Living with risk
Promoting better public space design

Design better streets
CABE is the government’s advisor on architecture, urban design and public space. As a public body, we encourage policymakers to create places that work for people. We help local planners apply national design policy and offer expert advice to developers and architects. We show public sector clients how to commission buildings that meet the needs of their users. And we seek to inspire the public to demand more from their buildings and spaces. Advising, influencing and inspiring, we work to create well-designed, welcoming places.

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Keeping cool:
The Turia River gardens, Valencia, are located on the old riverbed which forms an attractive and popular walking or cycling route through the town.

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Exciting public spaces create inspiring and interesting environments. They are the focal points for communities, the fundamental platform for civic life. Across all age groups they provide a sense of delight and stimulation within our towns and cities.

However, pressures to minimise risks and liability in the public realm can lead to ‘playing it safe’, resulting in bland and standardised spaces. Spaces designed for the norm do not delight, or educate, or provide the exchange that’s possible. Dull spaces mean that people are short-changed.

At CABE, we believe the design of high-quality public space is essential to making urban life liveable. Design can both recognise risk, and operate sensibly within the context of risk, without losing the ability to stimulate and engage. The people creating and managing our public spaces face the challenge of using risk creatively and positively while recognising the regulatory context within which they operate.

In Living with risk CABE says we can accommodate risk in the public realm without compromising the quality of our places. We must support the creation of innovative and stimulating spaces. In the face of warnings about health and safety and concerns about liability, we must challenge the tendency to settle for easy solutions.

Living with risk is to be welcomed for its provision of practical lessons for maintaining quality and for boosting our confidence in negotiating risk in the design process.

Jason Prior
CABE commissioner
Lessons from the case studies

Risk has become a prominent feature of our society. Changes in public attitudes, legislation and media coverage have produced an environment in which there is a much greater awareness of risk as an issue. Public organisations and businesses now give greater priority to risk management and there is a perception that the public is more willing to attribute blame for accidents and seek compensation.

Our approach

The study, Living with risk: promoting better public space design, focuses on three issues:

• What pressures are driving the greater emphases on minimising risk in public space design and what is helping steer organisations towards a more proportionate approach?

• How does risk impact on the different stages of the design process and how do professionals, clients and other stakeholders respond to this?

• What are the implications for the quality of public space in the future?

We explore views from national organisations concerned with risk and public space, while 10 case studies of public space schemes help establish how consideration of risk impacts on the different stages of the design process and the implications for the choices of professionals, clients and the public.

The 10 case studies

- Brindleyplace, Birmingham
  A privately owned and managed city-centre leisure, residential and commercial development

- Hofstraat, Apeldoorn, the Netherlands
  The restoration of watercourses and water flow in the main residential and shopping street in this Dutch town

- Park Hill, Sheffield
  A major redevelopment of blocks of council-owned flats with considerable problems of crime and anti-social behaviour

- Exchange Square, Manchester
  A major city-centre public square involving innovative design

- Kensington High Street, London
  A bold project to improve the quality and safety of the streetscape in a major shopping destination

- Deptford Green, London, and Heathfield Avenue, Dover
  Home zone schemes for two small residential areas

- Poundbury, Dorset
  A privately developed and largely residential scheme

- Handsworth Park, Birmingham
  The restoration of a 19th century park in an area with considerable problems of crime and anti-social behaviour

- River Tame, Birmingham
  Restoration and improvements to river and footpaths in a residential area.

1 Unfortunately it is far easier to justify playing it safe than use risk creatively.

More evidence is needed to justify a design that uses risk as a positive feature. Risk-averse decision-making tends to rely on a weaker, less thorough, evidence base, using statements about what people may do, often in an extreme case – for example, ‘people may fall into the river.’ Risk assessment and management does require some supposition about how people may behave. However, it is important that this is as robust as possible and that public space is designed for the norm, not the exception.

Detailed before and after monitoring of the Kensington High Street project was done to assure decision makers that the improvement was having the desired result and reducing accidents.

2 Strong leadership helps resist decisions that are based simply on worst-case scenarios.

The impact of leadership is demonstrated in several of the case studies. In Kensington High Street, an individual politician took a personal and political chance to champion an approach that drew heavily on the innovative street designs and traffic-engineering measures of Hans Monderman. The project aimed to increase risk awareness via the removal of guardrails and similar street ‘safety’ features, to reduce accidents.

3 A strong overall design concept helps counteract pressures to avoid risk.

Pressure to avoid risk can result in protracted discussions and negotiations over specific design elements. To counteract this a strong overall design concept informing the strategic direction of the project from the outset is vital. In some cases, compromises can be reached. In others, risk reduction takes precedence, and design has to accommodate it.

Clients in Brindleyplace, Birmingham, set out with the intention to create a high-quality environment in which risk was treated proportionately.

Compromise was reached in the River Tame restoration scheme, Birmingham, by deciding not to restrict access to the river, but instead to lay footpaths away from the banks.

4 Views about what constitutes a risk vary between different stakeholders in the design process.

Risks defined by the public are predominantly to do with personal security issues arising from the use of the space (e.g. mugging), rather than trip and fall hazards in the design. The public is also very concerned about risks relating to children. Designers can help to alleviate these risks, but generally they are not able to eliminate them. This is because they are based on people’s perceptions of what might happen as well as the way in which individuals actually behave in the space. Furthermore, there is often no overall decision-maker who can judge between these views. This means that the particular combination of factors in one scheme may lead to risk being managed more carefully than in another.

A home zone scheme for Heathfield Avenue, Dover, was not implemented after the Fire and Rescue Service identified risks in the design that led to changes undermining the original design quality.
Involving the public in design processes results in more informed, evidence-based decisions. Transparency about the criteria and judgements being made offers the opportunity to take decisions that are more informed and evidence-based. It also allows for design decisions to be mediated through stakeholder debate. Such debate helps all parties establish what risks are significant and how they should be managed. It is also more likely to result in an inclusive design that understands risk from the perspectives of the many different groups who will use the space.10

Residents involved in the regeneration of Handsworth Park, Birmingham, initially requested the installation of extensive security measures in the park. Their requests were modified as people’s perceptions of risk changed over the course of the design process.

Professional designers sometimes talk about ‘risk’ as a design feature that fosters the creation of exciting, varied and interesting spaces. They use the term ‘risk’ to refer to the psychological challenge for users of making sense of the way the space is constructed. This does not mean that designers want to create a dangerous or insecure environment. Health and safety professionals consider risk in a different way. They are trained to identify hazards that may harm individuals and to make judgements about risk, so might focus on potential slip hazards from wet or frozen paving. The different ways in which ‘risk’ is interpreted and used require clarity of dialogue between groups involved in the public space design process.

The redesign of Exchange Square, Manchester, included an open water feature. Despite concerns of some stakeholders about the risk of people slipping, the water feature was constructed and has proved to be a major attraction in the square.

Securing enough funding for the long-term management and maintenance of public spaces must be considered from the outset. Inadequate sources of long-term management and maintenance undermine the quality and value of public spaces and may not sustain the benefits of the initial investment. The contribution that design can make to help ease ongoing maintenance must also be considered. Maintenance is an important factor in reducing risks to quality of life that may arise once schemes are completed.

Key to the ongoing sustainability of the River Tame restoration scheme, Birmingham, is the maintenance of trees and shrubbery and ensuring that the river channel is free from debris. Without ongoing maintenance the site would have implications for the safety of its users.11

For more information on the link between adequate management regimes and the reduction in vandalism and anti-social behaviour see CABE Space (2005) Decent parks? Decent behaviour? The link between the quality of parks and user behaviour London: CABE.

10 CABE (2006) The principles of inclusive design (they include you) London: CABE.

11 For more information on the link between adequate management regimes and the reduction in vandalism and anti-social behaviour see CABE Space (2005) Decent parks? Decent behaviour? The link between the quality of parks and user behaviour London: CABE.
Next steps towards risk-aware public space design

The design of public space exists in a world of uncertainty: about how different groups will view a risk; whether risky or risk-averse behaviour can be predicted; whether the risks of today will be the risks of tomorrow; and where the legal requirements relating to liability start and finish.

These uncertainties do not inevitably lead to a culture that purposely avoids risk in public space design. Safety is achieved through active use, citizen surveillance and an engendered sense of personal and social responsibility and ownership. A safe place can still be physically challenging and exciting, and push the boundaries of accepted design.

1 Risks present opportunities that developers, clients, designers and other stakeholders can harness to deliver high-quality public space.

Designers, their clients, developers, and other stakeholders should explicitly consider how to focus on design innovation and excellence where risk is managed, not eliminated altogether.

Practically, this could involve:
- Clearly distinguishing between hazards and substantial risks, and being creative in the way substantial risks are managed. This should be based on the best available information on legal responsibilities, including the Tomlinson case12
- Being robust in challenging weak evidence for the worst-case scenario happening
- Not demanding a disproportionate weight of evidence to show that positive risk-taking is appropriate
- Ensuring that innovation and excellence are encouraged through appropriate mechanisms. This could be a design competition to procure a good designer or setting standards for design quality to ensure that everyone signs up to the design vision at the outset.

2 Judgements about risk are best taken in a process that involves all stakeholders.

Different groups involved in public space design think about risk in different ways. Interactive design enables an informed debate on what constitutes ‘risk’ in a particular scheme and how it should be managed. This is particularly important in creating an inclusive environment, so designers minimise assumptions about how specific groups may encounter the space. Some risks are only identified late in the design process – during implementation or once patterns of use are established, for example. Interactive design processes will highlight these risks.

Practically, this could involve:
- Designing and managing a space for the way people would normally use it and not reducing the overall quality to accommodate exceptional or freak incidents
- Ensuring that opportunities for positive risk-taking are clearly communicated to other stakeholders within a risk assessment process
- Using tools that allow a visual and tangible communication of design outcomes and changes to the built environment (CABE’s ‘Spaceshaper’ for instance13)
- Using a phased design process which allows for learning. This enables professionals to develop a greater understanding of lay perceptions of risk and use of a new public space and respond accordingly.

3 Further promoting the Health and safety executive’s (HSE’s) ‘sensible’ approach to risk management14 will enable stakeholders to understand the legal and regulatory context in which they operate.

National organisations concerned with public space recognise that the pressures to avoid risk, if left unchecked, will damage the quality of the environment and the capacity for citizens to benefit from stimulating urban design. These organisations should promote principles of sensible risk management to people making decisions about public space design. This should concentrate on explaining how a proportionate approach to risk can also enable high-quality design.

Practically, this could involve:
- Helping to train decision-makers to prioritise more effectively, so that attention is focused on the real risks
- Emphasising that managing risks should be about identifying and taking practical steps – not generating paperwork for its own sake
- Sharing practical examples of how a sensible approach to risk management has helped enable high-quality design.

‘Professional designers sometimes talk about risk as a design feature that fosters interesting spaces... health and safety professionals consider risk in a different way’

12 Tomlinson v Congleton Council and Cheshire County Council. For more information see www.publications.parliament.uk
13 Spaceshaper is a practical toolkit for use by anyone – whether a local community group or a professional – to measure the quality of a public space before investing time and money in improving it. For information see www.cabe.org.uk/spaceshaper
Chapter one
Public space and the risk society

Risk has become a prominent feature of our society. Changes in public attitudes, legislation and media coverage have produced an environment in which there is a much greater awareness of risk as an issue. Public organisations and businesses now give greater priority to risk management and there is a perception that the public is more willing to attribute blame for accidents and seek compensation.

The design of public space is one of many activities affected by perceptions of risk. Some argue that risk considerations reduce the quality of public space. CABE Space’s report *What are we scared of?* highlighted how concern about risk could affect professional designers and their clients and reduce the potential to create stimulating and innovative public spaces. Although risk aversion is a constraint, however, public spaces clearly can be of high design quality, many winning Green Flag or other Civic Trust awards.

But the significance of the debate on risk means that we need to know more about what impact it has on public space design and our streets, parks and squares. In recent years the quality of our parks and open spaces has improved. The challenge now is to sustain this improvement and ensure our public spaces are designed and maintained to a high-quality.

This chapter shows that perceptions of risk are influenced by wider social processes that include the media, social norms and attitudes towards government and experts. The different ways in which risk is interpreted means public space designers operate in a world of uncertainty. The chapter concludes with the implications of this for public space design.

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16 CABE Space (2005) *What are we scared of?* London: CABE.
This study was commissioned to answer the following question:

How does the management of risk, in relation to ensuring public safety, influence the design quality of urban public space?

We have divided this question into three components:

1. What forces are driving a greater emphasis on risk in public space design, and to what extent are there countervailing pressures promoting a more proportionate approach?

2. At what stages in the design process do these forces come into play, and how do professionals, clients, and other stakeholders respond?

3. What are the implications for the quality of public space in the future?

This study does not specifically consider risk to workers, and others, during construction and maintenance work. Instead the report explicitly focuses on the management of risk in regard to public safety. However we recognise that health and safety considerations do have the potential to impact on public space design.¹⁸

In this chapter we set out the context for the study, consider the nature of ‘risk’ and types of public spaces. In chapter two, we provide a framework for understanding the relationship between risk and public space design, and explain how our data was collected. In chapter three we set out the views of national stakeholders on these issues, and highlight some of the key dilemmas for public space designers; these are demonstrated in 10 case studies of public space design processes in chapter four. The case studies provide a detailed view of how risk impacts on the design process and how it is managed in different ways. Finally, chapter five draws conclusions from the study, identifies deeper risk issues arising from changes in our urban spaces, and makes recommendations for the design profession, its clients, developers and other stakeholders.

¹⁸ For more information see the Health and safety executive website www.hse.gov.uk
What is risk in a public space context?

Risk cannot be defined objectively. Values and beliefs in society shape how we understand risk and influence the priority we give to it. Judgements on whether a feature of public space design is a risk can be reached by professional designers alone, or in discussion with clients, citizens, and other stakeholders. But what is risk? It is best to define our terms.

It is helpful to distinguish a ‘risk’ from a ‘hazard’:

- A hazard is something that may cause harm
- A risk is the chance of that harm occurring, and the likely impact if it does.

Hazards in a public space context might include:

- Kerbs – which people may trip over
- Trees – whose branches may fall in strong winds
- Water features – into which children may fall or which may freeze in winter, creating slippery areas.

The risk associated with each of these hazards is a matter of judgement. For example:

- People may trip over kerbs, but generally kerbs are visible and people encounter them on a regular basis. If they do trip, the extent of the injury is likely to be small. So the risk may be judged to be low
- Water features are sometimes seen as more risky, in part because the impact of a child falling in can be greater. However, designers may decide that the risk is low because the hazard is obvious and parents can normally be expected to supervise or warn their children.

Risk assessment procedures provide a means of identifying hazards and determining the extent of risk. They assist the process of judgement by public space designers and other stakeholders about which risks are significant and require active management. Careful use of risk management techniques can help to determine the level of thought and action that is needed in relation to the chance of the hazard occurring and the scale of its impact.

Risk aversion occurs when all or most hazards come to be seen as risks that require active management. Here, people lose the ability to discriminate between minor risks that are unlikely to occur and/or will have limited impact, and major risks that are likely to occur and/or will have a major impact.

‘Risk aversion occurs when all or most hazards come to be seen as risks that require active management’
Why public space professionals need to reconsider their approach to risk

In some quarters there is a concern that risk management has become a constraint on choice and flexibility in public space design. This is also apparent in a wider reconsideration of the role of risk management in other spheres of society.

Some public bodies, as well as pressure groups such as Living Streets and PLAYLINK, argue that organisations and professionals respond to a fear of possible litigation from individuals by adopting an unduly restrictive and poorly understood interpretation of health and safety regulations. They are campaigning for a more sensible and proportionate approach to risk management.

The development of risk aversion is part of the gradual change in attitudes to risk in the UK. Both criminal and civil law have the potential to impact on attitudes to risk. Regulation, such as the Health and Safety at Work Act 1974, the Environment Protection Act and highways legislation provides a framework that has broadened in scope over recent decades. Construction, design and management regulations place statutory responsibilities on designers and apply to all design work carried out for construction purposes. The Disability and Discrimination Act 2005 introduced the Disability Equality Duty which obliges those who design, manage and maintain buildings and public spaces to ensure that disabled people play a full part in shaping an inclusive built environment and benefit fully from it. Regulatory bodies such as the Health and Safety Executive (HSE) and local authorities enforce these acts and associated regulations.

Most of this legislation is goal-setting, identifying a standard that needs to be reached rather than being prescriptive about the measures that have to be taken. However, it is easy for guidance on means of compliance to become viewed as prescriptive requirements. Over time, public and political pressures as well as court decisions have led to a continued expansion of the scope covered by these duties.

Claims for compensation in civil law are thought by some stakeholders to have a rising profile in the minds of designers. Individuals may have a right to compensation if they can demonstrate that someone has been negligent or has failed to discharge a duty placed on them by statutory law such as the Occupiers’ Liability Act 1957 or the Health and Safety at Work Act. The affected individual pursues compensation without involving regulatory bodies.

As a result, the risk agenda has widened beyond the workplace to include personal security, adventure activities, risks to the environment, and other areas of life. Risk assessment and risk management have become standard practice in many occupations and activities.

Recently, the idea that there is a ‘compensation culture’ has become popular. This is the perception that individuals increasingly seek to blame those responsible for misfortunes they suffer, and turn to litigation in the hope of obtaining financial compensation.

Now, however, people are developing more critical attitudes to our risk culture. There is a major debate in the UK about whether the regulation of risk has gone too far, and a growing realisation of the undesirable effects of risk aversion on society.

