

How people use temporary post-
disaster open spaces:
A study of three transitional community-
initiated open spaces in central
Christchurch, New Zealand

Andreas Wesener
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Abstract

The study contributes to a better understanding of utilisation and interaction patterns in post-disaster temporary urban open spaces. A series of devastating earthquakes caused large scale damages to Christchurch's central city and many suburbs in 2010 and 2011. Various temporary uses have emerged on vacant post-earthquake sites including community gardens, urban agriculture, art installations, event venues, eateries and cafés, and pocket parks. Drawing on empirical data obtained from a spatial qualities survey and a Public Life Study, the report analyses how people used and interacted with three exemplary transitional community-initiated open spaces (CIOS) in relation to particular physical spatial qualities in central Christchurch over a period of three weeks. The report provides evidence that users of post-disaster transitional community-initiated open spaces show similar utilisation and interaction patterns in relation to specific spatial qualities as observed in other urban environments. The temporary status of CIOS did apparently not influence 'typical' utilisation and interaction patterns.

Keywords

temporary urbanism, post-disaster, transitional community-initiated open spaces, CIOS, public open space, public life study, spatial qualities

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Chapter 1

Introduction

Temporary uses of vacant urban spaces are generally not foreseen in conventional urban planning and have mostly been connected to socio-economic or political urban disturbances (Groth and Corijn 2005; Colomb 2012; Andres 2013). Research on temporary urbanism after a natural disaster has mainly focussed on temporary housing (Johnson 2007; Félix, Brancob, and Feioa 2013) and related community involvement (Davidson et al. 2007; Lawther 2009). Research on post-disaster temporary community-initiated open spaces (CIOS) has only recently occurred (Wesener 2015).

Christchurch, New Zealand was struck by a 7.1 magnitude earthquake on 4 September, 2010 and a 6.3 magnitude earthquake on 22 February, 2011 followed by a large number of aftershocks. In particular, the February earthquake caused major damage to the built environment resulting in 185 fatalities. Historical buildings were particularly affected including symbolic heritage buildings such as the Christchurch Cathedral. Large parts of the city centre and the eastern suburbs along the Avon River were 'red-zoned' resulting in significant displacements of people, businesses and institutions. The CBD cordon was lifted in 2013; suburban residential red zones remain in place for an indefinite period of time. An estimated number of 15,000 citizens moved out of Christchurch between the September 2010 earthquake and the beginning of 2012 (Wilson 2013, 209); the 2013 census depicts a net loss of around 7,000 people. Many people have moved to nearby districts less affected by the earthquakes (Bayer 2013). Since 2011, large-scale demolitions of damaged or economically unviable to repair buildings have created numerous vacant urban spaces. Satellite images between 2011 and 2015 illustrate the extent of destruction (CERA 2014). By the beginning of 2015, 1,240 buildings had been demolished and only 292 new constructions commenced in Christchurch's city centre (Gates 2015). It is possible that some sites remain vacant for a longer period of time.

Christchurch's post-disaster urban planning and design approaches have been referred to as "two parallel dynamics in tension" (Swaffield 2013, 23) characterised by community-driven bottom-up initiatives on the one hand and central-government-led top down action on the other hand. Various community organisations have been developing temporary projects on vacant earthquake sites (Bennett, Boidi, and Boles 2012; Carlton and Vallance 2013). Two popular community organisations that started after the September 2010 earthquake are 'Greening the Rubble' which has focussed on green landscape projects and 'Gap Filler' which has advocated creative and experimental projects. The two organisations have previously worked together as "close allies" and "twinned initiatives" (Montgomery 2012, 3). It has been argued that the production of transitional community-initiated urban spaces (CIOS) in post-earthquake Christchurch has provided various benefits for communities and their individual members providing opportunities for reinforced community resilience and sustainable urban development (Wesener 2015).

The report follows a study that investigated how users utilise transitional CIOS in Christchurch's Central Business District (CBD). In response to a lack of publically available data on the use of temporary spaces in post-disaster Christchurch, the study examined how users interacted with three different CIOS in relation to particular spatial qualities. The goal of this report is to inform processes and decisions in regard to the planning and design of post-disaster temporary open spaces – in Christchurch and elsewhere.

Chapter 2

Research Questions and Method

The study investigates how people (the general public including visitors and tourists, shortly called 'users') use and interact with transitional community-initiated open spaces (CIOS) in central Christchurch. Three main research questions were raised:

- (1) How frequently are CIOS used?
- (2) What are their particular spatial qualities?
- (3) How do users interact with CIOS in relation to these qualities?

A mixture of qualitative and quantitative research methods was used based on Jan Gehl's Public Life Study approach (Gehl and Svarre 2013) including the counting of pedestrians, the mapping of users' activities, and the tracing of user movements supported by a survey that analysed particular spatial qualities of three exemplary CIOS (case studies). The field work was carried out in December 2014 and January 2015 and has been approved by the Lincoln University Human Ethics Committee (HEC-Approval 2014-43).

2.1 Public Life Study

Public Life Studies (Gehl and Svarre 2013) follow the tradition of Environment-Behaviour Research or Environment-Behaviour Studies (EBS) (Rapoport 2008) "covering research of how people use, like, or simply behave in given environments" (Moudon [1992] 2007, 447-448). Related to urban design issues, Gehl's work has been pioneering next to seminal studies such as Whyte's (1980) video observations in New York City, Appleyard's (1981) liveable street surveys, or Francis's, Cashdan's and Paxson's (1984) work on community open spaces. Public Life Studies use a toolset of empirical research methods based on direct observation of public space. Users "are not actively involved in the sense of being questioned, rather they are observed, their activities and behaviour mapped in order to better understand the[ir] needs [...]. The direct observations help to understand why some spaces are used and others are not" (Gehl and Svarre 2013, 3). Gehl's approach goes back to his early seminal work ([1971] 1987). It has been further developed and applied by his office in cities around the world including Copenhagen, Oslo, Stockholm, Melbourne, Adelaide, Perth (Gehl and Svarre 2013, 129) and pre-earthquake Christchurch (CCC 2009).

Observations occurred over a period of three weeks with reasonably good weather in the New Zealand summer season. Each of the three Public Life Study methods applied in this study (counting of pedestrians, behavioural mapping and movement tracing) were carried out on five days in a week between 8.30am and 7pm over a ten minutes period beginning with each full hour (with the exception of the first slot which started at the half-hour interval). The first ten minutes were designated to pedestrian counts, the second ten minutes to behavioural mapping, and the final ones to tracing movements across space.

Pedestrian counts represent the quantitative aspect of the study. However, they also provide insights into qualitative aspects of a public place; a higher frequency might translate into a greater usability of a site. Pedestrian counts were made for the first ten minutes every hour from 8.30am until 7pm on Mondays, Wednesdays, Fridays, Saturdays and Sundays. This method of pedestrian counts has been utilised in previous studies and provides a "rather precise picture of the daily rhythm" (Gehl and Svarre 2013, 25) of public open spaces. Pedestrians were counted with the help of a digital device (electronic hand tally counter).

Behavioural mapping (Gehl and Svarre 2013, 26-27), concerned with the recording of users' activities and interactions with a space, was carried out during the second ten minutes every hour. It investigated what was happening within the public open space; where people sit, stood, waited or congregated. Individuals were not studied in-depth but rather regarding their general behaviour. The observer had prepared a checklist of likely activities prior to the first observation including physical activities (e.g. ball games, jogging, yoga), cultural activities (chess, art), playing, lying down, sitting on folding chairs, sitting on secondary seating (ledges, steps), sitting on café chairs, sitting on benches, waiting for transport, standing, talking (in person), talking (mobile phone/digital interaction), consuming activities such as eating and drinking, watching people. Activities were added or changed as appropriate during the observations.

Tracing refers to the process of following users' movements on a specifically for the site developed map: "People's movements inside or crossing a limited space can be drawn as lines of movement on a plan of the area being studied" (Gehl and Svarre 2013, 24). The purpose of this technique is to reveal how users move through space and identify regularly used or neglected areas and corridors over time. The tracing method was carried out for the third ten minutes every hour.

Where it was apparent that there would be low user numbers during a certain period, the three activities were conducted in the same 10 minutes to avoid a distortion of the results, e.g. a scenario in which one visit occurs during the counting and zero while recording behaviour. The observer took a strictly passive role by avoiding any direct contact with the users. He attempted to blend in with the site by interacting with it in various ways to stray any suspicions by other users. It is important that participants are left to engage with the spaces under investigation 'naturally'. The known presence of an observer might create a degree of reactivity and changes of behaviours are common (McCall 1984). In order to avoid interruptions, every effort was made to avoid engaging in conversation with people. However, the second 30 minute period of each full hour was reserved to repeat observations if necessary and to change sites. This left a degree of flexibility in the data collection. In order to avoid that the presence of the observer became too noticeable, the observer changed case study sites frequently. These sites were in reasonable walking distance (5-10 minutes) from each other, which allowed hourly site rotations.

2.2 Spatial Qualities Survey

Investigations into qualitative criteria for public open spaces have been multi-disciplinary, often fuelled by the impression that the quality of urban space has declined in the second part of the 20th century (Wesener 2011). Kevin Lynch's (1960) and Jane Jacob's (1961) seminal works have been highly influential for following generations of urbanists and urban designers and their attitudes towards the quality of urban spaces. Despite a growing body of research over the last 20 years (e.g. Madanipour 1996; Francis 2003; Carmona, de Magalhães, and Hammond 2008; Gehl 2010; Carmona and Wunderlich 2012), there is no commonly agreed framework for measuring the perceived quality of (public) open spaces. Francis (1987, 88-94) proposed a set of criteria that influenced people's use of open spaces including the recognition of users' needs, safety and security, comfort, stress, aesthetics and perception, meaning, control and participation, privatisation and publicness, natural systems and environmental quality, economic benefits and impacts, and public art. Montgomery (1998, 97-100) argued that a sense of activity is a major quality of urban spaces. He defined activity as the combination of vitality (e.g. pedestrian flows) and diversity. Diversity comprises a wide variety of physical and non-physical entities that allow for different activities in an urban space. Based on the review of literature on tangible and intangible qualities of public spaces (incl. Rapoport 1990; Carr 1992; Smith, Nelischer, and Perkins 1997; PPS 2000; Lloyd and Auld 2003; Dines and Cattell 2006; Gehl [1971] 1987), Carmona et al. identified a set of twelve "universal positive qualities for public space" (Carmona, de Magalhães, and Hammond 2008, 15). Watson and Kessler (2013, 575-577) identified a

set of twenty spatial qualities that played a role in retrofitting rundown public and communal open spaces. Carmona (2014a, 22-26) studied spatial qualities based on users' social and physical preferences and design features that drew users into public open spaces and encouraged them to stay.

For the purpose of this survey a set of seven spatial qualities was selected based on combined and overlapping criteria discussed by abovementioned authors and related to physical design features of urban open spaces:

Safety and security

The sense of safety and security at a location can be generated in a variety of ways such as the 'eyes on the streets' effect (Jacobs 1961). Passive surveillance discourages behaviour that is deemed socially inappropriate. Certain user groups may receive better emotional security in places that are under passive surveillance (Francis 1987). The impression that a site is 'overlooked', a sense of 'natural' surveillance, is also a basic ingredient of 'Crime Prevention Through Environmental Design (CPTED)' concepts (Crowe 2000; Cozens, Saville, and Hillier 2005; Reynald 2011). CPTED concepts have been widely endorsed across New Zealand (New Zealand Ministry of Justice 2005) and are part of Christchurch City Council's crime prevention strategy (CCC 2015). Local commerce is another way of strengthening this effect. A feeling of safety and security can also be influenced by physical design features such as lighting and clear line of sight. Physical barriers such as fences or hedges may, however, enhance the feeling of emotional safety and security by creating a 'protected' space segregated from others. Physical safety can be increased by ensuring pedestrian priority over cars.

Comfort

Safety and security plays also an important role for the level of comfort and relaxation a site can offer (Francis 1987). However, other measures contribute to the comfort of users that occupy a space. Examples include the provision of a variety of seating opportunities, toilet facilities, pedestrian priority, nearby or on-site commerce (e.g. coffee shops and food), provision of shade and plantings, overall maintenance of the space and walkability.

Usability

Some sites are strategically situated and draw users in (Carmona 2014a, 23). Other factors that might increase the usability for pedestrians include perceived safety, surface cover (e.g. is it walkable for all footwear?), local attractions (is there something worth seeing or doing, e.g. shops, interaction, art), accessibility, ease of interacting with site, e.g. via line of site and aesthetics (Watson and Kessler 2013).

Diversity

Diversity of the site refers to the offer of things that occupy a space and encourage interaction. The accumulation of attractions may produce a livelier scene and a more diverse setting for interaction. Attractions may include playgrounds, small shops, cafés and restaurants, cultural amenities, displays for educational purposes, planting, toilets, seating, or works of art (Montgomery 1998).

Vegetation

Vegetation plays a vital role in a site's diversity, attractiveness and comfort, stress reduction, and sensory and emotional experience (Francis 1987). Planting colours and type may generate different emotions and thoughts. Colours might be mood lifting (i.e. spring feeling) and certain plants encourage feelings of engagement (e.g. touching, lying down) affecting a user's feeling of comfort. Vegetation may also play a vital role in the city's wider biodiversity. CIOS can potentially work as pocket parks; trees can provide shelter; certain species are used as food sources. Vegetation can further act as a barrier to dust formation.

Experience

Every site serves a purpose. However, the purpose is related to sensory experiences. Each of the above mentioned aspects affects users' experiences in a space. Other factors that have an influence on sensory experiences include lighting, materials, a place's history (Carmona and Wunderlich 2012, 21-22) and its distinctiveness including notions of meaning and identity (Francis 1987; Carmona, de Magalhães, and Hammond 2008, 15). It goes beyond the scope of this study to analyse individual sensory experiences such as sound, visual, tactile, taste and olfactory in detail. Experience is conceptualised as a holistic impression based on how the field researcher experienced a place when he visited it based on his own perceptions.

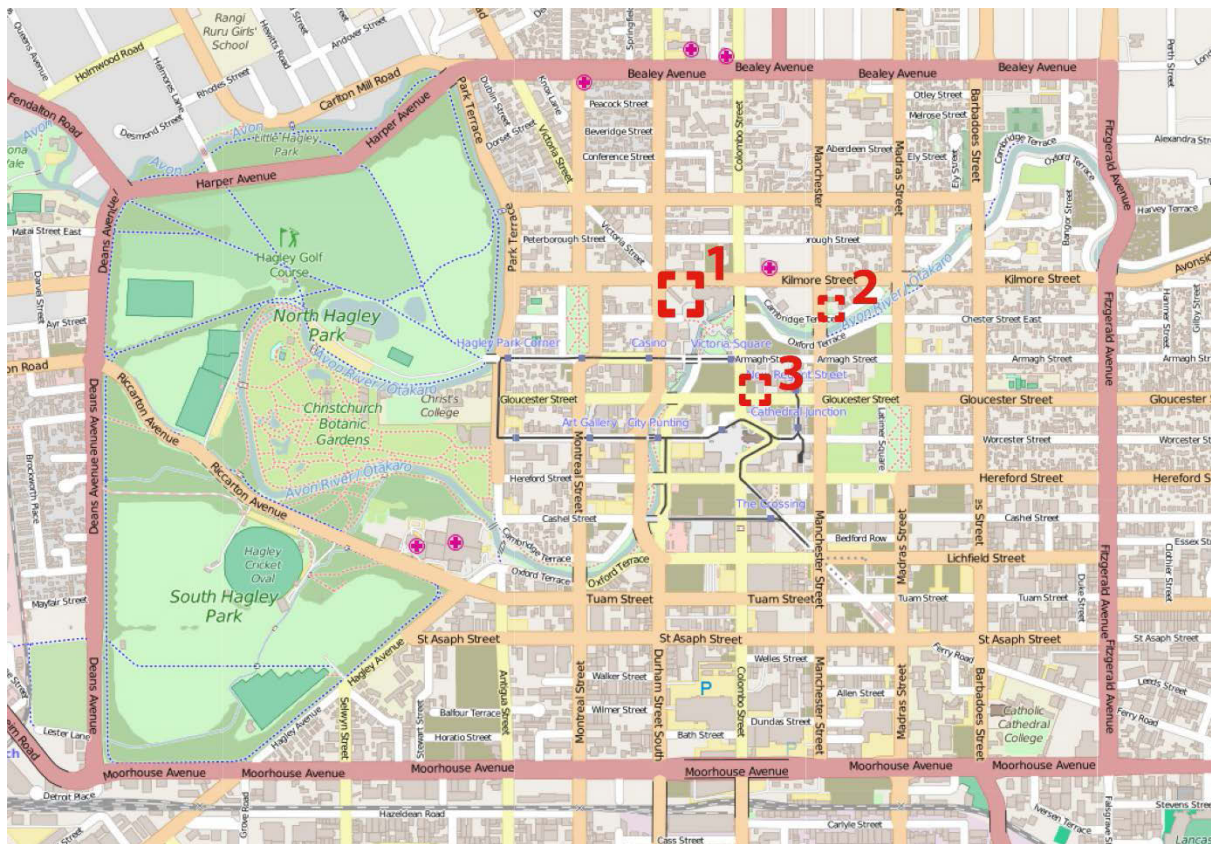
Context

The surrounding environment might be as important as the place itself. Surrounding businesses or residential compounds deliver the necessary visitor numbers to keep onsite commercial interests and site maintenance viable. Many of the abovementioned spatial qualities apply also to the urban context. For example, if a site's access routes are perceived unsafe then the site itself might be used less frequently.

