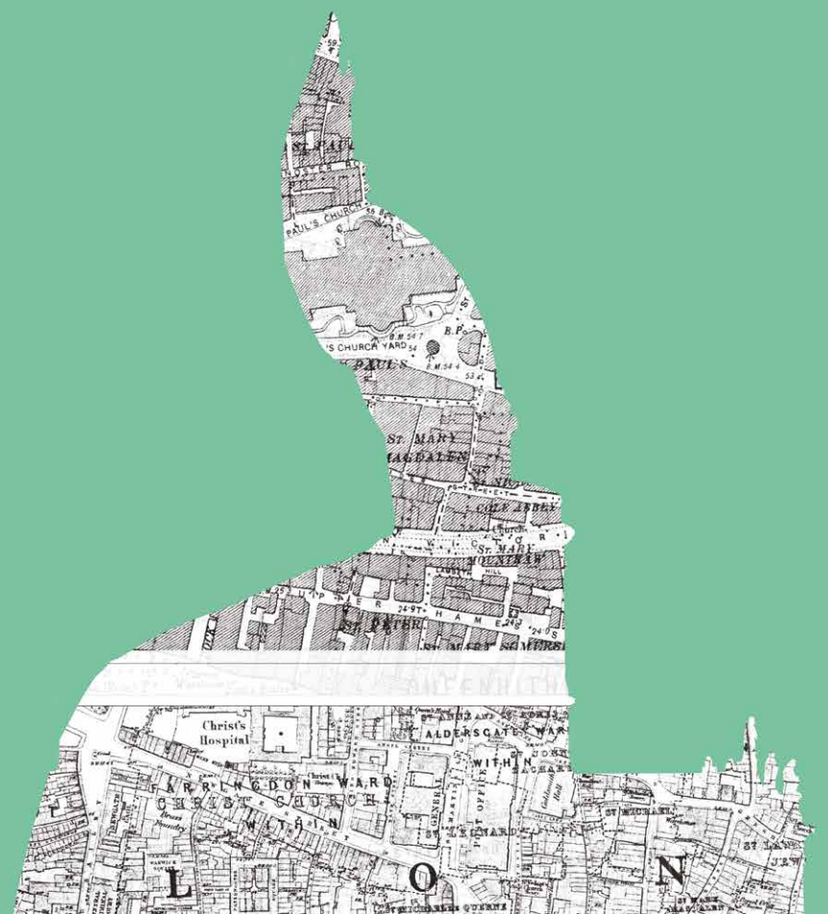
This document contains Theo Jones' chapter from the edited book
"More than One New Change"

theojones.com

More than One New Change

St. Paul's and Cheapside

Jacob Valvis
Theo Jones
Freddie Broadhurst
Rosie Tillotson
Ubada Muti



U30024: Cities, Culture and Society

Urban Conflict:
More than One New Change, St. Paul's and Cheapside

Architectural Edited Book, December 2013

12064526	Jacob Valvis
12070837	Theo Jones
12018441	Freddie Broadhurst
12062863	Rosie Tillotson
12088091	Ubada Muti

Printed and bound by
Oxford Brookes University Media Centre
Gipsy Lane Campus
Gipsy Lane
Oxford
England
OX3 0BP

Fig.1 A Record of Destruction and Survival (2013)