A recent report by the Better regulation task force is outspoken in its criticisms of ‘regulatory overkill’ and risk aversion:

‘We all manage risk every day in our lives, whether crossing the road, playing sport, buying insurance, taking flight or even bungee jumping. We rightly expect certain basic safeguards to be in place, but…the over-regulation of risk and the resulting glut of rules and guidelines make us less willing to take responsibility for risk, undermine trust and dilute our sense of adventure.’

For instance, the UK Highways Liability Joint Task Group notes that public perceptions of danger on highways is often different to accident records:

‘When things appear dangerous, individuals take care; where the appearance is one of safety individuals may drop their guard and accidents ensue. Consequently individuals sometimes pressurise local authorities to introduce measures that create nothing more than an appearance of safety and perversely introduce true danger.’

‘People are developing more critical attitudes to our risk culture. There is a major debate in the UK about whether the regulation of risk has gone too far’

Is there a compensation culture?

The idea of the compensation culture is that individuals are now more willing to make claims for negligence against public authorities and other bodies at whose hands they believe they have suffered injury. The compensation culture is a powerful idea, reinforced through the media and the growth of ‘no win, no fee’ practices by legal firms.

However, is the evidence for a compensation culture in the UK so clear-cut? And if so, how is it influencing public authorities, including those involved in public space design, to be more cautious in the approaches they take?

The reality of a compensation culture is hard to establish. The Better regulation task force Better routes to redress study argued that the compensation culture was ‘all in the mind’. It said: ‘Almost everyone we talked to...told us that the reality is somewhat different, because the number of personal injury claims is going down.’

However, the study recognised that there was a strong belief in the compensation culture due to a combination of media coverage (sometimes inaccurate), claims management companies, people’s desire to find someone to blame for their accident, and the constant repetition of the term by public commentators.

The Select committee on constitutional affairs also recently reviewed professional and academic evidence and concluded that: ‘The evidence does not support the view that increased litigation has created a “compensation culture”’

The evidence base, including that considered by these inquiries, indicates that the idea of a compensation culture is an oversimplification of a more complex situation:

- Long-term trends in personal injury claims have remained relatively stable since the late 1990s
- Mean damages awarded in cases brought by ‘no win, no fee’ companies fell between 2002 and 2005
- There has been little change in the volume of new claims. However, the cost of claims has risen dramatically, partly due to the introduction of scales for awards for compensation related to loss of earnings, and the fees charged by claimants’ solicitors
- Most claims against highway authorities relate to alleged deficiencies in maintenance. Claims for design faults are relatively rare
- Local authorities and other public authorities are now more aware of the problem of claims for negligence, and are introducing policies and procedures that both reduce the number of claims (such as design guides for public space; improved inspection and maintenance regimes) and enable them to successfully repudiate non-genuine claims.

Data on claims in relation to public space is not available, but there is some evidence to support the view that local authorities have been the target of an increased number of claims. This arises partly from their responsibilities for substantial areas of public space and the range of tasks they have in regard these.

Whether or not the compensation culture exists, people think that something needs to be done to reduce claims for compensation. Seventy-one per cent of citizens surveyed agree or strongly agree that ‘health and safety compensation claims have gone too far’.

‘Seventy-one per cent of citizens surveyed agree or strongly agree that ‘health and safety compensation claims have gone too far’

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28 Data from our research with stakeholders and local authorities; see also examples later in this chapter.
29 Local government association/Zurich municipal Suing the council: helping the citizen or harming the community? 2004.
30 HSE evidence to the Select committee on constitutional affairs, 2005.
The HSE is also advocating a more sensible approach to risk management. It has been concerned for some time about the trend for risk management to become overly detailed and driven by pressures to defend organisations from liability claims over even minor incidents. Insurers as well are promoting the view that risk should be managed, not managed out.

In mid-2006, the HSE launched a campaign to encourage a more proportionate approach to risk. The HSE is urging people to concentrate on real risks that may cause harm and suffering, and to avoid trivial risks and petty health and safety issues:

‘The perception of a compensation culture contributes to excessive risk aversion and unnecessary bureaucracy. Whilst a degree of risk aversion, proportionate to the level of risk, is very healthy, real problems arise when this balance gets lost.’

The campaign is a response to the way in which the idea of ‘health and safety’ has generated a belief that all risks should be eliminated. There is a sense of frustration, but also concern that responses to risk by organisations, employers, insurers and government itself have got out of control. Policies requiring risk-assessment procedures for all matters, red tape, paper trails and litigation fears all produce risk responses that are potentially counterproductive.

As the chairman of the Health and Safety Commission (HSC) observed, risk management should be ‘about keeping people safe – not stopping their lives.’

The HSE initiative is linked to revised and simplified guidance on conducting risk assessments. The HSE states:

‘A risk assessment is simply a careful examination of what, in your work, could cause harm to people, so that you can weigh up whether you have taken enough precautions or should do more to prevent harm.’

It also points out:

‘The law does not expect you to eliminate all risk, but you are required to protect people as far as “reasonably practicable”’.

The HSE recommends that people do not overcomplicate the risk-assessment and management process. It points out that in many settings the risks are well known and the necessary control measures are easy to apply.

New HSE guidance on risk management

The HSE says that sensible risk management is about:

- Ensuring that workers and the public are properly protected
- Providing overall benefit to society by balancing benefits and risks. This should have a focus on reducing real risks – both those that arise more often and those with serious consequences
- Enabling innovation and learning, not stifling them
- Ensuring that those who create risks manage them responsibly and understand that failure to manage real risks responsibly is likely to lead to robust action
- Enabling individuals to understand that as well as the right to protection, they also have to exercise responsibility.

The HSE explains that sensible risk management is not about:

- Creating a totally risk-free society
- Generating paperwork mountains
- Scaring people by exaggerating or publicising trivial risks
- Stopping important recreational and learning activities for individuals where the risks are managed
- Reducing people’s protection from risks that cause real harm and suffering.

The HSE offers a five-step process for conducting a risk assessment:

Step one – identify the hazards
Step two – decide who might be harmed and how
Step three – evaluate the risks and decide on precautions
Step four – record your findings and implement them
Step five – review your assessment and update if necessary.

Our report is part of this process of reconsidering approaches to risk, and of asking whether there is a better way of going about things.

What are public spaces?

‘Public spaces’ are outdoor open spaces that are publically accessible. This offers a wide range of different types of formal public space – for example, parks, squares, streets, play areas and so on. It also includes informal spaces such as empty building plots that may be used by people when taking a short-cut between other locations.

That streets and public spaces should be designed around people’s needs is at the centre of inclusive design. CABE accepts the social model of disability. This is that in the built environment people are not disabled by their own capabilities but by society’s failure to meet their needs. Disability is a state that anyone can find themselves in as a result of poor design.

While recognising the nature of informal places here, for example vacant land, in this study we consider three types of public space – parks, streets and civic spaces. There is already considerable material available on the impact of risk perceptions on the design of play areas, and thus we have excluded this type of space from our study.

Public spaces are regulated in different ways, and some may be closely monitored. Certain types of activity (busking, street artists, public drinking) may be prevented through local enforcement. Local authorities control many public spaces. Others, such as squares in many retail or business developments, are privately owned and the public does not have an automatic right of entry, although for all practical purposes they can be considered ‘public spaces’ if they are publically accessible.

Because public spaces are ‘open’, they are the focus of interest for a wide range of stakeholders, all of whom have different interests in the question of risk. Different stakeholder groups, including those who design, use, regulate and maintain public space – such as lobby groups, professionals, businesses, media, government bodies, utility groups, insurers, and enforcement/emergency services – will have their own understanding of risk. Activities of some groups may be considered to create risk for others. But equally, some users may be more susceptible to risk than others, which shows the complexity of the public space design professional’s task in managing risk.

‘Different stakeholder groups will have their own understanding of risk’

How do people understand risk in public spaces?

Our review of the existing research and guidance, together with interviews with stakeholders, reveals that there are three main types of risk with which public space users are concerned:

**Risks to the person** – for example:
- Crime against the person
- Accidents caused by motor vehicles
- Other accidents causing physical injury

**Risks to property** – for example:
- Vandalism and graffiti
- Car crime
- Burglary
- Flooding/subsidence

**Risks to quality of life** – for example:
- Loss of community cohesion
- Social exclusion
- Reduced environmental quality, often due to an inadequate maintenance regime
- Pollution
- Over-intrusive CCTV
- Obstruction by parked cars
- Anti-social behaviour
- Economic loss

Although these concerns are common across the population, there is evidence that different groups respond to risk in different ways. People will accept a higher level of risk from activities that give them benefits, and where the activity is voluntarily undertaken. This is relevant to public space design, since such spaces are often used voluntarily and give benefits (exercise, entertainment, leisure, shopping). Thus, people are likely to be less risk averse in these situations. The public also has a sophisticated relationship with media coverage of risk.

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36 See, for example, National children’s bureau: www.ncb.org.uk; Play England: www.playengland.org.uk; PLAYLINK: www.playlink.org.uk
Neglected space: poorly maintained public space can have a negative impact on its surrounding community.

However, there are differences within the population. People under 5 years old, and in particular young men, have lower levels of risk awareness, knowledge and understanding. They have the highest propensity to take risks. People in the older age groups (over 60) tend to hold mixed attitudes. On the one hand, they have a degree of pragmatism, borne of experience, that risk is a part of everyday life. But they are also aware that they may be particularly ‘at risk’ (from cancer, falls and everyday accidents). Thus, the fear of crime among older people, particularly those living alone, is often higher than expected, given prevailing crime rates.

Those in the lower socio-economic groups tend to be more reactive in their approach to risk issues and feel powerless to respond. A study for the National Consumer Council[40] found that those in higher socio-economic groups and those aged 30 to 60 tend to think about and engage with risk issues more than other groups; it also found that while men and women have similar attitudes towards risk issues, women are more cautious than men in terms of behaviour. Thus they tend to stop buying things or avoid certain situations if they fear there might be risks involved.

Finally, some risks can become ‘show-stoppers’ that have a major impact on society or a particular public space project. This usually occurs when a particular event happens that taps into the deep-seated concerns of the public or designers.

It is important for public space designers to understand public perceptions of risk, and the way in which different groups respond. The way different groups are expected to use the space may enable them to adopt an approach in which risk is used as a positive element in the design to a different extent in different places. Equally, people will not have uniform attitudes when confronted by risk. This poses a major challenge for public space designers in designing for variety rather than the norm or lowest common denominator in terms of risk perception.

Sharing space: Bideford Quay, Devon is one of a collection of CABE’s street’s case studies at www.cabe.org.uk/streets

Do lay people and experts agree or differ in the way they assess risk?

Public space designers are experts, drawing on their professional training to identify and assess risks. But is there any evidence that their views either correspond to or differ from those of lay people?

Research evidence shows that when people assess risk, they place great reliance on personal experience of accidents and incidents (or the lack of such incidents), the particular circumstances at the time (for example, whether they are rushing to catch a bus), and ‘local knowledge’ of what really happens in the public space (rather than what designers or experts think happens). People also rely heavily on interactions with their friends and work colleagues in making risk assessments. As a result, individuals may discount or ignore some significant risks, particularly where personal ‘evidence’ does not support the official line.

People assess risks against a wider set of considerations than are typically used by experts, which may be one reason why some public space schemes have had to have retrofitting to deter people from taking risks that were not considered by the designers.

However, this evidence suggests that the way in which professionals reason about risk has more in common with that of lay people than might be expected. Experience and informal contact with colleagues shape professionals’ views about risk. In professional networks, stories about how individuals ‘got it wrong’ have a considerable resonance, and can contribute to risk-averse practice.

How important is the media in shaping people’s views of risk?

‘Social amplification of risk’ describes the way in which some hazards and events become a focus of significant social and political concern while other potentially more serious events receive comparatively little attention. An initial event starts the process, and is interpreted by various stakeholders – including the media, government, industry, consumer bodies and pressure groups – in terms of their values and interests. Then, as the incident passes from group to group, so it is ‘amplified’ or given greater weight. Sometimes the starting point can be a serious event, but it may also be an unusual but trivial incident.

Thus the media plays a key role in the amplification process, through reporting not only the initial incident but also subsequent statements and actions by stakeholders. However, recent research into the role of the media in risk amplification refutes the idea that the lay public are passive recipients of expert risk knowledge. It found that individuals draw upon multiple information sources and understanding of risk. The media can only amplify (or attenuate) risk if they capture or resonate with the public mood.

In turn, members of the public are sophisticated users of what is an increasingly large and varied media – they understand hype and sensationalism when they see it. They also recognise the labels and styles of the media and the impact of these on the information being presented to them. They have clear criteria for evaluating utility, credibility and responsibility.

‘Designers sometimes use elements of risk to create interest and excitement’

Creative space: Parc Gulliver in Valencia, Spain, provides an exciting and innovative adventure space with a huge fiberglass model of Gulliver from the novel Gulliver’s Travels.
Risk as a ‘show-stopper’

People are generally concerned with immediate and personal aspects of risk, but sometimes a big issue will emerge that can be a ‘show-stopper’ – slowing or halting a whole project. In our case studies, we came across a number of these, where different stakeholders in the public space design process struggled with a major issue. They included design choices to reduce anti-social behaviour and provision for emergency-vehicle access.

When risk becomes a ‘show-stopper’ we have to question whether it is the perceived risk itself that is the cause or whether the risk issue is being used as a surrogate for other concerns. Sometimes, focusing on risks associated with uncertainty of understanding and expert knowledge can seem a more productive line of argument to those opposed to a development rather than trying to argue on social and moral or economic and financial grounds.

Arguments that local amenity will be lost, that house prices might be devalued, that the responsible organisation cannot be trusted, or simply that people do not like change in their environment, are less amenable to measurement and objective consideration in formal decision processes, whereas the risks to health (for example) are more so. Thus, risk issues can come to dominate an argument in decision-making, when in fact other concerns and questions might be trying to surface.

What are the implications for public space design?

Professionals, clients and other stakeholders face major challenges in managing risk in public space design. This is because risk in public spaces can have both desirable and undesirable characteristics. Designers sometimes use elements of risk to create interest and excitement, so managing risk in public space design is often complex.

Introducing aspects of risk into a design can have a positive impact on people’s experience of a public space. Shared surfaces, where the boundaries between pedestrians and vehicles is ambiguous, can both reduce accidents and improve the street scene by removing the clutter associated with safety barriers and warning signs (see case study of Kensington High Street).

Introducing aspects of risk to design is not incompatible with the needs of disabled people. Strategies that deliver walkability for many can also deliver inclusive design. However, design strategies, principles or philosophies that are misapplied as pattern books or copied wholesale, or in part, from one context to another can exclude whole parts of society from a given space.

Uneven surfaces can provide a place for creative exploration (for example, by children and young people) as well as adding new textures to a space (see case study of Exchange Square). Water jets emerging from a flat surface can create interest and excitement, so in an unpredictable manner introduce risk in an interesting and humorous way.

However, there are also undesirable aspects of public space risk. In particular, injuries and incidents associated with public spaces lead to increased regulation and retrofitting. Recent cases of injury – in play areas, from toppling trees and gravestones, and in high-profile places such as the Diana, Princess of Wales Memorial Fountain – have heightened awareness of risks in public spaces.45

These incidents give an impression of poor regulation of risk, although the reality in individual cases may have been different. Nevertheless, they may result in overreaction by public authorities in order to avoid further incidents. Changes may also be made to the design feature involved that may sometimes reduce design quality.

‘Water jets emerging from a flat surface in an unpredictable manner introduce risk in an interesting and humorous way’

Public space designers have different theories about the relationship between risk and design. For example, *Safer places* shows how planners, developers and other designers can use crime-prevention principles to make parks, streets and other public spaces safer. The Secured by Design initiative launched by the Association of chief police officers is also based on a theory that particular kinds of public space design can reduce anti-social behaviour, for example by facilitating ‘passive surveillance’. Others would argue that this is only effective where there are cohesive communities that have common values about how people should behave in public spaces and are willing to impose these norms on anyone on anti-social behaviour.

‘Injuries and incidents associated with public spaces lead to increased regulation and retrofitting’

Designing public spaces that increase personal safety

The risks associated with security and crime are a key feature of public space design. These are risks that individuals using public space may be unable to avoid, because public space is by definition open to all. Designers adopt different approaches to this risk. One strategy draws on Jane Jacobs’ seminal work *The death and life of great american cities*. She argued for a mixing of urban functions that would maintain street life at different times of the day and week in order to ensure ‘passive surveillance’ or ‘eyes on the street’.

Formal surveillance using CCTV cameras has taken over from neighbourhood watch or neighbourly watchfulness in many residential areas/housing estates, possibly due to greater anonymity among members of the community. The Secured by Design initiative offers guidance to designers on ways in which passive surveillance can be reintroduced into residential and other environments.

An alternative to surveillance is withdrawal from the social environment. Gated communities, enclosed and privately managed shopping malls and commercial office centres all construct a ‘private zone of safety’, bringing a sense of ‘civilisation’ or ‘order’ in retreating from civic (public) space. On the whole, these are privileged communities that can afford to ‘buy’ their safety.

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47 www.securedbydesign.com
48 An example of passive surveillance is where houses are designed so that their front doors look over a communal area. In this way, people will see what is happening as they enter and leave their houses, and those who might wish to engage in anti-social behaviour will be deterred.
The risks that people perceive in public spaces can affect their use and enjoyment of these facilities. In London, 39 per cent of women and 18 per cent of men reported that they felt unsafe in London’s green spaces, and 66 per cent of mothers said that they would not let their children play unsupervised. Reduced use of public spaces due to concern about risk has a number of negative social and health impacts. People often use public spaces for leisure activities, including walking for pleasure, football and play. This gives opportunities for social engagement and the exercise reduces the risk of health problems like obesity and heart disease. Some local authorities now promote health walks in local parks as part of their strategy to improve health and well-being. Designers, therefore, may need to work with agencies like the police and local authority park rangers in order to produce environments where undesirable social and health risks are minimised.

