

24/7 Environments: a Theoretical and Empirical Exploration from an Urban Planners Perspective

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Abstract

24/7 environments appear to be urban phenomena created by the fortuitous combination of various socio-cultural, economic, political and environmental trends, namely that of globalization and the increased demand on the time budget. A 24/7 environment can be viewed as an extremity of urban vitality or an expression of the city image and identity as a cultural, economic powerhouse.

Current trends of 24-hour societies in the United States and Japan are a translation of a 24-hour environment as a premium condition for time management of those diverging from the conventional social-temporal rhythms. Such an environment is built upon the daily struggles of increased time constraint and multiple demands on the urban user leading to a demand for multifunctional spaces and increased mobility, according to Ascher (1997:119).

To understand the phenomenon in its entirety, a decision was made to answer initial curiosity for 24/7 environments (which seemed to be lacking at present within the Netherlands) with a dual approach of both a theoretical literature study as well as an analytical empirical one. As important as societal conditions are, when aiming for a 24/7 city, it was - rightly - expected that spatial conditions, on different levels of scale, would nevertheless play a role as well. The built environment, after all, is the fabric that is needed to accommodate societal processes. The findings of this exploratory research are presented in this paper, which has as aim to lay a foundation for questions regarding 24/7 environments in terms of its conditions, effects and relation to the field of urban planning.

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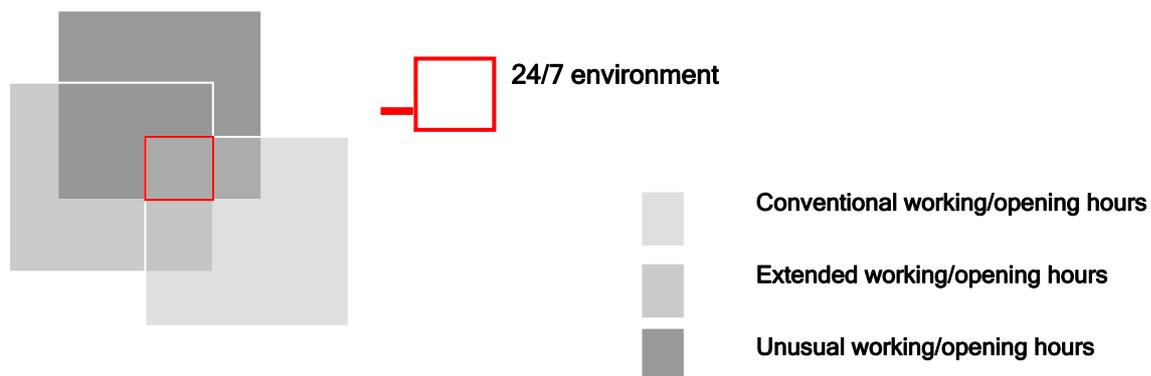
1 Introduction

Why is it that in certain cities, mainly in Asia and North America, inhabitants enjoy an effortless 24/7 society, where one can shop, go out, exercise and in short, live the urban experience 24 hours a day, 7 days a week, while in other cities, the hours, and sometimes even days, are far more restrictive? In other words, why can New York, Singapore and Tokyo sustain recognizable 24/7 environments, whereas cities in others countries, for instance, The Netherlands, apparently lack the capability? It was this curiosity that stimulated the explorative research project as reported in this paper - a question that of course, led to a world of other questions. In an effort to define the research, the following questions were selected for an explorative approach:

- What exactly is a 24/7 environment? Can such an environment be defined?
- What kinds of conditions are needed for a 24/7 environment to develop?
- What are the benefits and potential detriments of a 24/7 environment?
- Can such an environment be planned, and if so, what can and should be the role of urban planners and urban designers?

To find answers to these questions it was decided to approach them both theoretically and empirically. Starting point for this study was the conviction that a 24/7 environment should encompass more than just a few shops or other facilities, open or accessible 24 hours and 7 days a week, but should refer to an area where multiple functions for a range of people would be available day and night (Illustration 1). A 24/7 environment can therefore be considered to be an extremity of urban vitality.

