Introduction

For many years urban commentators have discussed the costs and benefits of urban authorities adopting counter-terrorism measures in the face of real or perceived terrorist threats (see, for example, Boal, 1969; Brown, 1985; Davis, 1992; Pawley, 1998; Graham, 2002). Some of the most historically explicit examples of such measures were seen in Northern Ireland in the early 1970s and 1980s where ‘fortress architecture’ and principles of ‘defensible space’ were used, by the security forces, to territorially control designated areas. This was most notably around the central shopping area in Belfast where access to the centre was barred, first by concrete blockers and barbed wire, and then later by a series of high metal gates which became known as ‘the ring of steel’ (Brown, 1985; Jarman, 1993) — a term which was to gain new meaning in the 1990s in central London.

In the 1970s Belfast became a laboratory for radical experiments on fortress urbanism, which became a recurring theme in urban research through the 1990s, especially centred on Los Angeles where connections were made to Belfast’s approach. When prophesying about the future of Los Angeles in the new millennium Mike Davis (1992) noted that within the crime-infested future city the car bomb could well become the ultimate weapon of crime and terror, and predicted that the urban authorities might well enact fortress style rings of steel as a counter response.1 Similar sentiments to this ‘fortress urbanism’ rhetoric have, out of necessity, been commonplace after September 11th.

The attacks of September 11th were unique in terms of the combination of tactics employed — the simultaneous high-jacking of planes and the targeting of iconic buildings which were used as missiles — as well as the destructive damage caused and insurance losses accumulated. September 11th also brought to the fore wider concerns about different types of ‘postmodern’ or ‘catastrophic’ terrorism (Laqueur, 1996; Carter et al., 1998), and a society based on living with an acceptable degree of risk and danger (Ewald, 1993; Lianos and Douglas, 2000; Beck, 2002).

In the post September 11th world reconceptualized terrorist realities have led, in some cases, to new and dramatic urban counter-responses based on Belfast and LA-style fortification as well as increasingly sophisticated military threat-response technology. For example, the Debates and Developments section of the September

1 Although ‘Fortress LA’ became a powerful vision for the future city in the 1990s, it is important to realize that there are many ways in which urbanism in LA may be viewed. Critics of Davis, for example, argued at the time that his prophecies were more about fear or crime than actual occurrence of criminal activity (see, for example, Friedman, 1998).
2002 edition of *IJURR* highlighted how the events of September 11th have served to influence the technological and physical infrastructure of targeted cities to the extent that ‘urban flows can be scrutinized through military perspectives so that the inevitable fragilities and vulnerabilities they produce can be significantly reduced’ (Graham, 2002: 589).

However, in many urban areas under perceived threat, such counter-terrorist responses amount to little more than extrapolations of ongoing trends which were already, or were intended to be, employed to reduce the occurrence and perception of crime. Such responses have inevitably evoked metaphors of territoriosity, popular in the 1970s or later in the 1990s, to highlight the control of space through urban design modifications. For example, after the 1993 attack against the World Trade Center individual buildings as well as discrete commercial districts increasingly attempted to ‘design out terrorism’ using ‘defensible space’ principles. As Brown (1995) reported in *The New York Times*, ‘barricades and bollards have become the newest accessory on this country’s psychic frontier . . . You might call it the architecture of paranoia. They call it “defensible space”’.

More recently, a number of commentators have explicitly highlighted the role of ever advancing technology in the ‘war against terrorism’. In particular, the mushrooming of new digitalized and algorithmic surveillance and its adoption as a categorizing and social exclusion device has been widely discussed (Lyon, 2002; Graham and Wood, 2003). Debate has occurred especially around issues linked to the erosion of civil liberties, with fear that democratic and ethical accountability will be given a back seat to the automatic production of space with urban society quickly becoming a technologically managed system based on automated access and boundary control (Lianos and Douglas, 2000; Thrift and French, 2002). For example, it was reported in July 2003 that the Pentagon is developing a digitalized surveillance network that is capable of tracking the movements of all vehicles in the city by identifying them by physical characteristic, colour or even the biometric features of the driver. This expansive ‘tracking system’, has already attracted the interest of the law enforcement agencies keen to mainstream this military technology for non-combat use (Sniffen, 2003).

The impact and counter-response to September 11th within urban areas has, of course, been spatially contingent, reflecting both the history and geography of different cities. This article highlights how central London in such a context has sought to reduce the real and perceived threat of terrorist attack over the last decade through the adoption of, first physical, and then increasingly technological aspects of territorial approaches to security at increasingly expansive spatial scales. Central London over the last decade has become emblematic of the threat of terrorism as well as the overt and covert counter-terrorist responses.