Individuals and groups perceive and value risk in different ways. The promotion of inclusive design challenges professionals and other stakeholders to develop an understanding of risk from the perspective of the many different groups who may use the space. Since August 2006 most planning applications should include a design and access statement. These documents explain the thinking behind a planning application and should include information on how everyone, including older people and disabled people, will be able to use the place that is being built.

On some issues, there may be similar views between groups, but trade-offs may sometimes have to be made. Here the designer should be transparent in reaching the judgement of how to deal with these issues.

This, however, means that risk cannot always be predicted. Spaces are used in ways their designers may not have anticipated – by skateboarders in public squares, for example. There is also a dynamic relationship between public spaces and users. The space creates opportunities that may reduce risk, for example by increasing night-time usage, thus reducing fears for personal security. Or it may increase risk if, say, joyriders start to use a park for racing stolen cars.

Finally, the emergence of ‘privatised’ spaces can displace risks. In these spaces, public-sector control is ceded to business and private security companies. A 2006 Royal institution of Chartered Surveyors report has illustrated how this creates the phenomenon of highly regulated, low-risk, affluent public spaces displacing problems such as anti-social behaviour and drug abuse on to neighbouring poorer areas.

The consequence is that the design of public space is potentially subject to uncertainty, debate and conflict in relation to the nature, scale, incidence and resolution of risk.
To what extent should designers take responsibility for risks to public space users?

Good public space design and management can reduce some of the undesirable risks for users, for instance by highlighting bins or other obstacles with tactile information for blind and partially sighted people, but it cannot eliminate them all. This leaves a dilemma for design professionals:

- Should they take on the responsibility for protecting people and design for risk minimisation?
- Or should they leave individuals to take responsibility for their own welfare, and risk blame if there are accidents?

We can illustrate this issue by considering the design of a major water feature in a busy shopping area. Should the designer seek to minimise risk through the design itself (for example by installing physical barriers between people and the water), emphasising the artificial nature of the feature? Or should the designer aim to encourage people to take responsibility for themselves and others, and in so doing potentially produce a more interesting, exciting, accessible, even natural feature? (See our case studies of Brindleyplace and Apeldoorn).

Often, the organisation responsible for the public space takes responsibility for managing the risks, but approaches vary depending on the nature of the space.

If the water feature is an open canal or river, there is likely to be reliance on people taking responsibility for themselves – if they choose to run or cycle along a towpath, for example. Erecting a physical barrier along the entire length to ensure that someone cannot fall into the water is unlikely to be a cost-effective risk-reduction measure. It would certainly detract from the ‘naturalness’ of the feature. But would the decision change if the authority wanted to proactively encourage cycling on the towpath – even make it part of a cycle route? Or if there were a number of accidents?

On the whole, evidence shows that people want the freedom to choose how to respond to risk – informed by sufficient and relevant information.

‘Evidence shows that people want the freedom to choose how to respond to risk’

58 Furthermore, it should be borne in mind that there are huge wayfinding benefits to including fountains in water features as the sound of water can act as a navigational tool for blind and partially sighted people (see the case study of Exchange Square, Manchester).

Waterside walking: walkers enjoy a stroll along the River Trent in Newark, Nottinghamshire
Conclusion

This chapter shows that risk is fundamentally a function of professional and lay perception and experience, shaped by wider social processes. These include the media, social norms, and attitudes towards government and experts. These norms may be translated into regulations and established procedures within organisations, which can be resistant to change.

The inherently contested nature of risk – caused by these different attitudes and judgements – means that public space designers operate in a world of uncertainty. These uncertainties include:

• Whether what they regard as a risk will be seen that way by users
• Whether different groups of users will agree on what is and is not a risk, or how serious the risk is
• Whether the space will generate risks unforeseen by the designers
• Where the legal requirements relating to liability start and end
• Whether they should undertake a comprehensive risk assessment, attempting to identify all possible risks, or something more selective – and the consequences in terms of the impact on design quality and potential subsequent liability
• Whether something that is regarded as a risk now (such as skateboarding in public squares) will continue to be a risk in the future, as fashions and social norms change, and therefore whether retrofitting is needed to minimise this risk.

Making judgements about these issues is a difficult task. It would be easy for designers to take a risk-averse approach, and minimise the hazards that space users might face. A more challenging route is to use risk to create interest and stimulation in the design, but in the context of an appropriate level of risk management. In chapter two we explore this issue further by setting out a framework for analysing the relationship between risk and design.
Chapter two
A framework for analysing risk in public space design

The previous chapter showed that the relationship between risk and public space is subtle and multifaceted. Individuals perceive and react to risk in different ways. And rather than wanting to reduce risk, designers may wish to include elements that are ‘risky’ in order to create vibrant and exciting spaces.

In this chapter we set out a framework for analysing the relationship between risk and design. The framework has two levels:

1 The general attitudes and approaches to risk in society at large, and the way they are reflected in regulation, education and organisational practices. We use Force field analysis to help us understand the pressures that are driving and resisting risk aversion.

2 The specific approach to risk adopted in individual public space design projects. We use a general model of the design process to help us understand how risk factors impact at different stages in the production of public space.
Forces driving and resisting risk aversion in public space design

The design of public space can be thought of as a complex decision-making process. This is because it involves a large number of stakeholders with different values and attitudes towards risk, and designers have to deal with uncertainty about how individuals and groups will respond to the choices they make.

Force field analysis is a widely used technique for analysing the factors that influence decisions. This technique views decisions as the outcome of a tension between driving forces and resisting forces (figure one):

- **Driving forces** are those promoting a particular change (for example, that designers should be more aware of risk, or should design to minimise risk)

- **Resisting forces** are those that act against the change (for example, taking the view that existing approaches to risk are acceptable, and that elements of risk create interest in a design).

In chapter one we showed that there are powerful driving forces promoting greater attention to risk. These are likely to lead to risk aversion in the absence of countervailing resisting forces promoting a more moderate approach. Where resisting forces are not in evidence, or are weak, individuals and organisations will tend to lose the ability to distinguish between major and trivial risks and will adopt uniform risk management approaches, regardless of the level of risk.

Driving forces for risk aversion

Strong driving forces lead to an institutionalisation of risk-averse practices and policies by organisations and the individuals who work within them. This means that standardised approaches to risk become the norm. Institutionalisation arises from three sets of driving forces (figure one).

The intention behind these processes may be one of effective risk management (to increase public safety, for example) as much as a fear of liability for personal-injury claims. However, the danger is that, when taken together, they will lead to poor quality and standardised public spaces in which risk is seen as an undesirable feature.

‘Strong driving forces lead to an institutionalisation of risk-averse practices and policies...This means that standardised approaches to risk become the norm’

Figure one: an analysis of potential driving and resisting forces related to risk in public space design

<table>
<thead>
<tr>
<th>Driving forces</th>
<th>Anticipated resisting forces</th>
</tr>
</thead>
</table>
| **Coercive forces** what you must do  
These are mandatory requirements imposed on designers by laws, regulations, organisational policies and client or stakeholder demands. Examples include corporate procedures for risk management adopted by organisations in order to comply with legislation, and client requirements that risk to individuals from trip hazards or play areas is minimised. | **Leadership**  
Inter-professional co-ordination on public space design in some local authorities |
| **Normative forces** what you should do  
These forces concern the overall norms and values of designers and other stakeholders in the public space design field that promote the idea that something is the right thing to do. This can be based on professional, aesthetic or similar grounds, and will develop and spread through formalised routes such as professional training, as well as informal networks. | **Interactive design with stakeholders**  
Increased levels of consultation with stakeholders |
| **Imitative forces** what you imitate  
These include examples that designers are encouraged to copy or imitate. They are conveyed through official guidance, continuing professional development, conferences and so on. One example is Secured by Design, which promotes good practice ways of reducing anti-social and criminal behaviour. | **Good-practice examples**  
Promotion of design that accommodates risk in an appropriate way, produced by interest groups and advisory bodies |
| **Statements by regulators**  
Regulators and others seeking to clarify law and the regulatory framework. |
Resisting forces promoting a proportionate approach to risk

We also need to consider resisting forces that promote a more proportionate approach to risk. Resisting forces are not opposed to the identification and management of risk, but promote a more balanced approach in which risk is considered in context and alongside other design considerations – for example its quality, interest and attractiveness to users, cost and flexibility. These views see risk as something that can enhance design but that also needs to be handled effectively.

The essence of such resisting forces is that they do not lead to an institutionalised approach to the way in which risk is managed. They encourage professional designers to distinguish between types and significance of risk, and to make decisions in the light of the particular context. This is the type of approach currently being promoted by the HSE and the Better regulation commission, as we discussed in chapter one.

Resisting forces include:

- **Leadership by key individuals and organisations in the design profession.** This can be seen in the approach to risk adopted by design professionals, clients and local politicians on a specific project. It is also evident in recent publications by the authors of *What are we scared of? and What kind of world are we building?*.62

- **The involvement of stakeholders in interactive design processes** with multi-disciplinary professional teams, enabling a sharing of views and negotiation of solutions that deal sensibly with risk. However, it should not be assumed that stakeholders will be less risk averse than professionals in all situations.

- **‘Good-practice’ examples** that demonstrate a proportionate approach to risk. For example, guides by the Children’s Play Council and other groups promote improved play opportunities for children.63

However, it should also be noted that ‘good practice’ can sometimes be an ‘imitative’ force leading to the institutionalisation of risk-averse behaviour; for example, in standardised designs for safe play environments produced by some local authorities. One size will not fit all – design solutions need to be context-specific.

- **Statements by regulators, government, insurers, professional bodies** and others that clarify the legal position and the responsibilities of those designing and managing public space. For example, the recent HSE campaign to promote sensible risk management.

Similar initiatives are being undertaken by the Royal Institution of Chartered Surveyors, the Institute of Civil engineers, the Hazards forum, insurers and other bodies in the public space field. They are working to enhance the resisting forces by developing greater understanding of the need for risk to be managed sensibly, and to strengthen communication between professionals working in multi-disciplinary project teams.

These initiatives include:

- The Institution of highways and transportation/ CABE joint workshops on ‘Streets for People’, which emphasise the importance of good design in street works
- The Royal institute of british architects’ continuing professional development courses on Secured by Design, the major initiative by the Association of chief police officers to design out crime
- The Institute of risk management, ALARM: the National forum for risk management in the public sector and other partners producing a risk management standard in order to set a common terminology, risk management process and organisational structure.64

These cross-professional discussions can contribute to a shared understanding of how risks can be understood and managed and are likely to assist the implementation of proportionate risk measures in the wider context of the HSE’s new guidance and its detailed advice for designers on the Construction (Design and Management) Regulations 1994.65

‘Resisting forces promote a more balanced approach in which risk is considered in context and alongside other design considerations’

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64 www.theirm.org/
Mapping risk issues in the design process

We now turn to the second technique for analysing risk in the public space design process. This focuses on the way in which risk impacts on different stages of the process, and the nature of the risks that come into play at these points.

The design process can broadly be understood to comprise three stages:

**Prepare**
Where the idea for the project is crystallised, initial concepts are explored, the team is put together, and finance organised
- Identify aims
- Develop strategy
- Build team
- Consult with stakeholders

**Design**
In which the detailed design work is undertaken, including exploring different options and evaluating these against relevant criteria in order to arrive at the preferred solution
- Vision for the space
- Choices about functionality
- Choices about quality
- Viability of design

**Implement**
Where the project is delivered, although this may also involve some modifications to the original design in the light of the practicalities faced on the ground.
- Delivery process
- Ensuring quality
- Monitoring

It is likely that different types of risk will relate to each stage of the design process. We term these:

- **Strategic risks**
  That relate to the ability to develop a viable project

- **Detailed risks**
  Concerned with the design of the public space; these are the risks to the person, property and quality of life we identified earlier, and are the main focus of our study

- **Delivery risks**
  Associated with the delivery of the design on the ground.

We use the case studies later in the report to isolate the nature of the risks in each of these categories. The categorisation is not exclusive and we recognise that there are often no clear distinctions between risks at each stage.

The design process incorporates a complex relationship between strategic choices (for example, agreeing the overall design concept) and detailed decisions (for example, evaluating and choosing the materials for footpaths). Strategic choices usually set off a large number of such detailed decisions, but the process is also often interactive and iterative, with exploration of detailed decisions leading to a rethink of aspects of the overall concept. Similarly, implementation of a project can sometimes highlight that changes need to be made and, occasionally, new features retrofitted.

Determining the overall approach to risk is one of the strategic choices facing designers and will affect the more detailed ways in which the design unfolds. But equally, choices about risk may only emerge over detailed aspects of the design. For example, questions about whether a water feature should be open or fenced are likely to generate wider ones about hazard identification and risk management.

‘Implementation of a project can sometimes highlight that changes need to be made and, occasionally, new features retrofitted’

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Conclusion

It is helpful to see risk judgements as a relationship between forces driving towards risk aversion, and those resisting and promoting proportionality. Force field analysis offers a way of capturing this relationship. Our framework also points to the way in which risk may impact differentially, according to the stage of the design process.

It is also clear, from the evidence presented in chapter one, that the impact of risk on a particular project should be understood in terms of attitudes and regulatory frameworks in society at large. Before investigating our case studies of public space design, therefore, we turn in the next chapter to an exploration of the views of national stakeholder organisations.
Chapter three
The views of national stakeholders

Many national organisations and pressure groups concerned with public space are actively debating the impact of greater risk awareness, the duty of care, potential liabilities from accidents, and the changing risk culture. This sets the context within which individual designers operate.

It is important for us to understand this context, so we interviewed 16 representatives from a wide range of stakeholder groups. Interviewees included risk assessors and managers, health and safety professionals, the highways and transportation sector, public space designers and user interests. We also interviewed managers responsible for public space in three councils and supplemented these interviews with a review of relevant reports and web-based material from other organisations.

The interviews and literature review provided evidence on four key issues that help to illuminate the risk context within which professional designers operate:

• What are the main types of risks in public space design?

• What is the impact of legislation and external regulation on approaches to risk?

• Is there risk aversion in public space design?

• How can designers manage risk in an effective and proportionate way?
Stakeholders providing information for this study

- ALARM – National forum for risk management in the public sector
- Better regulation commission
- Camden Borough Council
- Children’s play council
- Communities and local government
- Department for Constitutional Affairs
- Department for Transport
- Guidedogs for the blind association
- Health and safety executive
- Institute of highway incorporated engineers
- Institute of risk management
- The Institution of highways and transportation
- Knowsley Metropolitan Borough Council
- The Landscape institute
- Local government association
- London Borough of Richmond upon Thames
- National federation of cemetery friends
- Retail week
- Royal academy of engineering
- The Royal Borough of Kensington and Chelsea
- Royal institute of british architects
- Royal institution of chartered surveyors
- Royal national institute for the blind
- Urban design group
- West midlands police
- Zurich municipal

What are the main risks identified by stakeholders?

The majority of stakeholders regarded risks associated with crime and fear of crime as a priority for everyone involved in the design and maintenance of public space. Respondents thought that there was wide recognition in the profession that users of public space should be able to feel secure from anti-social behaviour and criminality.

However, a number of stakeholders also acknowledged the need to keep this issue in proportion and avoid design being driven by a security agenda. They voiced a concern that giving too much weight to security might lead to standardised responses and environments that were less stimulating and innovative.

Other stakeholders thought a combination of standard design practice and innovation was possible. There was also a recognition that design could go only so far in promoting safe spaces. Consequently, the definition of ‘reasonable’ risk – and proportionate risk management – becomes a core issue for public space design.

Liability claims arising from accidents are further, major considerations for national stakeholders. This relates to the changed climate of society in which individuals, sometimes encouraged by ‘claims farmers’, resort to litigation when they have suffered an accident. In this situation, a greater proportion of risks become ‘significant’ and thus of concern to the public (see chapter one).

Stakeholders recognised that organisations might respond by adopting more defensive practices. This includes reducing risk through ‘safer’ design or using signage to show how or when a particular space can be used. Changes to local authority design and regulation of play areas were highlighted as a particular instance of this trend, and indicative of normative forces driving an institutionalised response.

A number of national stakeholders thought that such defensive approaches were in part the result of organisations having inadequate information on the legal position regarding their responsibility, or holding views that were more risk averse than the legislation and regulatory framework intended. In terms of the framework in chapter two, this would mean that ‘coercive’ driving forces were particularly significant.

Recent case law – for example Tomlinson v Congleton Council and Cheshire County Council – was seen as providing a clear defence for councils by defining what is reasonable in terms of risk management. Such clarifying statements by regulators were identified as a potentially significant resisting force in chapter two. Nevertheless, one stakeholder felt designers might be blamed if there was a major problem with a public space, regardless of the legal position on liability for accidents.
The Tomlinson case

The case concerned a youth who dived into a lake in a countryside park and sustained serious injuries. There were signs at the lake saying it was unsafe for swimming, and rangers patrolled the lake, ordering any swimmers from the water. The case brought was that councils concerned had failed to prevent the individual from diving into the lake.

The Law Lords heard the case in 2003 and found unanimously in favour of the local authorities involved.

In their judgement, the Law Lords drew a number of conclusions that help define the limits of responsibility for regulating public space. In summary, these are:

1. There are some hazards that may injure careless persons or young children, against which it is impossible to guard by protective measures

2. Members of the public should be aware of an obvious hazard that can be clearly seen, and therefore there is no need for the responsible body to protect an obvious hazard

3. If there is no record of an incident or accident in an area that is regularly used by the public, and it is an obvious hazard, then it does not need further protection

4. There should not be an automatic assumption by an individual that because they have had an accident, someone else must be responsible, especially if the accident was caused by inappropriate action (in this case, by an individual diving into a lake).