Illustration 1 Multiple usages of space in the dimension of time



Given the increment in populations, demands and functions and the lack of viable space, urban environments are expected to supply more functions than just the four compartmentalized modernistic tenets, dating from the first half of the last century, of living, playing, working and moving. The strive for a vital, mixed use environment that encompasses the needs of the neighbourhoods and communities is idealised in the utopian 24 hour city by Dantzig and Saaty (1973), which illustrates the compression of space through time with their famous examples of 1 lunch table instead of 24 (Illustration 2) and of the compact city (Illustration 3).

Illustration 2: The Principle of Time (Dantzig & Saaty 1973: 32) In Principles of time, Dantzig and Saaty illustrated that a usual restaurant for lunch requiring 24 tables will only require 1 table instead in the Compact City, due to the spreading out of the lunch hours, breaking free of circadian rhythms.

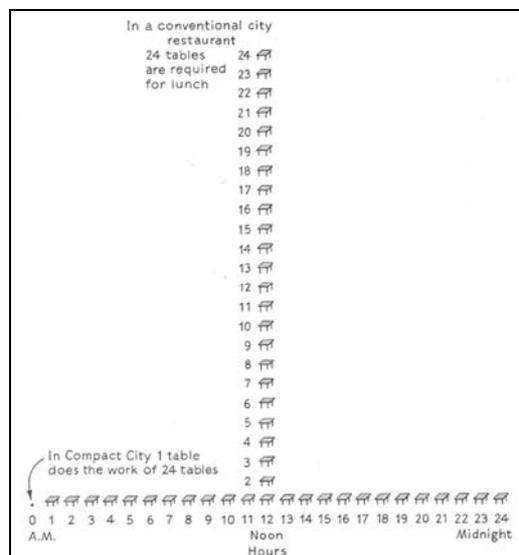
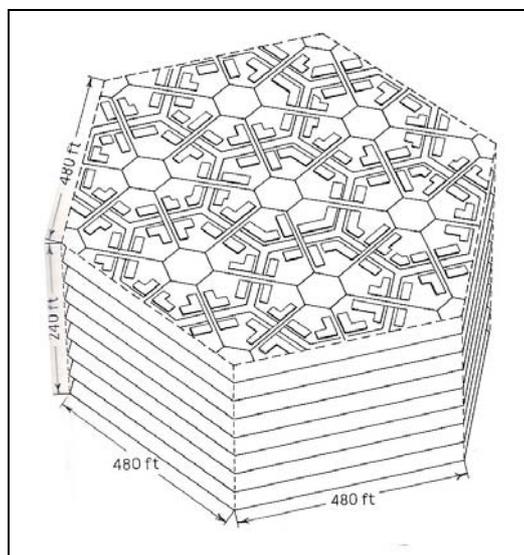


Illustration 3: A neighbourhood module (Dantzig & Saaty 1973:72).



2 Understanding the 24/7 environment

Starting from the point of view that a 24/7 environment indicates an area where multiple functions for a range of people are available day and night, we tried to get a better understanding of the phenomenon by looking for theoretical concepts that could aid us in formulating a framework. This resulted in finding limited amounts of directly relevant literature, which meant that we had to build our own theoretical framework out of the existing literature and research from across the academic and practising worlds that formed our knowledge base. Pillars upon which we base this concept are ‘urban vitality’, ‘agglomerative and symbiotic processes in complex open systems’ and ‘urban rhythms’.

Urban vitality

Urban vitality is the life force of the city, shaped by its pre-existing conditions (spatial and otherwise), requiring a critical mass to become viable and strong, a characterisation based upon Jane Jacobs breakthrough work, *The Death and Life of Great American Cities* (1961) and on publications by Landry and Bianchini (1994).