Chapter 3 Case Studies

The selection of CIOS case studies was informed by multiple factors including functions, activities, design and location. Three community organisations (Gap Filler, Greening the Rubble, Life in Vacant Spaces) were contacted and asked about their preferences for case studies. Their feedback informed the final selection; the three selected case study sites are located within the 'Four Avenues' (Bealey, Fitzgerald, Moorhouse, Deans) that define Christchurch's CBD (Figure 1)¹.

Figure 1.
The three case study sites highlighted within Christchurch's central city



No.1 'The Commons'; No.2 'Places of Tranquillity'; No.3 'Dance-o-mat' Area. Contains information from OpenStreetMap (<http://openstreetmap.org/copyright>; <http://openstreetmap.org>), which is made available here under the Open Database License (ODbL), <http://opendatacommons.org/licenses/odbl/1.0/#sthash.OZaO15pR.dpuf>.

¹ Historically, there have been different definitions about the western boundary of Christchurch's central city: Is it Deans Avenue (including Hagley Park) or Rolleston Avenue (without Hagley Park)? The probably most common definition, supported by CERA and Christchurch City Council, includes Hagley Park (CCC 2006; The Press 2014).

Figure 2.
'The Commons' site map (not scaled)

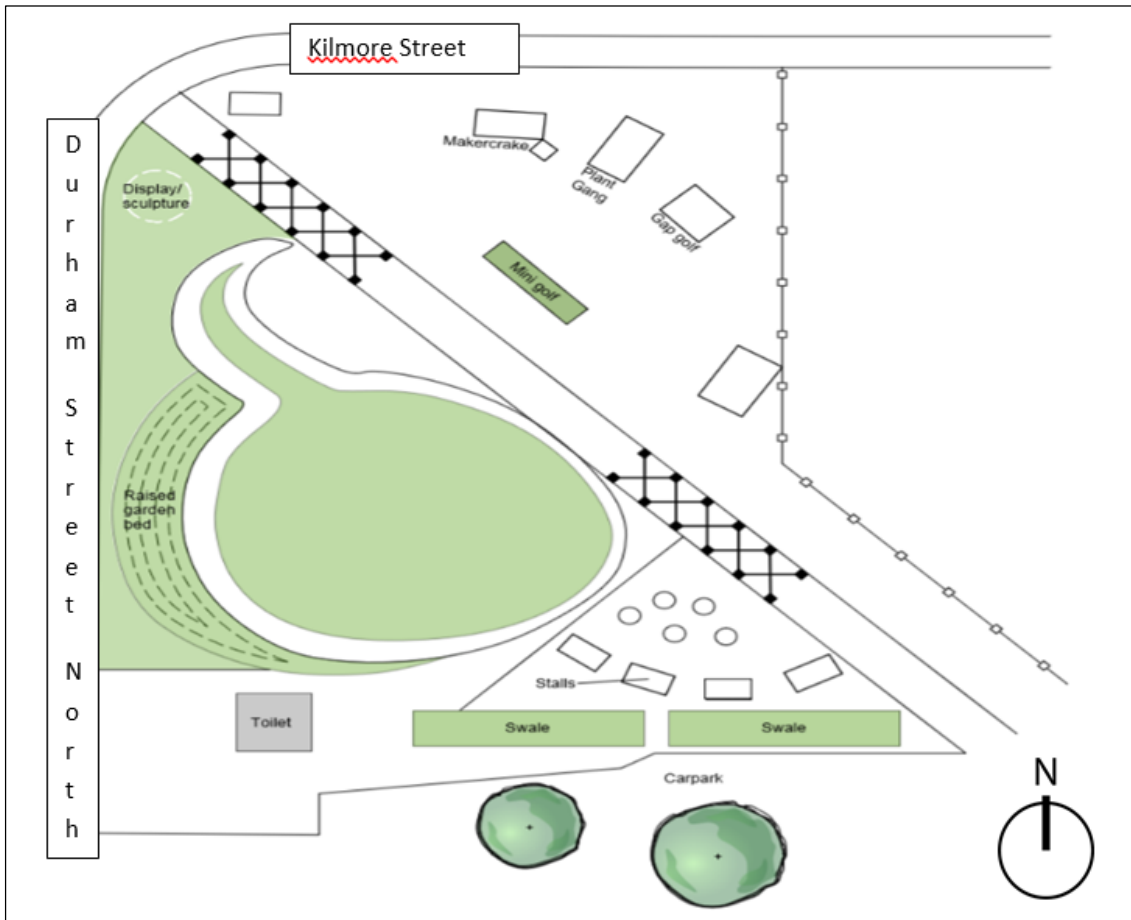


Image: Florian Risse

Figure 3.
'The Commons'. Overlooking the lawn from the vendors' sitting area.



Photo: Florian Risse

3.1 The Commons

'The Commons' (Gap Filler 2015) are located on the site of the former Crowne Plaza Hotel at the head of Victoria Square at the corner of Kilmore Street and Durham Street North (Figure 2). It received its present name in 2013; however, the site has accommodated various temporary installations since 2012 including Gap Filler's famous Pallet Pavilion between 2012 and 2014 (Gap Filler 2014b). It hosts Gap Filler's office (Gap Golf in Figure 2). The use of the site for transitional projects is based on an agreement between the site owner (Christchurch City Council), Life in Vacant Spaces (LiVS) and the main project partner, Gap Filler. Decisions about 'The Commons', conceptualised as "an experiment in a new partnership-style agreement between CCC and Gap Filler" are made collectively by representatives from Gap Filler, LiVS, the Arcades and the on-site Food Collective (The Commons 2015).

The Commons is on the edge of an area that has traditionally hosted tourist accommodation, bars and restaurants. Earthquake recovery in this area has been faster and much accommodation along Papanui Road stayed in operation after the earthquakes. Much was rebuilt on Victoria Street between Kilmore and Bealey Avenue before anything else so business as usual has been quicker in returning to that area.

By the time of the study, the site facilitated multiple activities; many of them directly or indirectly interwoven with each other. User interaction is supported by the site's design which enables and enhances users to engage simultaneously (actively or passively) in a variety of activities. For example, the strategic placement of a lawn, designated for games is bordered by the sitting area primarily used for food consumption (Figure 3). This placement enables pedestrians and vendor customers to actively engage in consumption while passively taking part as spectator of lawn activities. From the vendors' sitting area, users can engage in various happenings across the entire zone. The site's strategic location, its proximity to the courts, professional organisations, and residential units and its function as a pedestrian short cut through Victoria Park enhances its vibrant atmosphere.

3.2 Places of Tranquillity

The Places of Tranquillity (Figure 4), a cooperation between Healthy Christchurch, Greening the Rubble and a number of other organisations and companies that supported the project (Greening the Rubble 2015), are located at the corner of Manchester Street and Cambridge Terrace. The space intends to instil quietness, serenity and peacefulness and is therefore different in character if compared to the Commons. The design represents Christchurch's ethnical diversity including design elements from six different geographical and cultural backgrounds. The final design is based on six winning entries of a 2012 design competition among Lincoln University School of Landscape Architecture students. The contemporary Marae² onsite encourages reflections on the place's indigenous history and culture.

The site is located in an area that, since the earthquakes, is largely deprived of local businesses and many of the adjacent residential units are vacated. Nearby runs the Avon River, the banks of which are planted with grass, exotic trees and native plants that provide shelter for ducks. The Places of Tranquillity are characterised by sitting opportunities, native plantings and slender pathways covered in green glass gravel (Figure 5).

The site has been considered by the City Council as a more long-term project. It will be there while other buildings return and Manchester Street, which was very badly hit south of site, is repopulated. The area around the Places of Tranquillity is charged with memories and emotions connected to the

² Māori communal gathering place for religious and social purposes

earthquakes. The site is across the road from the former PGC Building where the second highest fatalities occurred in the February 2011 quake; it is still uncertain what the PGC site's future will look like and where the anticipated earthquake memorial would be placed.

Figure 4.
 'Places of Tranquillity' site map (not scaled)



Image: Don Royds

Figure 5.
'Places of Tranquillity', seen from the southern entrance



Image: Florian Risse

3.3 Dance-O-Mat Area

The third case study site (Figure 6) is located at the corner of Gloucester and Colombo Streets. The site makes part of a major redevelopment zone – vacant land that is most likely subject to major redevelopment in the future and therefore not suitable for permanent installations – in close proximity to the city's heart, Cathedral Square. Its central location encourages plenty of visitors. It accommodates three different temporary projects: The 'Dance-O-Mat' (Figure 7), Gap Filler's "coin operated dance floor" (Gap Filler 2014a) which has been relocated several times; the 'Tree Houses for Swamp Dwellers' (Figure 8), an installation by New Zealand artist Julia Morison, commissioned by Christchurch City Council (CCC) and installed for the 2013 SCAPE Public Art event (SCAPE 2013); and temporary street furniture (Figure 9), commissioned by CCC and designed by 'F3 Design' in 2012 (F3 Design 2012). The three projects appear isolated from each other; there is no coherent sense of unity. Activities are essentially limited to these three projects.

Figure 6.
'Dance-O-Mat area' site map (not scaled)

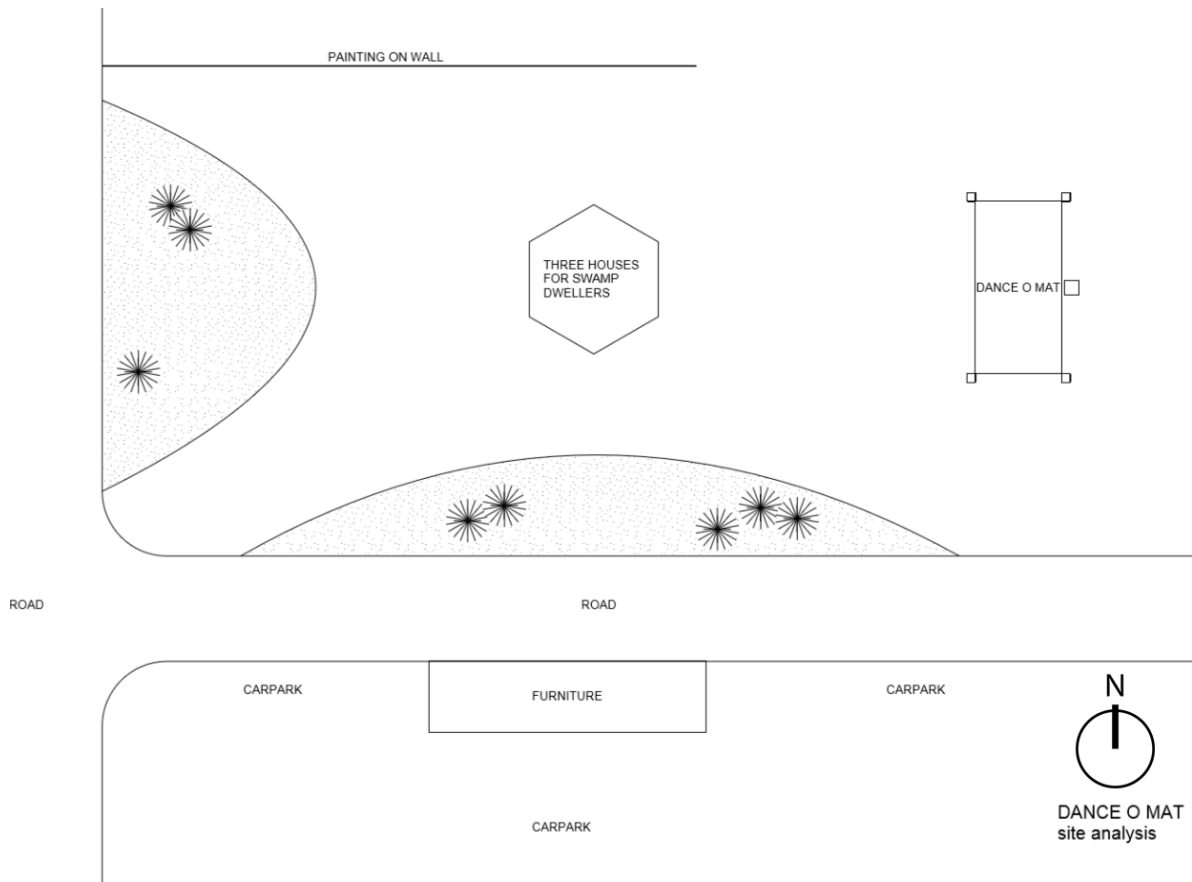


Image: Florian Risse

Figure 7.
'Dance-O-Mat' featuring a belly dance group

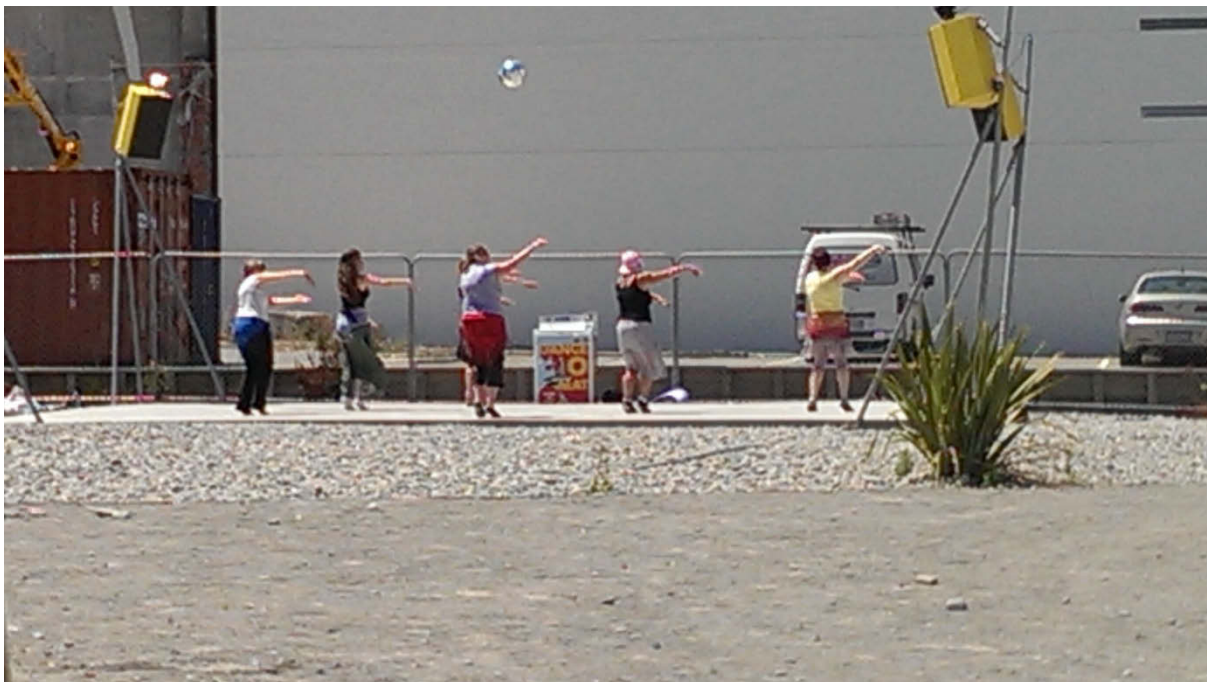


Image: Florian Risse

Figure 8.
'Tree Houses for Swamp Dwellers'



Image: Florian Risse

Figure 9.
Temporary street furniture



Image: Florian Risse

Chapter 4

Spatial Qualities Survey Results

4.1 The Commons

4.1.1 Safety and Security

A sense of safety and security at and around The Commons is generated in a variety of ways. Food outlet owners and organisations are present for the busiest hours of the day and create an 'eyes on the street effect'. The site's design contributes to the experience of safety and security. Businesses are located in a 'U' shape facing inwards and creating a 'shelter belt' that protects from the two main roads adjoining the site. There are no major visual obstacles within the site that prevent or significantly obscure one's view. The U's top end is outfitted with a small, slightly elevated flower bed to separate it from the nearby street without blocking sight. In summer, when days are longer, the site is well lit. During out of office times and at later hours of the day 'U's' open end is facing the nearby intersection bordering the site. This provides a level of visual connectivity during less popular hours of the day.

