, R.; Fyhri, A. 2021. Testing the Effect of Hedge Height on Perceived Safety-A Landscape Design Intervention. https://doi.org/10.3390/su13095063

03 Acoustics

The sonic environment is an invisible but crucial factor affecting how people interact with a space. Its most significant impact is on our perceptions of safety. Yet, it's also an essential consideration regarding physical safety too, given that some sounds might mask anti-social or criminal behaviour.

While there's a plethora of design advice and building regulations guidance dedicated to the management of acoustics in buildings, the importance of soundscape quality is less often a critical concern in public realm design, excepting consideration of road traffic noise during site surveys.

Acoustics can positively or negatively contribute to the enjoyment and sense of security within a space. Research by Professor Aradhna Krishna et al.[15] demonstrated how sound can help to create a feeling of safety in public places. Krishna et al. evaluated the impact of acoustics in differing 'open' environments, from parking garages to underground metro stations. Findings illustrated that certain ambient sounds – such as bird song or human voices – help create social presence, often leading to an increased feeling of safety.

On the opposite side of this, artificial nuisance sounds, such as loud traffic, can significantly negatively impact the perception of safety. A pilot study conducted at Granary Wharf, London, in 2019, by Aletta et al.[16] noted the adverse emotional effects of urban noise in public places, particularly for 'vulnerable' individuals.

The Marshalls Safer Spaces Survey shows unwanted noise becomes more problematic at night. More than 30% of research respondents considered their awareness of sounds when out and about in public spaces during darkness.

Insecurity is often heightened wherever overall sensory input – such as vision – is restricted, through poor lighting or in cramped spaces.

Ultimately, the aim is to harmonise all design elements to achieve balance, allowing lower volume and recognisable sounds whilst not overwhelming the users of spaces or masking noises that might alert people to potential danger.

"When I can see further around me (e.g. to identify where a strange noise has come from) I feel safer."

"During the hours of darkness, the risk to my personal safety feels greater. I am more aware of my surroundings, listen out for noises and I am generally more cautious."

15. Krishna, A., Sayin, E., Ardelet, C., Briand, G.,and Goudey, A.; 2015, Sound and Safe: The Effect of Auditory Input on Percieved Safety of Public Spaces, International Journal of Research in Marketing
16. Aletta, F., Molinero, L. ,Astolfi, A., Di Blasio, S., Shtrepi, L., Oberman, T., and Kang, J.; 2019, Exploring Associations Between Soundscape Assessment, Perceived Safety and Wellbeing, University College London

Garden City, Letchworth

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Design considerations

Bringing together hard and soft surfacing

When considering design elements, it's essential to think about how soundwaves behave when interacting with surfaces. Generally, the design principle would be to avoid too much reflection, reducing excess reverberation or echo that might create a sense of unease within the space. The use of textured materials on surfaces can also help to reduce reflection, absorbing more sound. Angles of more prominent hard landscaping elements such as high walling or seating should also be considered; high semi-circled walls of smooth concrete, for instance, might direct excessive amplified sound to a focused point within a space.

Of course, even where larger expanses of hard landscaping are used, potential acoustic issues can be mitigated through the use of vegetation and plantings, carefully placed throughout the space to 'noise block'. Plant density is the key here, with thicker, more tightly packed greenery offering more significant noise reduction. Evergreen shrubs are an excellent way to offer consistent protection.

Sonic flow

Designers can consider introducing 'overlay' sounds that mask unpleasant acoustics when plants don't reduce noise enough. Flowing water is very effective here, with streams, water fountains and other features providing a recognised calming effect.

A physical manifestation of sonic design

Physical representations of soundwaves could also be considered in public realm designs, mainly where unwarranted noise is a specific challenge, such as high traffic areas. Marking areas of potential acoustic interest should raise consciousness around the importance of this critical design component.