The guidance available in specialist documents provides a more detailed discussion of the legal context for public authorities in considering whether they have a responsibility to act.67

However, the stakeholder interviews did not find evidence of an increasing liability culture in the public space field. Respondents thought that anecdotal and popular perceptions of a ‘compensation culture’ were not borne out in practice. Two stakeholders commented:

‘[There is a] perception of a ‘compensation culture’ but no evidence to support this, since over the last five years [the value of] claims did not grow as a percentage of GDP.’

‘[There] seems to be no increase in the number of [successful] personal liability claims…[rather] there is an increase in the amounts awarded by the courts.’

There was also evidence from our local authority interviews that councils were managing this issue more effectively, leading to a reduction in liability claims. In two councils, new approaches had been introduced that were improving the quality of public space through rapid action on repairs and tackling fraudulent claims. These initiatives have led to a significant drop in claims. In other words, recognition of claims (which were largely for trips and falls) was leading to practical and proportionate risk management.

‘The stakeholder interviews did not find evidence of an increasing liability culture in the public space field’

The London Borough of Camden's approach to managing liability claims

Camden Council in London has implemented two linked initiatives to manage the problem of claims for accidents from trips and falls on its streets and pavements.

The first element is increased resources targeted at reducing accidents. This involves a more effective process of repairing faults and reducing other hazards.

The second aspect is to introduce a new process for making claims against the council in order to determine whether the claim is legitimate; the council is the responsible body, and is liable through negligence. This involves:

• Having only one point in the council at which an individual can register claims
• A procedure for investigating whether the council or another organisation (such as a utility company) has been negligent and is legally liable to pay compensation
• If the claim is accepted, a settlement is dependent on provision by the claimant of appropriate documentary evidence.

The impact of these measures has been to reduce the number of claims overall, and to reduce significantly the number of claims for which the council was responsible:

### Claims reduction following footpath improvements by London Borough of Camden

<table>
<thead>
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<th>Year</th>
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<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
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</thead>
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<td>113</td>
<td>141</td>
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<td>91</td>
</tr>
<tr>
<td>Claims for which council responsible</td>
<td>15</td>
<td>18</td>
<td>14</td>
<td>17</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

Reducing claims for trips and falls in Knowsley Metropolitan Borough Council

There was a dramatic increase in claims against the council for trips and falls, with 1,700 reported in 2001-02. The council began to analyse the claims relating to pavements and found they came from across the country, from solicitors and also from local ‘claims farmers’ operating on doorsteps and in town centres, proactively seeking out possible claimants. The council recognised that highways and pavement inspection standards had dropped over the years and there were delays in completing repairs.

Knowsley Council initiated a revitalised system of inspection and repair, employing additional highways inspectors and ensuring repairs were completed promptly. By 2005-06, the number of claims had been reduced by 86 per cent of its 2001-02 level.

The council examined whether there was exaggeration and fraud by claimants. Its insurance team worked with the council’s insurers to increase the information on claimants and witnesses held on the council’s database. Now the council goes to court where there is suspected fraud and many cases are dropped by claimants before they get to that stage. Knowsley has promoted its work on fraudulent claims through the media, pointing out that it is a cost for local people through the council tax.

‘Organisations differ in terms of the resources available to them to undertake risk assessments for the design or maintenance of public space’
What do stakeholders think is the impact of legislation and external requirements?

Stakeholders thought that the large body of existing or planned legislation, guidance and advice relating to risk and the design of public space brought the issue more to the notice of professional designers and members of the public. It was recognised that this sometimes led to risk-averse behaviour and ‘over-designing/engineering’, for fear of not following legislation or guidance, and potential claims if something went wrong. There was a consistent view that designers needed a more accurate understanding of what was required of them and should not over-compensate.

One stakeholder, referring to the Health and Safety at Work Act 1974, considered that the employer’s duty to its employees and others:

‘…is not about going to the ends of the earth trying to eliminate risk.’

Stakeholders recognised that there are many management approaches, with some organisations and people managing risk well but also a significant minority who do not. Therefore, while risk management needs to be proportionate, stakeholders were aware that not everyone was treating the issue seriously.

Stakeholders sometimes disagreed about the extent to which it is possible to recognise and control risk. Crucially, organisations differ in terms of the resources available to them to undertake risk assessments for the design or maintenance of public space.

There were different levels of awareness of risk in relation to specific design issues. Some stakeholders thought that larger organisations might be prone to ‘departmentalism’ which prevented or restricted integrated approaches to risk and design, whilst smaller organisations might lack the capacity and resources needed to manage risk in an effective way.

There was evidence that regulations and guidance were seen as having the potential to enhance design rather than constrain it. In this sense, ‘coercive’ pressures are not just on the ‘driving’ forces side of the risk equation set out in chapter two, but are also actively resisting risk aversion. For example, the Disability Discrimination Act 2005 was intended to increase access, and required designers to think creatively about accommodating different users within their designs. The act could potentially reduce risks faced by individuals who find public spaces difficult to navigate. Regulations and legislation, then, needed to be seen as factors that could enhance design quality and user experience, while at the same time reducing risk.

Do stakeholders think that design is driven by risk aversion?

In general, stakeholders had a pragmatic view on this issue. They agreed that risk was more to the fore, but that the detrimental impact of risk-averse behaviour was relatively limited. Stakeholders thought that risk concerns did not dominate active design considerations, but were balanced and weighed against other objectives. For example, one stakeholder commented that:

‘Design is less driven by accident statistics and standard engineering solutions. Designers are trying to create space for people to live in now, as opposed to what happened previously. There is a desire, for example, to increase pedestrian space at the expense of vehicular access.’

Stakeholders tended to report risk issues as coming to the fore in the formulation and implementation stages of the design process, and less so in the preparation stage (see chapter two).

Rethinking risk in design implementation

An urban local authority had reduced the width of the central reservation along a stretch of road in order to improve vehicle flows. There was a debate within the professional design team about whether a guardrail was required to stop people using the central reservation as a safe refuge while crossing the road, as they had done before it was widened. This was justified on the grounds that it would reduce the risk to pedestrians. Instead, the council decided to install additional pelican crossings, judging that guardrails would increase traffic speeds, and individuals wanting to cross at other places would probably climb them.

Stakeholders were concerned about the impact of media reporting on the public’s attitude to risk and the liability of public organisations and others controlling public space. For example, one respondent thought that:

‘...the media has had a role in heightening the sense of risk.’

Another observed that media coverage led:

‘...people [to] see risk negatively, as something to be avoided.’
Mixed use: if risk is managed sensibly
good quality streets can accommodate
a range of uses and users

‘Only so much could be done by individuals and organisations to reduce risk and avoid accidents and personal injury in public spaces’

Some stakeholders thought that media reports of personal injury attributed to accidents in public spaces were often biased and unfair.

Several stakeholders raised the issue of incremental or ad hoc changes being made to schemes as a result of decisions taken by particular organisations or local authority departments, especially where this involved retrofitting new elements into a recently completed scheme. In some cases, these changes were a response to concerns about risk. Other stakeholders commented on the need sometimes to retrofit services, features or elements because of a failure to think about the ongoing maintenance issues involved in a design.

Stakeholders highlighted the need for local authorities to develop effective procedures for ensuring that any such incremental changes were audited prior to implementation:

‘Plans are implemented and sometimes things are added following complaints. ‘We need to be constantly vigilant [and] not slavishly go in and adjust things because it seems to be the right or appropriate thing to do.’

‘Signage is probably the worst case. You are meant to have parking signs on both sides of the road in a control area. Why not apply to the Department for Transport for a dispensation [not to apply this regulation] if you think this is appropriate?’

A stakeholder representing the interests of blind and partially sighted people noted the risks for these public space users arising from incremental works and gaps in the pavement or the messy siting of street furniture. They can impact in undesirable ways on different user groups and on their ability to access and move around public space.

Overall, there was general agreement by stakeholders that only so much could be done by individuals and organisations to reduce risk and avoid accidents and personal injury in public spaces. This is an important finding, as it reveals a view amongst national organisations that driving forces for risk aversion need to be moderated. We found several examples of the ways in which national bodies are advising their members or undertaking public campaigns to promote a proportionate approach to risk management, thus adding to the resisting forces noted in chapter two.
How can designers manage risk in an effective and proportionate way?

Stakeholders agreed that the management of risk was important and suggested considerable professional effort was devoted to the avoidance or control of risk in public spaces. At the same time, a change in the culture of local government meant there was more partnership working on local priorities to improve public space and to create sustainable environments. This meant that risk might be seen in different ways from those adopted by professionals. The result could be positive, in introducing lay judgements about risk. Equally, it might lead to greater risk aversion.

Stakeholders thought there was some uncertainty about how to go about arranging consultations to consider risk and design issues that would be fully inclusive and take into account the views of all the different users of public space. Some of our case studies explore these issues more fully.

Local authorities provided examples of ways in which the design of public space and ad hoc interventions were regulated through a corporate process that integrated the work of different professions and functions. These initiatives sought to develop creative ways of managing risk and ensuring high-quality design. However, it requires the development of a multi-disciplinary culture within the local authority, in which different professions work to a common set of principles and understood how their skills could be used in complementary ways.

Integrating and improving public space design in the London Borough of Richmond upon Thames

The council has an inter-departmental public space group, chaired by an assistant director. This group is composed of professionals concerned with parks, highways maintenance, development control, and similar functions.

Different departments and officials use the group as a sounding board for their schemes. The group might suggest consideration of issues or ideas that have been missed or overlooked. It might be something as simple as positioning things in the landscape differently or the use of alternative materials.

The group oversees the council’s Public space design guide, and the expectation is that those involved in interventions in public space will follow its principles and use ideas contained in its worked examples. All schemes involve looking at the design and assessing it from a public perspective and in terms of what it will deliver for the users of the public space. The group tries to be imaginative and not just follow what officials might initially think is the appropriate design route.

For example, at Kew Gardens station, the council worked with the rail operator to create more open space with less clutter. Special signs were installed flush into the pavement. Other signage was designed to be less intrusive than pole-style systems.

However, stakeholders also noted that there was a need for adequate resources for the delivery and maintenance of high-quality spaces. While the definition of ‘high-quality’ was not explicitly linked with a risk-free space, there was evident belief that a high-quality (and potentially costly) space was one where risks had been addressed.

The choice of materials is an area of considerable debate. There are sometimes differences between professions regarding these issues, including their fitness for purpose in a risk environment. Southwark Council developed a Street scene design guide in an attempt to involve the suppliers of materials in risk and design discussions from the start. Inconsistent and sporadic use of tactile paving, for instance, causes difficulties for blind and partially sighted people.

Stakeholders generally considered that awareness of risk and judgements about risk were now integral to professional education and practice. However, it was recognised that more could be done on these issues at an earlier stage in the process of professional education.

‘Stakeholders thought there was some uncertainty about how to go about arranging consultations to consider risk’
Conclusion

These stakeholder views can be analysed in terms of the Force field framework (figure two). This provides a way of understanding the pressures that are driving towards greater attention to risk, and those that are resisting and encouraging a more proportionate approach. This analysis provides an insight into the perspective of national organisations that form the context within which professionals consider risk in their public space designs.

There are clearly a number of driving forces for risk aversion, or at least greater risk awareness, identified by national-level stakeholders. These include:

- Societal concerns about personal security
- Greater legislation and regulations
- Media coverage impacting on public attitudes.

The impacts of these drivers on public space design include over-design, ad hoc incremental interventions to solve particular problems, and a concern about liability.

However, the national stakeholder interviews also reveal that there are powerful resisting forces. These are clearly identifiable at the national level, but may not yet have filtered through sufficiently to designers working on specific schemes across the country.

The resisting forces include:

- Initiatives by local authorities, professional bodies and others to develop more integrated, multi-disciplinary approaches
- Promotion of design that accommodates risk in an appropriate way, produced by interest groups and advisory bodies
- More extensive involvement of lay people in discussions about risk in public space design
- Active campaigning by pressure groups representing particular sets of public space users.
- Greater clarity over the legal position of an organisation’s responsibility for ‘duty of care’ and its liability in case of accidents

The interviews reveal that the climate is moving towards a more proportionate and ‘sensible’ approach to risk assessment and management. Resisting forces have strengthened. Professional bodies and other organisations interested in public space design are also working together to improve understanding.

In the next chapter, we examine how these forces have played out in the design of specific public space schemes, and whether the picture at the local level reflects the national context.

The figure below summarises the national respondents’ views on driving and resisting forces to risk aversion in public space design.

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**Figure two: analysis of national organisations’ views on driving and resisting forces on risk aversion in public space design**

**Driving forces**

- **Coercive forces** what you must do
  - Increased legislation and regulation, although this may not be properly understood by professional designers

- **Normative forces** what you should do
  - Increased concerns of citizens about personal security

- **Imitative forces** what you imitate
  - Good practice guides can lead to a standardised response, but may also be seen as beneficial by the public, for example in reducing anti-social behaviour

**Anticipated resisting forces**

- **Leadership**
  - Inter-professional co-ordination on public space design in some local authorities

- **Interactive design with stakeholders**
  - Increased levels of consultation with stakeholders

- **Good-practice examples**
  - Promotion of design that accommodates risk in an appropriate way, produced by interest groups and advisory bodies

- **Statements by regulators**
  - Regulators and others are seeking to clarify law and the regulatory framework.
This chapter uses detailed case studies of public space design projects to understand how risk issues affected the specific choices facing designers and other stakeholders. It helps us understand more about the impact of the driving forces promoting greater attention to risk, and the extent to which the resisting forces for sensible risk management are being reflected in designers’ decisions.

We conducted 10 case studies of public space design. These were selected to give a range of examples on three criteria:

- Types of public space – pedestrian streets and squares, streets and squares with vehicular access, and parks
- Types of land use – civic, commercial, leisure and residential
- Types of scheme – new build, home zones, land in private and in public ownership.

The case studies are presented in order of public space type. A number of spaces are mixed use. We also sampled the cases to include new designs (Poundbury, for example) and incremental changes to existing spaces (such as Kensington High Street). Several of the cases are high-profile designs, chosen in order to understand whether the driving forces for risk aversion were affected by the significance of the development.

The case studies are listed overleaf.
The 10 case studies

- **Brindleyplace, Birmingham**
  A privately owned and managed city-centre leisure, residential and commercial development

- **Hofstraat, Apeldoorn, the Netherlands**
  The restoration of watercourses and water flow in the main residential and shopping street in this Dutch town

- **Park Hill, Sheffield**
  A major redevelopment of blocks of council-owned flats with considerable problems of crime and anti-social behaviour

- **Exchange Square, Manchester**
  A major city-centre public square involving innovative design

- **Kensington High Street, London**
  A bold project to improve the quality and safety of the streetscape in a major shopping destination

- **Deptford Green, London, and Heathfield Avenue, Dover**
  Home zone schemes for two small residential areas

- **Poundbury, Dorset**
  A privately developed and largely residential scheme

- **Handsworth Park, Birmingham**
  The restoration of a 19th century park in an area with considerable problems of crime and anti-social behaviour

- **River Tame, Birmingham**
  Restoration and improvements to river and footpaths in a residential area

Methodology

The main case studies were undertaken by analysing written reports and press coverage of the scheme, alongside interviews with key actors and site visits. The home zone analyses drew on the evaluation report of the 61 first-wave Challenge fund schemes and telephone interviews with the relevant local authority officials.

The case studies are presented to a common format. A brief preface highlights the purpose of the case. We then outline the problem the designers were tackling and the overall concept they adopted. Following this, the case study identifies major risk issues in the design and discusses how these were resolved. The case study ends by drawing conclusions about the overall impact of risk considerations on the quality of the space. These are organised around the three key types of public space risk identified in chapter one – risks to people, property and quality of life.

Our focus is on the way in which risk issues affected the design and management of the space, and thus our perspective only tells part of the story of the design process. It is not intended to be a comprehensive appreciation of the quality of each public space.

Brindleyplace, Birmingham

- Mixed-use waterside development
- Privately developed and managed by Argent Estates
- Design: John Chatwin; Townshend Landscape Architects
- £350 million development
- Completed 2002

The designers of this privately owned space strove to create an exciting place that also minimises the risks of crime and anti-social behaviour. They have done so by encouraging a mixed-use, 24-hour environment that incorporates both passive and active surveillance. There were risks associated with inherited and proposed water features and changes of level on the site, but the designers felt these were highly visible and that people should use their common sense when using the space.

The overall concept

Brindleyplace in Birmingham is the largest city-centre mixed-use development in the UK. It has been widely acclaimed as a model for urban regeneration due to its successful creation of a well-designed, safe and secure environment where people can work, live and socialise. The regeneration created one of Birmingham’s busiest areas of public space, attracting more than four million visitors a year.

Because it is wholly owned by the developer, Argent Estates, Brindleyplace provides an example of a privately designed, funded and managed space, in which public security and safety are seen as paramount to the continuing success of the development over the long term. Work on the scheme began in 1993, and the public space areas were completed by 2002.

The urban design brief provided an integrated, coherent view of the space as a whole, whilst still providing scope for individual architectural design and a high degree of flexibility. Each of the three public spaces in Brindleyplace has a different character. Oozells Square is sedate and relaxed, bisected diagonally by a water feature, and decorated with granite sculptures by Paul de Monchaux. Central Square is at the intersection of Brindleyplace’s three principal axes and is designed to be a busy hub of activity. Its small amphitheatre provides seating in the sunniest area, and a series of strata with different uses. An elliptical glass café sits at the centre of the square, along with a water feature and sculpture by Miles Davies. High-quality materials are used, and there is a thorough ongoing maintenance regime.
‘Each of the three public spaces in Brindleyplace has a different character’
Risk issues in the design

Argent viewed public safety and security for users of the space as the key risk consideration from the outset, believing that a well-designed and safe environment would have a major impact on its success. This was reflected in the project’s phasing, which enabled occupants and users of each successive phase to have a positive perception of security and personal/commercial safety. It ensured the reputation of the scheme as a safe and secure area could be gradually built up over time, and it also allowed flexibility in the design. If a particular building material or surface was found not to function well in practice, it could be easily changed for future phases.