4.1.2 Comfort

The site provides comfort and relaxation in a multitude of ways. Mobile food outlets that sell Mexican coffee, Brazilian BBQ, Japanese cuisine and the occasionally visiting cupcake vendor provide a diversity of consumption offers that keep the site attractive for recurring visits. These 'trailer' shops come with repurposed/recycled seating opportunities. Tables and chairs are made from large wooden cable rolls equipped with a sunscreen through its centre. Alternatively one can choose to sit or lie down on the lawn or the mobile tribune overlooking the lawn. The site provides public toilets. Planting pods and beds are scattered across the space and are generally well maintained by local organisations.

The entire site is pedestrian only. The archway feature (The Arcades Project; Figure 10) passively separates pedestrian 'through-traffic' from 'situated' activities. This prevents disruptions or intrusions for site users (see 4.1.3). There is occasionally dust from the gravel surface penetrating the walking and sitting areas. The seating areas for food consumption have solar protection; most other areas, however, are exposed to the sun for most times of the day.

4.1.3 Usability

Comfortable walking or cycling on site is limited. The surface materials are predominantly gravel made up of 1-1.5 cm sized stones with a high amount of dust in between. This might diminish the walking experience for certain office shoe types. Users with wheel chairs may find it more difficult to access the site. However, the site's rich diversity of activities, and its strategic location make it a preferable shortcut for pedestrians crossing the Avon River.

The site is split in two halves by The Arcades Project (Figure 10), a wooden archway cutting right through the centre. One site includes the food outlets and the lawn, the other the mini golf installation, community organisations and further sitting opportunities. The Arcades Project fulfils multiple purposes. Despite the archway's openness it channels by-passers, cyclists or joggers through the site without interrupting ongoing activities on the site. At the same time these user groups are not constrained from observing what is happening.

Figure 10
'The Arcades Project'



Image: Andreas Wesener

4.1.4 Diversity

The site is rich in diverse activities which makes it appear lively if not bustling at times. Beyond the commercial aspects, one of the main features is the lawn area. A 'game box' is unlocked by local staff each day; users can play lawn bowling, croquet, Frisbee and football. The site is also suitable for kite flying. Separate from the lawn is a one whole mini golf installation and an outdoors pizza oven. Both access points feature a wooden display detailing the sites history and context. The U-edges have been emphasised by art objects (sculptures).

4.1.5 Vegetation

The Commons are sparsely vegetated including lawn cover, 4-5 planting pods and some climbing plants at the arches of The Arcades Project. No native vegetation that could support indigenous fauna has been noticed. There are a few planting pods near to the seating areas which might help reduce dust irritation. The planting beds around the site contain a number of colourful flowers. Greening the Rubble had initially been asked to help with landscaping in the initial set-up when the Pallet Pavilion was the focal point and cabins sat on the periphery. However, it was deemed too difficult to harmonise the site as decisions had already been made about locating structures that made landscaping difficult. Also, the Pallet Pavilion was festooned with native plants that needed watering.

4.1.6 Experience

The site provides opportunities for various experiences, motivated by activities, consumption offers, physical objects and materiality including new and recycled materials. It depicts predominantly natural

materials and benefits from natural lighting and clear line of sights. The archway's vertical timber structure creates a strong and directed spatial definition. The historic use of the site as a Māori market place might add a semantic dimension to users' experiences.

4.1.7 Context

The Commons surrounding environment is well maintained and equipped with good lighting. Given its strategic location, the park areas on the Avon river side are well visited and street lights are provided. The site benefits from a mix of residential units, professional organisations and public agencies in the near vicinity.

4.2 Places of Tranquillity

4.2.1 Safety and Security

The site is fenced with plants growing up the fence, obscuring one's vision and thus reducing the 'eyes on street' effect. A large and some younger trees in combination with wooden structures limit visibility further. The site itself is located in a sparsely populated area featuring numerous vacant buildings and sites as a result of the earthquakes. Street lighting is sparse and does not reach far into the park. The back of the park is dominated by outgrown vegetation. The site is located close to the city's main prostitution area. A local volunteer clears and continues to clear the site of unwanted discarded materials associated with sex work should such material be deposited. The site has been relatively undisturbed by the street-based sex worker industry. The site does provide a higher level of 'emotional' security; the pleasant plantings and the fence might create a degree of safety.

4.2.2 Comfort

The site was designed with relaxation in mind and includes an extensive amount of wooden park benches. Stone beds and grass cover provide additional opportunities for sitting or lying down. The fence separates the site's interior from the main road and provides shelter. The park makes use of natural materials, colours and shapes creating an atmosphere that may add to its comfort value. The site accommodates a contemporary interpretation of a Marae in the form of a basic timber frame without roof or wall cladding thus not providing shelter against rain or wind. Shading is provided by trees.

4.2.3 Usability

The site has three access points. It is fully pedestrianized and highly walkable in form of a winding pathway covered with fine grained green glass fragments (non-harmful). It also features a 'tunnel' element which is suitable for walkthroughs. However, due to the high number of benches and flowerbeds it becomes difficult to stray from the pre-made pathway.

4.2.4 Diversity

At first sight, the site appears rather monotone providing only little room to engage in a variety of activities. However, it targets a different type of user compared to the other two case studies. The many seating opportunities encourage users to explore places that best suit their needs to rest and relax. Against that background, the Places of Tranquillity offer a different kind of diversity to the CBD experience that most other places may not be able to provide.

4.2.5 Vegetation

The site is rich in native plant varieties. It is framed and sprinkled with planting beds. Most areas are covered in grass. The choice of native vegetation fits well with the Māori cultural theme and draws a

link to urban sustainability issues in Christchurch (e.g. drainage and conversion of local wetlands, loss of indigenous flora and fauna) by providing a place well suited for native fauna.

4.2.6 Experience

The site is not intended to be a bustling CIOS and does not communicate this kind of experience. Beside its emphasis on tranquillity and relaxation it might also evoke experiences of ecological and cultural connectedness in response to native plant varieties and a stylised indigenous architectural artefact. The site encourages experiences based on reflection rather than activity; it is introverted rather than lively.

4.2.7 Context

The surrounding urban setting limits the number of possible users. The site might benefit from increased visitor numbers in the more distant future once businesses and residents have relocated. However, the place competes with the nearby Avon River and its green spaces which offer plenty of wildlife and places for relaxation.

4.3 Dance-O-Mat Area

4.3.1 Safety and Security

The location lacks commercial or residential facilities onsite or in immediate proximity, potentially diminishing the 'eyes on the street effect'. However, due to its central location between two of the CBD's main tourist attractions – Cathedral Square and New Regent Street – there is a fluctuating, yet steady stream of pedestrian traffic. In addition, the site is located at a corner junction and is not obscured visually. These two aspects improve the perception of safety. During late evening hours the site is potentially dark and might be perceived as less safe. The temporary street furniture's location is separated from the rest of the area by a main street and poses a traffic safety issue especially for children who are climbing and playing on it. The distance to passing vehicles is only minimal.

4.3.2 Comfort

The site's main seating opportunities are provided by the street furniture. However, the high visitor turnover with photo shoots and selfies create a rather uncomfortable, unsettling atmosphere. Alternative seating are the steps of the swamp dwelling. This is, however, a rather dirty and dusty place. No other primary seating areas are found. Lying down is difficult due to the gravelly surface. Due to the site's openness, nearby construction works and the surface materials, the area can be a bit dusty. The site provides a level of relaxation if one enjoys public dancing. Planting is very sparse and so is the provision of shading. Only the tree houses and one blank wall provide solar protection at certain times of the day.

4.3.3 Usability

The pedestrian experience is reduced by the fact that the space is divided by a busy street which interrupts people's movement. The area of the Dance-O-Mat and the 'Tree Houses for Swamp Dwellers' is relatively comfortable to walk through; the gravelly surface may deter certain user groups including disabled people. However, due to the existing pedestrian footpath along the street it is accessible to a variety of user groups from multiple directions.

4.3.4 Diversity

The site's diversity is limited to the three projects and their related activities. Each of the projects provides different but they do not appear to be integrated with each other. For example, the furniture

is spatially separated from the rest of the site without facing the other two projects. Users are not able to passively engage with other activities such as dancers or swamp dwelling visitors.

4.3.5 Vegetation

There exists only little vegetation on site. Those planted are New Zealand natives, situated alongside the pedestrian footpath. There are two planting pods located at the furniture site. This site would have benefitted from a greater variety of ground covers that could facilitate activities such as sitting, lying down or playing certain games.

4.3.6 Experience

The experience provided by the site can be highly fluctuating. An individual or a group of people dancing or watching others performing could create memorable experience. Even the music could trigger different experiences. The furniture provides the experience of something ordinary taken out of its usual context. The swamp dwellings are a work of art and provide a variety of sensory experiences. Materials include plastic (street furniture), timber (swamp dwellings) and a mix of concrete and metal (Dance-O-Mat). However, due to the disunity of the objects, the lack of diverse activities and the large size the area, a feeling of discomfort and an impulse to move on rather than engaging with the projects might occur.

4.3.7 Context

The location benefits from and competes with two popular public spaces in less than a minute's walking distance. This has some positive effects such as higher safety and security levels and higher visitor numbers. In addition, a nearby pigeon mural painted on an abandoned building wall serves as a popular photo background. However, due to its proximity to major construction works and two main streets, the site suffers from increased levels of noise and air pollution.

4.4 Discussion

This section highlights particular aspects of the seven surveyed spatial qualities and compares them across the three case studies. In regard to safety and security, three different perceptions are evident: Firstly, there is the perception of safety (against criminal offenses) provided by the physical presence of people including site users, local shop owners, vendors and members of community organisations. Both the Commons and the Dance-O-Mat Area are frequently visited sites and provide a sense of 'natural' surveillance, a basic ingredient of 'CPTED' concepts (see 2.2). Due to low and infrequent levels of use in combination with visibility-obstructing design features, the Places of Tranquillity do not provide a feeling of 'being overlooked' and may therefore be experienced as less safe. Secondly, traffic safety issues are present. This is a potential hazard at the Dance-O-Mat area due to a street transecting the site. The other two sites are fully pedestrianized and show therefore no traffic related safety issues. Thirdly, there is the matter of feelings of 'emotional' safety in regard to intimate spaces able to provide a feeling of protection. This is most likely to be experienced by users in the 'Places of Tranquillity' due to a provision of visually segregated spaces. Both the Commons and the Dance-O-Mat Area do not provide secluded spaces that visually protect users from the main flow.

The Places of Tranquillity provide a high level of comfort in the form of sitting or lying-down opportunities. Shading is provided in the form of trees. The chosen paving materials prevent the formation of dust. The Commons and the Dance-O-Mat Area suffer from high levels of dust in particular on hot and windy days. Both sites lack effective solar protection; users are exposed to the sun in most areas and most times of the day. The Dance-O-Mat area lacks shaded sitting opportunities and soft and clean surfaces. It suffers from a combination of high visitor turnovers that create an unsettling ambiance and disturbing noise levels due to intersecting traffic and construction work. The

Commons provide high levels of comfort in regard to their commercial offer (food and drinks) and the accompanying shaded seating and soft surface materials. The provision of public toilets adds to the feeling of comfort.

In regard to usability, all sites are easily accessible from multiple directions. Both the Commons and Dance-O-Mat Area have issues with their gravelly surface that might diminish the walking experience for certain user groups. Their spatial organisation is critical in regard to intersecting through-routes. This is less of an issue for the fully pedestrianized Commons; however, the Dance-O-Mat Area is spatially divided by a car-dominated street resulting in decreased connectivity between the different centres of activity. The Places of Tranquillity are highly suitable for walkthroughs; however, the surrounding fences might be perceived as a threshold creating uncertainty in regard to the private or public nature of the site. This design feature might discourage potential users to enter and explore the space.

The diversity of activities on each of the three sites is related to its design rationale. The most diverse site is the Commons, a space that has been created to accommodate and encourage an ever-changing range of activities (Gap Filler 2015). Accordingly, activities on site vary, complement and support each other. The Places of Tranquillity have been designed with a single activity in mind: quietness and relaxation. Not surprisingly, the site depicts a limited offer of activities which support its purpose. The Dance-O-Mat Area has not been designed as a coherent open space but as singular projects that do not share a connecting narrative. The site presents an assemblage of objects that do not integrate different activities beyond their singular purpose.

Both the Commons and the Dance-O-Mat Area are sparsely vegetated. This may cause negative effects including higher dust formation, higher solar exposure and limited ground-based activities such as sitting, lying or playing due to a lack of soft ground cover variations (in the case of the Dance-O-Mat Area). The lack of green space limits the experience of urban wildlife such as birds or insects. The Places of Tranquillity provide a richer offer of native vegetation thus encouraging different environmental and cultural experiences (see 4.2.5).

The three sites provide opportunities for different experiences related to their design rationale, design features, activities, consumption offers, and the presence of other users. The Commons and Dance-O-Mat Area are highly frequented sites providing vibrant (the Commons) but also unsettling experiences (Dance-O-Mat Area). The low frequented Places of Tranquillity encourage introverted and reflective experiences. They might, however, be experienced as deserted and in that respect appear uninviting or even unsafe.

The urban context is a fundamental factor regarding the use of and interaction with CIOS. Both the Commons and the Dance-O-Mat Area benefit from their position close to major pedestrian movement networks in terms of frequent use and related experiences of vibrancy whereas the Places of Tranquillity, located in a largely vacated area, do only attract a few users.

Chapter 5

Public Life Study Results

5.1 Pedestrian Counts

5.1.1 The Commons

Pedestrian counts were carried out on weekdays (Monday, Wednesday and Friday) and both days of the weekend between 8:30hrs (throughout) and 19:00hrs (see 2.1). Monday counts indicate a higher frequency of use over the lunch time period between 12:00hrs and 15:00hrs. A similar pattern occurred on Wednesday where user numbers were also highest between 12:00hrs and 15:00hrs, peaking at 13:00hrs and dropping at 16:00hrs. Another spike was noticeable at around 17:00hrs. Pedestrian counts on Friday rapidly peaked at 11:00hrs to 12:00hrs and slowly dropped off during the course of the day. Saturday's counts peaked at lunch, dropped and reached a plateau from 13:00hrs to 15:00hrs. From there on user numbers dropped further. On Sunday, pedestrian numbers spiked as early as 10:00hrs before dropping and climbing back to higher values during lunch periods from 12:00hrs to 16:00hrs. Figure 11 depicts the distribution of pedestrian counts over the entire period of assessment (the number of counted pedestrians is shown along the Y-axis). The graph illustrates that pedestrian activity at the Commons is generally highest around lunch time with some unusual peaks on Wednesday and a general drop of numbers on Sunday.

5.1.2 Places of Tranquillity

On Monday, the Places of Tranquillity show a peak in pedestrian counts around lunch time between 11:00hrs to 13:00hrs with little to no activity during other periods of the day. Similar to Monday, most visits on Wednesday occurred over the lunch time period between 12:00hrs and 14:00hrs. Friday equally experienced higher visitor number between 13:00hrs to 14:00hrs. A minor spike was observable at 18:00hrs with no activity during the remaining hours. On Saturday, visits occurred as early as 10:00hrs and a smaller number of pedestrians was counted at 12:00hrs. These two hours were also only times of recorded activity at the site. Sunday was more active over the course of the day with intervals of users at multiple occasions mixed with periods of inactivity. Figure 12 depicts the distribution of pedestrian counts over the entire period of assessment (the number of counted pedestrians is shown along the Y-axis). In general, the site was infrequently used over the entire week.

