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ORIGINAL ARTICLE

Urban design frameworks, user activities and public tendencies in Brisbane's urban squares

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Abstract
This research seeks to demonstrate the ways in which urban design frameworks stimulate and encourage social activities in urban public squares. We observed two public squares in Brisbane using a framework of design factors identified from existing literature to examine how such a framework correlates with user activities and engagement. The observation identifies patterns of public behaviour suggesting clear links between the design factors and the public's engagement with them. The results show that activated areas of social gathering draw people in, and the busier a space is, both the frequency and the duration of people lingering in the space increase. The study suggests that simply providing respite from the urban environment (and/or weather conditions) does not adequately encourage social interaction and that people-friendly design factors can instigate social activities. One of the primary conclusions of this study is that members of the public in Brisbane are both actively and passively social and often seek out locations where people-watching and being around other members of the public are facilitated and encouraged. The research provides the basis for further debates on what public space in Brisbane should cater for and how it could better contribute to its urban context.

Keywords Urban design framework · Urban square · Public space · Public activities · King George Square · Queens Park

Introduction

Urban public space supports wide ranges of uses (and users). Urban designers make judgements regarding appropriate public environments that both engage the public and allow all activities to proceed uninhibited. It is widely considered that for a designer to successfully respond to the needs of the public, a site must respond to the local climate, surrounding context, historical, social and cultural influences as well as the concerns about security and public safety measures. Much has been written about the design factors that contribute to "good" public space. As history tells us, however, many of the design frameworks set out for public spaces in traditional cities are no longer considered to be appropriate for contemporary urban spaces. For instance, the art-centric ideals by designers for public spaces in the nineteenth century made no real reference to the users or their requirements but rather focused on aesthetic and compositional characteristics of the site (Sitte 1965; Jarvis 1980). Alternatively, but still with great importance placed on aesthetic features, authoritative figures such as rulers employed design frameworks for social control and conditioning (Roeck 2004). This framework, unlike the art-centric approach, focused heavily on instilling ideals and values in the public. This was achieved through methods of conditioning and control, such as using scale, ornamentation and geometry to place importance on central, civic and religious buildings, and subsequently, implied power and importance (Roeck 2004).

Perhaps most pertinent for today's designers is the shift in attitudes towards people-friendly urban design (Jarvis 1980). These people-friendly frameworks for design, including the works of Alexander (1964, 1965), Alexander and Poyner (1970), Carmona et al. (2003), Carr et al. (1992), Crankshaw (2008), Gehl (1971), Jarvis (1980), Lynch (1960), Sternberg (2000), Tibbalds (2000) and Whyte (1980), all focus on the ways in which people can be encouraged to engage with and linger in public spaces designed for gathering, socialising

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and observing urban life with factors such as the human scale, permeability and shelter from the elements. These frameworks cannot, however, provide all encompassing sets of rules for the design of public spaces everywhere. Ultimately, the most significant factors contributing to the use of public spaces are locally distinctive social, cultural and climatic influences (Gehl 1971; Lynch 1960). Prominent research on the design of urban space considers the occurrences of social activities to be the best indication of "successful" public space (Gehl 1971; Tibbalds 2000). Gehl (1971) considers that to a certain extent, and within the confines of the external contextual factors cited above, the frequency, duration and quality of social interactions can be influenced considerably by design factors employed by public spaces. This implies that not only the application of urban design framework factors becomes a key concern in delivering successful urban public spaces, but it is equally important to identify how such factors respond to the local urban contexts.

Australia does not have a long history of development of urban settlements. Yet some cities like Brisbane boast a fine provision of city squares that were built to respond to the local needs over time. Although there is a growing interest among scholars in investigating urban squares in Australian cities, only few studies have examined the role of urban design factors in determining public use of urban spaces. Through observation of the urban design factors employed in Brisbane's urban squares and public activities occurring in them, this research examines locally distinctive patterns of behaviour and the various levels of performance that each of the identified design factors achieve in these public spaces. The focus of this study is to find correlations between specific design factors and the public of Brisbane's engagement with them. The research demonstrates the way in which urban design framework factors, individually and in various well-considered arrangements, stimulate and encourage social activities in urban public spaces of Brisbane. The research also seeks to better understand contemporaneity of historic urban squares and the emerging use patterns in the background of recent redevelopment and spatial transformation of major public spaces.

Urban design framework factors for public space

Aesthetics, social control and the design of public space

The proliferation of ordered, gridded cities and urban squares in nineteenth century America formed a hostility between designers and planners. Camillo Sitte notably objected to the rigid and formulaic planning of cities of the time in *City Planning According to Artistic Principles* (1965) with his compositional ideas on how public space should be designed. Sitte's principles aimed to provide beauty and artistic quality to urban spaces. A number of rules outlined in his book defined the way in which users should be positioned to admire both art and compositions of surrounding buildings (Sitte 1965). Similarly, the works of Frederick Gibberd (1953) focused on the composition of cities in an exclusively aesthetic capacity (Jarvis 1980). In an essay, *The Design of Residential Areas*, Gibberd (1953) outlines the way in which city streets should be composed to create pleasant urban spaces. The art-centric ideals by designers for public spaces, however, failed to make any reference to the users or their requirements but rather focused on aesthetic and compositional characteristics of the site (Jarvis 1980). While this design framework focused primarily on aesthetic qualities of urban spaces, Roeck (2004) suggests a different framework that employs these same aesthetic frameworks but for the passive control and conditioning of its public users.

Bernd Roeck, in *Early Modern Architecture: Conditioning, Disciplining, and Social Control* (2004), outlined ways in which the language of buildings (and spaces) has historically contributed to social control (Roeck 2004). Citizens were accustomed to their domestic architectural scale, and thus, the contrast between small and narrow spaces and the vast interiors of such buildings as cathedrals impressed them (Roeck 2004). Likewise, the scale of public outdoor spaces has been subjected to a change in societal expectations. The narrow alleyways of historical cities are placed next to sprawling urban squares and boulevards (Roeck 2004).

Impressing onlookers may be considered a simplistic and superficial function of architecture. However, particularly historically, the more heavily ornamented and "beautiful" a building was the better chance it had of impressing spectators and even other rulers and nations (Roeck 2004). The intention of "beauty" was quite often one manifested in symmetry and clear geometric patterns. These principles ensured that architecture was viewed as part of the ruler's intention and thus the ruler's power was legitimised. For instance, primary streets were ordered to lead to the palace or religious buildings, authenticating their power—the planned city illustrated not only the central ideals that were intended for the people (conditioning citizens to consider imperial, civic and religious ideologies as central to society) but also the ruler's power and ability to regulate (Roeck 2004).