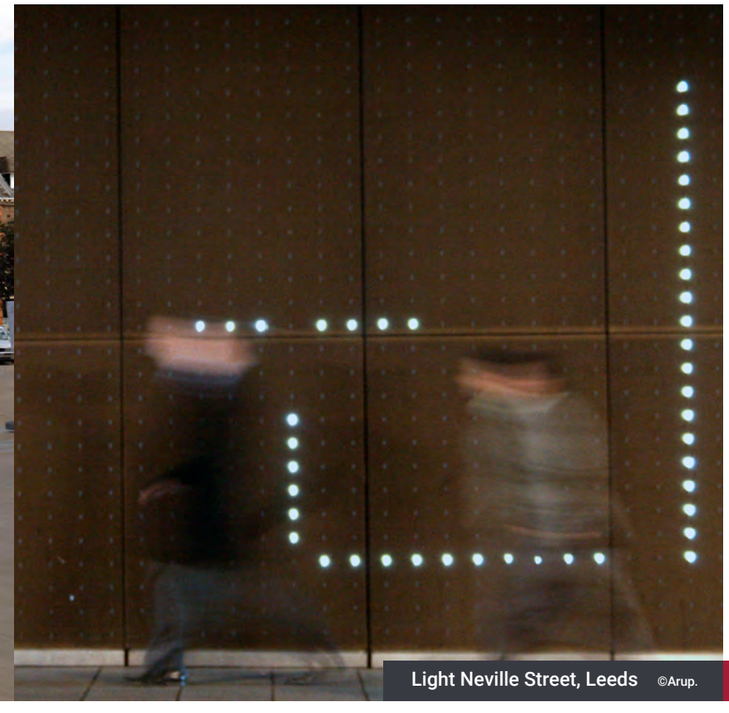
The 24-hour soundscape

The 24-hour soundscape should be evaluated during the site survey stages of public realm design. While noise consideration is always part of any initial developmental research, there is seldom a focus on designing for dark.

Conducting site surveys both during the day and at night enables a better identification and analysis of sound sources. ISO 12913-1:2014 provides a useful conceptual framework for the planning, design and management of soundscapes, as well as explaining the factors most relevant for measurement and reporting.

Acoustics in practice

A fantastic exemplar project is the Light Neville Street sonic art installation. Led by Bauman Lyons Architects & sonic artist Hans Peter Kuhn, this multi-million-pound project saw the transformation of a major gateway into Leeds city centre, which was previously just a dark tunnel. Designed to improve the safety and enjoyment of the space, light and sound elements come together to brighten the walkways and mask the noise of the train station above.



Light Neville Street, Leeds ©Arup.

04 Accessibility

Public spaces should be accessible to all prospective users, from pedestrians and wheelchair users to runners and cyclists alike. They should also feel inclusive and welcoming to people from all backgrounds and minority groups.

The charity Living Streets has carried out much research in this area, recognising that well-designed public realm spaces that work for people with additional access needs, also work for everyone else.

The charity's position paper on inclusivity[17] advocates for reducing the dominance of vehicles and re-focusing on the needs of people using streets and other public spaces. This starts with planners and designers considering individual needs, especially for those with protected characteristics, who might be directly disadvantaged by poor physical infrastructure.

In terms of overall perceptions of safety, ONS research[18] shows that people with disabilities feel less safe in all public settings, and particularly at night. The Marshalls research also supports this, with 80% of disabled participants citing that they feel vulnerable in public spaces at night.

In terms of inclusivity in respect of demographic variables – such as a gender, ethnicity and sexuality – stakeholder engagement is key in helping to create welcoming, vibrant places that support local communities.

Any engagement discussions should be led by potential users, not prescribed.
It's also important to factor in accessibility to engagement initiatives themselves, allowing flexibility for many voices to participate by holding both formal and informal events at different times of day and in multiple locations, making the collation of user insights as easy as possible.

The multiple potential uses of a space should be considered and explored, with open-ended possibilities for cultural and artistic interventions throughout the lifetime of the development.

"As a gay person I'm most worried about hate crime when I'm out and about alone at night."

Design considerations

Open spaces

The key to 'opening up' spaces is the removal of any physical barriers or 'pinch points' that could restrict access. Minimum widths for paths and access points are outlined in the Paths for All Design Guide[19].

The ideal – to allow all users to move freely, from pedestrians with walking sticks or guide dogs to mobility scooters – would be 1.5 metres, increasing to 2.5 metres where possible to allow for the turning circle of a larger mobility scooter. Spacing between any bollards should be a minimum width of 1.5 meters. The design of access routes to public buildings should comply with BS 8300:2018.

Elevated spaces

Allowing access to spaces at height or on uneven ground should be facilitated through a mix of steps, ramps and boardwalks, with supporting handrails to assist disabled users.