5.1.3 Dance-O-Mat Area

On Monday, the site saw an increase in visitor numbers at around 11:00hrs followed by a strong rise of pedestrians at around 15:00hrs caused by a tourist group and furniture users, while the rest of the day is fairly evenly distributed. On Wednesday pedestrian numbers were highest between 12:00hrs and 13:00hrs with a slight rise again around 16:00hrs. Friday experienced a peak time at around 12:00hrs as a result of a large tourist group, while the rest of the midday and afternoon periods were balanced between 8 to 13 users every ten minutes. On Saturday, The site reached high visitor numbers between 13:00hrs and 16:00hrs. Another peak was noticeable at 19:00hrs, possibly related to other night-time weekend activities in the neighbourhood. On Sunday, the Dance-O-Mat area experienced continuous high visitor numbers between 10:00hrs and 15:00hrs with a drop at 13:00hrs and a rise to previous values between 14:00hrs and 15:00hrs. Figure 13 depicts the distribution of pedestrian counts over the entire period of assessment (the number of counted pedestrians is shown along the Y-axis). The site was generally well visited during afternoons with a few high peaks on weekdays due to larger visitor groups. On Sunday, the site was continuously used between 10:00hrs and 17:00hrs.

Figure 11.
Pedestrian counts, The Commons, entire period of assessment

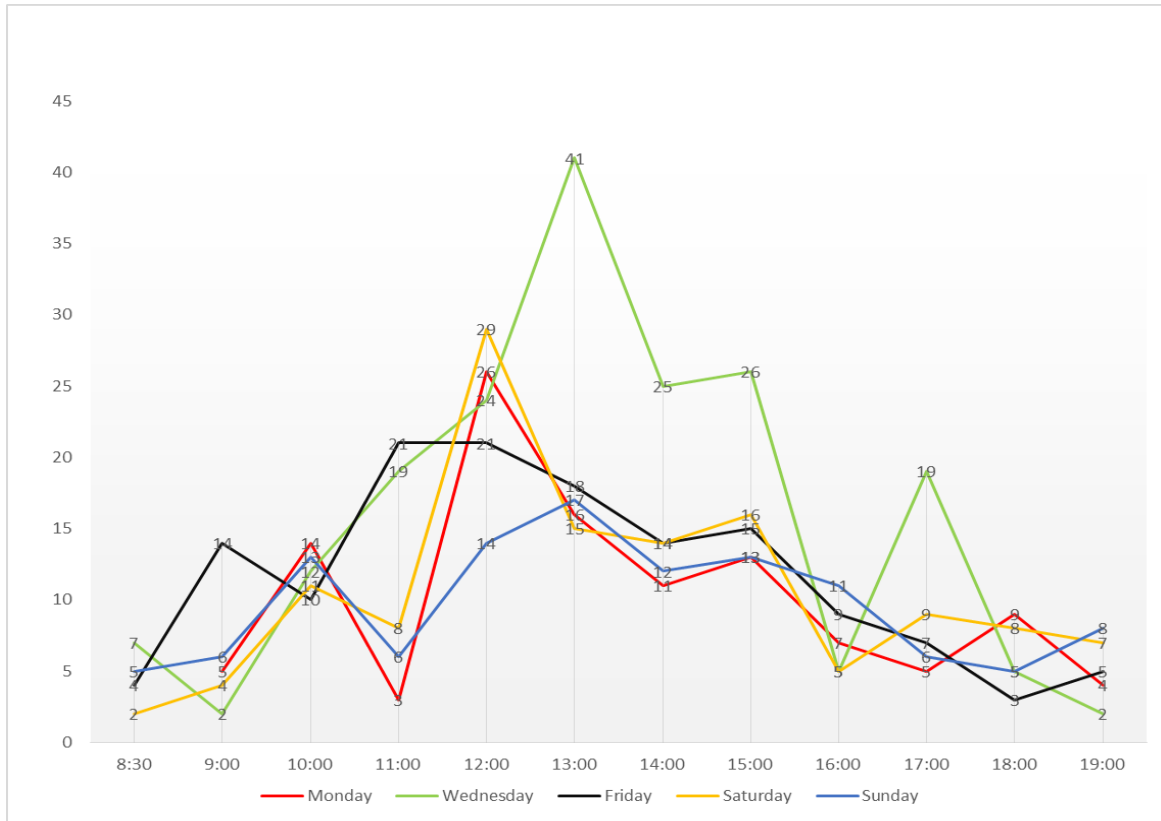


Figure 12.
Pedestrian counts, Places of Tranquillity, entire period of assessment

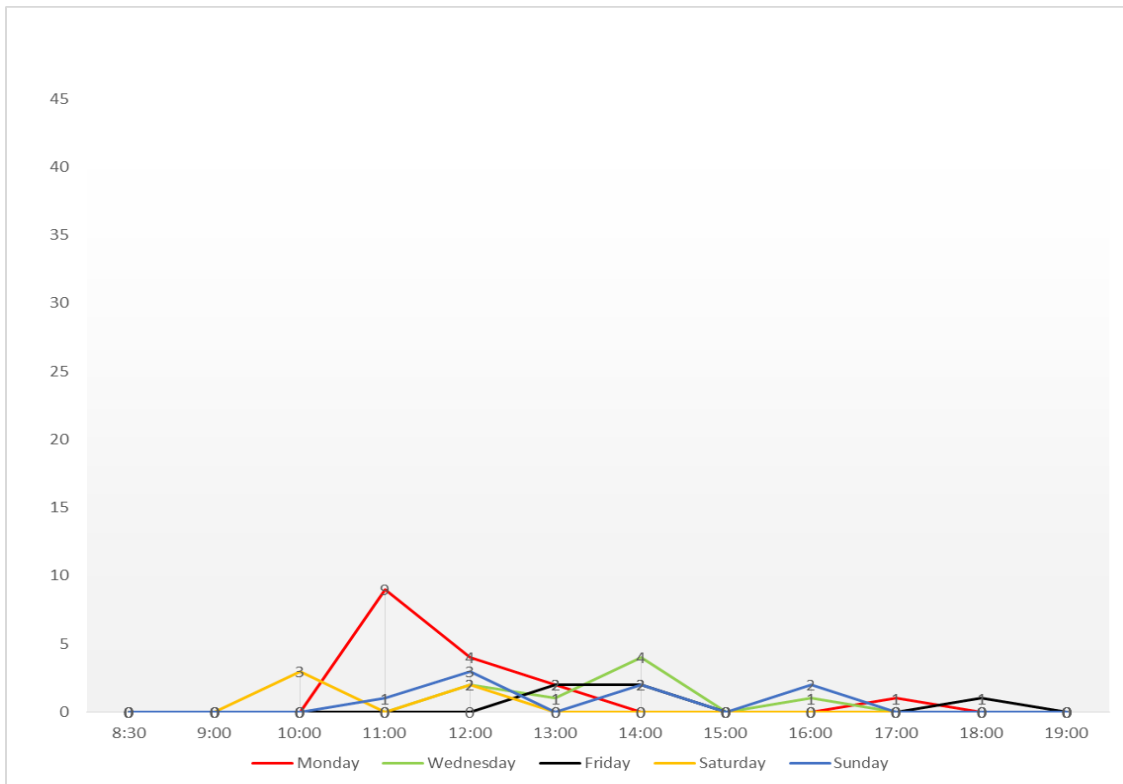
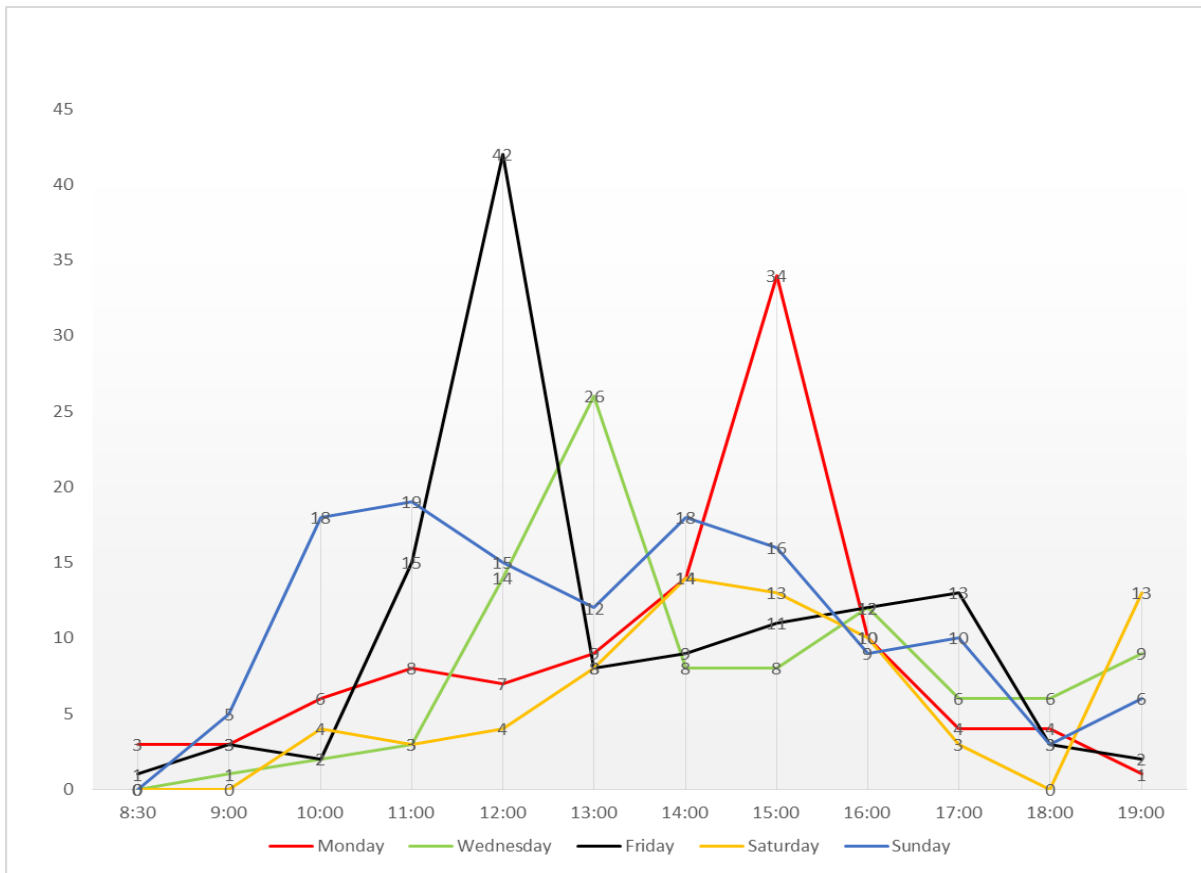


Figure 13.
Pedestrian counts, Dance-O-Mat area, entire period of assessment



5.2 Behavioural Mapping

The following behaviour maps (Figures 14-28) depict the number of observed activities on the three case study sites between 8:30hrs and 19:00hrs on Monday, Wednesday, Friday, Saturday and Sunday. The Y-axis shows the total number of observed site activities. The total number of activities is not necessarily the same as the pedestrian counts (5.1) due to sometimes overlapping activities that have been registered separately such as sitting, chatting and having lunch at the same time. The goal of behavioural mapping is to monitor human behaviour and related activities not user numbers.

5.2.1 The Commons

On Monday (Figure 14), users who passed through the site formed a large group at almost any time. Although less in number, cyclists were observed alongside chatting people. Certain activities were concentrated around certain hours such as coffee and food consumption around lunch time. This is linked to vendor's opening hours and cultural habits. Around noon, a lower number of passers-by and a larger proportion of consumers who chatted and sat was observed. There was also a noticeable group engaging in lawn game activities. The visitor count was generally the highest of the day at this period (5.1.1).

Similar to Monday, Wednesday (Figure 15) featured a frequent and proportionately large number of passers-by. One group of users strolled through the site as well, but in a more explorative manner. Beverage consumption, sitting, chatting and queuing for food increased during the lunch and morning tea break periods. Coinciding with this observation are a higher number of people sitting and chatting. Generally, activities were more diverse than Monday. Wednesday reached user numbers of

approximately 40 people per 10 minute intervals between 11:00hrs and 15:00hrs followed by a sharp decline around 16:00hrs and another steep increase at around 17hrs. At 5pm, a large number of users were passing or cycling through the site coinciding with the end of the working day. There were also many chatting groups at this time.

Friday (Figure 16) showed again a high proportion of users who used the site as a short cut and passed through. Lawn games appeared to be used more frequently over the course of the day. 11:00hrs and 12:00hrs showed the day's highest values of chatters. User numbers increased at 11:00hrs just like on the other working days, but decreased earlier (after 12:00hrs).

Saturday's user numbers (Figure 17) peaked at 10:00hrs and between 12:00hrs and 13:00hrs. In the morning, the site saw a large proportion of users passing through, sitting, chatting and consuming food and coffee. Lunch periods were subdivided into similar groups, yet with a lesser degree of sitting users. There was a slight rise of user numbers from 17:00hrs to 19:00hrs, dominated by people passing through while chatting. From 15:00hrs, joggers frequented the site.