Historical cities have often been considered to communicate strong cultural values and, instil respect and devotion to the ruler or founder. The "ideal" city was one of a monument to its founder, through the use of order and visual tributes (generally in the form of art and architectural symbols) (Roeck 2004). The design strategy of "ordering" space is not one confined to history, it goes without saying

that order is utilised by designers frequently so that instead of chaotic and meaningless urban spaces, it ensures that they can become knowable and predictable (Lofland 1985). Cities use the same mechanism that humans have always used to make their world more liveable—order (Lofland 1985).

Both the social control design and art-centric design frameworks have historically used aesthetic design factors. For the purposes of this study, social control design factors are considered to include those employed by the compositional and artistic designers of art-centric public spaces. While some of these factors' influence on contemporary citizens may have been diminished by new technologies, and changing values, (such as architectural technologies allowing sky-scrapers and less emphasis in contemporary society on religion and monarchy) perhaps the more significant shortcoming of this practice of designing public space is that it does not consider the comfort or free-will of the inhabitant other than attempting to suppress it (Roeck 2004).

Urban design and people-friendly public space

Jarvis (1980) outlines urban design frameworks that make little reference to visual and aesthetic sensibility but places great focus on the experiential and behavioural matters relating to urban spaces, their physical layouts and surroundings. In defining "people-friendly" urban design, he asserts that current literature provides "clear evidence of the possibilities for an urban design that starts from and measures its success by use and activity in places rather than physical form alone" (Jarvis 1980, p. 64). Carmona et al., in *Public Places, Urban Spaces: The Dimensions Urban Design* (2003), describes urban design as a broad understanding incorporating not only the physical and visual elements of public space but also as an "integrative" and "integrating activity" (Carmona et al. 2003). Kevin Lynch, in *The Image of the City* (1960) outlines the way in which people's perceptions are not only connected to the physical elements of a space. According to Lynch (1960, p. 1) "nothing is experienced by itself, but always in relation to its surroundings, the series of events leading up to it, the memory of past experiences". He further argues that "we are not simply observers of this spectacle, but are ourselves a part of it, on the stage with the other participants" (Lynch 1960, p. 2). Christopher Alexander in *Notes on the Synthesis of Form* (1964) and *A City is not a Tree* (1965) identifies the need to allow multiple, and diverging cross-connections of places, people and their activities (Alexander 1964, 1965; Jarvis 1980). Alexander's analysis of the way in which people use urban space is not described as the "needs" of people, but rather the way in which people have "tendencies" to behave in particular ways in particular contexts (Alexander 1964, 1965). "Tendencies", for Alexander, are observable patterns of behaviour (Jarvis 1980).

People-friendly urban design factors

Creating people-friendly public spaces requires a meticulous consideration of urban design factors that are highly supportive of public activities in their design, development and management. This section identifies and outlines eight people-friendly design factors relevant to this research, referring to some eminent scholars in the field (see Table 1). The theoretical explanation of these factors come from the works of Lynch (1960), Whyte (1980), Tibbalds (2000), Gehl et al. (2006) and Crankshaw (2008). These factors, along with the social control design factors previously mentioned, serve as an analytical framework for this research and are used to discuss research findings.

Activities in public space

In *Life Between Buildings: Using Public Space* (1971), Jan Gehl categorises outdoor activities into three types: necessary, optional and social. Gehl (1971) classifies any activity that participants have no choice but to undertake as a "necessary" activity. These activities could include travelling to work or school, running errands and waiting, whether for a bus or a friend or other such essential activity (Gehl 1971). "Among other activities, this group includes the great majority of those related to walking" (Gehl 1971, p. 143). These types of activities are influenced little by physical factors, such as the weather or the design of public space. While inclement conditions may slow the participant, and take them longer to complete, the activities will continue in almost all circumstances (Gehl 1971).

When exterior factors are ideal or suitable, optional activities take place (Gehl 1971). These activities are described by Gehl (1971) as those "participated in if there is a wish to do so and if time and place make it possible" (p. 143). Optional activities (generally those that are pleasurable) may include taking a leisurely or sightseeing walk, reading or sunbathing (Gehl 1971). Children playing, conversations, communal activities and "people-watching" (defined by Gehl as passively seeing and hearing other people) are all classified as social activities. These activities are generally formed because of the other two categories of activities (Gehl 1971). Gehl identifies that even passive social activities, such as being in the presence of other people, can be very appealing.

Research method

Currently, Brisbane has many public spaces where people perform a range of activities. In undertaking this study, we have identified two public sites in the Brisbane CBD, namely, King George Square and Queens Park (Fig. 1).

Table 1 People-friendly urban design factors and their explanations

People-friendly urban design factors	Theoretical underpinning
Human scale	Human scale can be achieved by reducing the overall scale of the public space, but more commonly by introducing design elements such as awnings or colonnades, that reduce the vastness of a space for the user and even shelter the user from the elements (Tibbalds 2000; Whyte 1980)
Sight lines	Visual connections between spaces, whether they are within the bounds of the public space or externally to them, assist in way finding, encourage exploration and provide visual interest (Tibbalds 2000)
Activated edges	Sidewalks and edges of buildings should be treated as social spaces (Crankshaw 2008; Gehl et al. 2006) More than pedestrian thoroughfares, street and building edges require activation and vitality to increase social interaction (Crankshaw 2008; Tibbalds 2000)
Shelter	Shelter from weather may not only increase the efficiency and ease with which people undertake necessary tasks but may also increase the frequency and extend the duration of people using space for optional uses (Tibbalds 2000) Thermal comfort is required for people to linger in a public space (Whyte 1980; Crankshaw 2008)
Seating	Places to sit down comfortably need to be well considered (Whyte 1980) Seating areas should be configured to provide both prospect and refuge (Whyte 1980) Arrangements of these elements should be clustered allowing people to look at one another, encouraging conversation (Crankshaw 2008)
Engagement	It is important to cater for the "wants" of potential inhabitants (Tibbalds 2000) Whyte (1980) speaks extensively about this and considers a "third element", or some type of spectacle to be simultaneously observing while also socialising with those around you, as "triangulation"
Legibility	Urban spaces need to be always comprehensible and legible for multiple types of users (Tibbalds, 2000) Legibility should not be solved using signposts, but clearly demarcated spaces and edges of spaces for different uses (Tibbalds 2000) Public spaces need to be accessible 24 h a day and hence, requirement for lighting of public spaces should be a consideration (Tibbalds 2000) A distinctive and ordered environment helps the resident orient himself, place parts of the city into coherent categories, and acquire a sense of security that he can relate to the surrounding urban world (Lynch 1960, p. 6)
Permeability	Permeability of pedestrian routes connecting streets and public spaces should be maintained (Crankshaw 2008; Tibbalds 2000) Converging routes of travel can make for more interesting and social spaces (Tibbalds 2000)