Jacobs’ book might not be the first literature to address the issue of urban vitality, but it surely is one of the most influential and popular. To avoid the ‘Great Blight of Dullness’ (Jacobs 1961: 144) she stresses the importance of diversity of urban ‘ingredients’ (ibid.), safe streets and good public spaces. According to Landry and Bianchi urban vitality is related to levels of activities, of use, of interaction, of communication, transaction and exchange and of representation.

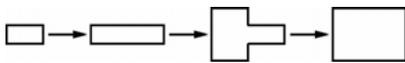
Projecting their ideas on a 24/7 environment, we conclude that this type of environment should be identified by the amount of activity and usage throughout a 24-hour period. It is spatially not possible to capture exchanges and transaction, but possible to identify locations and services that are associated with the daily exchanges and transactions of the urban users and the time spans during which they are accessible. Therefore the necessary 24-hour services (law enforcement, fire protection, emergency services, etc.) are isolated as part of the definition of the 24/7 environment. A healthy urban environment is used by all spectra of society over a myriad of time spans. A 24/7 environment is not a constant singular activity, time span or society sector but an overlapping of every user group’s routine

and pattern of usage. It can also be defined as a public space (indoors/outdoors - as long as accessible by the general public), which provides services at any time span. In short, it is a time-democratic environment, where any user should be able to conduct the same diversity of activities they are accustomed to in usual working hours/time spans.

Agglomeration and symbiosis in complex open systems

Neighbourhoods, cities and urbanised regions can be regarded as systems. The physical part of these systems, the object of urban planning and design, is inextricably bound up with the urban system as a whole (Klaasen 2004: 79). Agglomerative and symbiotic processes are processes in urban systems enhancing vitality. Agglomeration effects (Illustration 4) occur at all scales. "When a branch of the HEMA [a chain of Dutch department stores - w/itk] opens in a small urban centre, this increases the attractiveness of the centre and its vicinity, resulting in increased employment, and more and larger shops selling a greater variety of articles. The opportunities for the retail trade may develop to such an extent that a large department store such as Vroom & Dreesmann may decide to set up a branch there. The catchment area will increase in size, creating scope for specialized shop" (De Boer, 1990: 40/41).

Illustration 4 Agglomeration (Source: Klaasen, 2004: 135).



Symbiosis means the mutual profit that (at least) two different types of activities gain from one another. When symbiosis is present in an urban system, there is usually an attracting activity and other activities that depend on it, such as flower stalls, street musicians, theatre cafes, ice-cream vendors, etc. Symbiotic activities are to a large degree dependent upon impulsive participation. They mainly involve pedestrians, who are the only type of traffic that can stop immediately. Cyclists may also be involved but to a lesser degree. As stated in the caption of Illustration 5, symbiosis can improve public safety as well (Ibid.).

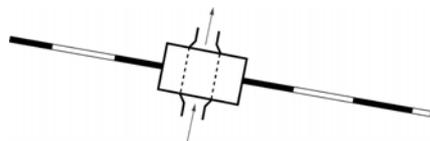


Illustration 5 Symbiosis

Connections at a certain scale often form a barrier at a lower level of scale. When the pedestrian/cycle routes between districts of a city located on either side of a rail line converge with access to the station and its associated activities (ticket sales, kiosk, etc.), this improves public safety for all users (Klaasen, 2004: 135).

In the scans done on the various cities, presented later in this paper, constant repetitions can be seen of attraction and eventual clustering of activities around selected functions or generators that due to the mass they attract or the scale of their operation encourage symbiosis. The clustering of leisure, retail and tourist oriented services in the various cities is a testament to the agglomeration effect of the 24/7 environment. In the Soho area of London, there is a high clustering of night-time leisure facilities, and they attract unsurprisingly, food and beverage services and retail. Up to a certain scale, an agglomeration of services can serve also as a generator of attraction and support symbiosis with other supporting functions.