Figure 14.
Behavioural Map, The Commons, Monday

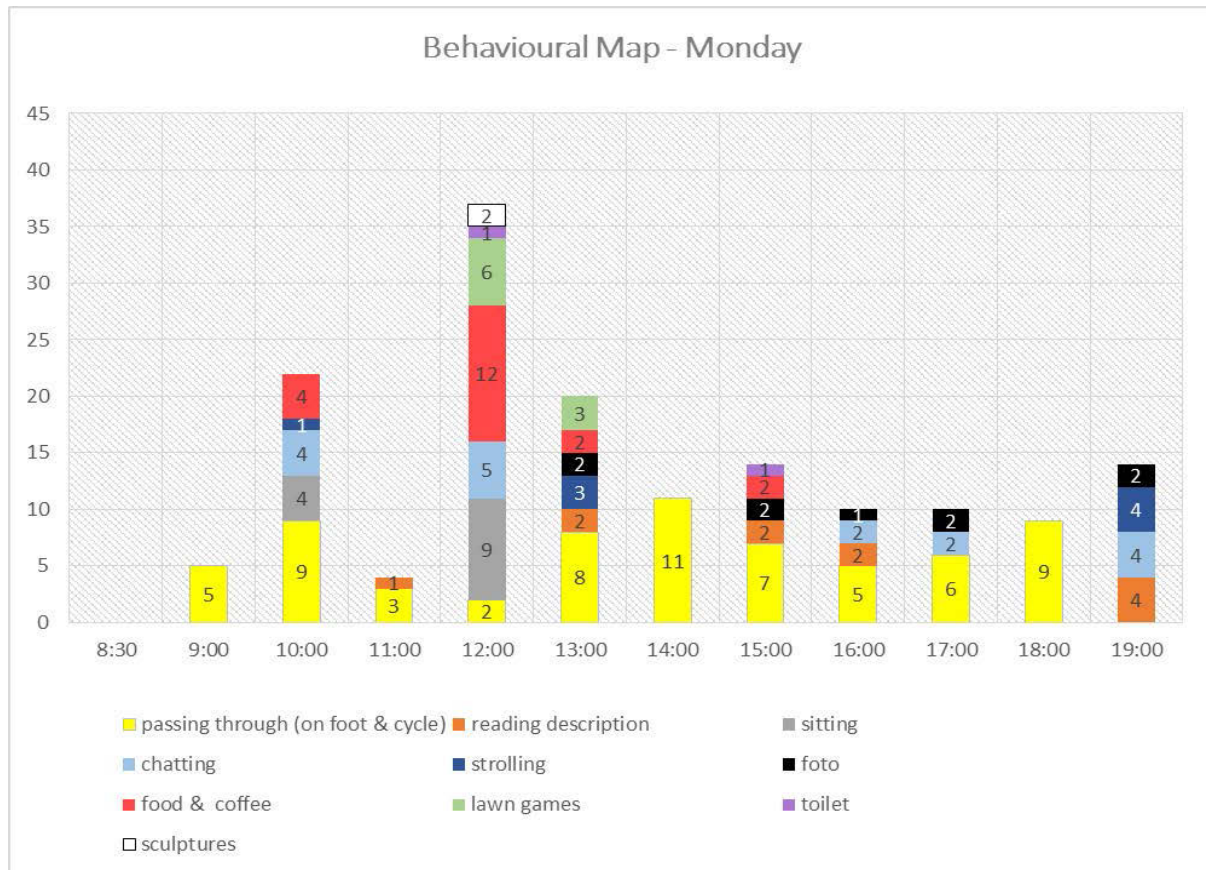


Figure 15.
Behavioural Map, The Commons, Wednesday

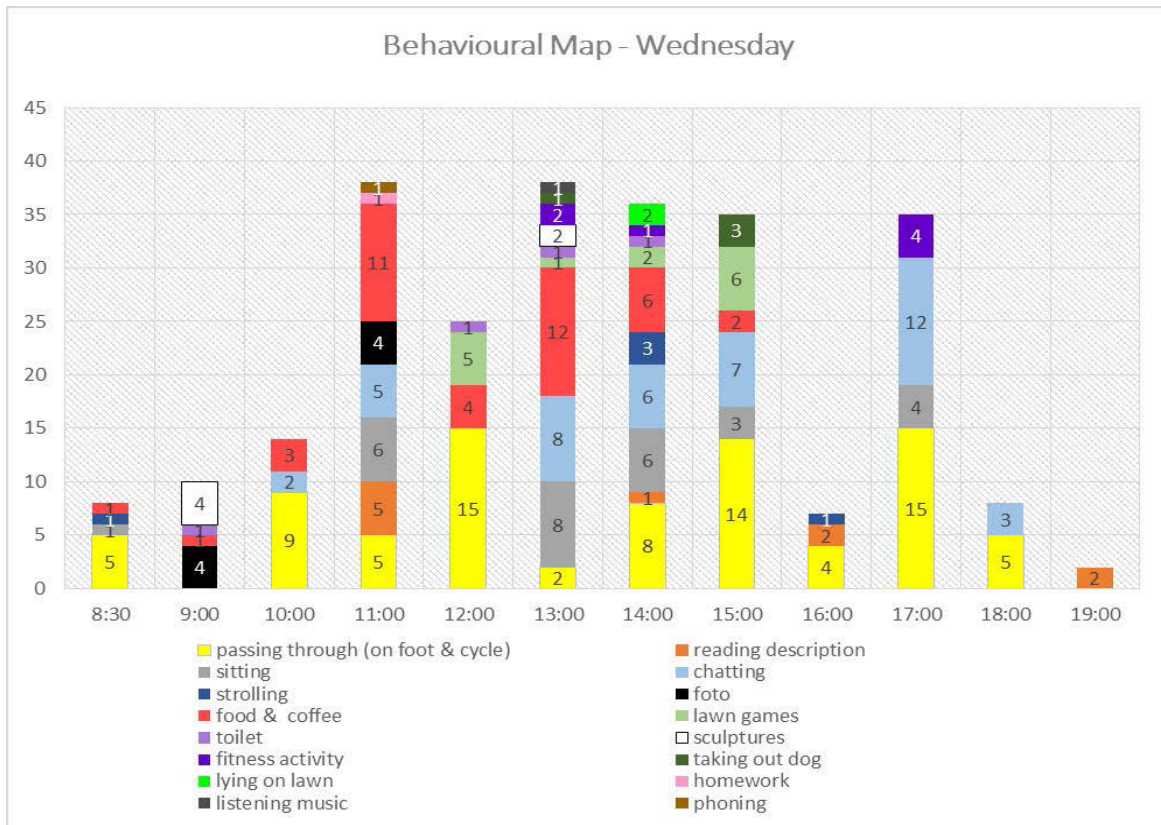


Figure 16.
Behavioural Map, The Commons, Friday

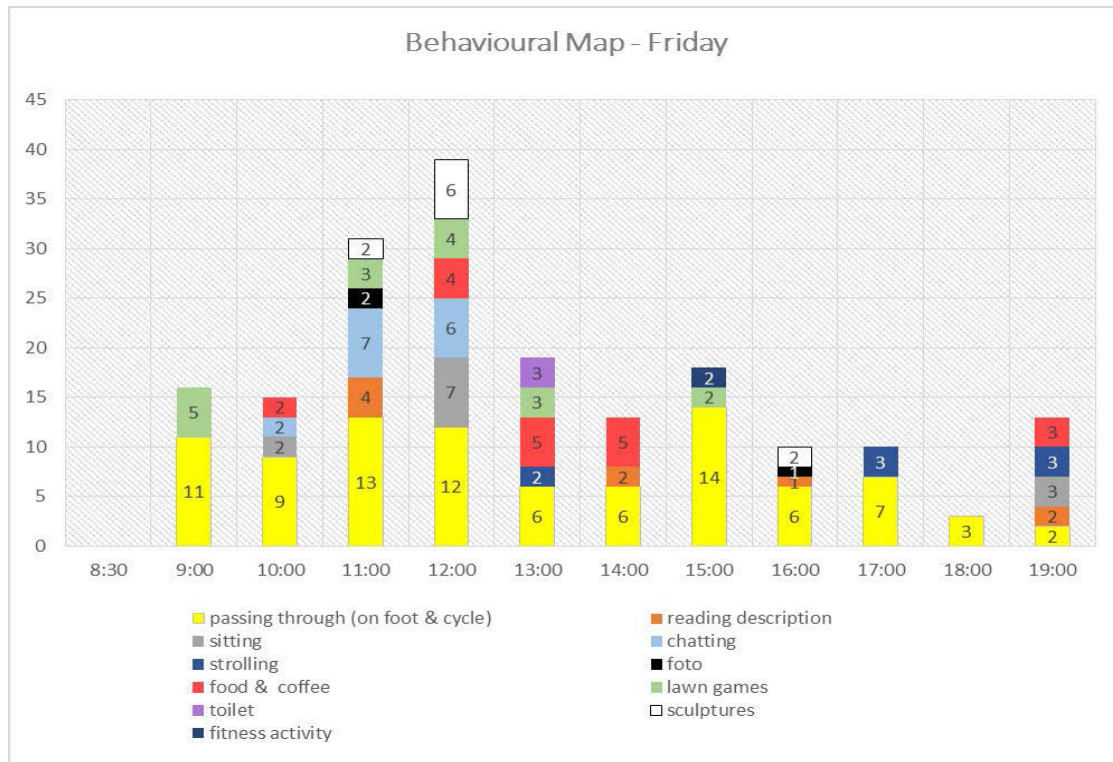


Figure 17.
Behavioural Map, The Commons, Saturday

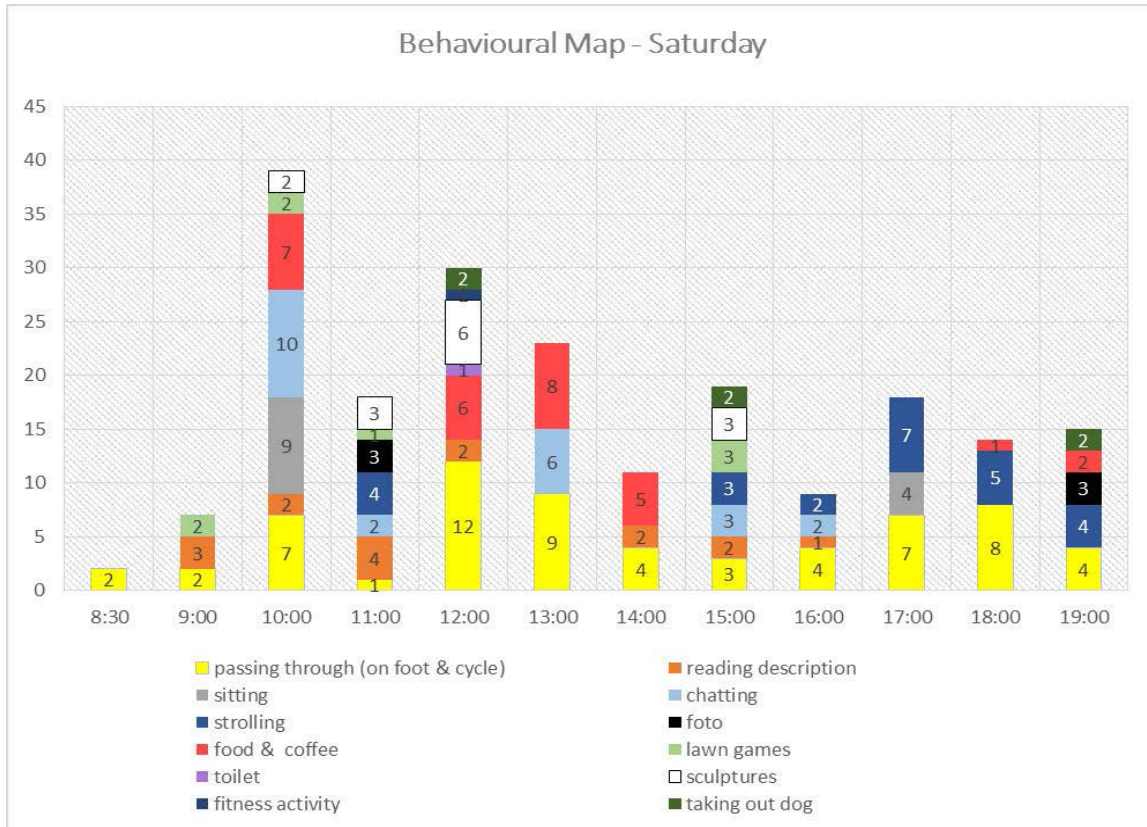
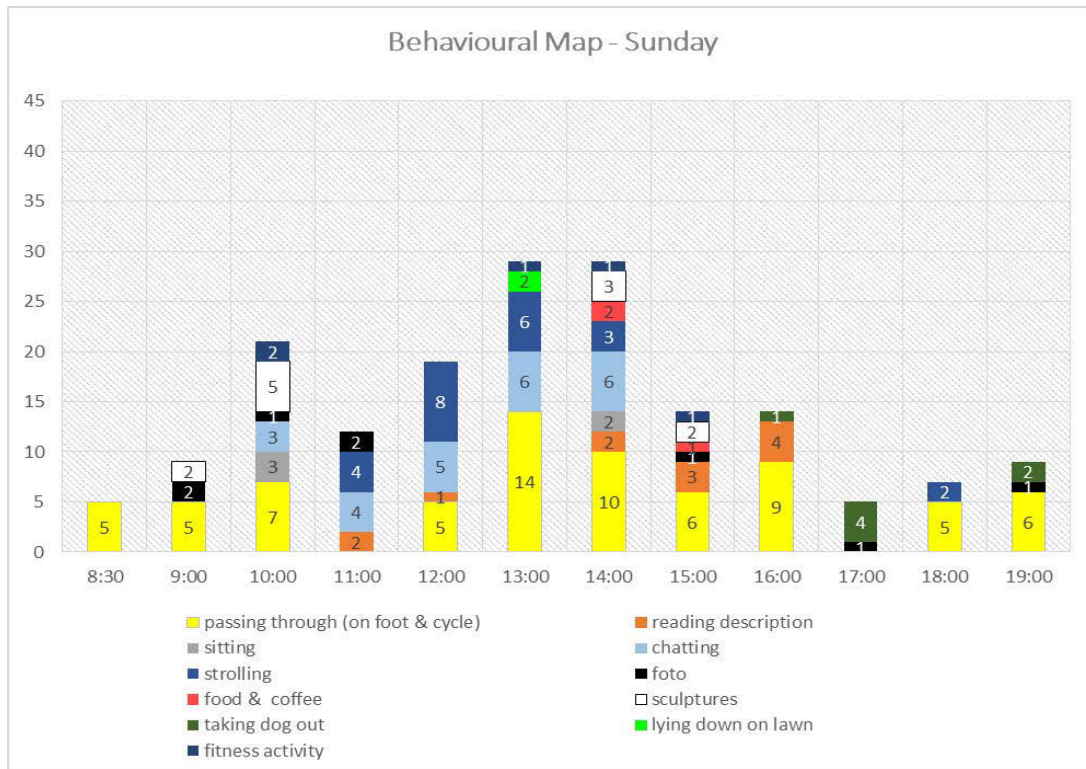


Figure 18.
Behavioural Map, The Commons, Sunday



On Sunday (Figure 18), user numbers were highest between 13:00hrs and 14:00hrs. The largest user groups during this period included passers-by and people strolling across the site. A large proportion of these visitors came in small groups and chatted. Passers-by formed the bulk of the day's users. Cyclists were few in numbers, however occurred frequently. Similar to Saturday, there was also an increased occurrence of joggers noticeable throughout the day ('fitness activity' in Figure 17 and 18).

5.2.2 Places of Tranquillity

Monday's activity was mainly between 11:00hrs and 13:00hrs (Figure 19). A group of visitors sat down, chatted and had lunch together at 11:00hrs. At noon, a number of individuals strolled through the site while chatting. Similar activities occurred during the other two visits. It can be assumed that this was an irregular event in the form of a company's Christmas picnic. The majority of Wednesday's activity (Figure 20) occurred over the lunch period between 12:00hrs and 14:00hrs and at 16:00hrs. A number of visitors entered the site, read the description and left without further exploration.