Fig. 1 Brisbane City map showing the case study sites. *Source* Google Earth

These sites are well used by the public and exhibit various contextual factors that influence the activities that take place there, as well as the way in which they have been designed and re-designed over their history. We used observation as a tool for data collection from the chosen sites. First, using the urban design factors identified from the literature review, we made a series of casual observations to examine what design factors are present. This was followed by structured observations of public activities occurring in the sites during different times of a day.

Case study site 1: King George Square

The first of two case study locations is King George Square (Fig. 2). This site has been selected due to its high profile socially and culturally. King George Square is the forecourt for Brisbane's City Hall and has throughout its history provided a "gateway" from the northern parts of Brisbane to the CBD, originally in the mode of vehicular traffic, and more recently through public transport and pedestrian traffic.

The square was first built in 1930, with a modest amount of open space developed in front of the City Hall. It was previously known as Albert Square but following the death of King George V in 1936, the square was renamed King George Square in honour of the king. Since its establishment, King George Square has been subject to multiple redevelopments (Newell 1997). The square was widened to include parts of Albert street in 1936. A larger square was conceived in 1969 with the acquisition of the land opposite the City Hall by City Council and the demolition of the original stairs of the City Hall (Fig. 3). Around the same time the square was closed off to vehicular traffic to facilitate pedestrian movement (National Library of Australia 2012; Newell 1997). The most recent refurbishment

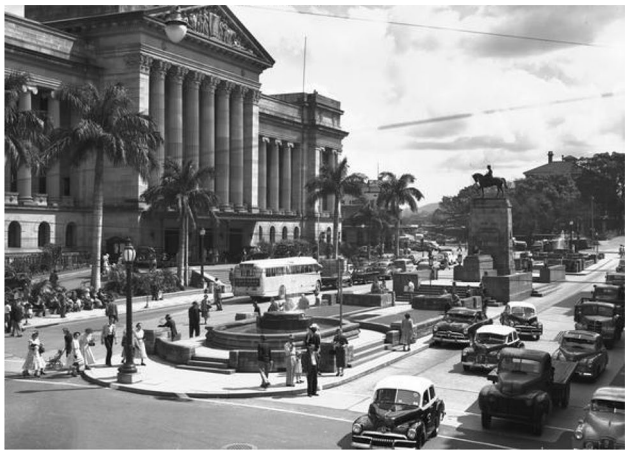

Fig. 3 Brisbane City Hall with original stairs. *Source* Hurley (2012)

of King George Square was completed in 2009, which was designed by UrbisJHD, winning the national design competition (McMahon 2009).

Case study site 2: Queens Park

Queens Park is the second case study area chosen in this study. It is only a few blocks from King George Square and sits between a cluster of historic buildings (Fig. 4). The open space uses strong, formal geometry presumably to highlight the importance of these imposing structures. Named for Queen Victoria, Queens Park is originally erected as a forecourt to the adjacent Executive Building. The park was previously the site of penal settlement engineer's cottage and the lumberyard erected in c.1825 (Queensland Government 2016). The site was developed as a public space between 1905 and 1962, following

a **b**

Fig. 2 King George Square: **a** aerial view and **b** view from east during Christmas. *Source* Google Earth and authors

Fig. 4 Queens Park: **a** aerial view and **b** view from northwest. *Source* Google Earth and Queensland Government (2016)

several stages of development. The original gardens were much smaller than the square that exists today due to the site previously housing the Church Institute and Synod Hall buildings at the northern corner. In 1962, the park was enlarged with the demolition of these buildings (Queensland Government 2016). Government records show that a bronze statue of Queen Victoria was erected in mid-1906 to express Queensland's loyalty to the British Empire (Queensland Government 2016). In 1917, a Krupp field gun was placed in the park, which was gifted by King George V. at the request of Thomas Joseph Ryan, the former premier of Queensland. The statue of Mr. Ryan himself was installed in the northwest corner of the park in 1925. With all these artefacts and early establishment date, Queens Park seems to bear greater historical significance as compared to King George Square (Figs. 5, 6).

Site observations

The first episode of observation took place casually to examine the design factors—both social control and people-friendly—and locate and record them at each of the case study sites. We used maps, photographs and diagrams for this purpose. We also looked at the site surroundings to locate the movement of people within a larger urban context.

Structured observation of public activities in the case study sites included three hour-long observations per site on a weekday during office hours (8:20 to 9:20 am), lunch time (12:40 to 1:40 pm) and after dark (6:20 to 7:20 pm). The sites were observed in October. The various types of activities that occur with the site and its design elements or features were mapped and recorded graphically. The mapping also highlighted patterns of movement and the user's engagement during such movements within and surrounding the case study sites. We then looked for patterns and "tendencies" of the users in the visual data, closely analysing

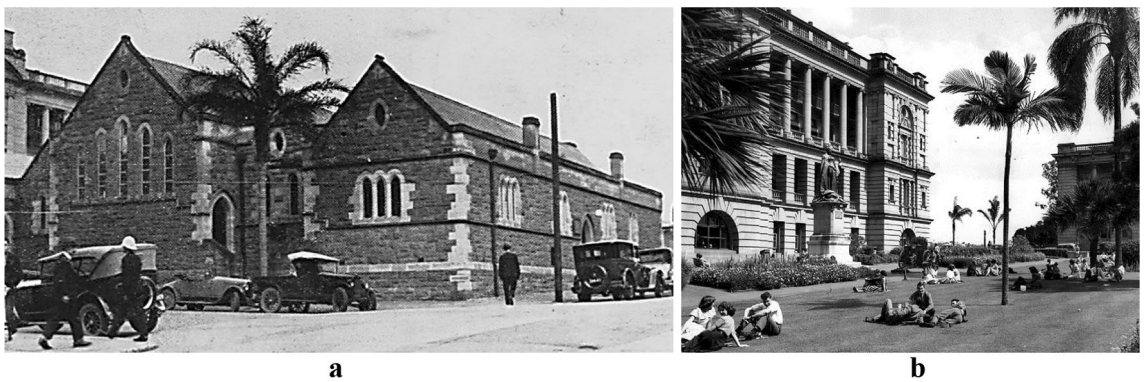

Fig. 5 Queens Park: **a** Church Institute and Synod Buildings in 1930 and **b** the park, Queen's statue and the Executive Building in 1949. *Source* State Library of Queensland (2003, 2010)

a b

Fig. 6 Queens Park: **a** view from south-east showing Treasury Building and **b** the statue of Queen Victoria. *Source* Queensland Government (2016)

their engagement with the identified design factors. In order to determine the tendencies, the users and activity types were classified and analysed at both sites for the three different time durations. While we looked for the patterns in public activities, the final goal was to evaluate the design factors in defining their contribution to fostering social activities.