Urban rhythms

In the post-industrial society, urban rhythms have changed considerably compared to the mainly industrial production period before. Time management has become more difficult, for instance, Ascher has pointed out (1997) that the urban user today is constrained by the multiple demands of his life and his environment, in relation to his limitations of bio-rhythms. The stress of daily unpredictability leads to the user logically demanding increased mobility and multifunctional spaces. Longer working hours require longer operating services which require longer cycles of work, while scale expansion, i.e. the fact that our urban systems are no longer restricted by borders, administration levels or time zones, adds to the temporal expansion of production rhythms.

One of the keys to examining the 24/7 environment is therefore to focus on the extended and unusual time periods instead of the 'normal' hours of an urban function or facility, and chart the urban vitality thus. A 24/7 city is not a city with constant dizzying activities, but rather a city built up from activities of different time spans that occur within the same spatial structure (Illustration 6).

Illustration 6 Differentiation of Time Spans

	Time Spans	Working/Opening Hours	Examples	Remarks
I	Conventional	09:00 - 17:00 (Monday - Friday)	Most offices (financial services, public administration etc), conventional small scale retailers	Normal working hours, excluding holidays and weekends
II	Extended	09:00 - 22:00 (Monday - Friday, Weekends, Public Holidays)	Services (F&B establishments, major retailers, some public facilities), some sectors (creative, production, health-care).	Normal working hours extending with opening during selected holidays and weekends.
	Extended Plus	08:00 - 02:00 (Monday - Friday, Weekends, Public Holidays)	Usually services in the leisure economy zones (F&B, hotels, entertainment venues), business services catering to international markets.	Specific (after works hours), shift works and closed on certain days a week (Usually a weekday)
III	Unusual	12:00 - 06:00 (Monday - Friday, Weekends, Public Holidays)	Late night establishment, for leisure purposes, vice trade, emergency services, public utilities, round the clock production facilities, transportation sectors.	Usually after normal working hours, odd hours period of 2-6 am, sometimes only in the weekends.

The theoretical concept of an 24/7 environment constructed in this section leads us from our starting point of view with regard to this type of environment to the following definition: *a 24/7 environment is an environment where there are possibilities for multiple temporal rhythms, multiple functions and multiple activities to coexist and interact within a finite space.*

It should be stressed that the 'multiple functions' in this definition should contain not just necessary functions, like care facilities, law enforcement and emergency services that exist in all major cities due to their inevitable necessity in every modern society, but a variety of demanded functions as well (Illustration 7).

Illustration 7 Differentiation in 24/7 functions.

Functions	Necessary	Demanded
Core Emergency Services (Police, Fire, Medical Aid)	•	
Civil Emergency Services (Public Utility, Infrastructural Services)	•	
Basic Services (Train stations, airports, gas stations, accommodations, production facilities, healthcare)	•	•
Support Services (Financial, business services, telecommunication, security, management)		•
Consumer Services (Retail, hotels, food & beverage establishment, leisure and recreational services, events, personal care services)		•

3 Conditions that frame the existence and development of 24/7 environments

Although some cities have for quite a long time, had areas that could be characterised as being 24/7 spaces, 24/7 environments are a growing phenomenon closely connected to current urban and societal trends. The considerations of the societal frame that encompasses the 24/7 environment highlight the intricacy of the subject, closely connected to the multiple facets of human life, therefore to

better understand the subject a framework of the connected issues and context is presented. The explorative study of the issues of 24/7 environments, 24-hour economy, urban vitality and time-space conflicts, combined with a comparison of the different frames of references of the two authors - respectively Asia (Singapore) and Western-Europe (The Netherlands) - resulted in the following list of conditions that influences the existence and the development of 24/7 environments.

Economical conditions

Globalisation - contributes to the breaking down of geographical and subsequently time based economies, leading to a rise in scalar expansion and to a demand in multi-functional spaces to fulfil daily tasks, adding to the push for more varied environments. Thus any economy that has a proportion of its sectors relying on the global trade can no longer afford to side step the issue of extended hours for services, production and consumption. This has impact on the sociological and spatial conditions of urban life (Sassen, 2001). In addition, this expansion in territory, production zones and financial markets is also felt spatially, culturally and temporally; production and consumption are no longer subjected to a single time zone or geographical limitations.