Figure 19.
Behavioural Map, Places of Tranquillity, Monday

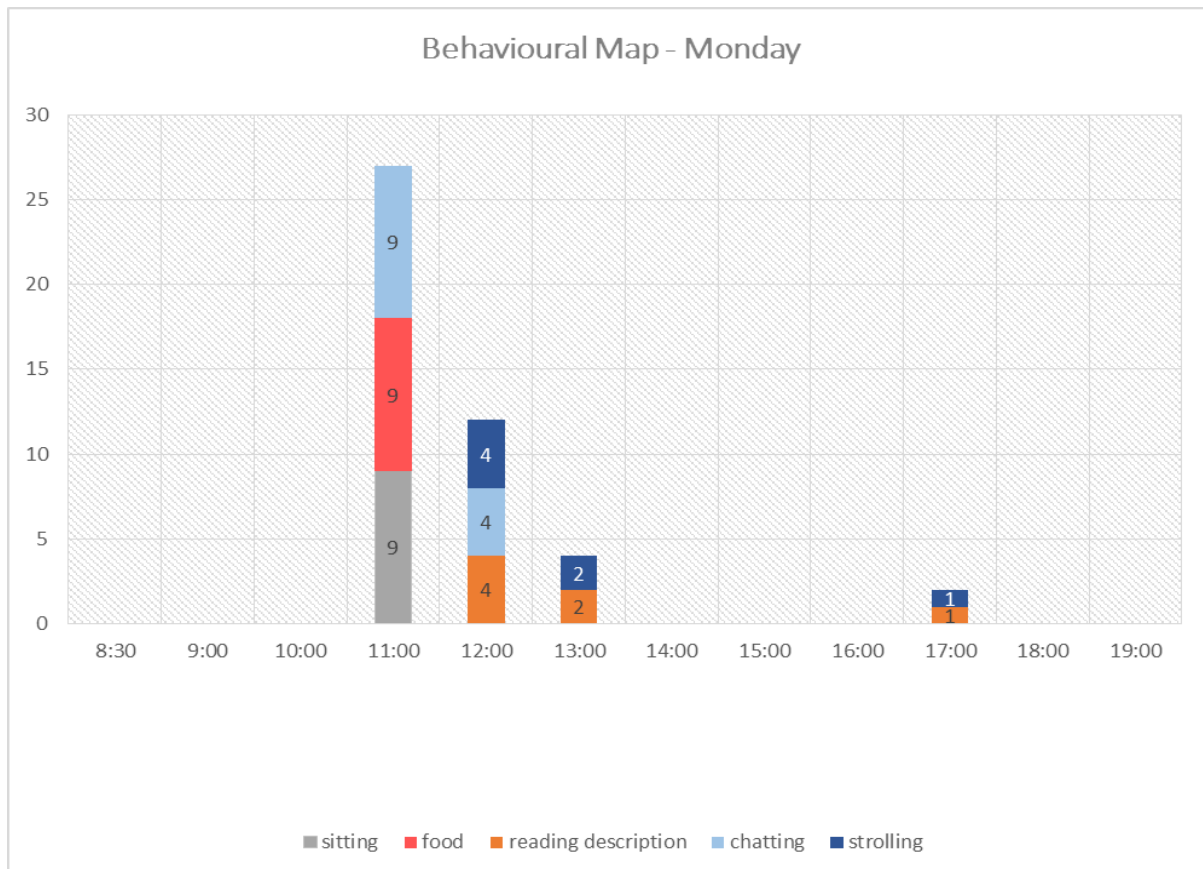


Figure 20.
Behavioural Map, Places of Tranquillity, Wednesday

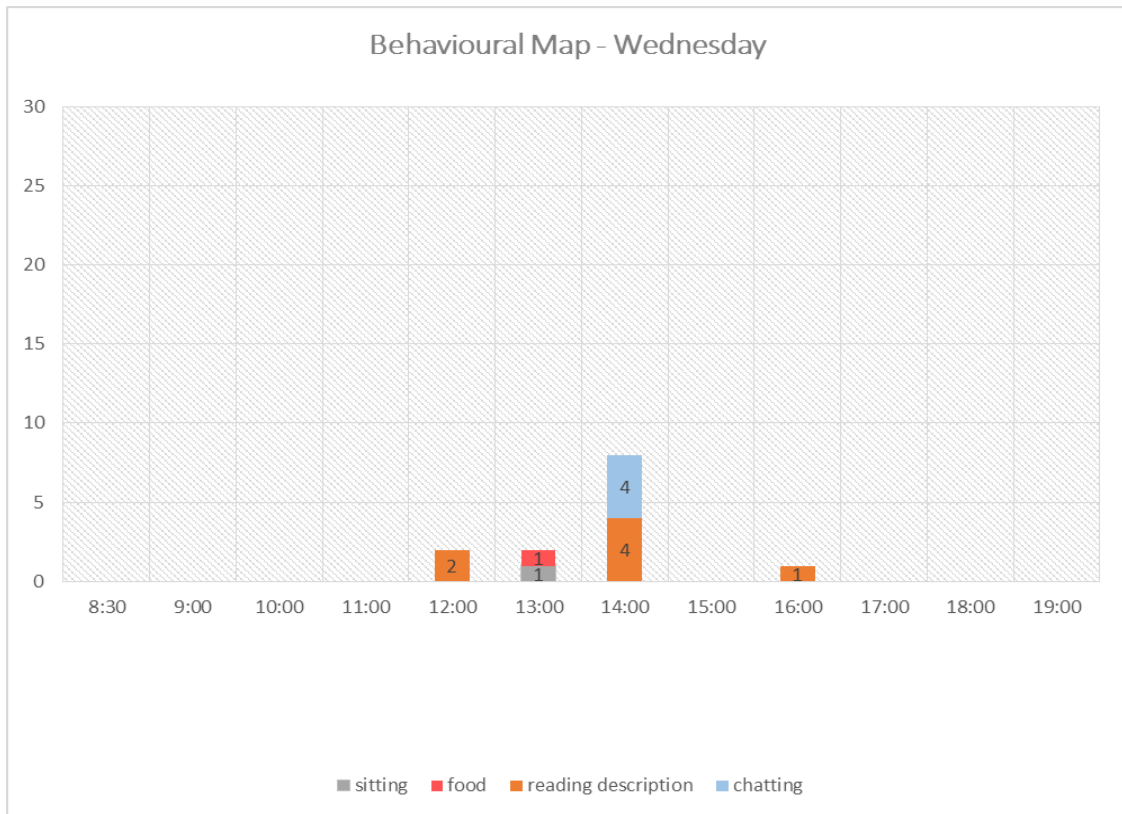


Figure 21.
Behavioural Map, Places of Tranquillity, Friday

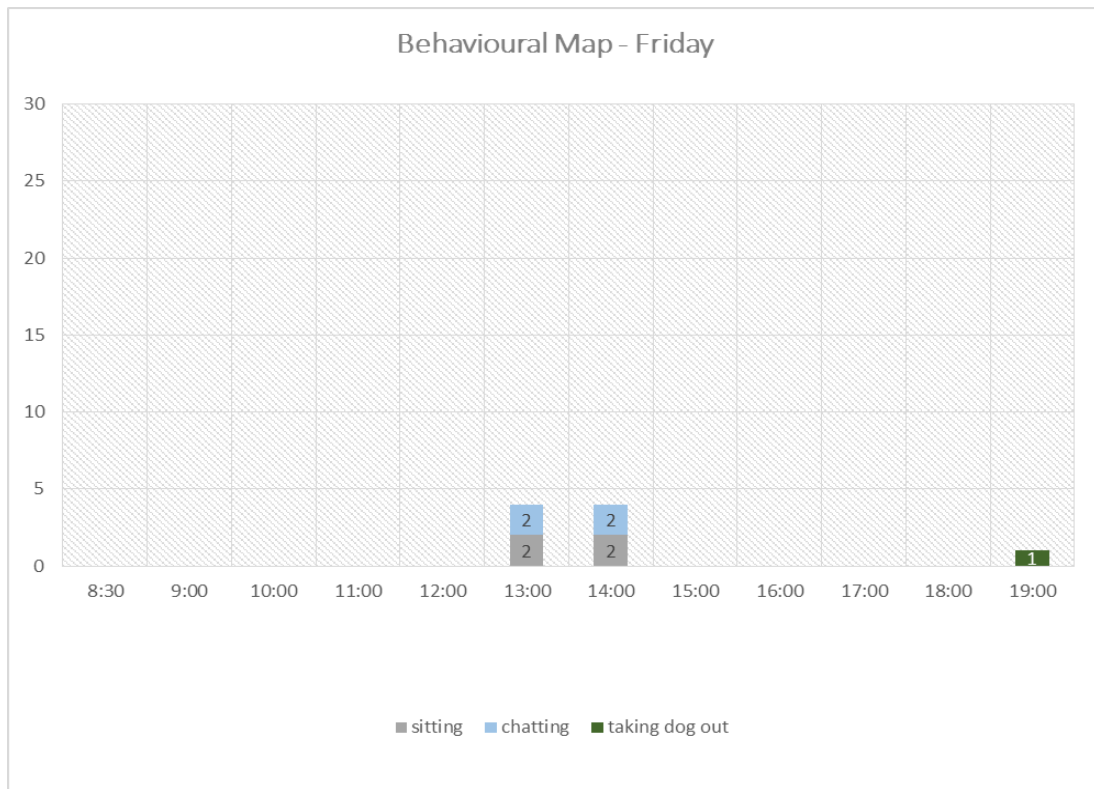


Figure 22.
Behavioural Map, Places of Tranquillity, Saturday

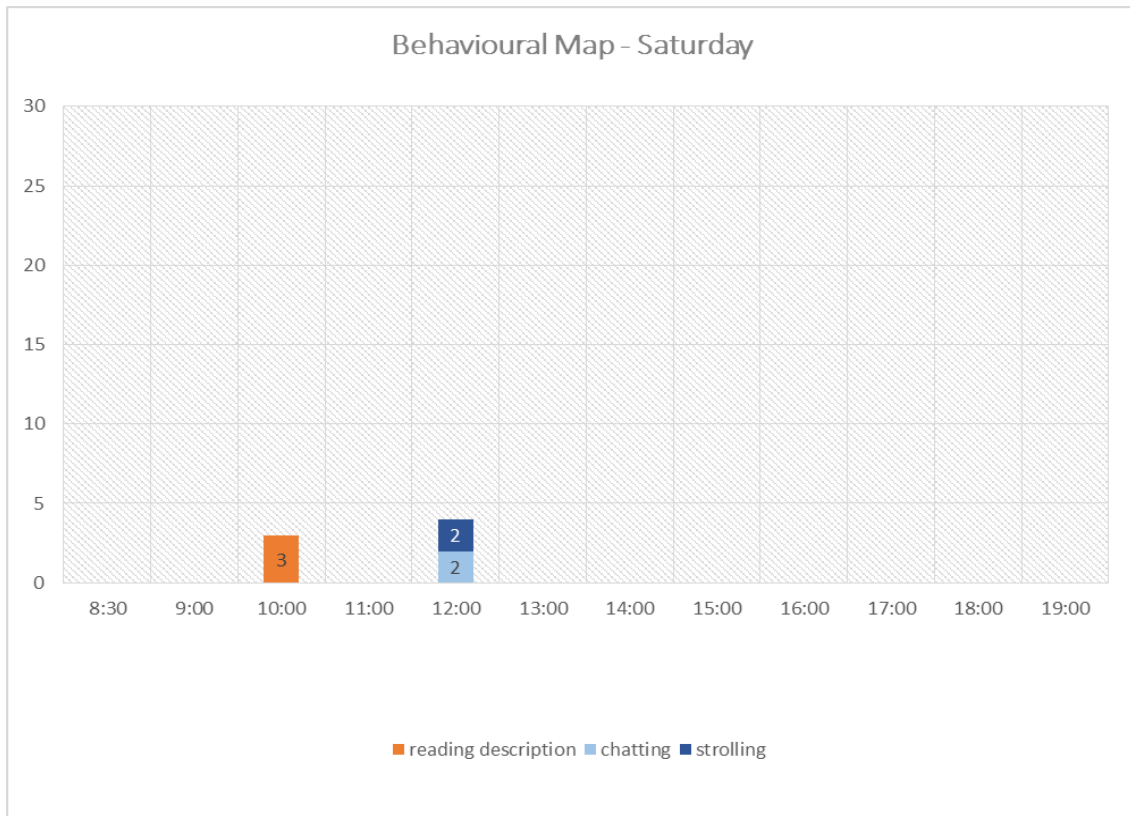
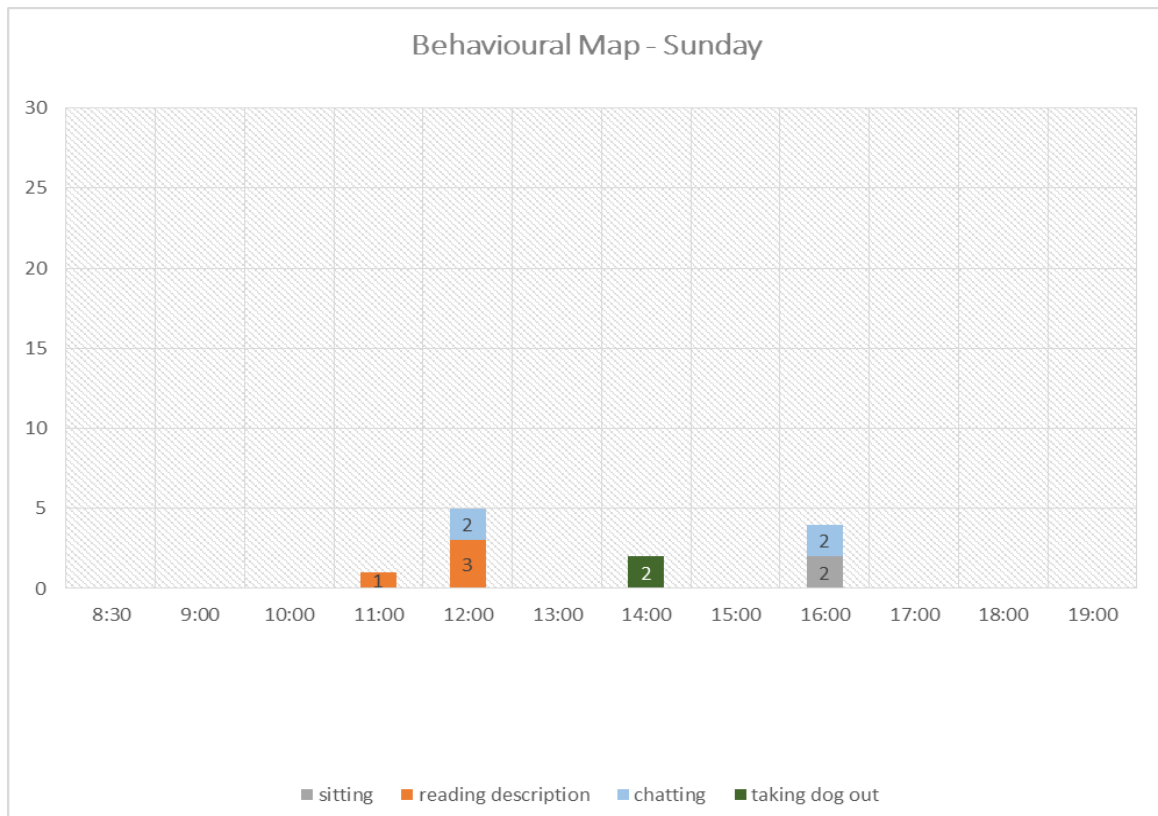


Figure 23.
Behavioural Map, Places of Tranquillity, Sunday



Friday’s main period of activities (Figure 21) occurred between 13:00hrs and 14:00hrs when a group of users sat down and chatted. At 19:00hrs one person took out the dog. On Saturday (Figure 22) at 10:00hrs, a group of visitors read the description and left the site again. Two visitors strolled through the site and chatted at around noon. Sunday’s main activities (Figure 23) occurred between noon and 16:00hrs. Activities at 11:00hrs were limited to visitors leaving the site after reading its description and chatting. A couple took out the dog at 14:00hrs. At 16:00hrs a group set down and chatted.

5.2.3 Dance-O-Mat Area

Throughout Monday (Figure 24), the most frequently occurring activities included sitting on the furniture, photos with furniture while sitting on it and chatting. At 10:00hrs, the site experienced high activity levels due to a larger tourist group visiting the area. There were higher user numbers over the lunch period from 12:00hrs to 14:00hrs. Wednesday’s peak periods (Figure 25) started at noon and ended around 15:00hrs with a low at 14:00hrs. Major activities during this time included photos with the furniture while sitting and chat on it. There were also dancers using the Dance-O-Mat throughout the day. User numbers declined slightly between 16:00hrs and 18:00hrs with another increase at 19:00hrs.