Where pavements are incorporated into a landscape design, drop kerbs for wheelchair and bike accessibility are essential.

Use of textured landscaping

All public realm designs should use tactile paving as standard to aid blind or partially sighted users. The use of contrasting colour in demarcations and street furniture is equally important. To distinguish design elements in darker hours, reflective strips or lighting should also be considered.

Stopping points

To support users with limited mobility, regular resting places can be incorporated into the urban realm – ideally at intervals of between 50 to 100 metres. Aim to locate resting places in sheltered spots where there is protection from the wind, perhaps close to points of interest, such as public art or a viewpoint.

"Being a full-time wheelchair user I feel very vulnerable personally."

17. https://www.livingstreets.org.uk/media/5917/inclusive-streets-final-position-paper.pdf
18. https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/
19. https://www.pathsforall.org.uk/mediaLibrary/other/english/outdoor-access-design-guide.pdf

05 Familiarity

Having a level of spatial familiarity is important for users of public spaces, as it affects both comfort and enjoyment. Architect Jan Gehl has spent considerable time analysing human interactions with the urban realm, and in his book, Spaces of Uncertainty, he highlights the need for the reassurance familiarity brings.

This conclusion is supported by Dr Norsidah Ujang[20], who identifies the increasing use of 'generic urban environment' as having a damaging effect on spatial harmony and the sense of identity embedded in a user's experience of place.

In terms of impact on perceptions of safety, many Marshalls survey respondents said that familiarity does make a difference to their overall feeling of security when interacting with a space.

22 Aldgate Square, London

Design considerations

Feature repetition

The use of recognisable design features supports positive environmental psychology outcomes as this removes an element of the unknown, especially for first-time visitors to a space. Where feature repetition is successfully integrated into the urban realm, users no longer need to be concerned with what 'lies around the corner' as a certain level of comfortable predictability takes effect.

Local area characteristics

Spaces also tend to feel more familiar if they sit happily in the context of the local vernacular architecture. In an area well-known for a particular building material, such as regional heritage stones, the frequent use of such material brings with it more of a connection to a place. A site character assessment is a crucial part of the initial feasibility and often triggers ideas used within the design process, such as recollections of heritage, which increase pride and attachment to the space in question.

"I feel most vulnerable in unfamiliar places, I don't know where to run to if I need to get away."

"My greatest fear is fear of the unknown."

20. Ujang,N; 2008, Place Attachment, Familiarity and Sustainability of Urban Place Identity

06 Technology

For many years, technology has played a crucial role in public safety in the form of CCTV, and with rapid innovations around smart devices and the Internet of Things, more opportunities are being created.

In the Marshalls Safer Spaces Survey, good security, in the form of CCTV cameras and other deterrents, was considered very important by almost 60% of participants.

However, it is also important to note that there's a balance to be struck between reassurance and safety, and unwittingly achieving the exact opposite.

The presence of too much technology such as a proliferation of cameras, can create fear and the feeling that a space must be insecure. Likewise, if technology is too accessible in a vulnerable area it becomes at risk of vandalism.

Design considerations

CCTV

While the importance of informal surveillance has already been highlighted, in higher crime areas in particular, more formal surveillance such as CCTV is often also needed. Another crucial balance here is to ensure it achieves its aim without encroaching or being perceived to encroach on the public's privacy through over-surveillance.

In Lincoln, a Government-funded scheme to improve street safety includes an app which allows women to ask CCTV operators to track their journey home[21]. This takes surveillance to a new level whereby the public have an element of control and the reassurance of access to surveillance on request.

When considering the role of CCTV in a landscape, it is recommended to engage security experts in the early design stages so that safety is 'designed in'. Traditionally, such measures have been seen to compromise aesthetics and were often therefore handled later in a project life cycle. However, with advances in technology, this no longer needs to present such an issue.

Connectivity

Marshalls' research showed that more than half of people will call or text a friend or family member on their journey home as the remote presence of a familiar person enhances the feeling of safety. However, in areas of poor network signal or a lack of Wi-Fi, the prospect of being truly alone and without access to help should someone need it is daunting. Providing public Wi-Fi or boosting local networks should be a matter of course in developing public realm spaces.