Leisure economy - The growing leisure economy leads to a boom in the leisure branch of the service economy, where the majority of recreational services are privately operated (Mommaas, 2004). It is therefore prudent to always consider the effect of the tourist dollar and its symptoms (attractions, accommodations, cultural areas) in describing a 24/7 environment for its contribution to the economy.

Socio-cultural and political conditions

Multi-ethnicity - A diverse society indicates a more tolerant and experimental society, more open to the idea of different rhythms and welcoming enough for subcultures to sustain them. The knowledge that non-western ethnic groups are more willing to work harder hours in retail and services contributes to the conclusion that the diversity of ethnicity is an important condition.

Religion - An overtly singular religious culture will mean that most of the society will adhere to a strictly parochial time spans, where the Sundays are sacred and most definitely not available for 24/7 environments to occur.

Work Culture and the family unit - Time expansion also means that workers will need to work longer hours or in shift. The willingness of the labour force to such labour division is crucial. The main objections are lack of family time. A culture where the family unit is of prime importance, monetary compensation for shift work or extra hours shifts will not be as well received and might form a handicap for a 24/7 city (Peper & Den Dulk, 2003).

Individualism - on the other hand, leads to more social demands and responsibilities. It contributes in part to the increased spending on leisure and personal services, which also translates into a demand for those environments (Breedveld & Van den Broek, 2006).

Governance - issues of importance include, licensing rules and authoritarian management. Any authority hoping to make a success of a 24/7 environment, has to have vision and needs to be flexible and horizontal in organisation while following a structured vision for a desired outcome, as, for example, can be learned from London, Singapore and Johannesburg. Current trends on strong, vital cities, such as London and Paris aided by charismatic vision and marketing, strongly evident in the efforts of Ken Livingston, the Mayor of Greater London and Bertrand Delanoë, the *maire* of Paris (Rubin 2006), forms a crucial backbone to the formation of the 24/7 city as an economic and cultural advantage.

Spatial/environmental conditions

Accessibility - The most important condition found so far is the accessibility of public transportation systems, in providing enough density of users to the area, for channelling the movement of the users across more areas in reach of more functions and thus enlarging the 24/7 environment. Vehicular traffic is important for certain percentage of users travelling to and from the locations but mostly gives more value when it is diverted and the urban space is released as public space (as, for instance, seen in the redevelopment of Trafalgar Square in London).

Density (critical mass) - As Landry (1994) pointed out, any vital environment requires a certain mass of users to be viable and the level of interaction and activity contributes also to the measurement of vitality. Thus, the density of each city's population is a major aspect of the potential for a 24/7 environment. In addition, 24/7 environments tend to find themselves within dense areas of tourist trade and attractions.

Public Space - As mentioned under 'accessibility', the abundance of pedestrian paths enlarges the urban space available to users and helps in constructing the base fabric of 24/7 environments, as well as natural surveillance bourn of well lit and secure squares, parks and streets are environments not restricted by boundaries and time (Jacobs, 1961; Montgomery, 1998).

Climate - plays an important role in determining the amount of usage of public space (Nikolopolou, Baker & Steemers, 2001) and subsequently what kind of 24/7 environment can exist in the city. Warmer climates have users who prefer to be active after sundown and cooler climates have deterrents such as cold and rain, all which contribute logically to the limitations and possibilities of 24/7 environment usage.

4 Beneficial and Potential Detriments of 24/7 environments

Self-evidently developing or further developing, 24/7 environments, leads to economic, social and cultural gains, and is even spatially beneficial. External costs will always be incurred when trying to regulate new policies and regulations, it will be a balance between the profit generated and the effectual cost incurred to determine the negative consequences of funding and maintaining a 24/7 environment. Undoubtedly, this is only when a 24/7 environment is purposely built and directed by an organization or authority.

Both sides of the coin have to be considered, however, some consequences cannot be regarded as gains, or are even detrimental. Considerate designs, balancing and managing the interest and quality of experience for all parties involved though, should help to minimise the latter (Lovatt, 2002).