Contents

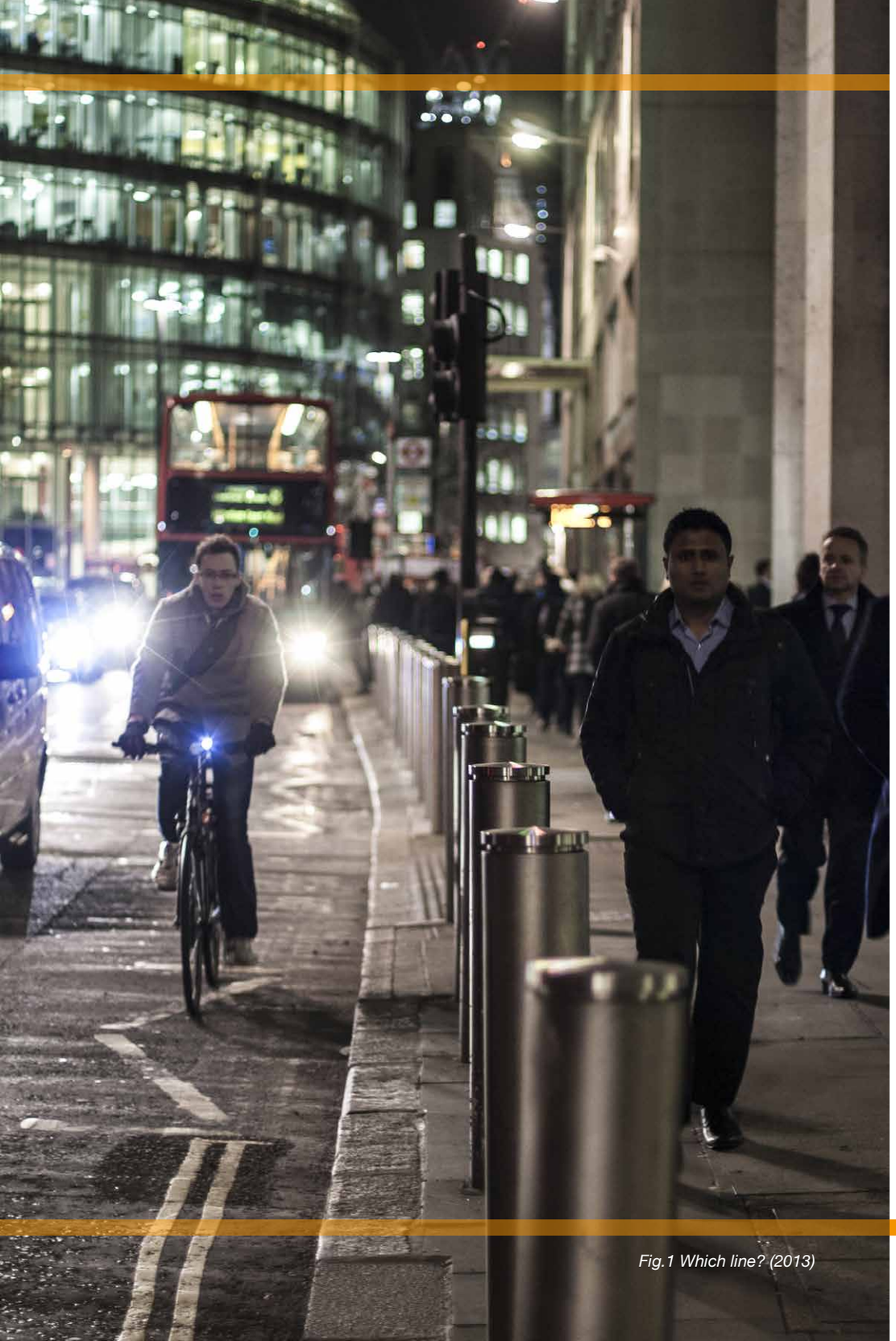


Fig.1 Which line? (2013)

Bollards: Preserving and protecting the dynamics of future pedestrian space?

Forming a physical “Ring of Steel” (Coaffee, 2003), bollards are traditionally considered essential to secure and define the public and semi-public space (Wynne Rees, 2005c, p.17) around St. Paul’s Cathedral and One New Change shopping centre. With a reduction in their use and a change to increased pedestrian space urban design can move, without a loss in safety, towards more effective shared spaces in the future City of London.

Theo Jones *12070837*

bol•lard noun - chiefly British: any of a series of short posts set at intervals to delimit an area (as a traffic island) or to exclude vehicles (Merriam-webster.com, 2013)

Fig.2 Street Scene (2013)

This research will explore the meeting of a vehicle and the pedestrian in shared urban space within the context of bollards. Are bollards essential in the area for security and safety? What is the line to take? Should there be demarcation of the streets; should we split car from pedestrian or enact shared street spaces that have been shown to decrease accidents and increase traffic flow (Hamilton-Baillie and Jones, 2005, p.39)? Mikes Davis's chapter "Fortress L.A" in "City of Quartz" talks of "architectural policing of social boundaries" (1990 p.223) and Vela-McConnell posits that this dividing is often done in the name of security (1999). The lecture by Thames Valley Police CPDA (Crime Prevention Design Advisor) Ian Carmichael advises to "Design out crime" (2013) a statement and initiative of "Secured by Design", which supports the use of passive streetscape design as a more effective way to reduce crime and terrorism. Contrary to this the City of London Corporation "City Street Scene Manual" which describes the space as the "street scene" (see fig.2), (Wynne Rees, 2005a) advocates for removal of as much street clutter as possible including bollards. However how can such design guidelines fit with local counter terrorism and security policy? "bollards … are required in certain locations to mitigate criminal or terrorist vehicle-borne threats" (Bollards and Pedestrian Movement, 2013, p.1). Looking to the future, this work will explore how shared space and interactive technology could lead to a radically new street scene (Driverless city, 2012, pp. 16-17). To conclude there will be a summation of key points leading to the current state of people and public space's relationship with bollards and how expanded (and planned) public space (Street Scene Challenge, 2008) in the area has reduced bollard numbers alongside the more subtle anti-terrorism measures.