Recognising that's not always the case and that people may not always have a device with them, some tech companies are developing more modern solutions. StreetHubs from BT provide digital panel units which are installed on the street to replace old payphones. They provide ultrafast internet, phone calls and other digital services such as mobile phone charging, maps and directions.

Dynamic street lighting

As mentioned, lighting is key to a feeling of security in public spaces at night. And new technology allows far more intelligent use of lighting to ensure safety can be tailored to the space. It's also more energy-efficient and offers a better quality of life where the needs of local residents must be balanced. This includes sensor lighting triggered by movement, which is only used when required.

21. https://www.bbc.co.uk/news/uk-england-lincolnshire-58831536
22. https://futurecity.glasgow.gov.uk/intelligent-street-lighting/

Technology in practice

As part of Future City Glasgow, the city is currently trialling intelligent street lighting[22], which harnesses real-time data to improve the lit environment and in turn, safety. Examples include Gordon Street, where a lighting network controlled and managed remotely online connects to the City Operations Centre, a state-of-the-art integrated traffic and public safety management system. Riverside Walkway also benefits from the scheme with a dynamic lighting system that reacts to the presence of the public and encourages the safe use of cycle paths and open spaces.

Trials such as this highlight the need for wider consideration of how lighting, combined with surveillance and wider public data, can be used to enhance safety in cities and towns.

Islington Square, London

07 Maintenance

As outlined in the National Planning Policy Framework,[23] good design can help to deter a range of crimes from theft to terrorism.

And many studies show that investing in the ongoing maintenance of well-designed places is a key factor in mitigating potential criminal activities. A University of Gronigen team, led by Kees Keizer, conducted a study in 2008[24] in the Netherlands to test so-called 'broken window' theory – the idea that disorder and lack of upkeep in a space perpetuates an ongoing cycle of degeneration and security challenges.

Research findings supported this concept, showing how the behaviour of people is dramatically influenced by the quality of public realm space. In streets where rubbish, graffiti and unkempt buildings were present, theft and other types of anti-social behaviour increased. Keizer et al. concluded that one type of anti-social conduct often leads to others, as the sense of social obligation is diminished.

And, of course, maintenance of spaces isn't just about minimising crime. Trip and slip hazards are as much of a concern for more mature and less able users when it comes to using public spaces, as demonstrated by the Safer Spaces Survey.

"I have mobility issues so I'm always conscious about trip hazards."

"As a blind person, my fears are broken pavements, crossing boxes not working or no tactile paving where there should be some. These are essential for me to be able to move around safely."

23. https://www.gov.uk/guidance/health-and-wellbeing#achieving-healthy-and-inclusive-communities
24. Keizer, K; Lindenberg, S; Steg, L. 2008. The Spreading of Disorder. Science (New York, N.Y.). 322. 1681-5. 10.1126/science.1161405.

Design considerations

Low maintenance materials and infrastructure

To remain usable, safe and sustainable, outdoor landscaping and building structures must be regularly maintained. The ongoing costs of this upkeep should, of course, be factored into any development plans during the design stage, to ensure project budgets are met upon contract completion and beyond.

For hard landscaping, such as street furniture, paving, kerbs and roads, low-maintenance products with longer lifespans can be selected to reduce the need for care interventions. Products with in-built protection against damage should also be considered, such as anti-graffiti coatings, weather-resistant features and sustainable urban drainage systems.

When it comes to CCTV and other technology systems, clearly maintenance and upkeep is key; but where possible they should also be future-proofed, enabling updates to avoid such interventions becoming obsolete.

Management processes

For soft landscaping, the use of hardy, evergreen elements can reduce the need for regular clear up, such as the removal of excess leaves. This of course should be balanced with some deciduous planting, with a controlled level of leaf fall for food and cover for earthworms and other insects, soil enrichment and protection of new growth from frost.

Where grass features on public land, regular grounds maintenance and grass cutting are required by the local authority.

A repair regime for paths and other connecting infrastructure is necessary to help prevent slip or trip incidents.

Local ownership and engagement

Increased involvement and more ownership by local people helps to improve feelings of social obligation, which should in turn help to protect spaces from vandalism, littering and other forms of anti-social behaviour.

Local stakeholder engagement is key to this – consultation with businesses, occupiers, and users of the public realm should be carried out whenever possible at the design stage, and throughout.