**Risk reduction in fortress London**

Throughout much of the twentieth century, London has been threatened by terrorist groups, almost exclusively, until recently, linked to the Irish Republican cause. The 1930s IRA bombing campaign against London was a distant memory to most as the current troubles in Northern Ireland began in the late 1960s. Over the next 25 years the IRA regularly attacked central London and particularly targeted political, economic, judicial and military sites. Such campaigns ebbed and flowed in intensity and, as such, certain buildings were protected but no overarching and ongoing defensive strategy was implemented. During the late 1980s and early 1990s attempts to design out terrorism at specific targets were crude and rudimentary, but nonetheless high profile. For example, the spectre of Belfast was brought to London in 1989 when wrought iron security gates were installed at the entrance to Downing Street on the orders of Prime Minister

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2 Most notably the Provisional Irish Republican Army (IRA) and Real IRA. Other terrorist groups that have also been considered a serious threat include the Angry Brigade, the Kurdistan Workers’ Party (PKK) and most recently Al Qaeda.
Margaret Thatcher (see Figure 1). Given the range of possible threats to Downing Street, the gates provided an effective and efficient means of controlling public access. The counter-response came from the IRA in February 1991 when, during a ‘Gulf War’ cabinet meeting, the IRA fired a number of mortar bombs at the prime minister’s residence.

By the early 1990s there was a noticeable targeting of global cities, and in particular their economic infrastructure, by terrorist organizations in order to attract global media publicity and to cause severe insurance losses and significant disruptions in trade. In London the Provisional IRA successfully attacked a number of key economic targets in the 1990s with large bombs exploding in the City of London (the Square Mile) in April 1992 and April 1993. In November 1992 a bomb was found under the Canary Wharf Tower in the London Docklands, and in February 1996 the IRA succeeded in bombing the London Docklands, at South Quay Station. These bombings and the subsequent reaction of urban authorities and the police served to highlight the use made of both territorial and technological approaches to counter-terrorist security.

The counter-response employed within the Square Mile drew heavily on lessons learned from attempts to ‘beat the bombers’ in Belfast with the adoption of ‘territorial’ approaches to combating terrorism. A newspaper editorial captured the popular view that security must be enhanced in the City:

> If we are to wage effective war against the IRA, there must now be an urgent review of security at their most likely target. Since the IRA mortar-bombed Number 10 from a waiting van, nothing is allowed to park in Whitehall. *If it can be done for Downing Street it can be done in the city* (cited in the *Sunday People*, 25 April 1993: 3, emphasis added).

Leading City figures cited in *The Times* newspaper also indicated that a Belfast-style scheme should be implemented — ‘the City should be turned into a medieval-style...”

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3 Other newspapers also proposed modelling security on the ring of steel in Belfast with entrances, which were fitted with security barriers manned by armed guards. Other security methods suggested included a large increase in visible police officers, a lorry ban in the City, a national identity card scheme, and bomb-proofing vulnerable buildings.
walled enclave to prevent terrorist attacks... In private there is talk about a “walled city” approach to security with access through a number of small “gates” and controlled by security discs (25 April 1993: 3, 27; see Sivell, 1993).

Others disagreed, highlighting that ‘we wouldn’t want the City turned into a castle with a moat around the outside’ (cited in The Independent, 5 May 1993: 3). At this time such ‘draconian security was dismissed as a propaganda gift to the Provisional IRA as well as being difficult to implement legally’ (cited in Ford, 1993: 3). The majority agreed that some form of security cordon should be enacted with roadblocks which would not disrupt the business functioning of the City or transfer the displaced traffic into neighbouring areas.

As such, in July 1993 what was referred to in the media as a Belfast-style ‘ring of steel’ was activated in the City, securing all entrances to the central financial zone. Essentially, the entrances into the City were reduced from over thirty to seven where road-checks manned by armed police were set up. Locally, the ring of steel was referred to as the ‘ring of plastic’ as the temporary access restrictions were based primarily on the funnelling of traffic through rows of plastic traffic cones. The City’s ring of steel represented a far more symbolic and technologically advanced approach to security, which tried to avoid the ‘barrier mentality’ of Belfast in favour of less overt security measures. However, the ‘ring of plastic’ provided a highly visible demonstration that the City was taking the terrorist threat seriously, even if many entering the City did not realize its anti-terrorist use. Indeed, within London the ring of steel was promoted in terms of traffic management and environmental improvements with an attempt to remove any references to the ongoing terrorist threat. Over time the geographical scale of the security cordon increased to the current position where 75% of the Square Mile is covered within the secure zone (see Figure 2).