> "Car bombs…a poor man's air force"
> *(Davis, 2007)*

Bollards have over time been used in the area for 5 main reasons: delineation of pedestrian paths; protection of pedestrians from vehicles; protection of buildings/ pavements from vehicles; branding/defining property ownership; counter-terrorism. This

research will touch on all these uses but with the focus being the effect on pedestrian use and experience of space. Some of the earliest evidence of bollards from 1721

Fig.3 Waltham Cross (1721)

Fig.4 The Church of St Mary le Bow in Cheapside (1764)

shows (see fig.3) wooden posts (Pevsner and Fawcett, 1976, p.13) protecting buildings from being damaged by vehicles, a time when the buildings were often valued above the pedestrian. This didn't last long with the later 18th century seeing wooden bollards being used along Cheapside (see fig.4), in closely packed long rows to protect the pedestrians, buildings and to define the edge of the road. There is an interesting irony with the concept of bollards as protection as some of the earliest where made from up turned cannons (see fig.5), with cannon balls fixed into the barrel end (Evans, 2012), something which is evident in the design language of many to this day. Adding to the militaristic connections bollards are sometimes referred to as Dragon's Teeth "wedge-shaped concrete antitank barriers laid in multiple rows" (Merriam-webster.com, 2013) used in the Second World War (see fig.6) (Thomas E. Griess (Edt), 2008, p.354).

Fig.5 Cannon Lane Hampstead NW3 (2011)

Fig.6 Allied advance Siegfried line (1945)

Fig.7 Bollard 2007 (2013)

Fig.8 Bollard 1988 (2013)

Fig.9 Stick Bollard (2013)

Global warfare has moved from the battle field to urban terrorism; (Graham, 2004) thus our defences have turned to cities. Mike Davis' writings on car bombs or VBIEDs (Vehicle Borne Improvised Explosive Devices) shows that globally it's a clear weapon of choice for terrorism "under certain circumstances, was comparable to airpower in its ability to knock out critical urban nodes and headquarters as well as terrorize the populations of entire cities" (2007). In one interview for this research Ian Carmichael (Crime Prevention Design Advisor) Thames Valley Police stated "without them (bollards) there is nothing stopping a car driving in" (see appendix A). Bollards are the principle way to significantly reduce damage from car bombs. When assessment is carried out and the area deemed of high risk, bollards (meeting the British Standard PAS68 for counter terrorism impact) are implemented (see appendix C). Jon Coaffee's work 'Terrorism, Risk and the Global City' (2009) has been updated from 2003 to reflex the significant changes over the last decade and outlines the 'Ring of Steel' that surrounds the City of London. Implemented and expanded initially due to several attacks from the IRA, surveillance now keeps close control over the financial capital of the UK, channelling cars down small streets and capturing all vehicle entries on CCTV.

How does the Ring of Steel manifest itself in bollards? Bollards are predominately in a traditional City of London style - as laid out in the street scene guide (Wynne Rees, 2005c, p.17). Those which are deemed historic bollards are to be where possible persevered, sometimes moved and they are still being produced by ATG Access (City of London Bollard, n.d.). The majority of this style are dated, with the most recent in the area being 2007 (see fig.7) (see appendix D) and the oldest 1988 (see fig.8) (see appendix D). The style is distinctive in its red, black and white colours to match the City of London colours, but also for high visibility; there are a variety of shapes changing over time and to suit specific placement (fig.9). Bollards must have a shallow mount, as in this area services are very close to the surface, this limits the impact strength they are rated for. The new traditional style are not rated for counter-terrorism, rather they have been tested for impact with the following results: a rigid vehicle of weight 7500KG at 64kph in a head on collision would penetrate 3.7m past the back face of bollard with major debris (25kg or more) landing up to 4.2 meters away (City of London Bollard, n.d.). It is important when placing bollards to consider the stand-off distance from a building, (Cormie and Mays et al., 2009, p.250) in this example it would be greater

Fig.13 One New Change (2013)

Fig.11 One New Change Bollard (2013)

Fig.10 15 bus 'slams' into bollards at Cannon Street (2013)

than 4.2 meters. That distance is significantly more than is left between most bollards and buildings in the area. Some of these bollards (see appendix D) were put to a real life test recently when a double decker number 15 bus slammed into them on Cannon Street (fig.10) (Beard, 2013). The bollards successfully stopped the bus and remained undamaged. A few people on the bus were injured but pedestrians on the pavement remained unharmed.

The One New Change office and shopping complex brings the newest bollards to the area (see appendix D), these are of a modern steel cylindrical design with chamfered tops used for branding (see fig.11). The primary purpose of these is to stop vehicles driving into the large open entrances, however they also have a very clear secondary use; branding the line between public pavement and the semi-private space within the shopping centre. This combined with an area patrolled by a large number of active private security guards (I was told to stop taking photographs while inside the building) make it clear there is a separation of the space as you cross the bollard line and enter a new privately controlled space. It's interesting to note that close by Paternoster Square, which doesn't have the same defining of space with bollards, was considered public space by many including the 2011 Occupy Movement (see chapter "The Right to Occupy and the Spatial Reaction to Protest") before private security closed the site revoking the right of way (Moore, 2011) for the duration of the protest. The bollards right outside St. Pauls are an unusual mix (see fig.12). The space is arguably a high profile target for attack however there are no PAS68 counter terrorism bollards due to the churchyard being marked primarily by historic granite bollards (grade II listed) (see appendix D) (Claim form for possession of property, 2011, p.40) put in place in 1880 by F.C. Penrose (Surveyor 1852-97) (St Paul's Cathedral Conservation Area, 2013).