Conclusion

This paper has used insight into current perceptions of public safety to inform seven design pillars for creating safer spaces. The pillars should be used to open debate, unlock thinking and provide focus – with particular reference to designing for the dark, an issue which was frequently raised by survey participants.

The design pillars demonstrate how important it is to find the right balance for a space, and highlight the conflicting demands of different uses, users and scenarios.

When it comes to putting this work into practice, a range of expertise exists to ensure that measures intended to create safer spaces are successful.

Early engagement with suppliers, and an understanding of the ones which offer expertise on top of their product ranges, is crucial.

Marshalls, for example, has an experienced commercial design team, who combine their product expertise with a deep understanding of how best to design and engineer the systems into which they're installed. This includes concept and technical visualisations and a library of downloadable BIM models.

Suppliers who offer this level of support will have a wealth of experience that can be tapped into, providing insight on what is proven to work well.

MARSHALLS - CREATING SAFER SPACES : WHITE PAPER SEPTEMBER 2022

For more information about Safer Spaces or to read our latest case studies, visit our website.

Find out more at:

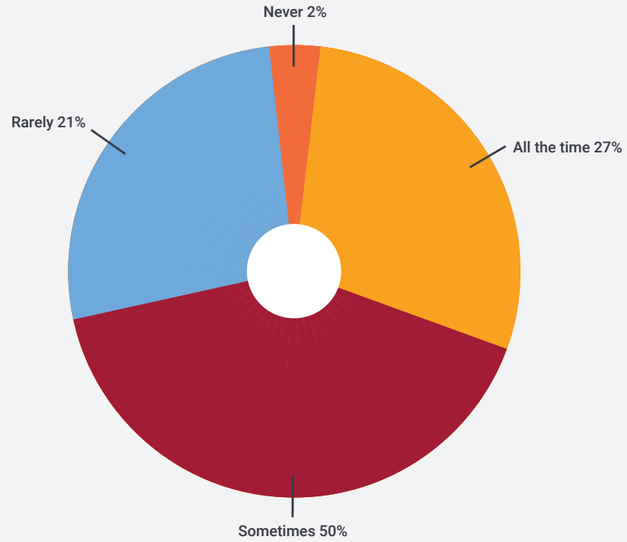
www.marshalls.co.uk/saferspaces

Survey results

Safety concerns

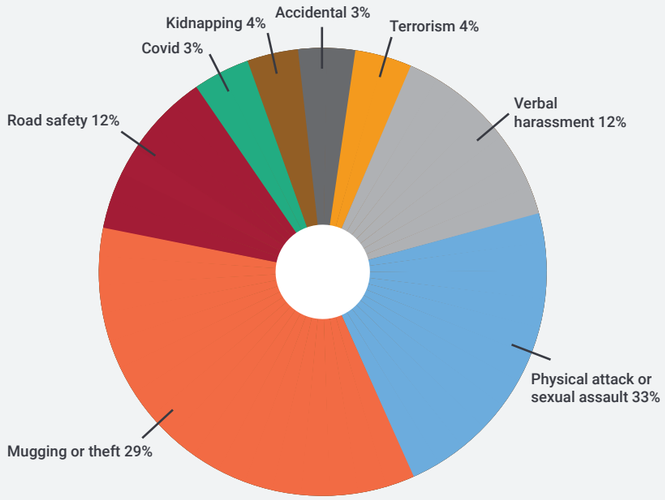
How often the general public thinks about safety.

- 77% of all respondents were likely to think about safety when out and about in public, at least for some of the time
- 27% think about safety all the time
- 70% of people tend to feel vulnerable when out and about alone
- Women are more likely to think about safety than men; 86% of women think about safety at least some of the time, versus 59% of men
- 79% of people feel more unsafe when out and about at night



Safety fears.