Urban design factors and public activities in King George Square

Physical features and urban design factors

King George Square measures roughly 80 m × 80 m and is divided into several pockets of open spaces. While a large (central) part of the square has been left clear without any structures, the square contains some built elements, including benches for sitting, sculptures, entry kiosks to underground bus stop and a double storey structure with a restaurant and a viewing platform. The built structure with the restaurant forms one of the major elements of the square. This area can be considered as the "activated zone" that provides the constant "liveliness" that public spaces often require to draw people in (Fig. 7). A practical benefit of this structure is also that people are sheltered from the heat and rain which enables optional and social activities to proceed unhindered by occasional inclement weather and Queensland's (sometimes harsh) sub-tropical climate.

King George Square's current design does not in itself utilise social control design factors; however, the historical buildings that surround it do contribute to the space's aesthetic and spatial qualities due to their intricate detail and historical built fabric. The City Hall is the primary feature of the square both aesthetically and culturally (Fig. 7b). There appears to be an obligatory reverence for the historical civic building given the setbacks from it (no street furniture sits against it) and views from the full extent of the square (and surrounding streets) are maintained towards the building's imposing, yet beautiful, sandstone façade. The building is commanding due to its scale but also the relative scale of the building's features such as the Corinthian columns supporting the elaborately carved tympanum (Newell 1997).

The square in its design exhibits numerous people-friendly urban design factors. For example, the square utilises leafy trees to shelter and "soften" areas for human gathering and resting. The various clusters of benches sit in configurations allowing people to sit in the shade while also observing the greater square area and passers-by (Fig. 8). These areas appear to have been (re)designed with the human scale in mind, as often benches are spaced carefully to allow conversations and comfortable gathering of groups varying in sizes. These spaces encourage people to linger within the square, providing passive engagement with others.

Table 2 outlines the urban design factors examined in King George Square. The design factors are further analysed in the description of public activities.

Public activities

In order to understand the context in which people go about their daily activities in King George Square, a greater urban context and primary pedestrian travel paths are important to consider (Fig. 9). Two major pedestrian connections have

Fig. 7 King George Square: **a** activated zone of restaurants and bars, **b** Brisbane City Hall and **c** aerial view showing the built structure with restaurants and viewing platform. *Source* Authors and Flickr: ORIOLUS84

Fig. 8 King George Square's people-friendly seating areas. *Source* Authors

been identified for King George Square. The first connects the busy Queen Street Mall to Roma Street Station, and the other connects it to the Roma Street Parklands and suburbs north of the city. Thus, King George Square acts as a gateway to the CBD, making the site a bustling area throughout the working week. The square also provides access to a major underground bus station, with two entrances at the South-Eastern edge of the site.

Observations show that during the busy morning "rush hour", King George Square consisted largely of users walking to or from the Queen Street Mall and bus station precincts. The configuration of the site appears to "funnel" pedestrian traffic from the Roma Street precinct and surrounding office buildings into the Queen Street Mall shopping precinct. Generally, most people travelling to work walked quickly and directly across the square. The

Table 2 Outline of urban design factors analysed in King George Square

Urban design factors	What	Where
Social control design factors	Scale and symmetry	City Hall
	Material	City Hall
	Beauty and ornamentation	City Hall, nearby church building
People-friendly design factors	Human scale	Site sculptures and artefacts, benches
	Sight lines	Across the square
	Activated edges	Activated zone, entry to the City Hall
	Shelter	Activated zone, benches
	Seating	Benches
	Engagement	Activated zone, site sculptures and artefacts, benches
	Legibility	Entire square
	Permeability	Across the square, NE and NW edges of the square

Fig. 9 King George Square context and travel path diagram. *Source* Google Earth

occasional tourist was observed photographing City Hall or the statues that occupy the square. Even at this time of day, the "activated zone" appeared lively and energetic (Fig. 10a). Those who were not rushing off to work would occasionally sit down. Those sitting were observed to be people-watching, or as Gehl (1971) would classify them, "passively socialising". Several people undertaking these optional and leisurely activities lingered in the space for some time—some remained there for more than the hour-long site visit.

The pedestrian traffic considerably increased at lunch-time, with a greater number of tourists, shoppers and diners. The travel paths become less direct to become more "meandering" in nature (Fig. 10b). This change was likely a result of a more casual engagement by users who were perhaps on their lunch break. The historical surroundings appeared to be popular with tourists as many were observed photographing in the square. Yet the main attraction was the open space and the energetic dining experience provided in the "activated zone". The activated zone was full of life at this time of the day. Not only did this provide leisure and entertainment for the patrons of the restaurant, but appeared to draw others, who were not directly engaging with the businesses, but who were happily congregating on the edges of the establishments. The square was busy and social, with many examples of gatherings of people of various sizes engaging in people-watching and active interactions and conversations (Fig. 11).

Fig. 10 King George Square user engagement: **a** 8:20–9:20 am, **b** 12:40–1:40 pm and **c** 6:20–7:20 pm. *Source* NearMap and authors

After dark, King George Square's popularity is barely affected (Fig. 12), with the entire square and enclosing buildings well-lit, forming an attractive and dynamic backdrop for the social activities. While the activated zone continues unhindered by the time of day, the activities taking place on the open square itself are notably different. The much lower levels of pedestrian through traffic contribute to a much quieter and relaxed space, as well as groups of people being generally a minimum of two or three. Few single users were observed at this time of night. While some groups sat on the benches that were popular during the sunny daylight hours, most were observed standing and sitting out in the open square. With the sun down, and little pedestrian traffic cutting through the square, this location now became a space for stopping and chatting. The space generally is a social one in the evening, with only few necessary activities taking place—the space has a particularly leisurely feel (Fig. 10c).