The majority of bollards are focused on traffic control and protection of pavement and pedestrians rather than being specifically designed for counter terrorism. The "City Traffic and Environmental Zone" was put into place in 1992, which closed many roads (Wynne Rees, 2005a, p.11) and reduced entry points from 33 to 8 (Environmental Zones in Europe, 2002, p.14). At the time bollards were considered the best way to implement this. However more recent (and planned road) closures take a different approach and actually reduce the number of bollards when a road is closed (Street Scene Challenge, 2008). This is due to traditional narrow streets being littered with bollards, particularly on corners for protection of the pavements made from large historic Manchester bond stone. A move to smaller 300x200mm York stone which can withstand the weight of cars, has reduced the need for bollards (Wynne Rees, 2005c, p.6). Pedestrian islands used while crossing the road, often include bollards, not only considered as protecting the island but on marking it as a place to land for a wandering pedestrian, keeping them safe and out of the way of cars.

The area from St. Paul's to Cheapside has never suffered a terrorist attack and to public knowledge none have been attempted. These modern day fortifications are reducing. Do we as pedestrians feel safe with a physical presence of bollards? Alexander Williams (Counter Terrorism Security Adviser & Architectural Liaison Officer for City of London Police) responded in an interview "I very much doubt that people used to spending time in the City notice them" (see appendix B), others state they are noticed, during busy periods with overcrowding, and pedestrians performing a "bollard ballet" (Wynne Rees, 2005, p.11). Do bollards allow for the increasing pedestrian space? Is it possible that an increase in bollards could lead to more 'safe' space? Traditionally this approach works, however it's clear from the more recent public space development (see fig.14)

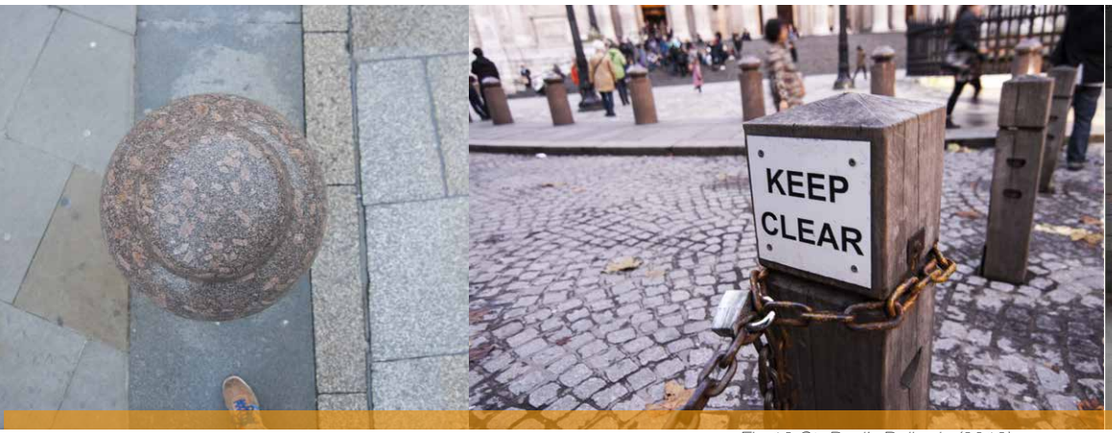


Fig.12 St. Paul's Bollards (2013)

Fig.14 Fleet Street Courts and Lanes Proposal (2003)

Fig.15 Rhinoguard seat (n.d.)

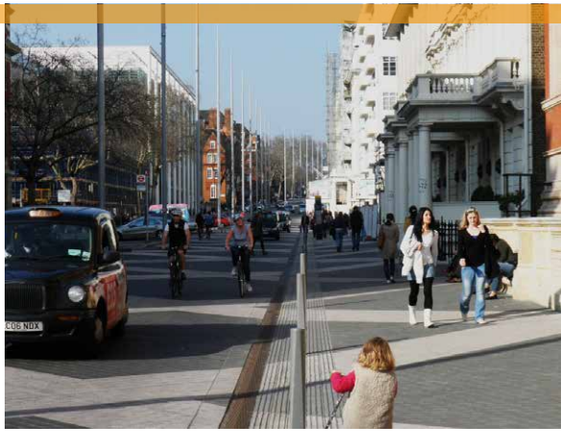


Fig.16 Exhibition Road (2012)

(Street Scene Challenge, 2008) that they should not be essential. Yet still we have these questions: How may bollards be removed but keep cars from blocking public space? How may bollards be removed while still protecting landmarks from attack? How may bollards be removed but pedestrians kept safe?