In the City of London territorial approaches to security were backed up by the retrofitting of ever-advanced CCTV in both private and public and spheres. Publicly the police, through an innovative partnership scheme known as ‘CameraWatch’, encouraged private companies to install CCTV in liaison with neighbouring businesses,
whilst at the entrances of the ring of steel, as well as strategic points around the Square Mile, the most technologically advanced CCTV cameras available were installed.\(^4\) In February 1997, 24-hour Automated Number Plate Recording (ANPR) cameras, linked to police databases, were fitted at entrances to the ring of steel. These digital cameras were capable of processing the information and giving feedback to the operator within four seconds. In the space of a decade, where terrorism had been considered a serious threat, the City of London was transformed into the most surveilled space in the UK and perhaps the world with over 1500 surveillance cameras operating, many of which are linked to the ANPR system (City of London Police, 2002).

The London Docklands containing the Canary Wharf complex was also the focus for counter-terrorist planning through the 1990s. This area was subject to a failed terrorist bombing in 1992 as well as a devastating explosion in the southern part of the area in February 1996. Following the 1992 Canary Wharf attack, managers at Canary Wharf initiated their own ‘mini-ring of steel’, essentially shutting down access to ‘their’ private estate within the Docklands complex (Coaffee, 2000; Graham and Marvin, 2001). Such an approach combined attempts to ‘design out terrorism’ with changing approaches adopted by the police and private security industry. Security barriers were thrown across the road into and out of the complex, no-parking zones implemented, a plethora of private CCTV cameras were installed and identity card schemes initiated.

After the 1996 bomb in the southern part of the Docklands the business community successfully lobbied the Metropolitan Police to set up an anti-terrorist security cordon to cover the whole of the Docklands — the so-called Iron Collar modelled on the City of London’s approach — amidst fears that high-profile businesses might be tempted to relocate away from the Docklands. Subsequently, a security cordon was initiated for the whole Dockland peninsula comprising four entry points which at times of high-risk assessment would have armed guards. High resolution ANPR CCTV cameras were also installed. The most noticeable difference between the scheme initiated in the Docklands and that in the City was the overt advertising of the Docklands security cordon on the large signs at entry points into the cordon instead of downplaying the zones anti-terrorism purpose.

Prior to September 11th the counter-terrorism measures focused on London’s financial zones, albeit under the guise of re-appropriated traffic and environmental strategies, and within an overall project of crime reduction and safety. These zones became synonymous with increasing the ‘quality of life’ amongst certain sections of society whilst, on the other hand, being strongly criticized by others for abuses of civil liberties around stop and search procedures, intrusive CCTV, as well as the transference of traffic and potential terrorist-related risk to less well defended sites.

**Business as usual and September 11th**

The unprecedented events of September 11th led to an instant counter response from London police forces, focused on digitalized tracking technologies as well as the overt fortressing of ‘at risk’ sites. In the City of London the ring of steel swung back into full-scale operation as part of a coordinated London-wide operation. This saw over 1,500 extra police patrolling the streets of the capital, liaising with American firms to improve their security through extra patrols, as well as instigating a far greater number of stop and search checkpoints. The initial strategy adopted in central London was that the police were uniquely prepared to cope with the threat of global terrorism, given over 30 years of active experience of dealing with similar threats, and as such the approach adopted was ‘business as usual’ and ‘vigilant but calm’ in order to avoid a ‘siege mentality’. In short, the balancing of security needs with realistic threat assessments was seen as paramount.

Since September 11th, central London has been under increased risk from terrorism with some reports even claiming that there was a detailed plan developed by Al-Qaeda.

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\(^4\) This technology was developed during the first Gulf war.
to bomb the Square Mile (The Observer, 16 December 2001). What is clear is that September 11th has refocused the minds of London’s police forces on counter-terrorism, along with the realization that high levels of technical surveillance, which have proved relatively successful against domestic terrorism, might be ineffective against new terrorist methods such as suicide attack (City of London Police, 2002).