Fig. 11 King George Square user activities during the daytime: **a** visitor to the square, **b** busy day with local events and **c** street busker. *Source* Authors

Fig. 12 King George Square well-lit at night. *Source* Timesauce (2011)

Urban design factors and public activities in Queens Park

Physical features and urban design factors

Queens Park measures roughly 70 m × 70 m and is generally undivided with no structured (i.e. built) encouragement for people to converse, such as clustered benches or protection from the weather, except for the statue of the queen and other historical artefacts. The geometric pathways converge in front of the queen's statue, which provides a simple network. There is, however, no provision for gathering at this intersection for meeting or assembly. Furthermore, excluding the small and lacklustre adjacent stretch of shop frontage, no activated edges exist to boost pedestrian traffic, interest and social activities. On top of this, three of the four edges of the square are bound by busy roads with no substantial division between the noise of the vehicles and the open lawn.

The historical buildings surrounding Queens Park are imposing both in their appearance and scale and provide a picturesque backdrop. The buildings are, while vast and imposing to the human user, impressive aesthetically and showcase incredible craftsmanship that is welcome relief from the steel, glass and concrete outlook of the urban

context more generally. Sight lines towards the buildings not only allow for observation and enjoyment of the historical façades, but also allow legibility of the whole precinct. Generally, there are no references to the human scale in the design of the historical buildings except for the more recently constructed Oaks Casino Towers building, which has an awning covering the footpath. This awning, however, is across the road from Queens Park and offers no immediate refuge from the weather to users (Fig. 13). The symmetry of the park, with pathways directing pedestrian travel and sight lines towards the Executive Building and the queen's statue create a strong sense of order and the "ruler's" intention within the space. Bench seats, street lamps and trees are also placed geometrically and are generally evenly spaced.

Despite Queens Park providing a rare expanse of lawn for people to spread out on and break away from the busy urban environments that surround it, the space provides very few people-friendly design factors. Perhaps the most significant success of the site is the open lawn. The lawn achieves a few people-friendly design goals in with one simple strategy. By providing a lawn in this urban context, users can utilise it in a way that suits them, due to its flexible nature. What the lawn does not provide, however, is clear purpose in terms of the intended use of the square. One could argue that the space indicates two very different functions for users to engage with, a casual lawn to sprawl out on, versus a formal and demarcated route for travel.

Table 3 outlines the urban design factors examined in Queens Park. The design factors are further analysed in the description of public activities.

Fig. 13 Queens Park with Oaks Casino Towers in the background. *Source* Authors

Public activities

The Context and Travel Path Diagram (Fig. 14) shows major pedestrian travel routes connecting the south side of Brisbane River with Brisbane Square and Queen Street Mall beyond (to the North-East). Similarly, George Street shown on the North-East edge of Queens Park forms the connection from the South-East peninsular of the Brisbane CBD, known as Gardens Point, to Queen Street Mall. Parallel to George Street, the same pedestrian travel route takes place along William Street; however, Queens Park provides a shortcut to this route.

Queens Park was almost deserted the morning the site visit was undertaken (Fig. 15a). Throughout the hour-long visit, only one social activity was observed in the square which consisted of 10–15 people in a guided group sightseeing. They gathered in front of the Executive Building briefly, presumably pausing to discuss the history of the building and surrounding area. Other than this event, and a few tourists wandering through to take photos of the statue of Queen Victoria, little use of the space was observed. At

Table 3 Outline of urban design factors analysed in Queens Park

Urban design factors	What	Where
Social control design factors	Scale and symmetry	Executive building, treasury building, geometric pathways
	Material	executive building, treasury building, SGIO building
	Beauty and ornamentation	Executive building, treasury building, SGIO building
	Order	Queens statue and the radial pathways originating from it
People-friendly design factors	Human scale	Oaks Casino Tower, sitting areas
	Sight lines	Across the square, radiating pathways to the statue
	Activated edges	None
	Shelter	Benches
	Seating	Benches
	Engagement	Open lawn, site sculptures and artefacts, benches
	Legibility	Entire park
	Permeability	Park as a shortcut although it is bounded by roads on three sides

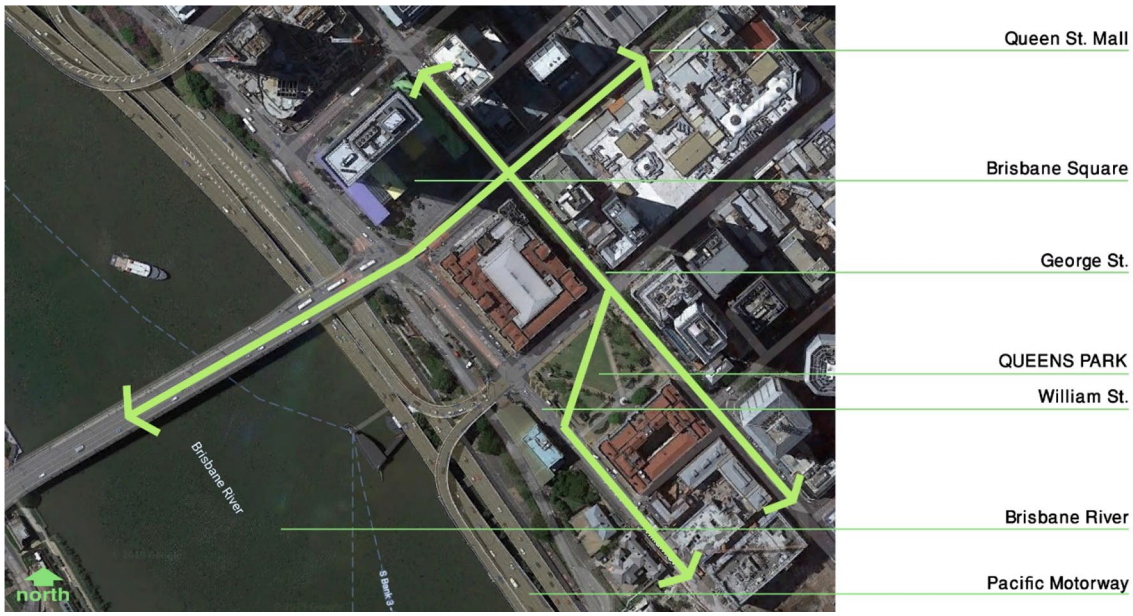

Fig. 14 Queens Park Context and Travel Path diagram. *Source* Google Earth

this time of the morning, almost the entire lawn in the square was in shade due to Oaks Casino Towers casting a large and ominous shadow. This did, however, create a pleasant environment in the square as the day was cloud-free, and hot. The site is positioned close to the Brisbane River and as such receives pleasant breezes and a good view of the sky (which is rare in many urban environments, due to tall, obscuring buildings). Despite these pleasant conditions, only a few lone users sat (and slept) on the benches to gain respite from the bustling city in peak hour.