Alexander Williams (Counter Terrorism Security Adviser & Architectural Liaison Officer for City of London Police) doesn't consider there to be any conflict between pedestrian experience and bollards (see appendix B). Alternatives to traditional bollards are increasing in use, there are many PAS68 counter terrorism rated street furniture options including seating and planters (see fig.15) (Marshalls, 2013), however these solution are

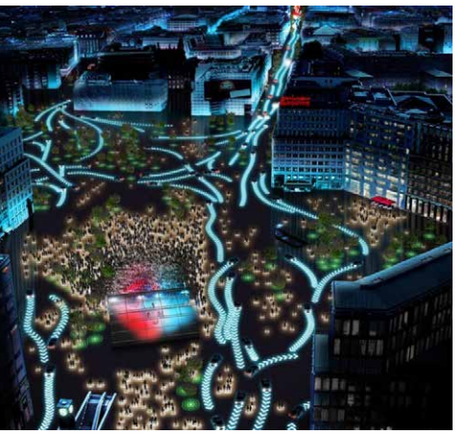


Fig.17 Driverless City: Shared Space (2012)

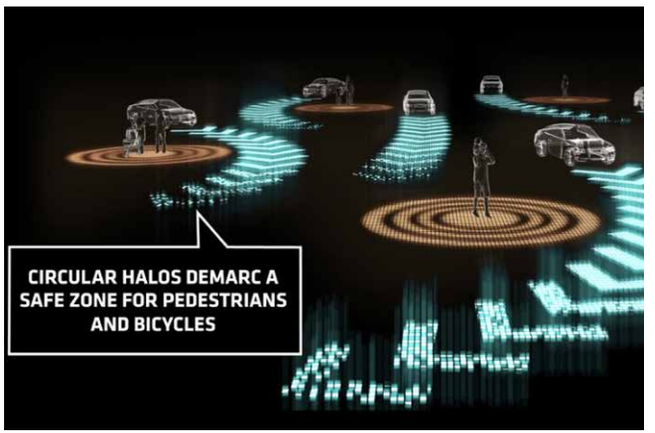


Fig. 18 Driverless City: Smart Tiles (2012)

more expensive than bollards and are hard to implement on the small streets of the City. Shared-use surfaces are a more radical way to readdress our public space, allowing for greater mixing of pedestrians and road users. This starts with a flat surface, no curb side and reduced signage, to ensure drivers pay more attention to who is actually around them. However the official City of London street scene guide believes shared use

spaces only work where traffic volumes and speeds are low and "invariably require the installation of bollards" (Wynne Rees, 2005, p.18). Dixon Jones' Exhibition Road project is one of the most significant shared streets implementations in the UK (see fig.16). They incorporate a significant numbers of bollards in the scheme. The current common state of traffic and pedestrian layout is primarily based upon the 1963 "Traffic in Towns" report by Sir Colin Buchanan. Yet a recent retrospective on the report points out regarding segregation of traffic "the safer drivers are made to feel, the more dangerously they tend to drive" (Traffic in Towns: A Retrospective, 2013, p.1). The alternative of shared space increases drivers' awareness of others and decreases accidents (Hamilton-Baillie and Jones, 2005, p.39).

> "...pedestrian area to highway, from city square to meadow"
> *(Ingels, 2011)*

BIG Architects in collaboration with Kollision Aarhus, Schmidhuber & Partner proposed a radical change to the streets for our future city at Design Miami in 2011 (see fig.17). "Fixed elements such as carriageways, sidewalks or city squares no longer exist, but the digital surfaces can be adapted to all road users and in this way control the traffic" states BIG founding partner Bjarke Ingels, "On one single day, the street can change many times: from pedestrian area to highway, from city square to meadow." So called 'smart tiles' (see fig.18) would visually show the path of driverless vehicles giving pedestrians time to react alongside algorithms calculating efficient routes to speed up traffic. This concept, although reliant on radical changes could be a possible future without a single bollard in use.

The use of alternative street furniture can serve as a substantial counter terrorism grade defence in key high profile areas; this, combined with well implemented shared spaces, could integrate future technologies of dynamically adaptive road/pavements and advanced automated/semi-automated cars. No longer would there be a need for the bollard ballet as pedestrians navigate streets. For the development of future pedestrian space, businesses like One New Change would need to accept a blurring of the line between public and private space, losing the ability to define their entrances with bollards. In addition public space designers, would need to be persuaded that this change is for a significant benefit. Are bollards preserving and protecting the dynamics of future pedestrian space? This research shows that traditional use of bollards inhibits the development of pedestrian space, safer streets and an enhanced experience in the City of London.