The security measures in place are apparent, for example, the presence of security guards and CCTV which is intended to act as a deterrent to anti-social and criminal behaviour and skateboarders, perceived as a risk to users.

Risks to personal security are also managed through the mixed-use nature of the development, which results in the space being well used at all times of the day, evening and through much of the night. The management company encourages the staging of festivals and weekend outdoor events in the public squares. The main open spaces have been designed so they face on to building fronts instead of blank facades, and create ‘active edges’, enhancing natural surveillance and deterring would-be criminals and vandals; a further disincentive to crime and anti-social behaviour.

The design includes water features and changes of levels, including a footpath between two pools with fountains erupting randomly and a canal side walk. Although these are hazards, the designers decided that risks are low because of their visibility and that people should use common sense. Consequently, no special measures have been installed to further minimise the risks.

Brindleyplace has an exceptional security record. Since the completion of its main area in 2002, there has been only one incidence of graffiti, and in the 900-space, multi-storey car park (operational since 2000), only three incidents of car crime, despite a throughput of over three million cars. The car park is well used and well lit, providing a high degree of visibility so that people using it can both see and be seen.

This security record has undoubtedly been bolstered by the large number of security staff patrolling the area and monitoring via CCTV systems – up to seven security staff are on duty at any time. This positive perception has had a significant ‘trickle-down’ effect on the surrounding area, leading to the business community in Brindleyplace and adjacent Broad Street winning the ‘Safe Business’ award in May 2006. However, there is of course a cost implication for the provision of these measures and such a high level of security may not be replicable in other projects.
How did risk affect design?

Brindleyplace’s mix of public and private activities ensures that all spaces are animated and busy throughout the day and evening, thereby aiding security. To some degree, Brindleyplace is a ‘manufactured’ environment, with the range of uses more clearly zoned into different parts of the site than would be the case in a traditional urban environment. It has been criticised because of its obvious security and CCTV presence, but this has undoubtedly been a crucial factor in its excellent safety and security record. Physical hazards associated with water and levels are obvious and are left to the individual to judge and negotiate.

‘Physical hazards associated with water and levels are obvious and are left to the individual to judge and negotiate’

Table one: Brindleyplace – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Users having accidents, especially associated with water features (including canals), changes of level and surface materials</td>
<td>Developer, designers</td>
<td>Use of high-quality materials and promotion of excellence in design; people should use common sense when using the space</td>
</tr>
<tr>
<td>To property</td>
<td>Anti-social behaviour and criminality</td>
<td>Developer, designers</td>
<td>Designed to enhance maximum pedestrian movement around the site; mixed-use development promotes use of the space at all times of the day and evening</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Vandalism and graffiti on buildings and car crime in parking areas</td>
<td>Developer, designers</td>
<td>Buildings fronting on to public spaces; good lighting; 24-hour security surveillance; CCTV cameras; thorough ongoing maintenance regime; controlled main entrance and lockable towpath gates</td>
</tr>
<tr>
<td></td>
<td>Safety of residents, businesses and public space users compromised while site is being developed and has only partial occupancy</td>
<td>Developer, designers, businesses</td>
<td>Phased development, flexible design principles</td>
</tr>
</tbody>
</table>
Hofstraat, Apeldoorn, Netherlands

- Renovation of waterways along shopping and residential street in small Dutch town
- Partnership between city council and public and private water companies
- £3 million investment
- Finishing implementation stage at time of case study

We looked at a public space project in the Netherlands in order to gauge the extent to which we in the UK might be more risk averse than our European neighbours. This case study illustrates that a major project to return water flow to canalised streams in urban streets generated similar risk issues as in the UK, but these were less pronounced because of cultural differences between the two countries.

The overall concept

In 2002, a unique project was completed: the return of the water flow from the Grift River and various springs to the waterway running along the centre of Hofstraat, a major street in Apeldoorn, in the eastern Netherlands. This scheme was part of a broader policy initiative to restore and render more visible the streams and brooks in and around Apeldoorn and was motivated by concerns about water management and maintaining the natural landscape. Hofstraat was the first project implemented, and demonstrated that it was feasible to return water flows to the channels within the city.

The project was undertaken by Apeldoorn City Council, water board Veluwe (responsible for surface water management), and Vitens (a company that provides water to inhabitants in the area), but landowners were also involved, as they are responsible for water maintenance on their own property.

The Hofstraat project proved to be one of the most difficult sections of the Grift to restore. It was recognised that it would be a pilot – success here would demonstrate what would also be possible in other places. But because it was the first, the council set a much higher standard for the scheme than was originally intended.

The largest problem was to fit all spatial functions into the available space. The design assignment was complicated because it involved not only returning the water flow but also creating a car-free zone, changing the bus stops and providing a high-quality public space. The shop owners and residents were sceptical initially, but gradually the project succeeded in gaining their support.
‘Hofstraat demonstrated that it was feasible to return water flows to the channels within the city’
Risk issues in the design
The need to maintain political support meant that the design team had to be conscious of, and respond to, risks to people and property identified by the inhabitants. They were mostly concerned with safety risks (the threat of small children drowning) and health risks (such as the growing number of insects attracted by the water). Safety risks were addressed by avoiding having steep walls to the watercourse and providing access points (small stairs). The watercourses are generally not very deep (never more than 50cm) so the risk of children drowning in them is not very high.

There was some anxiety from property owners about risks to their properties, but these mainly arose from a concern that the project would not bring the expected benefits (that is, reducing the risk of flooding).

‘Residents and businesses were involved in an interactive decision-making process’

Other than these measures, the project design proceeded along lines laid down in professional and legislative standards. Residents and businesses were involved in an interactive decision-making process with the water board and city council, and this assisted in the management of local political risks.

How did risk affect design?
Personal risks, such as safety and health, played only a minor role in the whole Hofstraat design process. Getting the funds and co-ordinating the various efforts of the agencies was more important, as was the pressure to achieve good water drainage and minimise pollution. Therefore, as far as the content of the whole project is concerned, the property risks associated with ineffective water management and quality-of-life risks associated with the ecological aspects have been more important than the risks to people’s safety (table two).

This does not mean that safety risk has not played a role, however. In fact, the Hofstraat project is often used to show inhabitants that bringing water back into the urban environment does not have to mean major...
safety risks. This may be enhanced by the fact that the Netherlands does not have a strong ‘compensation culture’ and that there is a tendency for technical solutions to carry considerable weight in decision-making. This is in marked contrast to the UK, where risk drivers have greater weight and there is often public debate about proposed technical solutions.

In addition, the decision-making process involved considerable interaction between residents, businesses and the three main partners. Importantly, the value of properties in Hofstraat rose because of the watercourse restoration which also resolved flooding experienced by some residents, leading to strong local support for the scheme.

Overall, most participants are fairly satisfied with the outcomes of the Hofstraat project and also with the policy initiatives and implementation of the water plan so far. The city council is satisfied that the wider initiative to return water to the streets has started, and that with Hofstraat completed, a difficult job is already over.

‘Personal risks, such as safety and health, played only a minor role in the whole Hofstraat design process’

Table two: Apeldoorn – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Safety risks, especially children having accidents and increased health risks from insects</td>
<td>Inhabitants</td>
<td>Avoiding steep walls to the watercourse and providing for access points from street to water</td>
</tr>
<tr>
<td>To property</td>
<td>Risk of flooding</td>
<td>Property owners; water board</td>
<td>None: the scheme was designed to improve water management</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Pollution risks</td>
<td>Vitens water company</td>
<td>None: the scheme was designed to improve pollution control</td>
</tr>
<tr>
<td></td>
<td>Risks of economic damage to businesses if scheme unattractive</td>
<td>Retailers; property owners</td>
<td>Taken into account by designers; little impact as scheme designed to promote better quality retail environment</td>
</tr>
</tbody>
</table>
The regeneration of Park Hill shows how dealing with risks associated with public space in a disadvantaged neighbourhood presents challenges for designers who also want to produce an innovative and creative vision for the area. The design process was under way at the time of the case study.

The overall concept
Sheffield's Park Hill flats were built in the 1950s on a hillside overlooking the city centre. In 1998, they were Grade II listed. Wide walkways or ‘streets in the sky’, designed to encourage conventional street activities, connect separate blocks that vary in height from four to 13 storeys.

In 2003, English Partnerships and the city council devised plans to refurbish the flats and their precincts. In April 2004, Manchester Methodist Housing Association (a registered social landlord) and developers Urban Splash were selected to help regenerate Park Hill flats and their surroundings.

Urban Splash has consulted with residents and other stakeholders and developed creative public space plans to include a village green, a crown green bowls facility and landscaped parkland. The design also includes modified courtyards providing children’s play areas, a tree-lined avenue leading to a new piazza, a wildflower meadow, allotments and a ‘high street’ with shops along its length. Improved transport infrastructure will include upgraded pedestrian routes and trams that connect the estate with the city centre.
‘Plans include a village green, a crown green bowls facility and landscaped parkland’
**Risk issues in the design**
The design team has tried to take a balanced approach so that issues of personal security do not dominate decisions on the public space options. Nevertheless, the poor quality of the local environment means there are residents who are fearful of crime and anti-social behaviour and complain that open walkways are an easy escape route for petty criminals. CCTV has been installed to help make residents feel safer, albeit temporarily until criminality and anti-social behaviour lessen. However, it is intended that secure door-entry systems will be installed in all walkways providing access to flats.

Some residents are concerned about risks associated with a proposed skateboard park, especially in terms of potential anti-social behaviour from users. There have been debates too about planting around buildings, with some stakeholders suggesting that minimal planting of shrubs would increase the sense of security.

Risks associated with cars are another major concern for residents. The proposal to construct shared space where there is no pronounced demarcation between traffic and pedestrians is controversial. Some residents do not believe traffic calming based on different textured road surfaces (as opposed to humps) will work. The proposal to build a new multi-storey car park is also the subject of debate, with some residents regarding cars as a risk to pedestrian use and saying they should be discouraged.

The space under the multi-storey car park has been set aside to house a new nursery, supermarket and dentist’s surgery. The design team recognises the difficulty of ensuring that the entrance to this underground space conveys a sense of security.

English Partnerships and the council have set a number of specific design standards, for instance applying Secure by Design principles. These are not perceived to be a constraint on innovation, but help ensure adequate time is devoted to discussions about how the buildings and precincts can be made secure. At the same time, the design team wants to avoid compromises that damage the overall future vision for the estate. Nevertheless, some changes have been agreed to ensure residents feel safe and secure.
How did risk affect design?
The risks mainly concerned poor personal safety experienced by residents (table three). Consequently, the quality of public space, including its capacity to be regulated in the interests of ordinary residents, becomes a symbol for the whole scheme; a significant design challenge. The designers need to respond to people’s concerns and find ways of designing out risk. But they also need to avoid becoming risk averse and thus undermining the quality of the public spaces in Park Hill. These issues have led the designers to work closely with other agencies, including the council and the police. They have also undertaken wide-ranging and in-depth consultations with relevant stakeholders. The challenge for the design team is to balance the demand for regulated and risk-minimised space with the more challenging and exciting aspects of the vision to transform the area.

This scheme is at an early stage. In some of the other case studies in this report we have noted changes in the views of citizens and other stakeholders towards risk over the life of the project. Whether this will also occur in Park Hill remains to be seen.

‘The challenge for the design team is to balance the demand for regulated and risk-minimised space with the more challenging and exciting aspects of the vision’

Table three: Park Hill regeneration – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Criminality against residents in areas of public space</td>
<td>Designers and residents</td>
<td>Restrict access to some areas of public space</td>
</tr>
<tr>
<td></td>
<td>Public safety in the space under the proposed multi-storey car park</td>
<td>Designers</td>
<td>Not resolved at time of undertaking case study</td>
</tr>
<tr>
<td>To property</td>
<td>Low visual amenity of car park</td>
<td>Environmental groups and residents</td>
<td>Not resolved at time of undertaking case study; discussion about necessity of accommodating increased car ownership</td>
</tr>
<tr>
<td></td>
<td>Shared space and traffic-calming measures will not reduce traffic speeds and flows</td>
<td>Residents</td>
<td>Not resolved at time of undertaking case study</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Security of residents in and around their homes</td>
<td>Designers, the council and residents</td>
<td>The walkways that provide access to flats will no longer be open to the general public; introduction of entry systems</td>
</tr>
<tr>
<td></td>
<td>CCTV surveillance to improve security will be intrusive</td>
<td>The council and residents</td>
<td>A degree of intrusive CCTV infrastructure was included because of the high level of resident concern about personal safety</td>
</tr>
<tr>
<td></td>
<td>Public spaces will be used for skateboarding and will encourage young people to congregate</td>
<td>Residents</td>
<td>Not resolved at time of undertaking case study</td>
</tr>
<tr>
<td></td>
<td>The estate and its public space will not be maintained after redevelopment, leading to a return of the problems of anti-social behaviour and criminality</td>
<td>Developers, designers, and the council</td>
<td>Strategy being developed at time of undertaking case study</td>
</tr>
</tbody>
</table>
Exchange Square, Manchester

- Redesign of civic square, including retail and leisure uses, in heart of major city
- Design: EDAW and Martha Schwartz Partners
- Client: Manchester Millennium, a public/private partnership including Manchester City Council
- Completed 1999
- £4 million scheme

This case study shows how views about risk varied between the many stakeholders involved in an innovative design for a public square. While some of the original design elements were retained, such as the distinctive water feature, others were modified or dropped.

The overall concept
Manchester’s Exchange Square is a significant public space in the heart of the city’s Millennium Quarter district, developed in the aftermath of the 1996 IRA bomb explosion there. The redevelopment process involved a partnership between clients, various public funders and major chain stores with an interest in this prestigious site.

Manchester Millennium, the public/private partnership set up by the government and Manchester City Council, was the client responsible for commissioning the redevelopment of the square and EDAW the company appointed to create a masterplan to guide the scheme. The client rejected less innovative proposals and eventually appointed US-based landscape architects Martha Schwartz Partners. Its scheme was perceived to be a challenging and stimulating design that included a number of level changes and a major water feature running through the square.

The design as implemented has provided an exciting and popular space in the heart of Manchester. The Millennium Quarter Manchester (including Exchange Square) won a Civic Trust Award in 2004 and was commended for its vision and animation. The square is a well-used meeting place, the water feature popular with all age groups.

‘The redevelopment process involved a partnership between clients, various public funders and major chain stores’
‘There was concern that skateboarders using the square might upset shoppers’
Risk issues in the design

Inevitably, given the variety of stakeholders engaged in the development process, there were different perceptions of risk and views about its management in the context of public space design. There were risk issues concerning the different users of the square, its day and night-time use, the water feature, access for emergency and utility vehicles to pedestrianised areas, and level changes. The legislation and guidance on matters of public safety considered when drawing up the plans to redevelop the square covered issues that included lighting, moving from one level to another, railings and their permeability to children, and slipping on wet or icy pavements.

Some stakeholders (especially those with business or commercial interests) were anxious about how the square might be used. For example, there was concern that skateboarders using the square might upset shoppers. This problem was accentuated because changes of level in the square were dealt with by constructing two plazas with curved ramps and low sidewalls between them – ideal skateboarding territory.

The issue was resolved by retrofitting stainless-steel armrests to the ramps and sidewalk to prevent skateboarding. But the subsequent installation of a large TV screen has resulted in people tending to sit on the ramp walls facing it, thus reducing the potential for the random intermingling in the space hoped for by the designers.

Another set of risks concerned access routes into and out of the pedestrianised areas of the square for emergency and utility vehicles. The key question was whether the public needed to be aware of the routes that might be used, and how they should be marked. The design team resisted proposals for painted lines on the surface of the square, using bollards to mark vehicular access instead. However, some stakeholders thought this reduced the quality of the appearance of the public space. Furthermore, bollards can act as a barrier for people with pushchairs and wheelchair users.

The texture of some of the paving material used in the square was the subject of debate on the grounds of risk to public safety. Black granite paving on the upper plaza had an uneven finish that engineers said was unacceptable because pedestrians could trip up, so it was ground down to reduce the problem.

In line with the brief to be innovative, the designers proposed three specific features: artefact boxes, a watercourse, and artificial palm trees. It was suggested that illuminated boxes containing local industrial artefacts should be inset into sidewalks. The council felt these boxes would be prone to attack by vandals, and would also be difficult to maintain since electrical fittings might be affected by condensation. The idea of the boxes was therefore not pursued.
Meanwhile, sceptical stakeholders (including the council and some retailers) felt a 90m water feature containing sawn boulders that formed stepping-stones was not a good idea. This water feature traces the route of an old stream called the Hanging Ditch. There was debate about maintenance costs and possible water leakage leading to slippery or icy pavements. The risk of people – and especially children – slipping, trapping their legs between rocks or even drowning was a major concern. Nevertheless, the water feature was constructed in its original form and the noise that emanates from it provides a warning of its existence to blind and partially sighted people. It has proved to be a major attraction in the square.

Finally, the artificial palm trees were considered a significant risk by some commercial and council stakeholders, because parts might fall off or members of the public might climb them. They were replaced with tilting steel windmills, providing an alternative distinctive feature for the site.