Figure 24.
Behavioural Map, Dance-O-Mat area, Monday

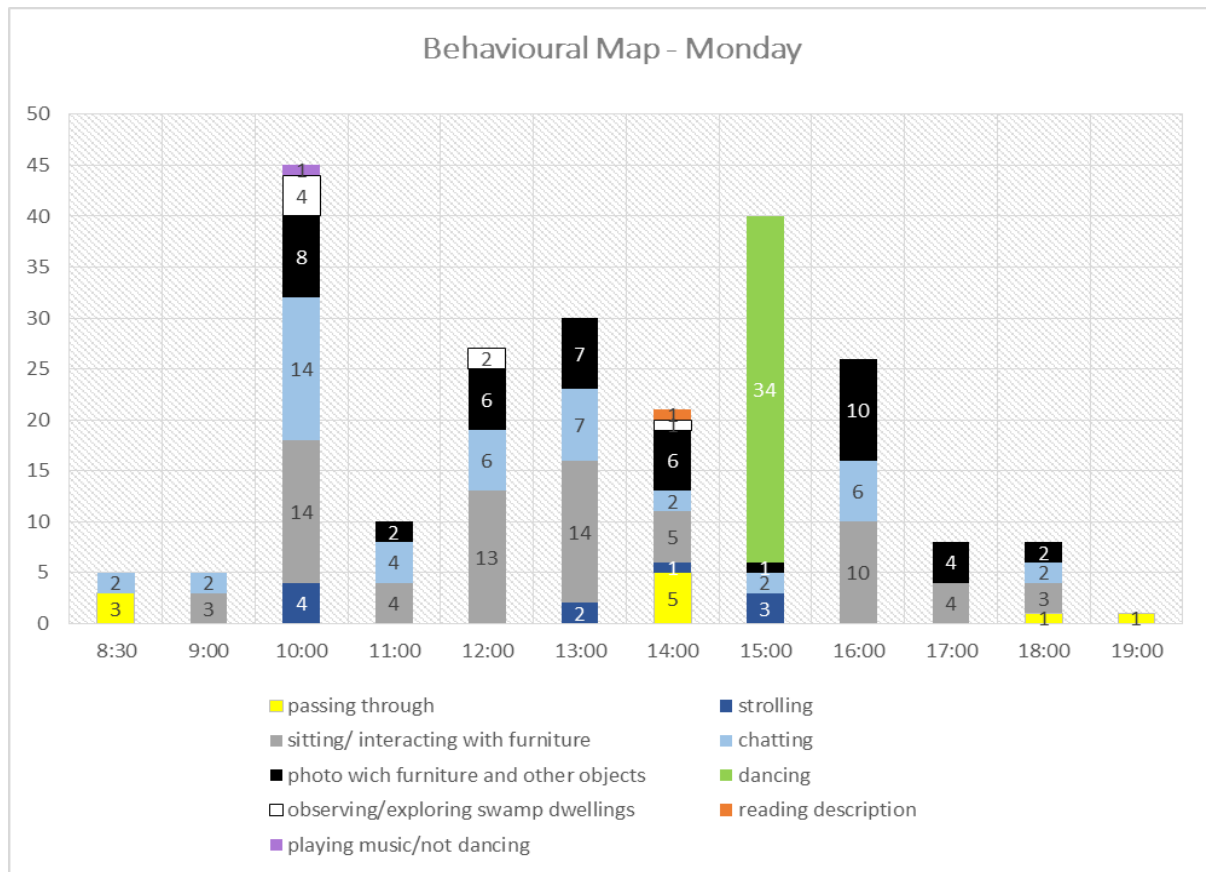


Figure 25.
Behavioural Map, Dance-O-Mat area, Wednesday

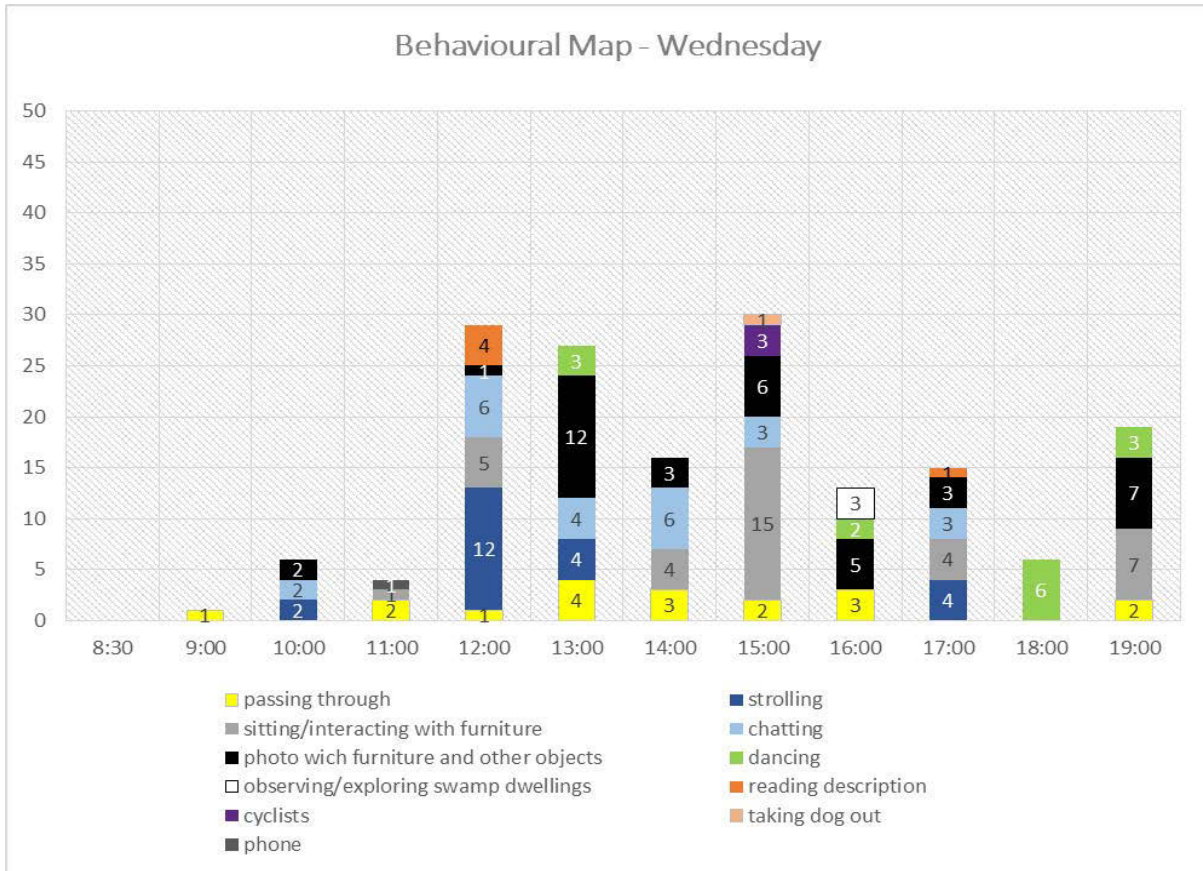


Figure 26.
Behavioural Map, Dance-O-Mat area, Friday

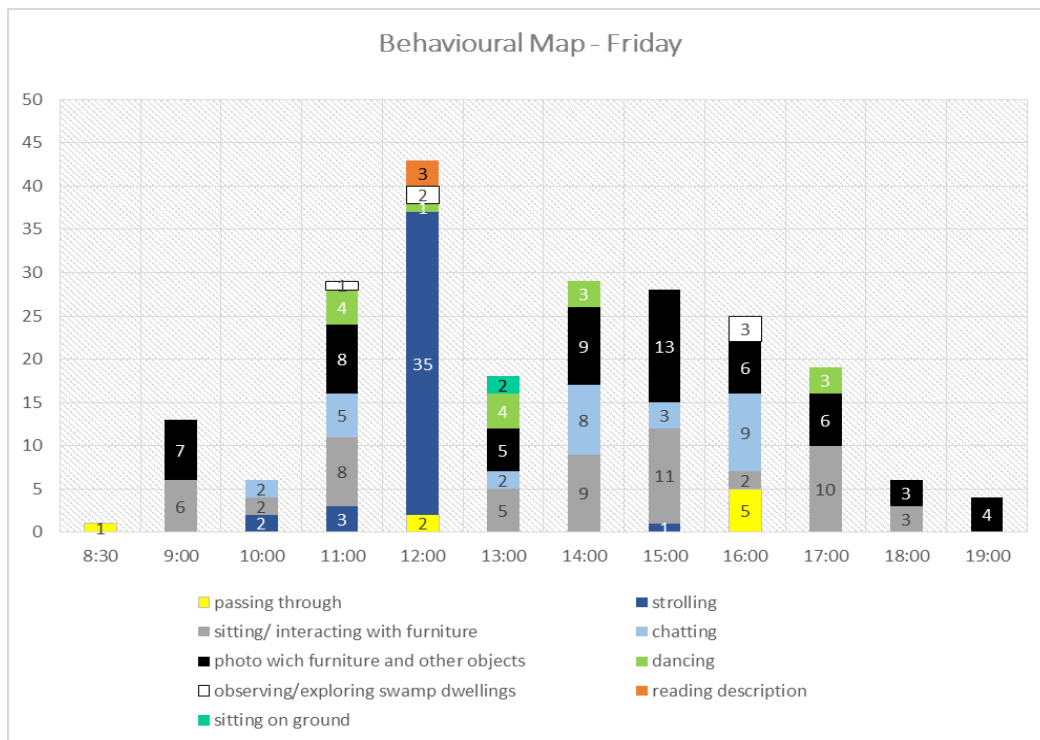


Figure 27.
Behavioural Map, Dance-O-Mat area, Saturday

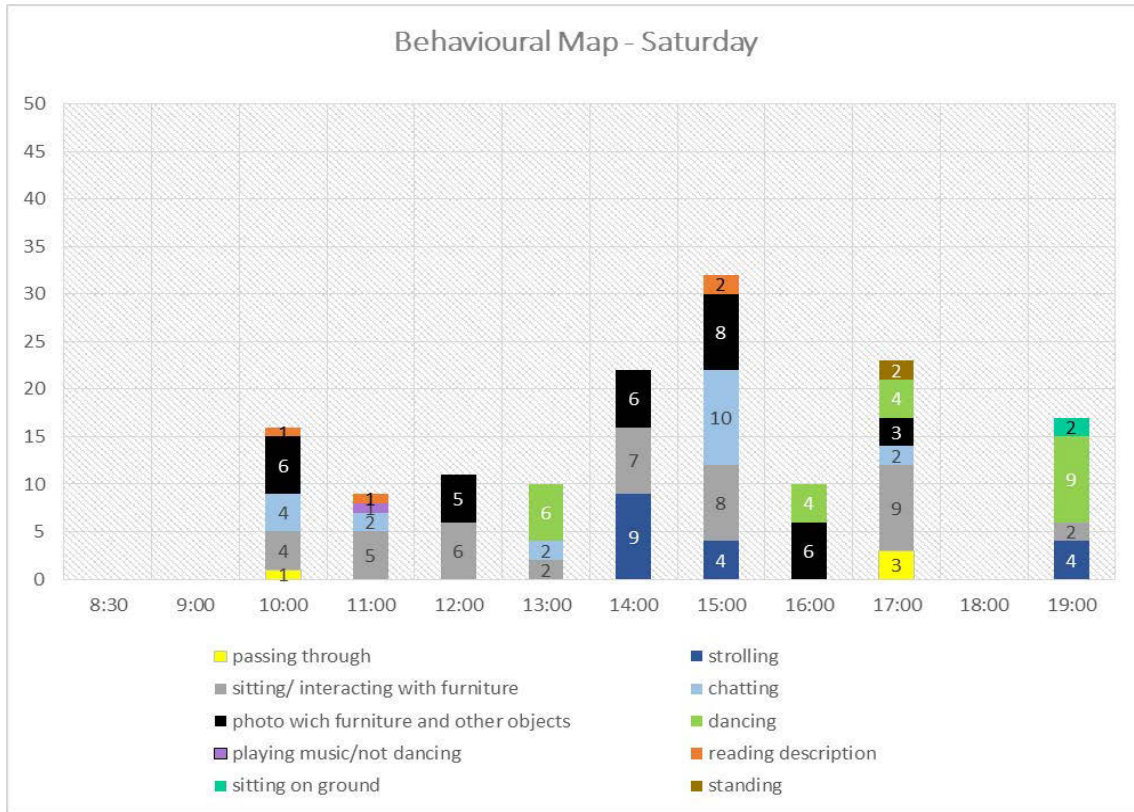
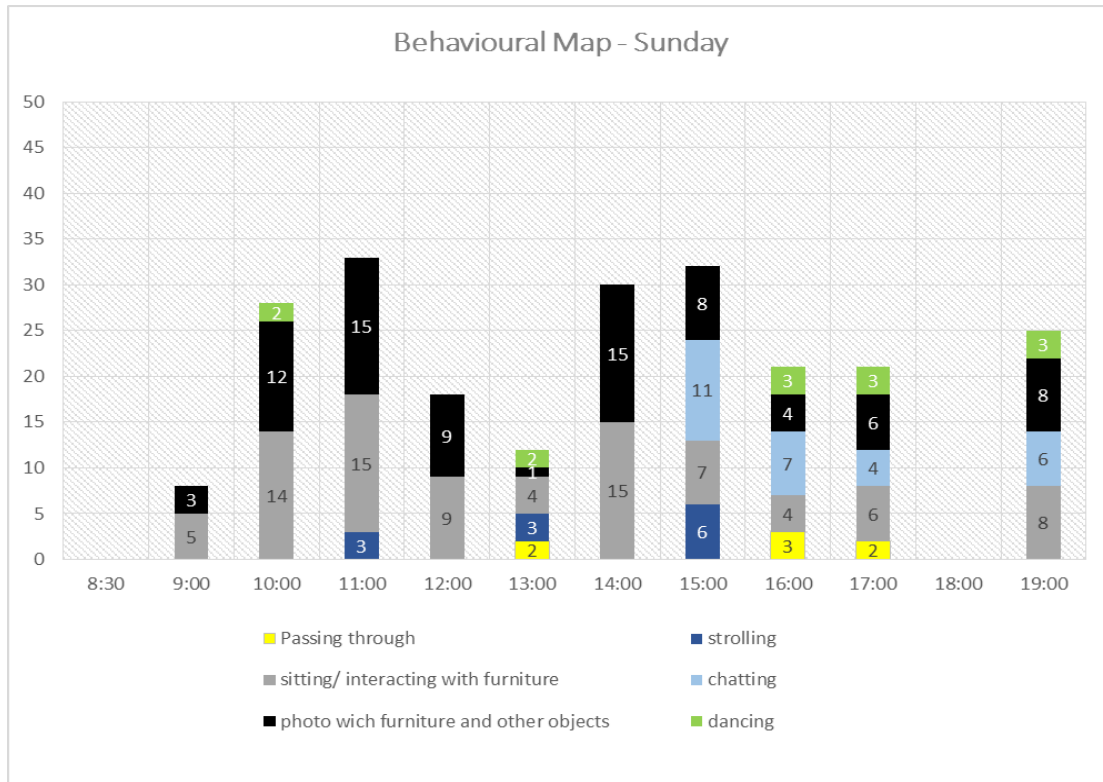


Figure 28.
Behavioural Map, Dance-O-Mat area, Sunday



Friday's activities (Figure 26) were highest between 11:00hrs to 15:00hrs, peaking at noon and dropping at 13:00hrs. The majority of performed activities were sitting on the furniture, taking photos and chatting while sitting on the furniture. Dancing did not occur as frequently as furniture related activities but happened regularly during lunch and afternoon periods. The high number of users at noon was due to a large tourist group strolling through the area.

Saturday (Figure 27) had several user increases throughout the day. These occurred at 10:00hrs, 14:00hrs, 15:00hrs, 17:00hrs and 19:00hrs and included familiar activities (taking pictures while sitting on the furniture and the occasional chat). However, there were a larger number of people utilizing the dance floor throughout the day. The largest dance group occurred at 19:00hrs. There was a drop of users between 11:00hrs to 13:00hrs and one at 16:00hrs. Visitors took photos of alternate objects at times, including the pigeon mural covering a nearby wall. Sunday (Figure 28) followed with the usual activities with more users during the earlier morning periods compared to Saturday. Peak periods included 11:00hrs, 15:00hrs, and 19:00hrs.

5.3 Tracing

5.3.1 The Commons

The trace map in figure 29 shows pedestrian movements that were observed across the site. There are hotspots of increased activity including the seating area in front of the food vendors (blue dashed oval), the lawn (2), the mini golf area (1) and the sheds of local community organisations. The public toilets and works of arts (grey dashed circles) did also attract site users. The archway was used as a major pedestrian through route (red dashed line) for users who cut through the block diagonally.

The thinner black arrows represent frequently used paths. It is apparent that the seating areas (red) in front of the vendors, the lawn and the mini golf area and the organisations' sheds were major focal points followed by the sculptures at the site's peripheries. The lawn and mini golf were frequently used for various physical activities.

5.3.2 Places of Tranquillity

Figure 30 shows areas of activity in the Places of Tranquillity. The grey dashed circles represent the activity of reading the site's description. The blue circles highlight areas where visitors have been observed to sit and communicate. The black arrows refer to the most frequently observed pedestrian movement directions.