Economical advantages

Global demand - In short no economy can afford to be limited by their time zone and working hours, when the rest of the world is striving for economic growth. Especially with the focus on the Asian economic boom, production time zones have to be more flexible and financial and business services even more so to grow their customer base. The economy of the city is now influenced by much more than its geographical borders (Storper, 1997).

Leisure economy - With most economy moving away from production and manufacturing economy, the turn towards leisure economy is one of the most lucrative alternatives (Tribe, 1999).

Productivity - Related to the some socio-cultural effects below, productivity is increased when flexible work times can be arranged and allowing previously unemployable population to once again contribute to the economy.

Socio-cultural and political advantages

Diversity of choice - Any advanced society recognizes the advantages in providing for as varied a society as possible, a 24/7 environment is just another exercise of choice and free will from a community of different cultures and expectations.

Female working force emancipation - In relation to time expansion, by encouraging 24/7 environments and corresponding services, more of the population would be free to work and still maintain a stable social life. When half of the population is no longer restricted by conventional working times and roles, the economic and social growth will be unimaginable (Presser, 2005: 3).

Vibrant cities - Competitive cities are the way of the future, each city is vying for vitality, quality of life and vibrant cultural scenes as signs of a healthy city. An environment, when combined well, can provide all of those traits.

Spatial / environmental advantages

Safety of public areas - Public areas are safer when populated and active. This 'eyes on the street' concept from Jacobs (1961) is still as relevant today as in the 1960s. Encouraging activity in certain urban areas might be a better way of keeping crime rate at bay. Although conversely, when not managed properly, a 24/7 environment could also facilitate crime increase (Montgomery, 1995).

Potential socio-cultural and political problems

Anti-social behaviour - The 'mass vertical drinker' of London's alcohol premises and his anti-social behaviour is an unwanted side effect of the 24/7 environment biased towards alcohol consumption and vice. This could be better handled if the 24/7 environment was monitored to maintain a good balance between recreational drinkers, other leisure users as well as residents and stake holders (Finney, 2004).

Crime rates - Although Robert and Turner (2005) indicate that crime rate seemed to have increased for the area, it is plausible that rowdiness and masses engaging in after hour activity might be a magnet for crime, but there has not been contrary evidence to prove that even if the masses and crowd were not present the crime rate would decrease.

Over legislation - a prevalent danger for any organization. Flexibility in dealing with 24/7 environments is a prerequisite, but the urge to over micromanage might be a negative consequence. License holders in London's West End used to complain about the overwhelming conditions for different licenses prior to 2003 (Elvins & Hadfield, 2003).

Potential spatial/environmental problems

Noise pollution - Noise pollution is inevitable when diverse activities (including cleaning up) occur around the clock in the same and adjacent areas. This is an issue best solved by legislation and good design (Greater London Authority, 2005).

Waste pollution - A 24/7 environment eats into the traditional quiet hours that public utilities use to maintain and clear the streets. Careful management and scheduling would be prudent in tackling these issues.

5 Analysing 24/7 environment cities

Scanning 24/7 cities: types of 24/7 environments

On the basis of analysable findings of the theoretical study, a scan of 12 cities was done (Illustration 8). These cities were chosen out of an initial set of 25 cities (at least one per continent) based on (a) their GaWC¹ ranking as an indication of the service economy level of the city; (b) their population density, because the density of services is related to the determination of the critical mass of users required for a 24/7 environment to function, and (c) GDP *per capita*, as affluence of an urban area contributes to the amount of time and expenditure budget available to the users of the environment. The 12 cities were chosen in such a way that some were similar in terms of density, some in terms of population size, and some in affluence or ranking; also the five continents are represented.

¹ GaWC - Globalization and World Cities research group inventory of world cities based on producer services.