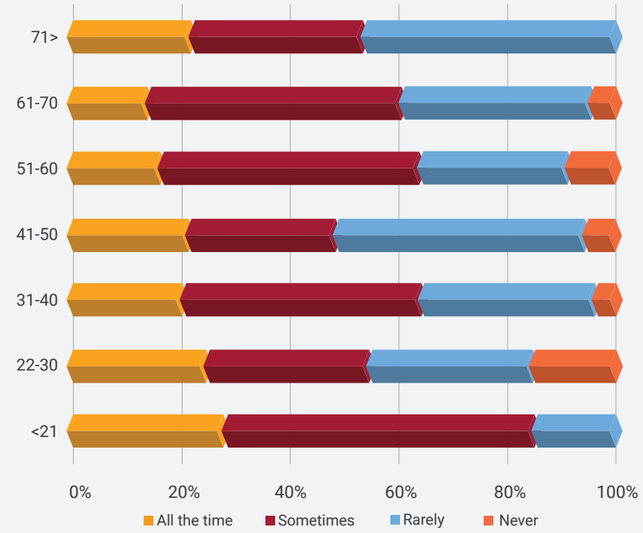
- The greatest safety fear (33% of responses) was around being physically attacked
- Thereafter, either mugging or covert theft was a specific fear people had when out in public (29% of responses)
- Road safety was also a concern (12%), specifically at night when visibility is poor
- Verbal harassment was a worry too (12%). This figure increased significantly (25%) for minority groups
- Other safety fears included fear of acts of terrorism, kidnapping, or accidental falls
- The risk of catching Covid and inadequate social distancing measures were also cited



Safety concerns continued

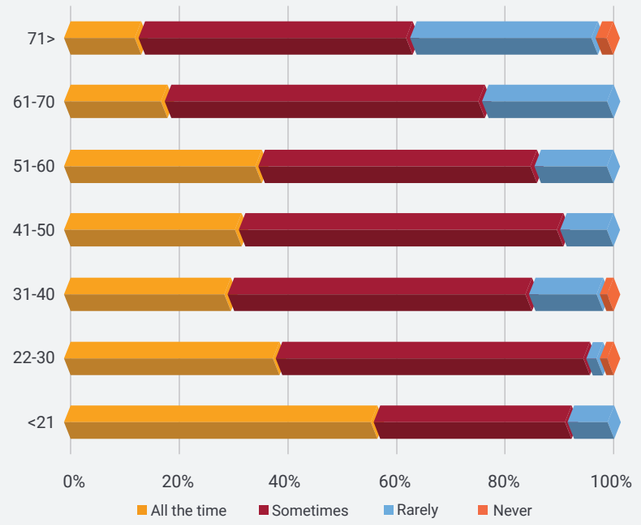
Men thinking about safety.

- On average, 19% of men think about safety 'all the time'
- 40% of men think about safety at least 'some of the time' when out and about in public spaces
- 44% of men tend to feel more vulnerable when out and about alone
- Men under the age of 21 were the most safety conscious group



Women thinking about safety.

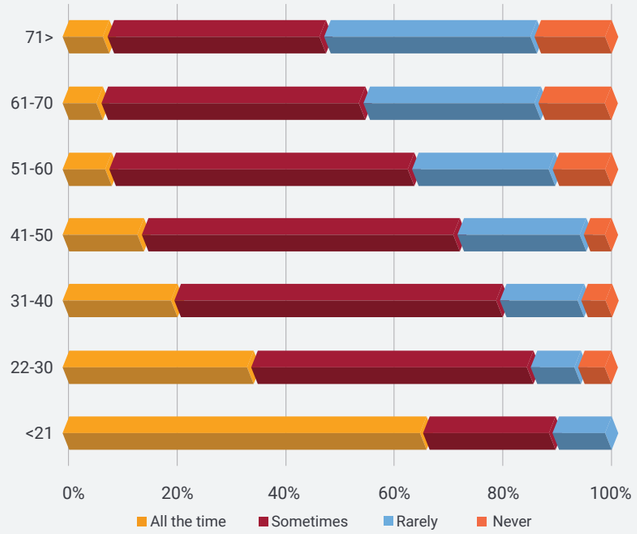
- On average, 31% of women think about safety 'all the time'
- 55% of women think about safety at least 'some of the time' when out and about in public spaces
- 84% of women tend to feel more vulnerable when out and about alone (40% more than men)
- Women under the age of 21 were the most safety conscious group. Women over 71 were the least safety conscious group