Although the international terrorist threat has been considered high in the years following September 11th, central London quickly returned to business as normal, although security was noticeable on a higher state of alert at times of specific threat, such as on the anniversary of September 11th, with a large and visible increase in armed police on the streets generally, and particularly around potential ‘target’ buildings. In addition, certain prominent landmark buildings have also been crudely fortified against vehicle-borne bombs. For example, The United States embassy in central London has become a virtual citadel, separated from the rest of London by fencing, waist high ‘concrete blockers’, armed guards and mandatory ID cards (see Figure 3). Furthermore, in May 2003, in response to a heightened state of alert regarding possible terrorist attack given suicide bomb attacks in Saudi Arabia and Morocco, a vast number of waist high concrete slabs were placed outside the Houses of Parliament to stop car bombers (see Figure 4). This so-called ‘ring of concrete’, which was later painted black to make it more ‘aesthetically pleasing’, was one of a number of planned fortifications set up in central London to protect prominent and historic buildings. This follows the unique sight of armoured vehicles, including tanks, and hundreds of soldiers being placed outside Heathrow airport earlier in February 2003, and the full-scale simulation of chemical and biological attack on the central London underground in the summer of 2003 to test the preparedness of emergency services.5

5 In early September 2003 the City of London was ‘closed down’ in an elaborate anti-terrorism exercise as a response to these continual threats of attack. In this exercise over 500 London Emergency Services personnel were tested for their state of preparedness and ability to use
Such visible and brutal securitization against certain sites has led to the inevitable dislocation of London into zones of differential risk and security. Advanced technology is, however, at hand to provide a more expansive security blanket over central London. The Automated Number Plate Recording (ANPR) technology developed throughout the City’s attempts to deter Provisional IRA terrorists has now been ‘rolled out’ across central London for use in traffic ‘congestion charging’. This system became operational in February 2003 and uses 450 cameras in 230 different positions. All number plate images are captured when entering the zone and automatically matched against a database of those who are registered to pay or have exemption. Other cameras monitor the general flow of traffic throughout the area, with mobile camera patrols operating throughout the zone.

In essence, central London has been circled by digital cameras, creating a dedicated ‘surveillance ring’ affording London’s police forces vast surveillance gathering capabilities for tracking the movement of traffic and people, and by inference highlighting potential terrorist threats. Not surprisingly, such an anti-terrorist function for the new congestion zone has been largely absent from information and promotional material circulated about the scheme which can, in essence, be considered a full-scale extension to the City of London’s ring of steel. It has been alleged that ‘MI5, Special Branch and the Metropolitan Police began secretly developing the system in the wake of the 11 September attacks’, creating ‘one of the most daunting defence systems protecting a major world city’ (see Townsend and Harris, 2003). It was also suggested appropriate equipment in the event of a chemical or biological attack. This exercise focused on a hypothetical release of chemical agents on the London underground around the Bank tube station in the heart of the City of London. This test was in many ways using the Tokyo 1995 scenario, when twelve people were killed and many injured by the release of the nerve agent sarin into the central Tokyo subway. This test was due to take place earlier in 2003 but the second Gulf war meant it was postponed.

6 A 90% accuracy reading is reported.
7 The City of London where the technology was developed is on the eastern border of the zone.
that in the future the system could ‘utilize facial recognition software which automatically identifies suspects or known criminals who enter the eight-square-mile zone’. Using facial recognition technology to ‘snap’ the driver rather than the number plate of a vehicle would also necessitate different data protection legislation and a rigorous code of conduct set up for operators and monitors of the system. Stanley and Steinhardt (2002), for example, highlight that facial recognition software is being used in surveillance systems at a number of major airports in America as well as at prominent sporting fixtures. However, other commentators report that at present such technology is highly inaccurate and unlikely to be of any practical use until refined (Meek, 2002; NIST, 2003). Not surprisingly, civil libertarians feel misled over this hidden use for London’s scheme which is promoted as an attempt to beat traffic congestion.

**Terrorist risk, fortress urbanism and the automatic control of space**

Since the early 1990s London has provided some tentative glimpses into the relationship between terrorist risk and future urbanism, and in particular the mindset of planners, architects, developers and security personnel in designing our cities in relation to risk-management criteria. Such accounts have placed great emphasis upon ‘target hardening’, although increasingly more covert approaches, especially digitalized surveillance, are taking over as the counter-terrorist planner’s favourite tool. Pawley (1998: 148) argued that as a result of an upsurge in urban terrorism, especially against ‘the highly serviced and vulnerable built environment of the modern world’, the new-wave of signature buildings could be replaced by an ‘architecture of terror’ in response to security needs. This, he argued, could well have the function of making the buildings ‘anonymous’, and thus, he concluded, a less attractive terrorist target. Pawley, using examples from Israel, Sri Lanka, North America, Spain and the UK, further inferred that this ‘architecture of terror’ will be self-reproducing as planning guidelines once drawn up will be difficult to withdraw, and such defensive architecture will become ‘impossible to resist’ once bombs are detonated, due to calls to reduce the impact of terrorism through urban and architectural design. Similar pronouncements were made in the aftermath of September 11th, leading to a situation where ‘military and geopolitical security now penetrate utterly into practices surrounding governance, design and planning of cities and urban regions’ (Graham, 2002: 589) with the ‘war on terrorism’ serving as a ‘prism being used to conflate and further legitimize dynamics that already were militarizing urban space’ (Warren, 2002: 614). Many commentators also predicted the demise of the skyscraper and the changing functionality of urban centres (see, for example, Kunstler and Salingaros, 2001; Mills, 2002). Others highlighted the potential for terrorism to lead to a new counter-urbanization trend amongst business and wealthier citizens in search of ‘space and security’ (Vidler, 2001), or for the increased fragmentation of urban space to continue through ‘concentrated decentralization’ (Marcuse, 2002). London, by contrast to such predictions, has continued with a dedicated ‘tall buildings’ policy and continues to centralize its core functions within a central ‘activities zone’.