It was observed that most of the pedestrian traffic passing by the site was on the opposite side of George Street connecting Gardens Point to the Queen Street Mall precinct. At lunchtime the user engagement with Queens Park picked up considerably as pedestrian traffic was drawn through the space, presumably being used as a shortcut between office buildings and the various food outlets situated in the Queen Street Mall (Fig. 15b). This liveliness did not, however, linger in the space. The truly active areas were the footpaths surrounding the square and, particularly, that on the opposite side of busy George Street. The roads themselves were busy too. The traffic noise was substantial and was accented by the frequent sounding of horns and occasional siren. At this time of the day, the shade was minimal across the square. While there are a number of trees, the majority are palms, which provide minimal shade. The other trees were also sparse in foliage (presumably a seasonal occurrence). Office workers were observed resting under the few patches of shade, sitting and laying out on the grass. The occasional pair of workers would sit together for lunch; however, social activities were generally inert and relaxed, unlike much of what was observed at King George Square. The benches were frequently used and sometimes for reasonably long periods of time, but these were generally lone users. A quieter corner of the square adjacent the Old Queensland Museum was used by a group of people for a small picnic for which they had brought their own table and folding chairs. Other than a few tourists wandering through, the general users of the space were workers presumably on their lunch break. Many of the workers were observed speaking on their phones or smoking which would indicate that the space is used for activities that cannot take place indoors. Those that did use the space for leisure (all of which were either individuals reading, or pairs quietly conversing), however, did linger in the space for considerable time. On average, those that were observed sprawling on the lawn stayed between 30 and 60 min (Fig. 16).

After dark Queens Park was observed to be almost completely deserted, with only the occasional pedestrian cutting through the park (Fig. 15c). No optional or social activities were observed in the space. Particularly after dark, people appeared to be wary of their surroundings and others, particularly if walking alone. This is perhaps a natural response to a dark and deserted urban space due to the perceived danger of criminal or deviant behaviour. Unlike King George Square, which was well lit and bustling with activity after dark, Queens Park is quiet, deserted and eerie due to the lack of activity within it and in the surrounding area (except for pedestrians nervously hustling by).

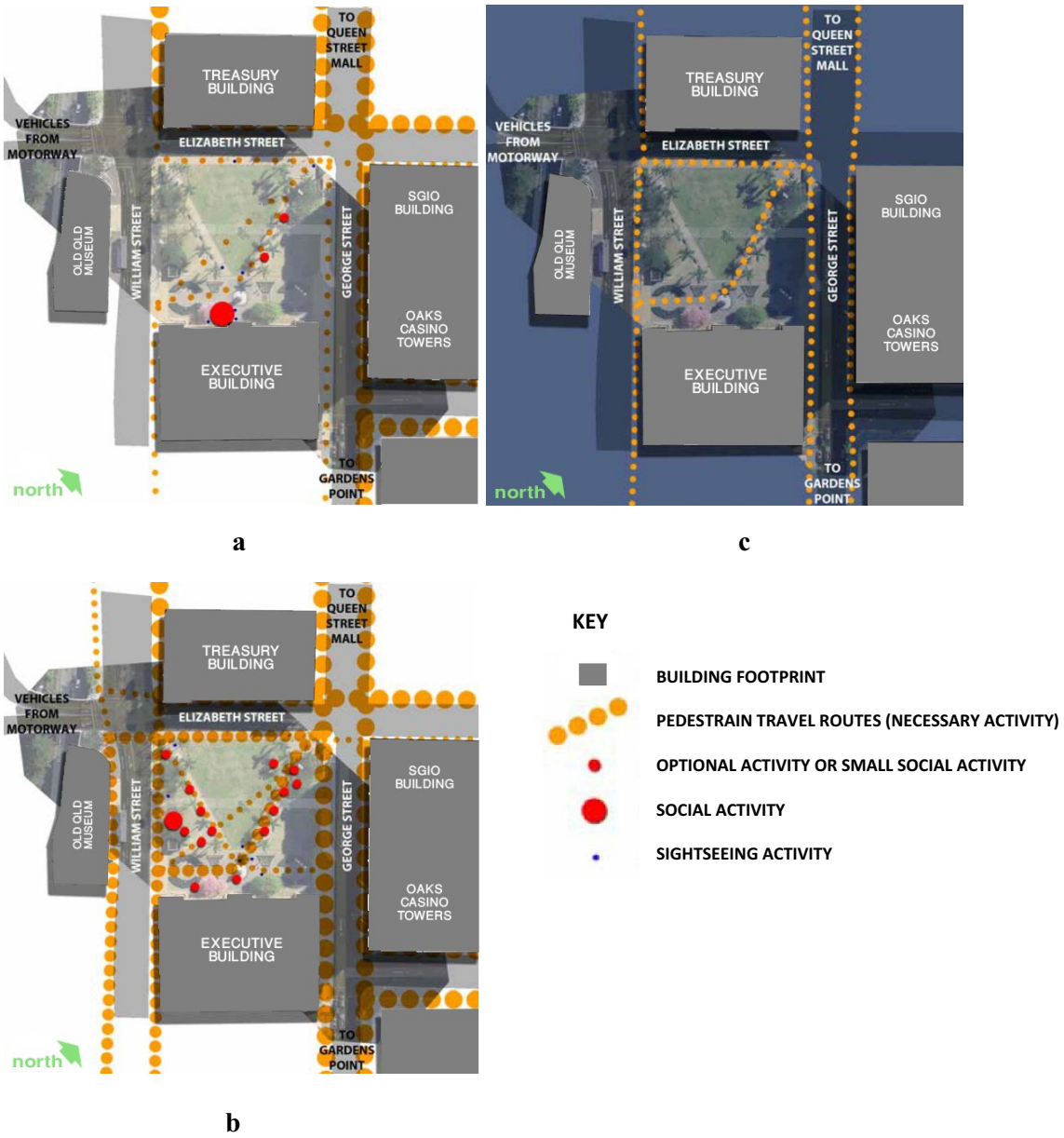

Fig. 15 Queens Park user engagement: **a** 8:20–9:20 am, **b** 12:40–1:40 pm and **c** 6:20–7:20 pm. *Source* NearMap and authors

Discussion

The application of urban design factors—both social control and people-friendly—seems to have influenced user engagement with public squares in Brisbane. However, with recent redevelopment of urban squares, the tendency of public activities is changing depending on which factor gets priority over the other. Observations show that primarily people-friendly design factors have been utilised in the current design of King George Square, with only a few remnants of historical social control design factors remaining. Queens Park's current design and its history, on the other hand, reveals that strong social control design factors are still evident. Apparently, the urban design factors in question do not contribute "equally" to stimulate and encourage social activities in these public squares.