Safety concerns continued

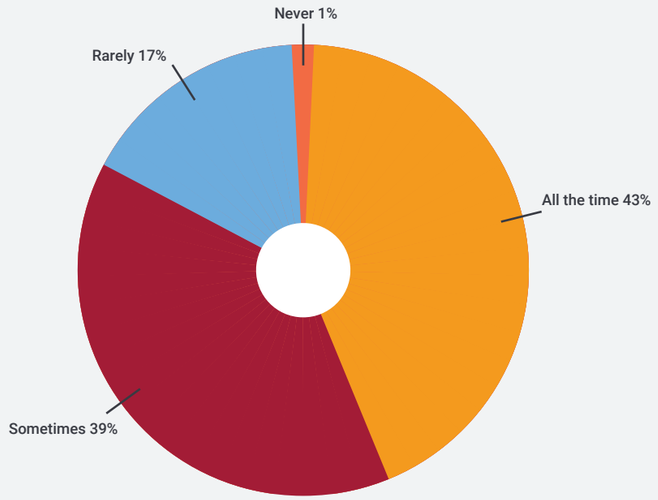
The influence of age when thinking about safety.

- Across all genders, younger people tended to think about safety much more, with nearly half of respondents thinking about their safety 'all the time'
- Younger people also tended to feel much more vulnerable when out in public alone, with 67% of under 21s agreeing they feel more vulnerable alone all of the time
- Of the under 21s, there was a significant difference between male and female perspectives; 86% of women under 21 felt more vulnerable all of the time, as opposed to 28% of men
- More mature respondents were less safety minded, with the over 60s thinking about safety much less
- Over 70s in particular tended to be much more confident, with nearly 15% of participants stating they never thought about safety, either by day or at night



Disabled people thinking about safety.

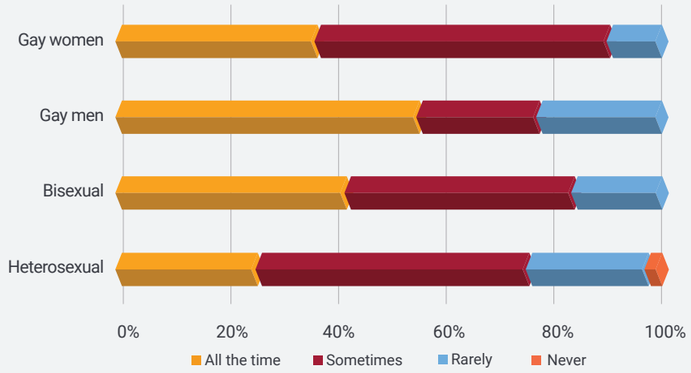
- Participants with disabilities were generally much more concerned about their safety, with 43% of respondents thinking about safety all of the time, and an additional 39% thinking about safety sometimes
- 80% of disabled people feel more vulnerable at least some of time when they are out in public alone
- The type of disability people have (i.e. physical or non physical) does not appear to impact their views about safety



Safety concerns continued

Impact of sexual orientation.

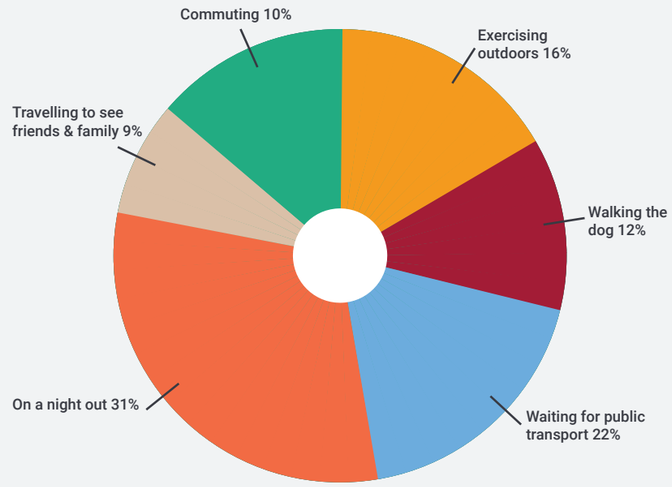
- There appears to be a difference in feelings of safety correlated to sexual orientation
- Gay men are twice as likely to think about safety 'all the time' when compared to a heterosexual person



Public places

Activities affecting safety.