Figures

Bibliography

Beard, M. 2013. Six injured in rush hour as number 15 bus 'slams' into bollards at Cannon Street. Evening Standard, [online] 30 October. Available at: http://www.standard.co.uk/news/transport/six-injured-in-rush-hour-as-number-15-bus-slams-into-bollards-at-cannon-street-8912870.html [Accessed 4 December 2013]

Bollards and Pedestrian Movement. 2013. [e-book] London: Department for Transport. Available through: GOV.UK https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/245355/tal-2-13-bollards-pedestrian_movement.pdf [Accessed 4 December 2013]

Carmichael, Ian. 2013. Secured by Design. [Lecture to BA Architecture Year 2]. Oxford Brookes, 29 October 2013

City of London Bollard. n.d. [e-book] London: ATG Access. Available through: ATG Access http://ww.atgaccess.com/media/74310/city_of_london.pdf [Accessed: 4 December 2013]

Claim form for possession of property. 2011. The Mayor and Commonalty and Citizens of the City of London (claimants) v Persons Unknown (defendants). High Court of Justice, Queens Bench Division

Coaffee, J. 2004. Rings of steel, rings of concrete and rings of confidence: designing out terrorism in central London pre and post September 11th. International Journal of Urban and Regional Research, 28 (1), pp. 201--211

Cormie, D., Mays, G. and Smith, P. 2009. Blast effects on buildings. London: Thomas Telford Ltd

Davis, M. 2007. Buda's wagon. London: Verso

Driverless city. 2012. Building Design, 27 January, pp. 16-17.

Environmental Zones in Europe. 2002. [e-book] Stockholm: Stockholm Real Estate and Traffic Administration. Available through: Stockholm Real Estate and Traffic Administration http://46.22.123.170/xpo/bilagor/20030509053222.pdf [Accessed 4 December 2013]

Evans, M. 2012. Old cannon re-used as bollards. [online] Available at: http://people.ds.cam.ac.uk/mhe1000/bollards/cannonbollards.htm [Accessed 3 December 2013]

Graham, S. 2004. Cities, war, and terrorism. Malden, MA: Blackwell Pub.

Hamilton-Baillie, B. and Jones, P. 2005. Improving traffic behaviour and safety through urban design. Proceedings of the ICE - Civil Engineering, 158 (5), pp. 39-47. Available at: http://www.icevirtuallibrary.com/content/article/10.1680/cien.2005.158.5.39 [Accessed 3 December 2013]

Jane Fawcett (ed), 1976. The Future of the past: Attitudes to conservation 1174-1974. Edition. Thames and Hudson

Jon Coaffee, 2003. Terrorism, Risk and the City: The Making of a Contemporary Urban Landscape. Edition. Ashgate Pub Ltd

Jon Coaffee, 2009. Terrorism, Risk and the Global City: Towards Urban Resilience. Revised Edition. Ashgate Pub Co

Marshalls. 2013. Marshalls - Counter Terrorism Furntiutre. [online] Available at: http://www.marshalls.co.uk/commercial/street-furniture/products/rhinoguard-eos-seat-ferrocast-and-timber-pas-68-seating-rg-se-00001 [Accessed 4 December 2013]

Merriam-webster.com. 2013. Bollard - Definition and More from the Free Merriam-Webster Dictionary. [online] Available at: http://www.merriam-webster.com/dictionary/bollard [Accessed 4 December 2013]

Merriam-webster.com. 2013. Dragon's teeth - Definition and More from the Free Merriam-Webster Dictionary. [online] Available at: http://www.merriam-webster.com/dictionary/dragon's%20teeth [Accessed 4 December 2013]

Mike Davis, 2006. City of Quartz: Excavating the Future in Los Angeles. New Edition. Verso

Moore, R. 2011. The London River Park: place for the people or a private playground?. The Guardian, [online] 13 November. Available at: http://www.theguardian.com/artanddesign/2011/nov/13/london-river-park-floating-public-space [Accessed 4 December 2013]

St Paul's Cathedral Conservation Area. 2013. [e-book] London: City of London. Available through: City of London http://www.cityoflondon.gov.uk/services/environment-and-planning/planning/heritage-and-design/conservation-areas/Documents/st-paul's-cathedral-conservation-area-spd-march-2013-adopted-version.pdf [Accessed 4 December 2013]

Street Scene Challenge. 2008. [e-book] London: Department of Planning & Transportation. Available through: The City of London http://www.cityoflondon.gov.uk/services/environment-and-planning/planning/planning-policy/local-development-framework/Documents/Streetscene%20Challenge%20Approved%20Schemes%20update.pdf [Accessed 5 December 2013]

Thomas E. Griess (Edt). 2008. Second World War: Europe and the Mediterranean. Square One Publishers

Traffic in Towns: A Retrospective. 2013. [e-book] London: Transport in Cities. Available through: Transport in Cities http://www.transportincities.com/wp-content/uploads/2013/02/TransportinCitiesRestrospectivez_V1.0.pdf [Accessed 4 December 2013]