Such accounts of the post September 11th city also tend to present bleak portrayals and worst case scenario options. The concern is that anti-terrorist defences, if constructed, could mean the virtual death of the urban areas as functioning entities. As such, urban leaders are now having to think more carefully when balancing security with mobility and risk with recklessness. Since September 11th, issues of trust, risk and danger in cities have increasingly come to the fore with ‘trust [being] replaced with mistrust and as such “the terrorist threat” triggers a self-multiplication of risks by the de-bounding of risk perceptions and fantasies’ (Beck, 2002: 44) which are over-exposed in the global media and uniquely concentrated in the global city.

London, because of its global city status, its history and response to terrorist bombings, and because it occupies a pivotal place within the so called ‘war on
terrorism’, has been thrust centre stage into the limelight as far as counter-responses are concerned. Primarily, such attention has focused upon its financial heartlands — the City of London and the London Docklands — which provide two possible scenarios for the defended city: first, a security arrangement which combines territorial control and advanced surveillance through the lens of traffic and environmental improvements; second, a security cordon which overtly advertises its function as a counter-terrorist deterrent to maintain the area’s image of ‘safety and security’. However, both areas have become disconnected, physically and technologically, from the rest of the city through the development of their ‘rings of confidence’ (Coaffee, 2003), creating a condition of ‘splintered urbanism’ (Graham and Marvin, 2001; see also Norris and Armstrong, 1999; Coaffee, 2000; Rosen, 2001). Importantly, from a public and social policy viewpoint, these rings of confidence are now seen by business coalitions, motorizing organizations, commuters, residents and neighbouring local authorities as part of London’s daily life.

Anti-terrorist security at other key sites in London is both visible (as in overt fortressing and defensible space measures at key target sites) and invisible, as in the congestion charging zone which doubles-up as a ‘central panopticon’. The latter forms what Lianos and Douglas (2000) refer to as an Automated Socio-Technical Environment (ASTE) — essentially high-tech risk management devices, whose specification can be altered according to the needs of the operator (see also Huber and Mills, 2002). These systems are certainly ones that the agencies of security, most notably the police, as well as insurers will endorse fully as they promote safety, retain traffic flows and meet with the needs of business. This echoes national UK guidelines and rhetoric which seeks to provide a balance between democracy and risk management responses in the new age of terrorism:

We are mindful of the desire and the need of people in a vibrant democracy like ours to live normal lives without a sense of constant fear. We also know that in part because the terrorists want us to live in fear, and want to damage our economy, and the well being of our people, that they are capable of feeding false information to us in the hope that we over react . . . Getting the balance right is not easy.8

This is the delicate balance that the managers of many cities are now facing as the threat from terrorism continues to cast a shadow over urban life. The response of urban authorities and public and private security agencies to this threat poses serious consequences for urbanity and the civic realm, and in particular for social control and freedom of movement. Ultimately, it appears that ‘fear and urbanism are at war’ (Swanstrom, 2002; see also Cuff, 2003). Over the last decade London has been enveloped by an ever-expanding surveillance web, in no small part as a response to the fear of terrorism, which has threatened to blur the boundaries between public and private space. At the time of writing, the majority of workers in the City of London reportedly consider terrorism a significant threat (Chiumento Consultancy, 2003), with the media reporting that ‘a terror attack by suicide bombers on a target in London is almost inevitable’ (Evening Standard, 3 September 2003: 1). Today, the average Londoner is thought to be caught on CCTV cameras 300 times a day (Sniffen, 2003). In London, the policy processes which are leading to the ever-increasingly automatic control and militarization of urban space have ultimately lacked transparency and scrutiny and have often been promoted in terms of traffic management or crime inhibiting measures. As such, this points inevitably to the splintering potential of such rings of security and rings of confidence which are slowly, but surely, becoming ‘rings of exclusion’.

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