['The water feature was constructed in its original form and the noise that emanates from it provides a warning of its existence to blind and partially sighted people’]

How did risk affect design?
This case study shows the tension between a client’s brief to create an innovative and challenging public space and operational issues in managing risk on site. Innovative design may push the boundaries of civic, professional and commercial views about acceptable and unacceptable risks. The complexity of these issues is accentuated in a project such as Exchange Square, where multiple stakeholders play an active part in the design process.

Different professionals and other stakeholders understood risk in different ways; consequently, there were debates about the right way to deal with particular issues (table four). Some of the design changes introduced impacted on the original design concept. For example, the stainless-steel armrests retrofitted to ramps and sidewalls to discourage skateboarding, combined with the later installation of a TV screen, caused a regimentation of seating arrangements and prevented people from walking on the sidewalls as was originally intended. However, differences of view might have been more significant if the design process had not encouraged a joined-up approach to create a shared perspective across professional groups.

Table four: Exchange Square – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Pedestrians involved in accidents due to occasional vehicular access</td>
<td>Highway engineers</td>
<td>Bollards erected to demarcate the area vehicles can use</td>
</tr>
<tr>
<td></td>
<td>Trip and slip hazards from paving materials and uneven surface</td>
<td>All stakeholders</td>
<td>Surface was ground down</td>
</tr>
<tr>
<td></td>
<td>Slippery pavements caused by water feature</td>
<td>Highway engineers; some businesses and retailers</td>
<td>The water feature was installed as originally designed</td>
</tr>
<tr>
<td>To property</td>
<td>Damage to property and injury to users due to parts falling from palm trees</td>
<td>Local authority; some businesses and retailers</td>
<td>Replaced by tilting steel windmills</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Anti-social behaviour from skateboarders attracted by curved ramps and sidewalls</td>
<td>The council, some members of the public, and some businesses and retailers</td>
<td>Stainless-steel arm-rests were retrofitted but they made seating arrangements more regimented</td>
</tr>
</tbody>
</table>
Kensington High Street, London

- Redesign of pavement, road, signage and street furniture in busy, high-profile London shopping street
- Design: Project Centre
- Client: Royal Borough of Kensington and Chelsea
- Completed 2003
- £5 million investment

Reducing clutter and signage in urban streets might seem to increase the risk to pedestrians and drivers. However, this case study shows that it can heighten road-user awareness and as a result reduce risk and improve the quality of public space.

The overall concept
Kensington High Street is a ‘flagship’ commercial and retail street in the Royal Borough of Kensington and Chelsea (RBKC) in west London. In the mid-1990s, the street was in a poor state of repair, with much signage and street furniture that was outdated. The lack of an integrated streetscape was due to ad hoc changes to the street scene over the years. The council began a series of improvements in which 1.2km of the streetscape was stripped of barriers to movement and generally decluttered, creating a more mixed space for motorists, cyclists and pedestrians.

The thinking behind the design concept was that environmental contexts determine the behaviour of individuals much more powerfully than either legislation or formal rules. In contrast to a cluttered and confusing streetscape, the vision for changes to Kensington High Street drew heavily on the innovative street designs and traffic-engineering measures of the traffic engineer Hans Monderman. Monderman has argued that designs that increase the perception of risk of personal injury reduce actual risk by forcing all users of the space to slow down, take more care and be more vigilant.

The improvements to Kensington High Street also represent a deliberate attempt to make the streetscape a safer and more egalitarian place for all users. It is a key example of a public, commercial, vehicular street where street improvements have been characterised as highly innovative and risk-taking rather than risk averse.

Work cost £5 million and was carried out over six separate phases between October 2000 and July 2003. Careful phasing of the improvements allowed risk to be evaluated in an ongoing manner, and modifications to the design incorporated into the latter phases. This demonstrates a need to balance cost and value for money.
‘Designs that increase the perception of risk of personal injury reduce actual risk by forcing all users of the space to slow down’
Risk issues in the design
The general principle was to reduce the need for guardrails and similar ‘safety’ features as far as possible. Only two materials were used for the improvement works – high-quality granite and York stone, their contrasting colours helping to delineate the roadway and the pavement without the need for unsightly (and often confusing) street markings. Tactile paving was employed to convey information about the environment to blind and partially sighted people or wheelchair users, with raised steel studs at new pedestrian crossings.

The street improvements were designed to make better use of space and minimise the amount of street furniture. The quality of urban design and the use of space were improved by several measures:

- Traffic lanes on the road were reorganised, and road markings reduced to improve the overall street aesthetic
- Kerbs and pavement build-outs were removed and a clear definition of the footpath kerb line reintroduced
- All guardrails and barriers were removed from pedestrian crossings, and redesigned pedestrian crossings were put in place at strategic locations.

Changes were also made to street furniture:

- The number of bins was reduced from 40 to just five, and all the new ones were made of stainless steel
- Streetlights were designed to use white light, making the street area more brightly lit, acting as a deterrent to crime and increasing personal security
- The use of road signs was drastically reduced to force drivers to drive more slowly and take more careful notice of their surroundings.

Because of their non-standard design, the use of quadrant kerb stones (which are a potential trip hazard) and lower kerb heights between the pavement and road required the formal approval of the council itself. It was initially reluctant to approve the changes – although its highway and traffic engineers were in favour of them – because of a fear of liability if accidents resulted. However, phasing the works, with surveillance and monitoring of the safety implications, allayed these liability concerns and the non-standard elements were adopted throughout the whole scheme.

How did risk affect design?
This case study shows that innovative public space design can be risk-embracing (table five). The improvements maintain the street as a thoroughfare for motor vehicles, but reduce their dominance by encouraging a ‘self-help’ attitude to street safety. Although there was debate about the overall approach to managed risk, and the details of some elements of the design, two features were important in its success.

The first feature was high-level and visible political leadership. The cabinet member for transport and deputy leader of the council championed this risk-embracing approach and was instrumental in driving forward the safety and risk-related aspects of the street-scene modifications. He viewed the decisions as his responsibility, thereby using the improvements as a means to overcome a safety regulation culture which had influenced previous approaches to design of this streetscape.

This political leadership was closely connected with the second key element in the scheme – a sound evidence base of research on the impact of the changes on risk and safety in Kensington High Street. Results have been impressive. Accident statistics released by RBKC show a significant reduction in both serious and minor road accidents along the street since the completion of the works (table six). Between 1998 and 2000 there were 70 casualties recorded (with eight killed people or seriously injured and 62 slight injuries). After the completion of the street improvement scheme, figures for September 2003 to August 2005 show 40 recorded casualties (four killed and 36 slightly injured). This is a reduction of 43 per cent, against a reduction of 35 per cent across RBKC as a whole and 17 per cent Londonwide.

‘Tactile paving was employed to convey information about the environment to blind and partially sighted people or wheelchair users’

71 ‘Latest casualty figures support rethink on street design’ press release 2063, 17 March 2006, Royal Borough of Kensington and Chelsea.
Table five: Kensington High Street – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To people</strong></td>
<td>Pedestrians and road users suffer accidents due to unfamiliar design</td>
<td>Client and designers; pressure groups</td>
<td>Decluttered signage; building materials; kerbs; reduced road markings; phased development and ongoing risk monitoring; removal of railings and bollards; new pedestrian crossings</td>
</tr>
<tr>
<td></td>
<td>Businesses and pedestrians subject to crime and anti-social behaviour</td>
<td>Client and designers; businesses</td>
<td>Street lighting; intelligent planting and general decluttering to increase surveillance opportunities and reduce opportunities for theft</td>
</tr>
<tr>
<td><strong>To property</strong></td>
<td>Vandalism to street furniture and buildings</td>
<td>Client and designers</td>
<td>Minimal street furniture – strategically placed and designed to be fire and vandal-proof</td>
</tr>
<tr>
<td><strong>To quality of life</strong></td>
<td>Exclusion of particular groups through failure to create inclusive environment</td>
<td>Client and designers; pressure groups</td>
<td>Aim to create an egalitarian street scene – tactile paving to aid way-finding; removal of railings and bollards; new pedestrian crossings; cost-vs-value approach; evidence-based approach to decision-making; consultation with stakeholder groups</td>
</tr>
</tbody>
</table>

Table six: Comparison of accident rates before and after Kensington High Street improvements

<table>
<thead>
<tr>
<th>Accident type</th>
<th>Kensington High Street annual accident rate</th>
<th>RBKC average annual accident rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>All</td>
<td>65.7</td>
<td>34.5</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>26.3</td>
<td>8.9</td>
</tr>
<tr>
<td>Bicycle</td>
<td>11.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>15.3</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Source: Royal Borough of Kensington and Chelsea

The improvements to the streetscape of Kensington High Street are clearly a highly innovative attempt to embrace and encourage a certain degree of risk amongst users of the space to increase vigilance and thereby public awareness and safety overall. It shows what can be achieved with a strong desire to push the boundaries of accepted practice on risk and personal safety; how progressive highway authorities can challenge existing conventions; and that a more egalitarian street scene can be created with a strong design approach, the right materials and high-quality workmanship.

This quality has been recognised. The scheme won a Civic Trust award for environmental design in 2004 and Best Lighting Scheme 2002 at the Lighting Design awards, as well as being nominated for several others.

‘It shows what can be achieved with a strong desire to push the boundaries of accepted practice on risk and personal safety’
Home zones: Deptford Green and Heathfield Avenue

- Small-scale traffic-calming and environmental improvements
- Residential neighbourhoods
- Schemes undertaken by London Borough of Greenwich and Kent County Council
- Each scheme cost £800,000 – £1 million
- Completed 2005

Two case studies of home zones show the types of risk management problems that can emerge in detailed design and highlight the significance of particular stakeholders in determining what risks are acceptable and what risks need to be reduced.

The overall concept

Home zones are initiatives that reduce traffic speeds and increase space for pedestrians in residential areas, improving the urban environment and helping the sustainability of community life. Evidence from the first wave of 61 Challenge Fund home zones was reviewed to identify any evidence of risk or risk aversion being a factor and to establish whether this impacted on the design.

The following cases specifically illustrate ways in which risk and public space quality can intersect in the detailed design of small-scale schemes, and are not intended to be representative of home zones as a whole.

Deptford Green, Greenwich
Older people living in the area identified shared surfaces as a risk, being used to a well-defined pavement and clear boundary with the highway. Their concerns about losing these boundaries arose during implementation, when they could see the scheme in reality.

However, the scheme included occasional bollards to mark the pedestrian area boundary; once these were in place the issues were resolved. Subsequently, some residents raised concerns about cars parking between the bollards but this was resolved by introducing a controlled parking zone.

Heathfield Avenue, Dover
The scheme was in a stretch of road which had a school at one end and which was being used as a 'rat-run'. Consultations with residents, including a visit to another home zone, led to a draft scheme that incorporated their main priority of retaining the number of parking spaces. However, there was only limited support from residents for this draft, partly because the benefits of a home zone were not seen as particularly relevant and concerns that new seating and pedestrian spaces might attract undesirable people.

The Fire and Rescue Service pointed out that the traffic-calming measures would reduce speed of response and the echelon parking design meant that their vehicles would not be able to get next to properties, nor would they have enough space to set up their equipment. The local press reported these views under the headline ‘Safety is the burning issue for home zone’, accentuating the level of the local debate.

A revised design was produced and accepted by the Fire and Rescue Service, but it adversely affected parking provision; after being put to residents in a ballot, there was insufficient support and the proposals were not implemented.

How did risk affect design?
The purpose of home zones is to improve residential environments, especially by reducing traffic speeds and thereby risks to residents. The evaluation of the 61 Challenge fund home zones shows that they have been successful in achieving this aim. However, there were a number of ways in which risk came into play (table seven).

The cases show that residents and other stakeholders view risk in different ways. Residents in both areas were concerned about the impact of changes being made to their streets. In Deptford Green, risk was associated with the unfamiliarity of the designs being implemented. In Heathfield Avenue, the emergency services identified risks from the design, leading to changes that undermined the original design quality.

The cases also illustrate that public space is often now designed through an active dialogue between stakeholders and designers. This is found particularly in small-scale developments and where there are definable community interests and groups, such as residential areas.

However, judging which risks to accommodate is a political process. Where the benefits of public space design improvements are not seen as the solution to a problem that collectively faces residents (as in Heathfield Avenue), there may be insufficient political support from the community to overcome pressure for changes by external stakeholders in response to their particular risk concerns.

In all 61 Challenge fund home zones, residents were actively involved from the outset with design professionals and other stakeholders in setting out the issues facing their community, jointly exploring possible solutions and reaching agreement on the preferred scheme. This often involved visits to other schemes and informal contact between residents and professionals. In some cases, the skills of non-technical public servants (in one case, a regeneration manager) were helpful in facilitating discussion and assisting residents and professionals to understand each other’s viewpoints.

‘Residents and other stakeholders view risk in different ways’
It appears that this interactive design process, in contrast to one where the designer works to the client’s specification, enables all parties to understand the needs of the scheme’s beneficiaries and deal appropriately with risk issues. Indeed, the very nature of the designs in home zone schemes – shared surfaces, limited barriers and so on – may require residents and design professionals to be less risk averse than they might otherwise be. This is illustrated in the Deptford Green case.

However, there are also other players who are peripheral to the design process but who can have a considerable impact once a draft design has been agreed. The emergency services, for example, are not normally integrated into the design process, but typically are consulted once a broad design has been agreed. The Heathfield Avenue case illustrates that design to meet residents’ needs may compromise the emergency services’ priorities of speed of response and accessibility to an incident.

Table seven: two home zone case studies – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risks</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To people</strong></td>
<td>Accidents to pedestrians, and especially older people and children, due to inadequate definition of vehicle route on shared surfaces</td>
<td>Residents; parents; designers</td>
<td>None: there was already a plan to install occasional bollards to define the boundary. A visit to another home zone with shared surfaces resulted in the residents who participated in the visit no longer seeing this as a significant risk</td>
</tr>
<tr>
<td><strong>To property/people</strong></td>
<td>Risk to property and life due to reduced accessibility by emergency services</td>
<td>Emergency services</td>
<td>Design was revised, affecting level of parking provision and further reducing resident support for scheme</td>
</tr>
<tr>
<td><strong>To quality of life</strong></td>
<td>Cars parking on pavements and blocking pedestrian access/ causing accidents</td>
<td>Residents</td>
<td>Controlled parking zone introduced</td>
</tr>
<tr>
<td></td>
<td>Residents do not support home zone initiative as not perceived to be relevant to their needs</td>
<td>Designers; residents</td>
<td>Unable to proceed with improvements</td>
</tr>
</tbody>
</table>

‘This interactive design process enables all parties to deal appropriately with risk issues’
The case study of Poundbury, a village constructed along traditional lines, illustrates the trade-offs for public space designers in responding to different kinds of risk. It also shows how a phased implementation enables evaluations of risk to inform later development. Early phases have been completed, but the whole development process was not been concluded at the time of the case study.

The overall concept
Poundbury in Dorset is a new development on a 160-hectare site owned by the Duchy of Cornwall. The intention is to create a 'model village' to challenge what are seen as some of the undesirable current conventions of planning and development and accommodate population expansion from Dorchester.

The concept has been heavily influenced by the architectural and public space design ideas put forward by HRH Prince Charles in his 1989 book _A vision of Britain_. Emphasis has been placed on the sustainability of the development, the quality of the design of buildings and public spaces and the materials used, including the provision of street furniture, lighting and signage. Based on a masterplan by architect Leon Krier, it will take place in four phases over 25 years according to market demand for housing and employment opportunities.
'Emphasis has been placed on the sustainability of the development'
Risk issues in the design

Community safety and the relationship between pedestrians and vehicles are the two predominant risk issues. The design approaches include mixing different types of land use instead of segregating them, passive surveillance, and the deliberate introduction of risk in street design.

Commercial buildings are designed to sit within residential areas. This is intended both to reduce reliance on the car as a means of getting to work, and ensure that such mixed-use areas have a range of activities throughout the day and evening. This is intended to minimise ‘dead areas’ which may attract crime or anti-social behaviour.

Streets are designed to be overlooked, increasing opportunities for informal, natural surveillance. Many areas in Poundbury have been designed with windows maximising the view on to the street, the avoidance of blank facades, and the continuity of frontages and aspect maintained on corners.

Streets in Poundbury are designed to naturally control vehicle speeds and make such spaces equally accessible to all users, including those driving motor vehicles, cyclists and pedestrians. Roads have been deliberately designed around the layout of buildings, and streets have irregularity of width and angle integrated into their design, with junctions, trees and other features in place to control vehicle speeds without recourse to speed bumps or traffic signs. This enhances public safety by reducing the risk of road accidents, as vehicles cannot accelerate beyond 20mph in built-up areas.

Wall-mounted and carefully designed street lighting helps to minimise light pollution, whilst still allowing residents to move around safely at night. Lighting and planting schemes have been designed together to ensure that street trees do not reduce the effectiveness of street lighting. In addition, pathways are often surfaced with gravel rather than tarmac to allow people to hear the presence of others.

A unique insight into residents’ appreciation of the risk-related aspects of the design was revealed by a public consultation undertaken by the local authority in March 2006. Criticism was levelled at several aspects of the risk-related designs so far:

- The detailed design of roads, especially the lack of paving, was seen as a risk
- The drop on kerbs was judged too ‘sharp’ and dangerous to pedestrians, especially older people, disabled people and families with children in pushchairs
- The lack of pavements and defined crossing points, along with few road markings, was argued to cause confusion and many near collisions
- The security aspect of gravel pathways is not perceived to offset the disadvantages for particular groups of users. Some argued that the surface was difficult for those in wheelchairs or using pushchairs, and was variously too sharp, too slippery, and resulted in grazes if individuals slipped and fell.