Figure 29.
Tracing Map (not scaled). The Commons

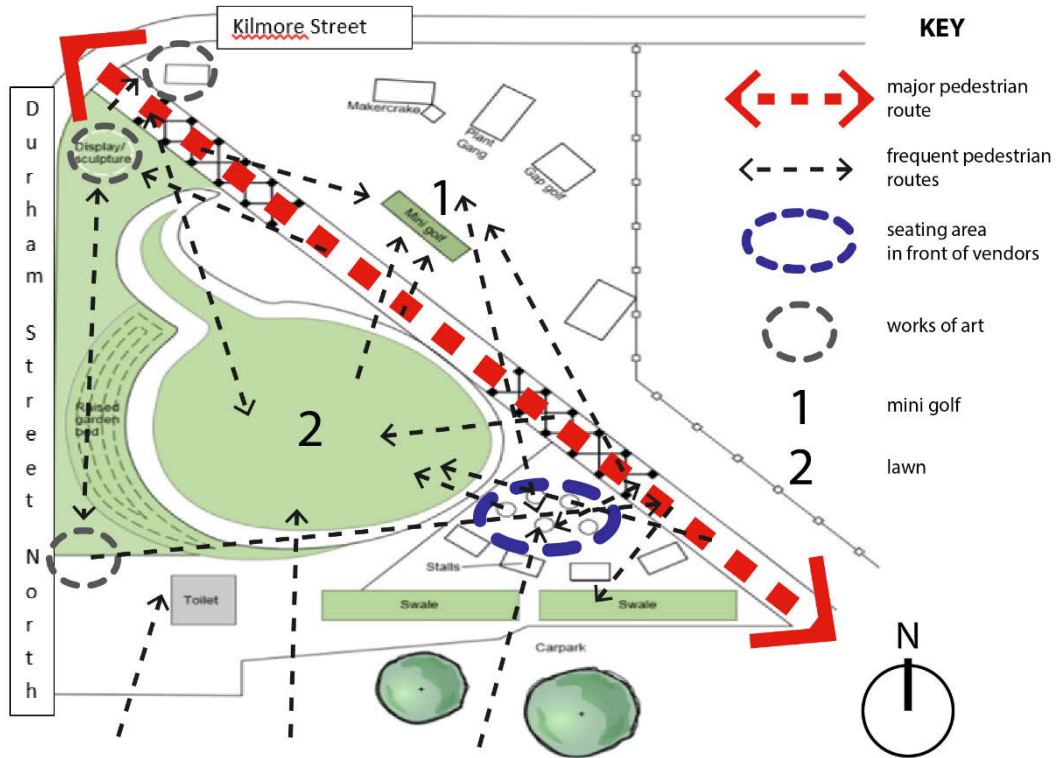
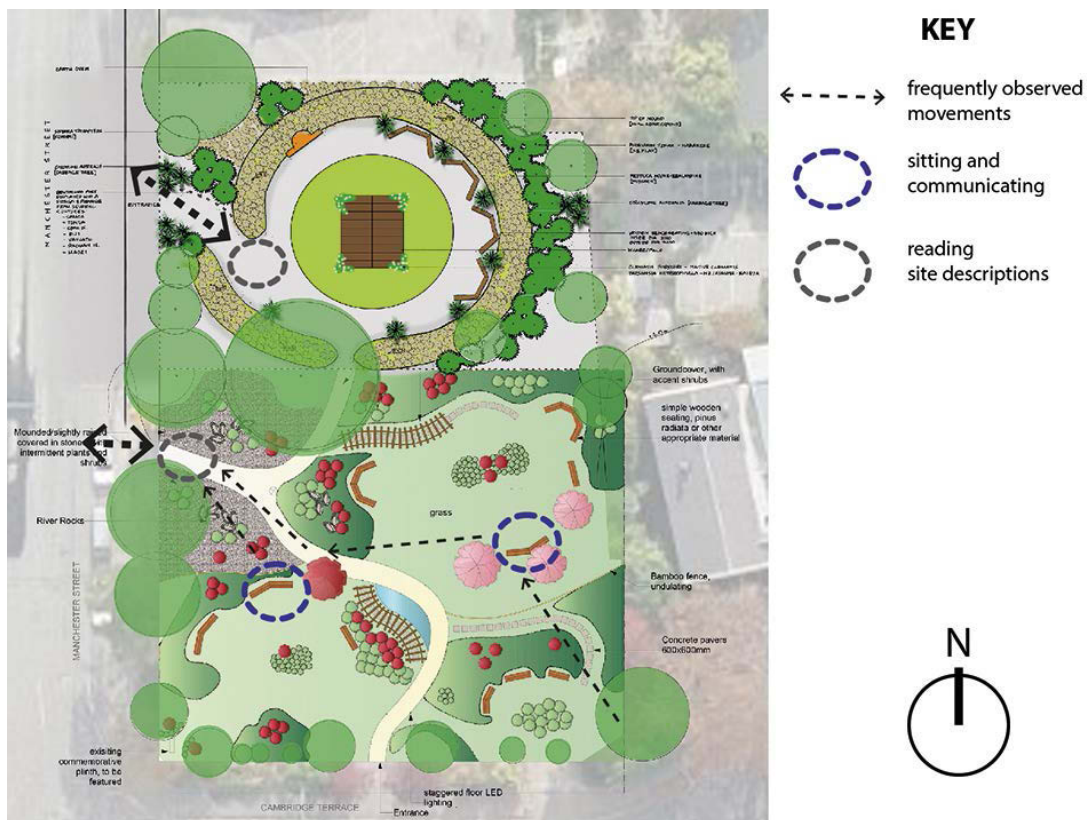


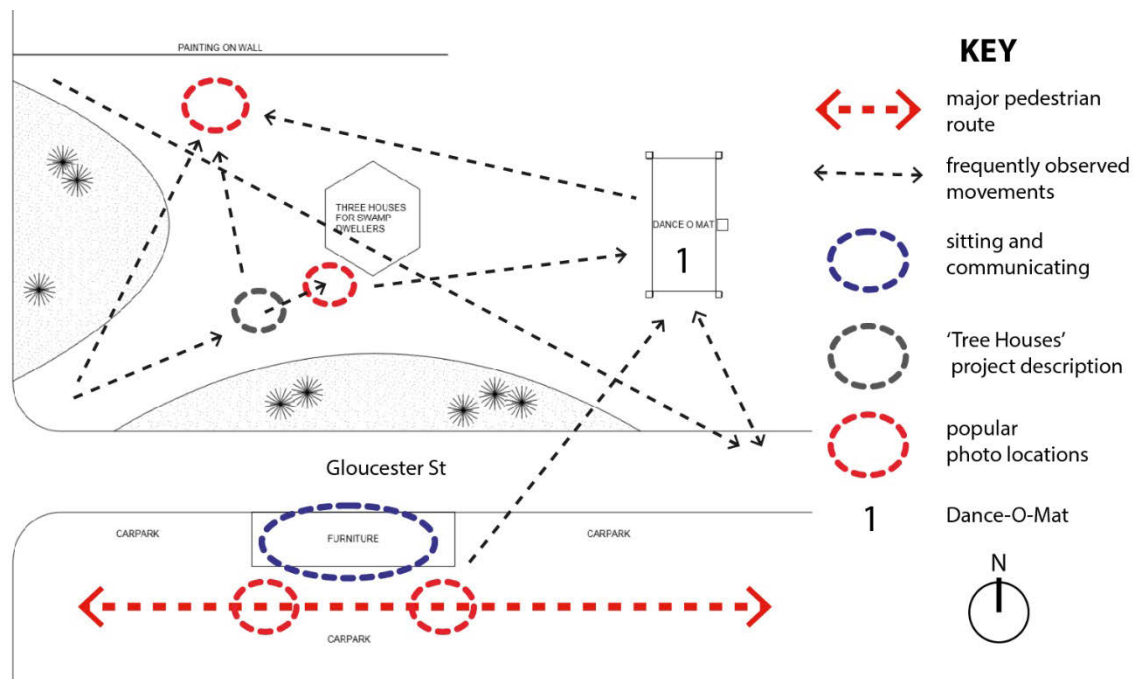
Figure 30.
Tracing Map (not scaled). Places of Tranquility



5.3.3 Dance-O-Mat Area

Figure 31 highlights the areas where frequent activities took place. The red dashed circles represent popular photo locations. The blue circle indicates the main sitting area (temporary street furniture). The grey circle represents the 'Tree Houses for Swamp Dwellers' project description signage. The Dance-o-mat project (1) provided opportunities for dance activities (see 5.2.3). Red and black arrows depict observed pedestrian movement on site.

Figure 31.
Tracing Map (not scaled). Dance-O-Mat Area



5.4 Discussion

This section compares particular aspects of the Public Life Study across the three case studies. The Places of Tranquillity were mostly visited between 12:00hrs and 14:00hrs. Due to the generally very low number of users over the entire week (Figure 12), it is not possible to identify distinctive patterns of utilisation. Both the Commons and the Dance-O-Mat Area experienced high user numbers. Pedestrian counts at The Commons depict a consistent utilisation pattern over the entire week with similar numbers of users at key hours and a few unusual peaks on Wednesday (Figure 11). User numbers generally increased at 10:00hrs, peaked around lunch time and decreased slowly in the course of the afternoon. The Commons seem to attract users who utilise the site as part of their day-to-day activities including morning tea, lunch break or on their way back home from work. The Dance-O-Mat Area showed less consistent utilisation patterns; larger groups entered the site and caused peaks at different hours of the day and different days of the week (Figure 13). The site is frequently visited by users who occur in groups at irregular hours and utilise the site in a transient sense, for example on the way from one (tourist) destination to another rather than engaging with it as part of their day-to-day activities.

This impression was supported by the behavioural mapping study. Users of The Commons utilised the space for both 'situated' and 'transient' activities (cp. Carmona 2014a, 22) likely as part of people's day-to-day activities. Some situated activities such as sitting and food consumption occurred regularly at typical hours on weekdays and Saturday (Figures 14-17). Transient activity patterns – in particular

passing through – suggest that people use the site as a shortcut, for example on their way home on a regular basis. The Dance-O-Mat Area behavioural mapping study depicts photo shooting as an activity that occurred on most times of the day suggesting that in particular tourists used the space frequently. Sitting and chatting on the street furniture often occurred in combination with the photo shoots making it a less situated activity than, for example, using the seating area at the Commons in combination with food or coffee consumption. The Dance-O-Mat was regularly used (Figures 24-28); however, it is not possible to make a distinction between regular and ‘one-off’ users from the observations alone.

The tracing map for the Dance-O-Mat Area (Figure 31) depicts Gloucester Street as a physical divider. There is less pedestrian movement between both sides of the street than in the northern part of the site. Movements in the northern part of the site are mainly between the three activity spaces and a few popular photo locations. There is a diagonal through route (shortcut) across the site from the north-west to the south-east.

The Commons (Figure 29) show more active and complex movement patterns. The major movement corridor that crosses the site is not only a through route but guides users to different activity zones that provide ‘situated’ activities. There are also crossover movements between activity zones such as the seating area in front of the vendors, the lawn and the mini golf site; users enter and leave the site from various directions. Movement is not restricted to isolated activity spaces; the diversity of users’ movements contributes to the experience of vibrancy across the entire site. The Places of Tranquillity tracing map (Figure 30) shows only limited movement on site. In more than one occasion, people entered, read the information sign and left again without exploring the site any further. Particular design features, in particular regarding safety, diversity, and context (see 4.2), might contribute to this phenomenon.

Chapter 6

Conclusions

Three main research questions and three case studies have been addressed by this study. In regard to the first research question (how frequently are CIOS used?), pedestrian counts provided insights into the utilisation of the three CIOS. The analysis of the quantitative data against qualitative criteria, based on the spatial qualities survey, addressed the second research question (what are their particular spatial qualities?). In regard to user numbers, the most important spatial quality turned out to be the urban context. Both The Commons and the Dance-O-Mat Area – located in the vicinity of major public, commercial and touristic facilities, spatially connected within the city's major pedestrian movement networks – experienced high number user numbers. The Places of Tranquillity, on the other hand, located in a largely unoccupied neighbourhood attracted only a few people.

In regard to the third main research questions (how do users interact with CIOS in relation to these qualities?), design features that fostered safer, more comfortable, useable and diverse experiences influenced significantly the way users interacted with CIOS. The qualitative features that drew people into the three examined open spaces and encouraged them to linger corresponded largely to Carmona's (2014a, 23) "Determinants of space occupancy in London". Similar to London's open spaces, CIOS that managed to draw users in were well integrated into the city's movement network, provided "dominant 'movement corridors' or desire lines passing through spaces", hosted major attractors and amenities and were visually permeable. It is interesting but perhaps not surprising that users of post-disaster transitional community-initiated open spaces in Christchurch showed similar utilisation and interaction patterns in relation to specific spatial qualities as observed elsewhere. The temporary status of CIOS did apparently not influence 'typical' utilisation and interaction patterns. In that respect, temporary spaces could become suitable testing grounds to explore and monitor (low-budget) urban design concepts prior to permanent implementation.

The Commons, being a safe, diverse and highly useable space, was used for a range of 'situated' and 'transient' activities across different times of the day and days of the week. At The Commons "[h]igh levels of transient use generally stimulated high levels of situated activity [...] occurring in the interstices between dominant lines of movement and around key features and amenities" (Carmona 2014a, 23). The space featured qualities such as soft surfaces (grass), semi-flexible seating and varied microclimatic conditions including shading – the same qualities that encouraged situated activities in London. The Dance-O-Mat Area was also highly frequented and provided different activities and experiences. However, it reflected qualitative aspects that contributed to an unsettling atmosphere and encouraged 'transient' rather than 'situated' activities. The Places of Tranquillity provided a number of valuable qualities, for example in terms of vegetation and design features encouraging calm and introverted activities. However, the question might be raised if it was it a good idea to locate a 'quiet' garden within an 'empty' urban context. Would a site like the Places of Tranquillity, designed for peaceful relaxation, be better located along a frequently used pedestrian route? How could highly frequented and by times unsettling spaces like the Dance-O-Mat Area benefit from design features that characterise the Places of Tranquillity?

Such questions and related critique are appropriate; however, they must be carefully considered within Christchurch's post-disaster context. If CIOS show design- or context-related deficiencies, what did and does the central city look at the same time? Throughout 2011 to the end of 2013 much of the central city resembled a combat zone or wasteland. Community organisations have rarely been able to pick and choose vacant plots to suit their own project plans. Sites have been 'allocated' or made available. Both the City Council (CCC) and CERA have been actively involved in saying 'Yes' or 'No' to site choices and their utilisation. Within the CBD especially, community groups have often had to

accommodate the priorities of central and local government in projecting a sense of 'recovery'. The sites they wanted and the ones they got were not necessarily the same. The Places of Tranquillity, for example, have been conceptualised for a longer life span; the Dance-O-Mat area, however, is one of the main central redevelopment sites, only suitable for short-term and highly movable installations such as Gap Filler Dance-O-Mat. Even if a site like the Places of Tranquillity would possibly be better suited in a more central location, abovementioned circumstances would likely prevent it. In that sense, community organisations had no choice than to adapt to possibly less than optimal contexts and despite imperfections CIOS have created various benefits for local communities (Wesener 2015).

The study focusses on how users utilised and interacted with temporary open spaces in relation to physical spatial qualities that supported activities predominantly responding to people's "desire for relaxation, social contact, entertainment, leisure, and simply having a good time" (Carmona 2014b, 3). However, as with every academic research, the available amount of time and resources was limited and it went beyond the scope of this study to investigate experiential and social phenomena other than formulated in the research goals. The study did, for example, not examine how the three sites were 'passively' experienced, for example by motorized passers-by. It has been repeatedly reported "that even passive passers-by without direct involvement in community-led activities may experience positive emotions solely by noticing that ordinary people are recreating and rebuilding structures within a destroyed urban landscape" (Wesener 2015, 415). The 'windscreen view value' which is not the same as photo stops by tourists derives from seeing a big enough plot of land that has been adapted in some way as you drive by. In that sense, the Places of Tranquillity may work better than the other two sites. The study does not cover the three sites as roadside attractions; however, a glance at a CIOS could count as use and utility may derive from it.

Another important topic that has not been addressed is the fact that open spaces – temporary or permanent – are not just commodified assets for consumption and recreation. They are also platforms for political and social debate that has traditionally informed democratic societal transformation. In that respect, the study could be perceived as overly design-oriented and "de-politicized" (Spataro 2015), a critique that echoes much of the scholarly public open space debate of recent years (Carmona 2010; 2014b, 2-4). The authors recognise and empathise with this critique. Urban open spaces have traditionally been places that enabled encounters between individuals and groups who share different political, social and cultural perspectives. Neglecting the important public functions of open spaces would mean ignoring "that conflict has and will continue to be a fundamental part of changing cities" (Spataro 2015, 14) and providing only a "whitewashed" (3) and incomplete version of the nature of urban open space. It would be interesting to evaluate how community organisations have dealt with challenges that might have occurred, for example in regard to minority groups including homeless people or phenomena such as 'antisocial' behaviour.

Much has been written on temporary spaces in slow-onset ('non-disaster'), urban disturbance environments. In contrast, CIOS in Christchurch appeared in a rapid-onset, large area natural disaster context that overturned not just buildings but ownership of land through compulsory state purchase and commercial investments that were not in decline prior to the earthquakes. Despite a swath of official recovery and master plans since mid-2011 the situation as at 2014/2015 remains uncertain with no guarantee of a return to business as usual within the next five to ten years. The central city at present is a tangled web of large and unresolved insurance claims, new temporary laws, temporary designations and anchor project funding proposals that may or may not eventuate. CIOS that have been created in post-disaster urban environments are by nature different from non-disaster (temporary) open spaces. So far, English-speaking research on post-disaster temporary urban open spaces and related community involvement is virtually non-existent (Wesener 2015, 407). The emerging scholarship based on Christchurch's temporary spaces is pioneering and relevant in the

sense that it might support international researchers in similar post-disaster settings decide what would be worth looking at.

For future research, it is recommended to re-survey CIOS in Christchurch and include research topics such as those discussed above that have not been examined so far. Continuous research on CIOS in Christchurch will contribute to a better international understanding of benefits and challenges in regard to temporary uses of vacant urban open spaces after a natural disaster. It will provide a more comprehensive view on post-disaster urban open spaces including valuable insights how temporary spaces and associated community groups evolve with some time elapsed after the disaster.

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