Illustration 8 Scanning 12 24/7 cities: variation in 24/7 environments

		Agglomeration					Symbiosis			Mix	
		Symptoms Description					Typology				
Asia	Singapore	Orchard Road (emerald hill)	Bugis, River valley	Little India (Mustafa), Club Street (China Town)		Geylang (Red Light), Mohammed Sultan (nightclubs)				Clarke Quay, Boat Quay	Suntec/Esplanade
	Tokyo	Shibuya	Shinjuku	Ebisu	Harajuku	Roppongi					
Africa	Johannesburg					Yeoville (reportedly unsafe)					
	New York	5 th & 57 th		Chinatown, East village	Meatpacking, District	Soho, NOLITA		Greenwich (Bleeker)	Penn Station	Tribeca, Financial District	
America	Toronto			Trinity, Spadina West				Trinity, Spadina East		Rosedale North-Centre	
	Buenos Aires				Palermo, Viejo	Las Cañitas (Calle Báez), Corrientes Theatre District				Microcentre (Calle Florida)	Place de Mayo
Europe	Copenhagen	Stroget	Nyhavn	Ydre Norrebro	Nyhavn	Vesterbro (Istegade)		Stuediestraede	Hovebanegaard		
	Frankfurt				Sachsenhausen district	Bahnhofsviertel: Hauptbahnhof (Taunusstraße)			Bahnhofsviertel: Hauptbahnhof (Taunusstraße)	Altstadt	
	London	Oxford Circus	West End		Camden	Soho, Leicester Square			Victoria, King's Cross, Paddington	City	
	Madrid		Plaza Mayor		Puerta del Sol, Salamanca Quarter	Chueca					
	Paris	Forum des Halles		Gare d'Austerlitz (Chinatown)	St Germain (VI)	Montmartre (18 th)			Gare du Nord	La Bourse	
	Australia	Sydney			Paddington, Oxford Street	King's Cross (Darlinghurst Road)		Newtown	Circular Quay		

Learning to understand the cities that support a 24/7 environment is to learn that there are different types of types of 24/7 environments, sometimes in the same city. An understanding of the user types (with different spatial requirements) and city types (difference in programs and spaces) was gleaned from the empirical data, the literature research and common knowledge available. Most of the cities with an active 24/7 environment cater to, oversimplified, 3 types of users and in accordance with that, three kinds of 24/7 environments can be distinguished (although combinations of users within one city do exist).

Stereotypical users

- *The Hedonist*- Generally young, affluent and active during nights and weekends; descends into the city, to enjoy, to socialise and, possibly, looking to get drunk. Spatial requirements include, organised public areas, frequency of public transport, and sound and waste management with regards to the residents of the shared spaces.
- *The Resident*- Worker in the service or related economies, a broad section of employed society, who needs frequent transport, clean and safe streets and convenience of retail and employment spaces.
- *The Tourist*- Denizen of the recreational economy, which requires structure, orientation of public spaces, and accessibility of public transport.

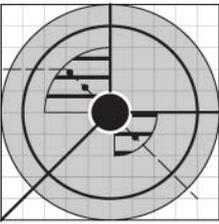
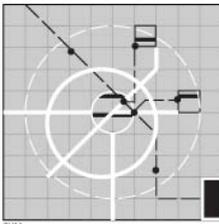
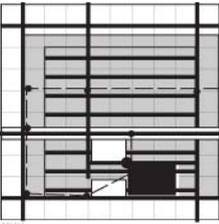
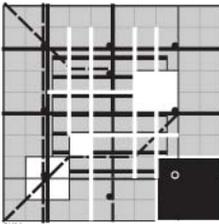
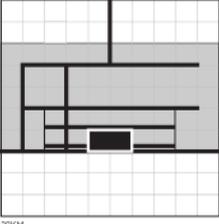
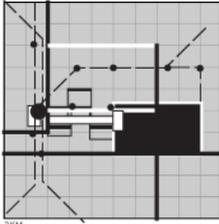
Of course, combinations of these stereotypes exist as well.