‘Streets are designed to be overlooked, increasing opportunities for informal, natural surveillance’
There have been sporadic incidents of anti-social behaviour in Pummery Square, and the Poundbury Residents’ Association put forward proposals to install CCTV cameras to discourage this behaviour. In Poundbury itself, there have been several ‘walk in’ break-ins since 2000, suggesting that, whilst the housing layout provides a deterrent to large-scale burglary, opportunist petty theft may be more prevalent because narrow alleyways and high-density residential areas make it easier for thieves to escape quickly. Thus, designing out one type of risk may in turn increase other risks.

How did risk affect design?
Poundbury demonstrates the value of holistic public space design in which risk is both controlled (to improve community safety) and encouraged (to minimise vehicle speeds). The design makes full use of the available space, and avoids wasteland and no-go areas. The use of lighting, carefully placed planting and street signage enhances the experience of the space for multiple user groups, and other measures deter criminality and contribute to an almost crime-free town where the majority of residents and visitors feel safe and secure.

However, the case study illustrates the trade-offs for public space designers in responding to different kinds of risk (table eight).

The phasing of the development process allows the evaluation of existing phases and design features to be incorporated into designs for the next phases. This offers the prospect of an interactive design process with residents in which the nature of risk and the design responses to it can be negotiated between the stakeholders.

‘The case study illustrates the trade-offs for public space designers in responding to different kinds of risk’

Table eight: Poundbury – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Accidents involving pedestrians and/or cars</td>
<td>Residents, developers, architects, highway engineers</td>
<td>Tight, unpredictable angles or roadways; lack of kerbs; minimal use of road signage; strategic use of planting to ensure cars cannot accelerate to over 20mph in most areas</td>
</tr>
<tr>
<td>To property</td>
<td>Theft from houses</td>
<td>Residents, developers, architects</td>
<td>Active corners; surveillance enhanced by housing designed to have no blank façades; gravel pathways</td>
</tr>
<tr>
<td></td>
<td>Theft and other car crimes</td>
<td>Residents, developers, architects</td>
<td>Car parks located in ‘back area’ courtyards and overlooked by shops and housing maximising natural surveillance</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Public safety and security in open areas</td>
<td>Residents, developers, architects</td>
<td>Mixed-use developments to maximise use of space and make active at all times of day and evening; integration of social and private housing to reduce development of an ‘us and them’ culture</td>
</tr>
<tr>
<td></td>
<td>Vandalism and graffiti to buildings and street furniture, and other anti-social behaviour</td>
<td>Residents, developers, West Dorset County Council</td>
<td>Proposed CCTV monitoring system around Pummery Square; community police officer for Poundbury</td>
</tr>
</tbody>
</table>
This case study of the regeneration of a Victorian urban park illustrates how risks identified by local people, as well as designers and clients, affect design choices. However, it also shows that local people may change their views on measures to promote personal security, leading to less significant interventions in public space.

The overall concept
Handsworth Park in north-west Birmingham provides a focal point for its multi-ethnic community. Designed by R. H. Vertegans, the 63-acre park opened in 1888. As with many public parks across England, quality declined from the 1970s as spending on maintenance and staffing was cut. In 1994, a group of residents began a campaign to encourage the park’s restoration, winning support from Birmingham City Council, the Heritage Lottery Fund, a Single Regeneration Budget scheme and other sources. The £9 million project began in 1999 and the park reopened in July 2006.

The whole design process was led by Birmingham City Council’s Landscape Practice Group, with a wider team of professions including civil engineers, architects, archaeologists and ecologists. Police crime reduction and architectural liaison officers advised on the design, and local residents were closely involved too.

The designers and local residents believed that encouraging more people to use the park and its buildings would help improve personal safety and reclaim community ownership, making the park more attractive, using design to improve safety, and improving surveillance through additional staff as well as CCTV.
'Designers and local residents believed that encouraging more people to use the park and its buildings would help improve personal safety and reclaim community ownership'
Risk issues in the design
Consultation with park users and local residents revealed that they had major concerns about personal safety in the park, as a result of a series of incidents and through facilities, environmental quality and staffing having been run down over the years.

The detailed design of park restoration included measures to lessen the risk associated with criminal activity. These included planting shrubs that people could see over, ensuring there were no blind corners, and introducing railings and gates around the perimeter of the park so that it could be shut at dusk in response to residents’ wishes (though they are now debating staying open later).

Lighting was central to debates about improving personal security, but there were opposing views on the extent to which it should be a feature of the design. One view was that lighting would reduce risk and improve safety; another that it would detract from the quality of the park at dusk, and might also encourage people to use footpaths at night, thus increasing risk to personal safety. The latter view prevailed, so lighting was placed around buildings and their approaches, but not along footpaths.

Concern about the risk of vandalism affected the choice of building materials and some design features of the older structures in the park. The historical and architectural advice was that tiles should be used for roofing, but on the roofs that were within reach zinc was used instead. Shutters were installed to cover the windows of the boathouse and Sons of Rest pavilion at night. These were not part of the original design, but were considered essential to protect the windows from vandalism.

The design of the play area reflects current council policy, stimulated in part by several accidents, one of which had serious consequences and led to a personal-injury claim against the council, which became more aware of risks in play areas and standardised aspects of its design. This includes separation of play equipment for younger children from that for older children, signage notifying people that the play area is only suitable for children up to 11 or 12 years old, safety surfacing, low railings around the perimeter and a single entry/exit gate.

There was considerable debate about whether or not boating could be reintroduced on the small lake. The city council had withdrawn boating, in part due to incidents involving drunken young people. Water quality was also poor, meaning a potential health hazard. The Handsworth Park Association regarded boating as a significant feature of the original park design, and it was agreed to restore the lake for boating as funding became available.
How did risk affect design?
Risks were identified by local people, the designers and other stakeholders. The designers have tried to reach a sympathetic solution that minimises risk. There has been an increase in surveillance, including recruitment of park rangers, but linked to an education programme and encouragement of park use. The aim of the designers and stakeholders was to regain ownership of the space and make it an unacceptable area for anti-social and criminal activity.

The main impact of personal-injury risks on design is in the play area. The approach here reflects one that has become standard across many local authorities and which has now become the subject of debate in the play profession. It is noticeable that negotiation and debate are a feature of the way in which design choices arising from risk are resolved, and that the views of residents (on closing the park at dusk, for example) are changing as the restoration reduces their concerns over personal safety.

People’s perceptions of risk changed over the course of the design process, and began to be more informed by experience and understanding of how design could improve quality by being risk aware but not risk averse.

Table nine: Handsworth Park – summary of risks and impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td>To people</td>
<td>Mugging, theft and other criminal activity to park users</td>
<td>Park users and residents</td>
<td>Low shrubs/planting so that individuals are able to see over; boundary fence and gate; low railings; no lighting along footpaths to minimise night-time use</td>
</tr>
<tr>
<td></td>
<td>Injury to people using boating lake</td>
<td>Designers; city council; other partners</td>
<td>Dredging lake; plans to improve water quality</td>
</tr>
<tr>
<td></td>
<td>Injury to children using play area</td>
<td>Designers; city council; other partners</td>
<td>Boundary fence; only one access/exit point; seeking to avoid use by young people above 11/12 years of age; soft surfaces</td>
</tr>
<tr>
<td>To property</td>
<td>Vandalism to park buildings</td>
<td>Park users and residents; designers</td>
<td>Use of zinc for low roofing rather than tiles as in original design; shutters at night to protect glass</td>
</tr>
<tr>
<td>To quality of life</td>
<td>Physical and social environment of park declines due to lack of maintenance</td>
<td>Designers; owners; funders</td>
<td>None at present; Heritage Lottery Fund requires city council to agree 10-year maintenance plan; implementation dependent on council priorities and financing, and supply of skilled gardeners.</td>
</tr>
</tbody>
</table>
River Tame, Birmingham

This case study of a linear riverside park in a densely populated part of a city highlights the way councils, residents, public space users and other stakeholders can discuss and negotiate risk.

- River restoration and enhancement project in urban area
- Partnership between EU-LIFE Programme, Birmingham City Council, Severn Trent Water, HR Wallingford and others
- Completed 2005
- £2 million investment

The overall concept

The Sustainable Management of Urban Rivers and Floodplains (SMURF) project focused on the Upper Tame catchment, a typical urban river affected by many years of urban and industrial activity leading to pollution, loss of habitat, reduced flood-storage capacity and heavy modification of the river course. The river runs through a park and playing fields in a densely populated area of Birmingham.

SMURF was a three-year EU-funded restoration and enhancement project by Birmingham City Council, the Environment Agency, Severn Trent Water and others. Its purpose was to develop and demonstrate new citizen-based and inter-agency methodologies for public space and land-use planning and water management.

The main restoration project was delivered in the Perry Hall Playing Fields, originally a typical Victorian park, now heavily used for sport and general recreation. The river through it is largely inaccessible and heavily modified, with steep banks, few distinguishing features, and little habitat value.

The project directly involved members of the public in the design process through deliberative dialogue, debate and negotiation. They helped identify what the solutions should be, with the technical experts and decision agencies involved (i.e. Birmingham City Council and the Environment Agency). Concerns related to:
- The needs of multiple user groups of the space, such as disabled people, older people, families with pushchairs, and cyclists
- Public safety in providing access to the river channel
- Public safety in the planting around the site
- The future security of the site, for example, installing litter bins that could not be vandalised.

The river banks prior to restoration
The project directly involved members of the public in the design process through deliberative dialogue, debate and negotiation.
Risk issues in the design

There was a range of views on what was considered a potential risk. For example, in relation to the river itself, Birmingham City Council has an ‘open water’ policy in those public spaces where water is a feature. This means that it is averse to fencing off such areas for safety reasons, and prefers users to rely on their common sense. This policy also advocates using as few warning signs as possible to avoid cluttering an area unnecessarily. In the River Tame project, the Environment Agency took a similar view.

However, the design consultants and construction contractors were more risk averse, arguing that certain areas should be fenced off completely, concerned they may be liable if a member of the public became injured due to insufficient fencing.

The solution was a compromise. As there were steep banks near the river associated with the flood-management structures, it was considered necessary for some light safety fencing and railings to be put in place. In addition, the layout of paths encouraged users to maintain a distance from the river banks.

Public safety was a key element of the community discussion about the proposed improvements to the riverside area. Although it was thought desirable to have thick clumps of trees along the river margin instead of bare banks, it was recognised that such planting might involve an unacceptable risk to public safety. Instead, discontinuous wooded areas were put in place so that potential attackers would have nowhere to hide, whilst still improving the habitat areas by the side of the river.

Similarly, there were complicated trade-offs associated with the need to improve public access to the river channel. Older people remembered paddling in the river, but it was agreed that this level of access should not be restored because of the tendency for the river to have occasional high flows. However, members of the public did not recommend extensive warning signs. They thought that those using the river environment should use their common sense and be aware that river channels and banks were potentially dangerous places if not accessed properly.

The potential security risk to the new benches and litter bins also influenced the scheme design. There was a need for robust, immovable benches and litter bins that could not be set on fire or removed from their bases. Birmingham City Council has internal guidelines which are used to assess safety requirements for public space furniture, and which took precedence over the aesthetic preferences of the public.

After the completion of the restoration scheme, the primary risk considerations relate to ongoing maintenance of the site, including maintaining trees and shrubbery, mowing grass on the riverbanks, and ensuring the river channel is free from debris. If these requirements are not met, there could be public safety implications relating to tripping hazards, personal attack, or injuries sustained around the river.

How did risk affect design?

The risk considerations and the means of dealing with them related to pre-existing organisational and professional guidelines and statutory requirements. The means of dealing with potential risks were largely at the discretion of the different organisations involved, rather than being dictated by legislative considerations per se. Therefore, risk management solutions were often the result of pragmatic compromise between different stakeholders, including the public. The project was certainly not risk averse, but at certain points risk had to be considered because of mandatory pressures to conform to specific guidelines on river enhancement projects (table 10).

The project demonstrated that members of the public have a realistic appreciation of risk in public spaces, and of the steps that might reasonably be taken to manage it. They played an active part in the design process, and offered a pragmatic perspective on the issues. They appear to be less risk averse than organisational stakeholders may sometimes be, and more ready to take the view that individual users should take responsibility for their own welfare in public areas.

‘The solution was a compromise, there were complicated trade-offs associated with the need to improve public access to the river channel’
Table 10: River Tame – summary of risks and their impact on design

<table>
<thead>
<tr>
<th>Type of risk</th>
<th>Details of risk</th>
<th>Perceived by</th>
<th>Design response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To people</strong></td>
<td>Accidents to members of the public using river banks or river, especially due to significant changes in water level and flow after rain</td>
<td>Environment Agency, residents, Birmingham City Council</td>
<td>Provision of wide pathways suitable for all users; limited use of warning signage; expectation people would use common sense around the river environment in accordance with council ‘open water’ policy; some light fencing at particular points</td>
</tr>
<tr>
<td><strong>To property</strong></td>
<td>Vandalism and arson to litter bins and seating areas</td>
<td>Residents, Birmingham City Council</td>
<td>Fire and vandal-proof bins, seating and signage</td>
</tr>
<tr>
<td><strong>To quality of life</strong></td>
<td>Public vulnerable to personal attack when using the space</td>
<td>Residents</td>
<td>Planting of discontinuous wooded areas where attackers cannot hide; planting designed to maximise light penetration</td>
</tr>
</tbody>
</table>
Conclusions

These case studies provide insights into the way in which professional designers and other stakeholders understand ‘risk’ as it affects the preparation, formulation and implementation of a public space design. They also highlight the way in which driving and resisting forces interact in real-life projects.

A number of features of risk in public space design are evident from the case studies:

• Different stakeholders in the public space design process often perceive risks in different ways
• Risk aversion is not confined to any one group of stakeholders
• In some cases, the public can be more risk averse than professional designers; in other cases the public takes a less cautious view of risks
• The perception of risk can change over time, especially through regular discussion between all stakeholders throughout the design process
• Solutions to one set of risks (such as CCTV to reduce risks to the person) can have an undesirable impact on other aspects of the design (for example, over-intrusive CCTV can reduce the quality of the scheme)
• Risks cannot always be predicted in advance, and retrofitting may also have undesirable consequences
• Maintenance was seen as an important factor in reducing the risks to quality of life that might arise once the scheme was completed.

We develop these and other conclusions in the next chapter by returning to the frameworks set out in chapter two and using them to analyse the case studies. This enables us to draw conclusions about the extent to which public space design is risk averse, and to make recommendations about ways in which a more proportionate approach can be developed.
Chapter five
An agenda for risk-aware, not risk-averse, public space design

This study was commissioned to answer the question:

How does the management of risk, in relation to ensuring public safety, influence the design quality of urban public space?

We divided this question into three components:

• What forces are driving the greater emphasis on minimising risk in public space design, and what is helping steer organisations towards a more proportionate approach?

• At what stages in the design process do these forces come into play, and how do professionals, clients and other stakeholders respond?

• What are the implications for the quality of public space in the future?

We gathered evidence from national organisations, including professional associations, regulators, space user groups, insurers, government and design advisors. We identified forces that, over several years, had been driving greater attention to risk and leading to risk aversion. It was also clear that national organisations are now seeking to change the climate and encourage a more sensible and proportionate approach to risk management.

These issues were examined in greater depth through 10 case studies. They explored whether, and in what ways, social attitudes and regulatory systems in the wider society impact on how public space designers identify and respond to risk.
Analysing the case studies

We analyse the case studies using the two frameworks set out in chapter two. First, we consider the types of risk that relate to each stage of the design process. After this, we use the Force field analysis to establish the nature and strength of driving and resisting forces related to risk aversion.

Types of risk in the design process

The framework suggested that we might find different types of risk at each stage of the design process. It indicated that there might be risks relating to overall strategic considerations at the preparation stage, risks relating to consideration of detailing at the design stage, and risks relating to delivery and implementation. The case studies revealed that there are indeed different types of risk at each stage, and that we can identify the nature of these in greater detail.

Preparation stage

There are a number of important risks relating to overall strategic considerations that designers need to manage at the preparation stage of the process. Handsworth Park and the Heathfield Avenue home zone illustrate in different ways how the support of stakeholders is essential in realising the project, and in responding to risks relating to detailing in a way that does not undermine design quality.

Ineffective professional communication is an additional consideration. In some of the projects we studied, it was clear that different design professions had different approaches to risk, and that the inability to clarify and resolve these hindered the realisation of design quality.

Finally, there are risks that the legitimacy of the project will be undermined. This particularly relates to the need to ensure that the design facilitates effective post-completion maintenance, as the Park Hill and Handsworth Park cases illustrate.

Relevant strategic risks

- Lack of stakeholder support
- Poor inter-professional communication
- Loss of client and designer legitimacy

‘Different design professions had different approaches to risk, and that the inability to clarify and resolve these hindered the realisation of design quality’

Formulation stage

This is the stage in the design process where public safety issues come to the fore. Here, there are a number of important risks relating to consideration of detailing, which were summarised at the end of each case study (see chapter four).

First, there are risks to the person. These include injuries and crime against individuals. In some cases, these personal risks were identified by designers and developers, and in other cases by members of the public or pressure groups. For example, residents involved with Deptford Green home zone were unfamiliar with the shared surfaces being installed. Midway through project implementation they raised concerns that pedestrians might be injured, requesting the design be altered to make the carriageway boundary clearer. In Brindleyplace, the design team debated the risk of injury from slippery surfaces around the water feature, but decided that no action was needed as the feature was obvious to users. In some cases, the policies of the developer or client, deriving from accidents that had happened, in the past foreclosed the choices available to the design team (for example, over the design of play areas in Handsworth Park).