- Generally people feel most unsafe on a night out, with 31% of all participants citing this as a specific activity where they feel unsafe
- Thereafter, waiting for public transport was another situation where people were concerned about safety, with 22% of people feeling unsafe at bus stops or train stations
- Other key trends were shopping, being in a remote area or being in an unfamiliar place



Public places continued

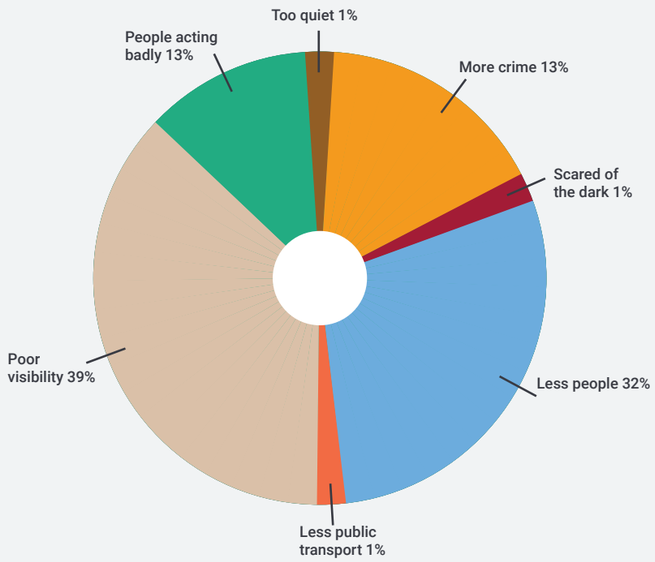
Safety in public spaces.

- Respondents did tend to change their behaviour to improve their perceived levels of safety when out in public
- The most common change in behaviour - cited by 64% of participants - was walking a longer route that's busier or better lit
- This was closely followed by crossing the street to avoid other people, an action carried out by 58% of respondents
- Telling a friend or family member when you've arrived home safely, and avoiding carrying or concealing valuables, were also common behavioural tactics

Day versus night

Darkness and perceived safety.

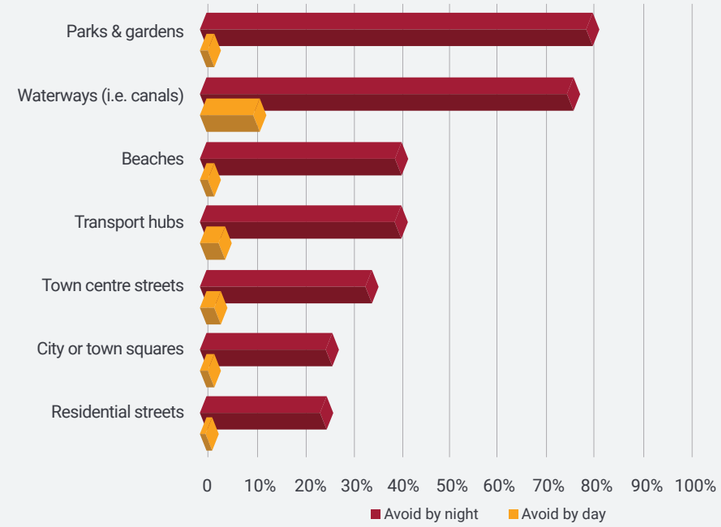
- 79% of people feel more unsafe when out and about at night
- Unsurprisingly, this was mostly due to poor visibility, whereby members of the public are concerned about hazards or danger that cannot be seen/can be concealed
- This was closely followed by lack of people. Social presence generally helps people feel more secure, knowing that they are less likely to be the victim of crime and more likely to get help should a problem occur
- There was also a strong view that 'bad elements' such as gangs, criminals or badly behaved individuals (due to alcohol consumption) were more likely to be present at night



Which spaces?

Perceived safety in different types of public space.

- Both parks and gardens plus waterways were generally seen as the most unsafe public places. These spaces were avoided - particularly at night - by 81% and 76% of people respectively
- All public places were avoided by respondents much more at night than during the day
- Residential streets were considered the safest public spaces, yet nearly 24% of people still avoided these streets at night
- Other spaces that were often avoided included alleys, tunnels, car parks and woodland areas



Improving safety

Most important factors in improving safety.

- The elements considered most important for improving safety in public spaces are good lighting and good sight lines/visibility. Being able to see potential dangers and hazards was a key concern of nearly all those surveyed
- Good security, in the form of CCTV cameras, security personnel and other deterrents was also considered very important, as cited by nearly 60% of respondents