The social control design factors are observed in the arrangement of historical buildings/elements at both the sites. Factors such as scale, materials, beauty and ornamentation are evident, and the sightseeing activities associated with the historical artefacts indicate that they can improve the attractiveness of the sites (particularly to tourists) and may generate a level of intrigue among users. Yet order and the ruler's intention are the most eminent of the

Fig. 16 Queens Park as observed during the site visit. *Source* Authors

social control design factors found at these sites historically, particularly in Queens Park. Roeck (2004) argues that the legitimisation of the power held by governing bodies (the authorities, the monarchy or the owners of the land) is often manifested in symmetry and geometry in physical urban elements. The geometrical pathways in Queens Park literally direct the users towards the references of powerful and historical elements (this factor is often ignored as people often walk over the lawn to follow a more direct route).

We found in Queens Park that some of the design elements that have been added in the redevelopment intend to markedly increase the "control" of the users. Clearly, the most recent redevelopment appears to have responded to the formal, historical buildings that surround it and adhered to art-centric design and composition as described by Sitte (1965) and Gibberd (1953). It can be argued that with a strong focus on one particular design factor, the intended use of Queens Park has become ambiguous. While the lawn would suggest that its intended use is for picnicking and leisurely activities, the surrounding physical elements of the site are rigid and unsocial. This may have resulted in a particularly unclear message to potential users regarding what "acceptable" uses of the space are. Moreover, the focus on "formality" and reverence to the monuments on the site appears to have overlooked the real issues of climate, user comfort and accommodation of social activities.

In contrast, King George Square seems to incorporate many of people-friendly design factors in an attempt to encourage optional and social activities while not inhibiting necessary ones. Human scale and shelter from the elements appear to be addressed together in its design. Many nodes exist for users to sit in sheltered comfort and partially separated from the expansive square. The user engagement with these nodes was consistent and often prolonged. The "activating" of King George Square has been a highly palpable change to the square in its recent redevelopment. Previously, the square did not have any commercial presence that might actively draw users into the square (Newell 1997; McMahon 2009). The current approaches to attain social quality in the design and management of the square (Chitrakar et al. 2017) appear to be highly effective. The activated zone achieves a lively hub for socialising as well as providing an active "edge" that interfaces with the sprawling open square, providing shelter for year-round activities while also affording its users views out to the busy square, the surrounding urban environment and the open sky. People want things to look at and do, and King George Square offers not only a thoroughfare and open space to urban inhabitants, but also creates a "destination" for public activities. Findings suggest that the mere presence of others and their activities is attractive to other users, either alone or in groups, as it provides a passively social environment (Gehl 1971). Gehl (1971) asserts that while physical framework, such as that provided at King George Square, does not affect social encounters directly, it does provide possibilities for seeing and hearing other people, and hence, provides an environment more receptive to incidental social gathering and interaction.

These findings also support Whyte's (1980) claims regarding triangulation. Social activities at King George Square were far more evident than those at Queens Park based on the frequency, duration and "liveliness" observed. Apparently, this could be partly contributed to the "prospect" seating arrangements provide users at King George Square. Crankshaw (2008) considers the success of public seating to be founded on its ability to provide options for both refuge and prospect. The prospect afforded by many (if not all) sitting nodes (and particularly "the activated zone") at King George Square allows triangulation to occur. This greatly enhances the site's attractiveness to users based on the observed popularity of these spaces for social activities and the periods of time that users were observed lingering at these locations (Crankshaw 2008).

Queens Park does not provide such an environment. The physical elements themselves almost discourage incidental social interaction with the spacing of bench seats vast, and their arrangement linear and rigid. Not only that,

but the bench seats turn their back on the busy pedestrian footpaths that border the site, ignoring the opportunity for leisurely "people-watching" and "prospect" that proved popular at King George Square. Users tend to use the lawn under the shade of trees for occasional social gathering but the opportunities for this are particularly limited compared to King George Square due to the lawn being patchy in places. Trees also do not provide a large amount of shade at this site, which further exacerbates the opportunities for people to gather comfortably or for long periods. Users were seen having to relocate at various times to stay within the small portion of shade afforded by the surrounding trees. Although a sense of history is highly noticeable at Queens Park, it is less productive in addressing many of the optional and social activities observed at King George Square.

Permeability is another key factor to achieve people-friendly design of urban squares. Observations indicate that while the edges of the case study sites addressing the surrounding footpaths are highly permeable, adjacent roads divide the squares from adjoining pedestrian traffic and activated edges of surrounding buildings. Queens Park is perhaps most affected by this problem, as a high amount of pedestrian traffic was recorded on the footpaths, but little actually penetrated the square. King George Square's relationship to the surrounding "mall" spaces is better, and it itself provides a pedestrian link between Queen Street Mall and surrounding areas. The pedestrian traffic that flows through the heart of King George Square is constant and substantial and this factor alone contributes to much of the success of the site as an activated and social space.

Brisbane users of public spaces appear to seek out things to look at and do, particularly social prospect. Prospect has been used in this paper to describe the user being in contact with others by seeing and hearing them. At King George Square, even when the provided seating was exhausted, people were still being drawn into the square, even standing in the open, in full sun simply, to be seen and to see others. In other words, groups of people were happy to stand and even dwell in the sun in order to be in the proximity of their social companions but also total strangers. The benefits of people-friendly design factors appear to extend beyond those enjoyed by users engaging with them directly. Users enjoying and observing the square collectively created a social "mass" which we consider to be a congregation of the public, going about their individual activities (both active and passive) but together forming a dynamic and engaging atmosphere that draws others in. This activated area becomes a destination in itself. Within this congregation of strangers, there is an observed mutual "watching" that provides the basis for passive observation and also triangulation, serving the active socialisation that takes place there. Findings show that it is ultimately the people that create the activation and appeal of a public space and the underlying people-friendly design factors instigate the gathering of people and are integral to encouraging prolonged engagement with the space.