The cases also illustrate that designers seek to create an awareness of personal risk as a positive feature of the design, for example:

- To change behaviour in a socially desirable way – for example, one intention of the narrow streets and lanes without pavements in Poundbury was to make drivers more cautious
- To create interest and excitement as part of an innovative design – for example, the long water feature in Exchange Square, Manchester, is a major source of interest for visitors.

This shows that personal risks in public space design can have both desirable and undesirable consequences.

The second set of risks is to property. These were less significant than risks to the person in the case studies. They included theft, vandalism and flooding. Increased active or passive surveillance was often employed, including various initiatives associated with Secured by Design. There was an active debate about the relative merits of the level of surveillance and its potential impact on design quality – for example in Park Hill, where there was both a demand for and concern about extensive CCTV surveillance. In Poundbury, gravel paths contributed to reducing property risks, but also generated personal risks and made mobility for some
harder. Residential and retail schemes are more able to develop design solutions to exclude members of the public (through security gates or guards) than parks and civic squares. Designing for regular public usage of spaces and thus passive surveillance (as in Brindleyplace, although alongside active surveillance) is an alternative solution.

The third set of risks is concerned with quality of life, for example anti-social behaviour, loss of community activity and over-intrusive signage. These were more important in some cases than others, and there were different responses to such risks influenced by the context and purpose of the scheme. For example, Kensington High Street aimed to create an inclusive environment, while in Exchange Square the concern about skateboarders resulted in retrofitting preventative measures. These examples reinforce the need for designers to have a clear view about the types of space users and be committed to the principles of inclusive design.

Relevant detailing risks
- Personal safety
- Safety of property
- Quality of life and environment

‘These examples reinforce the need for designers to have a clear view about the types of space users and be committed to the principles of inclusive design’

Implementation stage

Three main types of risk relating to delivery and implementation were identified.

The first risk is retrofitting an already implemented design. This occurs where public use of the space is not as predicted and previously unidentified risks emerge in construction, or the perception of known risks changes. Retrofitting in our case studies was relatively small-scale, but in chapter three we reported lateral thinking overcoming perceived post-design problems.

Lack of maintenance was a common issue for all schemes that involved using public space design to improve areas where there was a lower than desirable quality of life. The risk was that post-construction maintenance would be insufficient to sustain the beneficial impact of the investment in the scheme. The absence of adequate maintenance was perceived as undermining the value of public space designs and, in areas subject to anti-social behaviour and criminality, as potentially helping problems reappear.

For professionals, there were also concerns about whether the design itself had paid sufficient attention to the ease of ongoing maintenance.

The third risk is the vulnerability of the community and/or businesses during development. This principally affects public space designs that are part of major residential and business developments (as in the redevelopment of Park Hill), and thus the risks and their management go beyond the scope of this report. It includes the health and safety risks associated with construction, which do not directly relate to the design of public space.

Relevant delivery risks
- Retrofitting in light of actual use of the space
- Lack of maintenance
- Vulnerability of community, public and businesses during development
Where do the risks come from?

Driving forces for risk aversion

‘Coercive’ forces in the design process arose from the mandatory requirements in relation to risk assessment and management. These led to a number of legislative and regulatory requirements, for example in relation to health and safety, and duty of care at various stages of the design process. In addition, some of the organisations involved in these case studies had internal policies relating to matters of risk.

Designers and national stakeholders broadly support these requirements as desirable obligations to protect and promote public welfare. However, there is a debate about their interpretation and impact. Some policies and regulations are more specific than others and judgement about how they should be applied in different cases also varies.

The cases show that mandatory requirements are interpreted through the norms and values of a profession or organisation. These norms and values embody the accepted way to act in relation to a particular situation or regulation, that is, in terms of the design solution.

This means that different professions and organisations will vary in the way they understand risk and decide to approach its management. In several cases (River Tame and Exchange Square, for example) we saw evidence that designers from different professions vary in the extent to which they think risks need to be regulated.

Often there is no ‘right or wrong’ answer to how regulations should be interpreted. Circumstances vary, as do professional, client and public views. What is important, however, is that such debates are undertaken with a full awareness of the consequences of different judgements, and in a way that is informed by relevant stakeholders.

There were similar issues in relation to ‘normative’ forces promoting greater awareness and response to risks. In some situations (Park Hill, for example) the public had a strong view about what risks were important and how the design ought to respond as a result; elsewhere there were less significant driving forces (Poundbury, for example). The context of the scheme provides an important explanation of these differences.

The case studies, therefore, reinforce the point that risk is socially constructed, as we discussed in chapter one. The norms and values of different groups lead them to ‘read’ legislative and other requirements differently in relation to the context for the scheme. The limited weight given to risk issues in the Apeldoorn case reinforces this point, as it shows the different treatment of risk issues in the UK and Holland.

So, although there are driving forces to increase ‘risk aversion’, the effect of these varies from organisation to organisation and from one design context to another. There are clearly some ‘worst case’ examples of risk-averse design of public space, but the overall picture is more complex.

We found limited evidence of ‘imitative’ forces through which particular risk-averse solutions are widely adopted by designers. The professional design teams in the case studies generally sought creative solutions related to the nature of the site and usage.

Resisting forces for proportionality in risk

The two most significant resisting forces evident in the case studies were leadership by organisations and individuals and interactive design with the public.

The impact of leadership is demonstrated by organisations committing to innovative design that is not constrained by risk aversion. For example, in Brindleyplace and Exchange Square, the respective clients set out with the intention to create a high-quality environment in which risk was treated proportionately. These developments are now regarded as good practice examples.

However, there is a downside too. Several cases, including some mentioned in this report, also show how good intentions can be unduly affected by perceptions of risk from the various stakeholders engaged in the design process, and lead to compromises that are not entirely consistent with the underlying intentions regarding public space quality.

A second resisting force highlighted by the cases is the role of the public in various interactive design processes. River Tame case illustrates that members of the public may take a more pragmatic view than

‘Often there is no ‘right or wrong’ answer to how regulations should be interpreted’
professionals about the need to reduce personal safety risks – by relying more on individuals’ common sense, for example. Moreover, in Handsworth Park it is clear that residents, while initially requesting extensive security measures because of the park’s recent history, have modified their views in the light of experience and reflection. In this case, professional designers argued for design elements to respond to a lesser risk than the public originally wanted. In Park Hill, however, the nature of the problems facing residents is leading to a complex process of negotiation about the impact of risk on design.

Poundbury and Brindleyplace provide an interesting insight into this interactive design process, since each had several phases. They illustrate that phased design processes may enable a better appreciation of risk and the appropriateness of different strategies for its management. This is because it creates the opportunity for learning and thus opens a dialogue about the nature of risk and the appropriate way to respond.

A number of the completed case studies we investigated are now regarded as good-practice examples of public space design, including elements that present hazards to users and might be considered a risk (for example, water features and shared surfaces). This shows that creative design solutions can act as a resisting force to risk aversion.

The public space design processes we considered took place prior to recent campaigns by the HSE and others, so there was little evidence that new statements by regulators and others had made an impact on attitudes to risk.

‘Members of the public may take a more pragmatic view than professionals about the need to reduce personal safety risks’

Figure three: summary of evidence of risks in the case studies

### Driving forces

#### Coercive forces  what you must do
Mandatory requirements on duty of care, health and safety and so on, imposed through regulations and procedures

#### Normative forces  what you should do
Pressure from stakeholders (public, clients) to respond to particular risks, including personal safety and risk of accidents

#### Imitative forces  what you imitate
Limited evidence; designs tended to seek creative solutions within the particular situation

### Resisting forces

#### Leadership by key individuals and groups
Evidence of willingness to try new ideas, which gain credence through winning national design awards

#### Interactive design with stakeholders
Evidence that this can moderate the risk concerns of professionals, but may also give greater priority to particular types of risk and require a design response

#### Good practice
Some evidence of schemes becoming good practice for design and positively incorporating and managing the use of risk

#### Statements by regulators
No evidence; case studies were prior to recent HSE announcements on sensible risk management
Conclusions

The impact of risk aversion on public space design

There is some evidence of risk aversion in public space design, but there is also evidence of creative design based on a proportionate approach to risk.

1: Unfortunately it is far easier to justify a risk-averse design than use risk creatively.

More evidence is needed to justify a design that uses risk as a positive feature. It is far easier to justify ‘playing it safe’.

Risk-averse decision-making tends to rely on a weaker, less thorough evidence base, using statements about what people may do, often in an extreme case – for example, ‘people may fall into the river’.

2: Strong leadership by organisations and individuals helps resist decisions that are based simply on worst-case scenarios.

The impact of leadership is demonstrated in several cases. In Kensington High Street, an individual politician took a personal and political chance to champion an approach that drew heavily on the innovative street designs and traffic-engineering methods of Hans Monderman. His championing of an approach that makes street users more aware of the risks around them shows the way in which a new idea can revolutionise thinking about public space design. It offers a significant exemplar for other designers, and has already become a good-practice example.

3: A strong overall design concept helps counteract pressures to avoid risk.

Pressure to avoid risk can result in protracted discussions and negotiations over how to proceed with specific design elements. To counteract this a strong overall design concept informing the strategic direction of the project from the outset is vital. In some cases these discussions lead to compromises. In the River Tame restoration scheme it was decided not to restrict access to the river, but instead to lay footpaths away from the banks.

In other cases, risk reduction takes precedence, and design has to accommodate it. A clear vision and a strong ambition for good-quality design can help to overcome these problems, but only in a context where there is a regular process of interaction between stakeholders.

Phoenix rising: the Phoenix Project, Coventry, is the most important regeneration project for the city since the blitz in the Second world war.

‘Risk-averse decision-making tends to rely on a weaker, less thorough evidence base’
4: Views about what constitutes a risk vary between different stakeholders in the design process.

Professionally defined risks are those hazards that designers, contractors and clients identify as ones that may lead to them being liable in the event of injury to public space users. These risks arise from the design of particular elements, or their installation and maintenance. The minimisation of these risks may create trade-offs with other design considerations.

Risks defined by the public are predominantly to do with personal security issues arising from the use of the space (such as mugging), rather than trip and fall hazards in the design. The public is also very concerned about risks relating to children. Designers can help to alleviate these risks, but generally they are not able to eliminate them. This is because they are based on people’s perceptions of what might happen as well as the way in which individuals actually behave in the space.

Furthermore, there is often no overall decision-maker who can judge between these views. This means that the particular combination of factors in one scheme may lead to risk being managed more carefully than in another. For instance, a home zone scheme for Heathfield Avenue was not implemented after the Fire and Rescue Service identified risks in the design that led to changes undermining the original design quality.

5: Involving the public in design processes results in more informed, evidence-based decisions.

Transparency about the criteria and judgements being made offers the opportunity to take decisions that are more informed and evidence-based. It also allows for design decisions to be mediated through stakeholder debate. Such debate helps all parties establish what risks are significant and how they should be managed. It is also more likely to result in an inclusive design that understands risk from the perspectives of the many different groups who will use the space.75

Risk issues were debated between stakeholders in open forums in the Handsworth Park and Park Hill case studies. Perceptions of risk held by the residents in the Handsworth Park regeneration were modified over the course of the design process.

6: Design professionals understand the idea of ‘risk’ in ways that are different to health and safety specialists and insurers. This must be recognised and reconciled to enable mutual understanding.

Professional designers sometimes talk about ‘risk’ as a design feature that fosters the creation of exciting, varied and interesting spaces. This does not mean that designers want to create a dangerous or insecure environment. They use the term ‘risk’ to refer to the psychological challenge for users of making sense of the way that the space is constructed.

For example, Brindleyplace has fountains that are flush with a paved area and shoot jets of water into the air in a random pattern. Users respond to the risk of getting wet by playing with the boundaries of the space. This is a creative use of risk. Similarly, the shared surfaces in the home zones case study are designed to introduce a sense of risk and uncertainty on the part of drivers so that they slow down and take greater care.

Health and safety professionals consider risk in a different way. They are trained to identify hazards that may harm individuals and to make judgements about risk, so might focus on potential slip hazards from wet or frozen paving. The different ways in which ‘risk’ is interpreted and used require clarity of dialogue between groups involved in the public space design process.

7: Securing enough funding for the long-term management and maintenance of public spaces must be considered from the outset.

Inadequate sources of long-term management and maintenance undermine the quality and value of public spaces and may not sustain the benefits of the initial investment. The contribution that design can make to help ease ongoing maintenance must also be considered.

Maintenance is an important factor in reducing risks to quality of life that may arise once schemes are completed. Key to the ongoing sustainability of the River Tame restoration scheme is the maintenance of trees and shrubbery and ensuring that the river channel is free from debris. Without ongoing maintenance the site would have implications for the safety of its users relating to tripping hazards, personal attack or injuries sustained around the river.76

75 Cabe (2006) The principles of inclusive design (they include you) London: Cabe. 76 For more information on the link between adequate management regimes and the reduction in vandalism and anti-social behaviour see Cabe Space (2005) Decent parks? Decent behaviour? The link between the quality of parks and user behaviour, London: Cabe.
Future steps for public space design

The design of public space exists in a world of uncertainty: about how different groups will view a risk; whether risky or risk-averse behaviour can be predicted; whether the risks of today will be the risks of tomorrow; and where the legal requirements relating to liability start and finish.

These uncertainties do not inevitably lead to a culture that purposely avoids risk in public space design. Safety is achieved through active use, citizen surveillance and an engendered sense of personal and social responsibility and ownership. A safe place can still be physically challenging, exciting and push the boundaries of accepted design.

Risk management is not achieved simply through installation of protective physical barriers, CCTV and warning notices. Indeed, the removal of these in a planned and risk-aware context can bring many benefits.

A number of positive instruments are being used to approach risk management in a risk-aware but sensible way. These include risk assessments that can help to understand risks and provide a defence in cases of legal action. Other instruments are also important, not least active processes of debate and dialogue between different stakeholders (including the users of public space) and professionals to examine standards, values and priorities.

First impressions matter: Bristol Temple Meads train station is an example of a different approach to streetscape design outside a station. For more information see www.cabe.org.uk/streets

1: Designers, their clients, developers and other stakeholders should explicitly consider how to focus on design innovation and excellence where risk is managed, not eliminated altogether.

Risks present opportunities that developers, clients, designers and other stakeholders should harness to deliver high-quality public space.

Practically, this could involve:

• Clearly distinguishing between hazards and substantial risks, and being creative in the way substantial risks are managed. This should be based on the best available information on legal responsibilities, including the Tomlinson case.

• Being robust in challenging weak evidence for the worst-case scenario happening

• Not demanding a disproportionate weight of evidence to show that positive risk-taking is appropriate

• Ensuring that innovation and excellence are encouraged through appropriate mechanisms. This could be a design competition to procure a good designer or setting standards for design quality to ensure everyone signs up to the design vision at the outset.
2: Judgements about risk are best taken in a process that involves all stakeholders.

Different groups involved in public space design think about risk in different ways. Interactive design enables an informed debate on what constitutes ‘risk’ in a particular scheme and how it should be managed. This is particularly important in creating an inclusive environment, so designers minimise assumptions about how specific groups may encounter the space. Some risks are only identified late in the design process – during implementation or once patterns of use are established, for example. Interactive design processes will highlight these risks.

Practically, this could involve:

- Designing and managing a space for the way people would normally use it and not reducing the overall quality to accommodate exceptional or freak incidents
- Ensuring that opportunities for positive risk-taking are clearly communicated to other stakeholders within a risk-assessment process
- Using tools that allow a visual and tangible communication of design outcomes and changes to the built environment (CABE’s ‘Spaceshaper’, for instance)
- Using a phased design process which allows for learning. This enables professionals to develop a greater understanding of lay perceptions of risk and use of a new public space and respond accordingly.

‘Interactive design enables an informed debate on what constitutes ‘risk’ in a particular scheme and how it should be managed’

3: Further promoting the Health and safety executive’s (HSE’s) ‘sensible’ approach to risk management will enable stakeholders to understand the legal and regulatory context in which they operate.

National organisations concerned with public space recognise that the pressures to avoid risk, if left unchecked, will damage the quality of the environment and the capacity for citizens to benefit from stimulating urban design. These organisations should promote principles of sensible risk management to people making decisions about public space design. This should concentrate on explaining how a proportionate approach to risk can also enable high-quality design.

Practically, this could involve:

- Helping to train decision-makers to prioritise more effectively, so that attention is focused on the real risks
- Emphasising that managing risks should be about identifying and taking practical steps – not generating paperwork for its own sake
- Sharing practical examples of how a sensible approach to risk management has helped enable high-quality design.

77 Temlinson v Congleton Council and Cheshire County Council.
78 Spaceshaper is a practical toolkit for use by anyone – whether a local community group or a professional – to measure the quality of a public space before investing time and money in improving it. For information see www.cabe.org.uk/spaceshaper
Appendix A
Project steering group

This report was researched and written by Professor Chris Skelcher and Robert Dalziel, Institute of Local Government Studies, and Professor Judith Petts and Sarah Damery, Centre for Environmental Research and Training, all from the University of Birmingham, UK. Additional research was undertaken and drafting contributed by Birmingham-based architect and urban designer Joe Holyoak and Professor Erik-Hans Klijn, Michiel Kort and Yamina Lakbiach, of the Centre for Public Management, Erasmus University, Rotterdam, the Netherlands.

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Is it a popular myth that we’re becoming more averse to taking risks? How is this reaction to health and safety concerns affecting the quality of our streets, parks and squares? Is it creating an environment in which encouraging design innovation and risk-taking is becoming harder? 

Living with risk explores these questions, canvassing the views of national organisations and examining 10 recent schemes to improve public spaces. We find clear lessons for maintaining high-quality and for boosting stakeholders’ confidence to navigate risks in the design process.

Design better streets

Living with risk is part of a wider CABE programme that provides research, guidance and case studies aimed at promoting high-quality street design. For more information see www.cabe.org.uk/streets

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