Vela-Mcconnell, J. 1999. Who is my neighbor?. Albany: State University of New York Press

Wynne Rees, P. 2005a. City Street Scene Manual - Part One. [e-book] London: Department of Planning & Transportation. Available through: City of London Corporation http://www.cityoflondon.gov.uk/services/environment-and-planning/environmental-enhancement/publications/Documents/Street-Scene-manual1.pdf [Accessed 4 December 2013]

Wynne Rees, P. 2005b. City Street Scene Manual - Part Two. [e-book] London: Department of Planning & Transportation. Available through: City of London Corporation http://www.cityoflondon.gov.uk/services/environment-and-planning/environmental-enhancement/publications/Documents/Street-Scene-manual2.pdf [Accessed 4 December 2013]

Wynne Rees, P. 2005c. City Street Scene Manual - Part Three. [e-book] London: Department of Planning & Transportation. Available through: City of London Corporation http://www.cityoflondon.gov.uk/services/environment-and-planning/environmental-enhancement/publications/Documents/Street-Scene-manual-3.pdf [Accessed 4 December 2013]

Appendix

a

Ian Carmichael - CPDA (Crime Prevention Design Advisor) Thames Valley Police, Oxfordshire. 2013. Bollards: St. Paul's to One New Change. Interview by Theo Jones.

[Telephone Transcript] Oxford 2.12.13

T = Theo Jones I = Ian Carmichael

T: Do you consider bollards or other Vehicle Security Barriers (VSB) essential for the securing of public spaces in the St Paul's area?

I: There are more and more shared surfaces being implemented with planters etc used to break up surfaces with obstacles. Therefore I feel traditional bollards are not essential, but it does depends on what you're protecting and the level of protection, as in what's the crime risk? There is also a community safety issue with for example children in the area.

In certain places however, there must be some perimeter delineation, maybe not necessarily bollards. As can be seen with the onion skin peeling principle – you can layer protection – a simple combination of a bund, a wall, a door and locks. With regard to the area around St. Paul's you need to delineate from the road, so that vehicles don't park or obstruct it.

T: Bollard have essentially gone unchanged since the 1700s and although there are integrated VSB, are there any fundamental changes that could be designed in that would allow for the pedestrian experience to be elevated above security, or is this the future of our cities?

I: Generally speaking, bollards are being used less. However since 9/11 in high risk areas they have increased. They are somewhat going out of fashion, it used to be parks have a set of dragon's teeth along the side, now it's less formalised, maybe a wooden barrier or rough stone - but that's my opinion. They are not including bollards in front of supermarkets as much as they used to, without them there is nothing stopping a car driving in and away. There is a major cost to adding bollards and in recent years cost has become more of an issue than security, cheaper to introduce a stepped up surface and there are even cheaper ways of doing it for example using logs.

T: Would you say there has been a substantial increase in bollards in high risk areas over the last few decades and do you consider them successful or having a significant impact?

I: To my knowledge since the mid-1970s with growing terrorism concerns (car bombs, 9/11 etc) high risk areas have had a steady increase, but I wouldn't like to see the cost benefit, however I think there has been a significant impact on people's safety. But as a consequence terrorists have learnt that it's not viable to drive in anymore, so walk into instead.

Bollards have been upgraded or extended to meet the counter terrorism standards but also street furniture can be spaced (lamp posts, benches etc.) and designed to the vehicle stopping requirements, but this is expensive.

T: What is your opinion on their impact on the experience of being a pedestrian? Do you think they create a sense of security?

I: Personally, I would much rather see a bollard at the edge of a road vs. a fence that you have to walk round. I wouldn't find them obtrusive, but things can get rather cluttered. I think in the vast majority of busy city streets, bollards are mainly for road safety issues, on junctions or corners and generally a highway engineer has decided they need to be there.

b

Alexander Williams MA (Cantab), LCGI - Counter Terrorism Security Adviser & Architectural Liaison Officer, City of London Police. 2013. Bollards: St. Paul's to One New Change. Interview by Theo Jones.

[Email Transcript] Oxford 3.12.13

T = Theo Jones A = Alexander Williams

T: Do you consider bollards or other Vehicle Security Barriers (VSB) essential for the securing of public spaces?

A: Bollards can be an important tool for securing public spaces. The bollards themselves aren't the starting point of course; we start by identifying a problem and then seeking ways of mitigating it. If the problem is 'people driving their vehicles onto my footpath and damaging the flagstones' or 'people driving their vehicles onto my footpath and blocking it, inconveniencing or endangering pedestrians', simple bollards may be the least intrusive, least aesthetically-displeasing way of keeping vehicles off. If the problem is 'people driving their vehicle-borne improvised explosive device at my building or crowded place, and detonating it' then a bollard that meets the relevant British Standard for crash-resistance (Counter terrorism bollard BS PAS68) may be the most appropriate way of creating physical stand-off or protecting an identified area for the same reasons. There are alternative pieces of hardware in all the above cases, but they tend to take up more space, can be harder for pedestrians and vehicles to negotiate, and may require deeper foundations, which is a major problem in places like the City of London, where, often, services are only a few centimetres below the surface. So, in certain cases, they may indeed be essential.