Conclusions

The designing of urban public space is complex and multi-faceted, considering not only physical factors within the site, but also responding to the various social, cultural, contextual and historical influences of a city. The influences do, however, contribute to locally distinctive urban spaces if they are carefully considered. This research scrutinised Brisbane's public squares through examination of urban design framework factors employed in the case study locations. The findings confirm that many of the well-established design factors outlined in existing literature are present and effective in creating social and engaging public spaces in Brisbane. However, the findings also reveal that not all factors equally contribute to the desired outcomes. Existing literature extensively outlines various design factors that can contribute to successful public spaces—the research has tested them in the local context, providing evidence of their success (or failure).

This research furthers the existing knowledge regarding urban design in Australia, and in particular, in Brisbane. It provides the basis for further discussions regarding what public space in Brisbane should cater for, and how it should contribute to its urban context. More research is required to fully explore the ways in which public spaces in Brisbane can be improved. Further analysis of these sites will help gain a more thorough and comprehensive picture of the ways in which the urban spaces are used throughout the week (including weekends) and year.

Research limitations

The findings of this research are specific to Brisbane, Australia, at the time the study has been undertaken. While the research findings may be of benefit to the wider understanding of urban design outside Brisbane, the cultural, social, political, technological and climatic energies upon which the research is based may differ in other places and times. Moreover, while a few prominent design frameworks have been identified and various design factors have been interrogated in detail, there are obviously many other design strategies and frameworks of design factors that are utilised in contemporary urban design, as well as historically. Further research is required to outline the ways in

which these frameworks may have influenced and might improve Brisbane's public spaces.

Climatic factors have influenced this study's results. While this influence is of great interest to us in ascertaining Brisbane's local distinctiveness as a sub-tropical urban centre, further studies are required to ascertain the influences at different times of year. This research was conducted during Spring, and thus, findings determined during other seasons may uncover further, or different conclusions.

References

Alexander, C. 1964. *Notes on the Synthesis of Form*. Cambridge: Harvard University Press.

Alexander, C. 1965. A City is Not a Tree. *Design* 206: 46–55.

Alexander, C., and B. Poyner. 1970. The Atoms of Environmental Structure. In *Emerging Methods in Environmental Design and Planning*, ed. G. Moore, 5–9. Cambridge: The MIT Press.

Carmona, M., T. Heath, T. Oc, and S. Tiesdell. 2003. *Public Places, Urban Spaces: The Dimensions of Urban Design*. Oxford: Architectural Press.

Carr, S., et al. 1992. *Public Space*. Cambridge: Cambridge University Press.

Chitrakar, R.M., D.C. Baker, and M. Guaralda. 2017. Emerging Challenges in the Management of Contemporary Public Spaces in Urban Neighbourhoods. *ArchNet-IJAR* 11 (1): 29–43.

Crankshaw, N. 2008. *Creating Vibrant Public Spaces: Streetscape Design in Commercial and Historic Districts*, 2nd ed. Washington, DC: Island Press.

Gehl, J. 1971. *Life Between Buildings: Using Public Space*. Washington, DC: Island Press.

Gehl, J., L.J. Kaefer, and S. Reigstad. 2006. Close Encounters with Buildings. *Urban Design International* 11 (1): 29–47.

Gibberd, F. 1953. The Design of Residential Areas. In *Design in Town and Village*, ed. Ministry of Housing and Local Government. London: HMSO.

Hurley, F. 2012. *King George V Square and Town Hall, Brisbane*. National Library of Australia, Canberra, https://nla.gov.au/nla.pic-an23208124. Accesses 4 Oct 2012.

Jarvis, R.K. 1980. Urban Environments as Visual Art or as Social Settings? A Review. *Town Planning Review* 51 (1): 50–66.

Lofland, L.H. 1985. *A World of Strangers: Order and Action in Urban Public Space*. Illinois: Waveland Press.

Lynch, K. 1960. *The Image of the City*. Cambridge: The MIT Press.

McMahon, B. 2009. King George Square revamp sparks mixed reaction. *The Courier Mail*, October 22. https://www.news.com.au/couriermail/story/0,23739,26243055-3102,00.html. Accessed 20 Sept 2012.

NearMap. 2012. *Satellite map*. NearMap.com, Subiaco, https://www.nearmap.com. Accessed 20 Sept 2012.

Newell, P. 1997. Brisbane City Hall: History and heritage. In *Brisbane Corridors of Power*, ed. B. Shaw. Brisbane History Group: Brisbane.

Queensland Government. 2016. *Queens Gardens*, Queensland Government, Brisbane, https://apps.des.qld.gov.au/heritage-register/detail/?id=600112. Accessed 10 Dec 2018.

Roeck, B. 2004. Early Modern Architecture: Conditioning, Discipline, and Social Control. In *Social Control in Europe*, ed. P. Spierenburg and H. Roodenburg. Columbus: The Ohio State University Press.

Sitte, C. 1965. *City Planning According to Artistic Principles*, trans. G. R. Collins and C. C. Collins. New York: Random House.

State Library of Queensland. 2003. *Lunch Hour at Queen's Park, Brisbane, 1949*. State Library of Queensland, Brisbane, https://rosettadel.slq.qld.gov.au/delivery/DeliveryManagerServlet?change_lng=en&dps_pid=IE53188. Accessed 4 Oct 2012.

State Library of Queensland. 2010. *Church Institute and Synod Buildings, 1930*, State Library of Queensland, Brisbane, https://rosettadel.slq.qld.gov.au/delivery/DeliveryManagerServlet?change_lng=en&dps_pid=IE250219. Accesses 4 Oct 2012.

Sternberg, E. 2000. An Integrative Theory of Urban Design. *Journal of the American Planning Association* 66 (3): 265–278.

Tibbalds, F. 2000. *Making People Friendly Towns: Improving the Public Environment in Towns and Cities*. London: Spon Press.

Timesauce. 2011. *King George Square,* Flickr, https://www.flickr.com/photos/timesauce/5416956553/in/album-72157625771010739/. Accessed 4 Oct 2012.

Whyte, W.H. 1980. *The Social Life of Small Urban Spaces*. New York: Project for Public Spaces.