T: Bollards have essentially gone unchanged since the 1700s and although there are integrated VSB, are there any fundamental changes that could be designed in that

would allow for the pedestrian experience to be elevated above security or is this the future of our cities?

A: I don't accept the implied conflict between the pedestrian experience and security as provided by bollards. I do know that recent movements in bollard design have addressed aesthetics, safety (eg. visibility for visually-impaired people), shallow mounting (for the reasons mentioned above) and, in the case of crash-rated bollards, the ability to stop more with less metal, less depth of foundation, and less aesthetic compromise. This last has reached the point where it is not possible to tell the difference, just by looking at it, between a crash-rated bollard, and any other.

As long as you are considering the pedestrian experience, you may also wish to look into the idea, backed by recent research that in some cases bollards can facilitate pedestrian movement; crowds of pedestrians apparently automatically channel themselves into streams or lanes through bollarded areas at busy times. As a London commuter, purely anecdotally, I think there's something to that.

T: Would you say there has been a substantial increase in bollards in the St. Paul's area over the last few decades and do you consider them successful or having a significant impact?

A: The implementation of the City of London Traffic and Environment Zone (TEZ) in the early 1990s involved a large number of road closures and traffic redirections, and a number of these were marked by the installation of bollards for demarcation and deterrence. Their success depends very much on what they were intended to do in each location in the first place, but I am not aware of any areas where they are especially unsuccessful.

I think they have had an impact as part of the branding of the City of London; between the badged street-signs, and the unique red, white and black bollards, you always know when you are in the City, and when you have left it.

T: What is your opinion on their impact on the experience of being a pedestrian? Do you think they create a sense of security?

A: In my experience in the City of London – speaking as a pedestrian – their impact is that they tell me where I am, keep vehicles from (mistakenly) turning down a closed street where I can reasonably expect not to have to dodge traffic, and keep vans and lorries from mounting the kerb when taking tight corners in our Roman/medieval street layout. In my professional capacity, I also know why crash-rated bollards have been installed in various places, and what their capabilities are. In these senses, they create, for me, a sense of security. I very much doubt that people used to spending time in the City notice them enough for them to create a sense of anything much.

Don't get me wrong; I'm not some major bollard fan, but the whole question really starts

at the other end of the telescope. Stop vehicles coming onto the footway (including for purposes of crime and terrorism), change the way people behave in the built environment (motorists and pedestrians) and you can lose the bollards.

C

Peter Bennett – CPDA (Crime Prevention Design Advisor) Thames Valley Police. 2013. Bollards: St. Paul's to One New Change. Interview by Theo Jones.

[Email Transcript] Oxford 3.12.13

T = Theo Jones P = Peter Bennett

T: Do you consider bollards or other Vehicle Security Barriers (VSB) essential for the securing of public spaces?

P: Yes but only after carrying out a site security assessment. We would use our Counter Terrorism Security Advisor who apply a matrix to assess areas and sites. Most involve assessing Threat, Vulnerability and Risk.

That is from a serious crime/terrorist viewpoint but bollards are also useful from a normal highways traffic management and crime prevention point of view. The assessment process is pretty much the same.

T: Bollard have essentially gone unchanged since the 1700s and although there are integrated VSB, are there any fundamental changes that could be designed in that would allow for the pedestrian experience to be elevated above security or is this the future of our cities?

P: Not sure I totally agree with this. The security standard for bollards is PAS68 but of course they don't have to look like a bollard. The business part of the bollard can be covered in anything. Different boroughs in London have their own bollard design but if it needs to be to a security level the inner would be the normal tested bollard. They can also be disguised as planters, seats or almost anything.

The need for bollards depends a lot on the general layout. If vehicles can't get near to buildings or only arrive at an acute angle with no possibility of speed then anti ram protection might not be needed.

T: Would you say there has been a substantial increase in bollards in high risk areas over the last few decades and do you consider them successful or having a significant impact?

P: Yes but only because the Vehicle Borne Improvised Explosive Device has become the terrorist weapon of choice. As seen in Northern Ireland, Iraq, etc etc. Interesting

to look at most of the embassy attacks over the last 20 odd years. All or most have involved VBIEDs and have their impact has been governed by the amount of protective security. No bollards or security measures means greater impact.

T: What is your opinion on their impact on the experience of being a pedestrian? Do you think they create a sense of security?

P: I think most people don't really notice them as they don't restrict pedestrian movement but if they do realise then they would feel more secure.