Types of 24/7 environments

- *Leisure & Vice City*- Described as the urban playscape for the post-modern city centre (Chatterton & Holland, 2002), the leisure & vice city caters to the modern day hedonists who are attracted to the city. The area between Soho, Leicester Square and Covent Garden in London is the best example of a hedonistic playground. 85% of the services there are catering to the enjoyment of earthly pleasures, from eating, drinking, watching performances, and going to theatres, to the vice trade; as long as you are willing to pay for it, it can be found within the 2km street block. This is the "Leisure & Vice" city of London and part of the issues that are now being researched by Roberts and Turner are precisely the over indulgence of Westminster into leisure and vice based functions. The leisure and vice city is run by the mostly young hedonist whose single purpose is to fulfil his or her social indulgence.
- *Trade & Services City*- Frankfurt am Main is known as the 'Mainhattan' of Europe due to the high intensity of global finance and trade that goes on within the city. The business district within the Altstadt is connected via Taunusstrasse to the Hauptbahnhof and that street is known for its 24/7 activity for the commuters to and from the main station for food, retail, leisure and of course vice. The trade and services of the city also supports the daily urban needs of their residents and commuters. Tendency of certain commercial professions in banking, law and financial trade, which require off hours shift work, often contribute to the activity and user base in the downtown business areas. The trade and services city is fuelled by the professional working late hours trading with another continent and the employee in the service industry who is working shifts to provide services to the other working crowds.
- *Tourist City*- Most of the cities compared benefit from the tourist dollar greatly. It is no wonder that areas of European cities have special opening times and activities geared towards the visitors. These are the users that are already on leisure oriented spending warpath and the clustering of tourist activities and services around night life and 24/7 environments are a testament to their spending power. Although the tourist mass contributes to the city at specific seasons and time, the main generator of activity for 24/7 environments are still the residents and commuter who utilise and transact over the city space daily.

Mapping 24/7 cities: spatial-organisational types of 24/7 environments

Illustration 9 The three spatial-organisation types of 24/7 areas

	Icon/ Examples	Metropolitan Scale 30-100km	City/Urban Scale 1-30km
Radially accessed Mono-nodal	 <p>Metropolitan: Tokyo, Buenos Aires, London, Madrid and Paris</p> <p>Urban: Roppongi Hills, Tokyo; Victoria Station, London and Chueca, Buenos Aires</p>	 <p>Metropolitan area with clear centre (medieval city structure), usually restricted by urban morphology (ring roads, green/water bodies) with tendency for 24/7 environment to grow around the historic/civic/commercial centre and when strong enough, environments also tend to be found in pockets outside of central zone, usually in places of high density and transport accessibility.</p>	 <p>Urban area of high density and concentration of 24/7 environment (hospitals, large scale entertainment complex, transport hubs) usually offset from central zone and collects a dispersal of 24/7 activities around, usually highly connected via public transport and pedestrian zones.</p>
Tangentially accessed multi-nodal	 <p>Metropolitan: Singapore, Toronto, New York</p> <p>Urban: Downtown, Toronto Soho -West End, London Stroget, Copenhagen Shinjuku, Tokyo</p>	 <p>Metropolitan area with grid structure, with 24/7 environment offset from the central business/historic/civic district confined within arterial transportation grids. Area within grids is highly pedestrian friendly or densely connected to public transport system.</p>	 <p>Urban area fenced off by arterial grid, dense with pedestrian only access, transport modal hubs and public spaces. Fencing streets usually retail/commercial corridors</p>
Linearly accessed multi-nodal	 <p>Metropolitan: Frankfurt, Sydney</p> <p>Urban: CBD, Johannesburg Orchard Road, Singapore Gran Via, Madrid</p>	 <p>Metropolitan area developed linearly along coast line or central transport axis. 24/7 environment limited by arterial roads and usually links urban centre to major node (Transport hub, other urban centre, public/civic core). Characterized by 24/7 activities within first block depth of main streets.</p>	 <p>Urban area developed along main retail/commercial street. Linking 2 urban nodes together (train stations, main squares, commercial areas or harbors)</p>

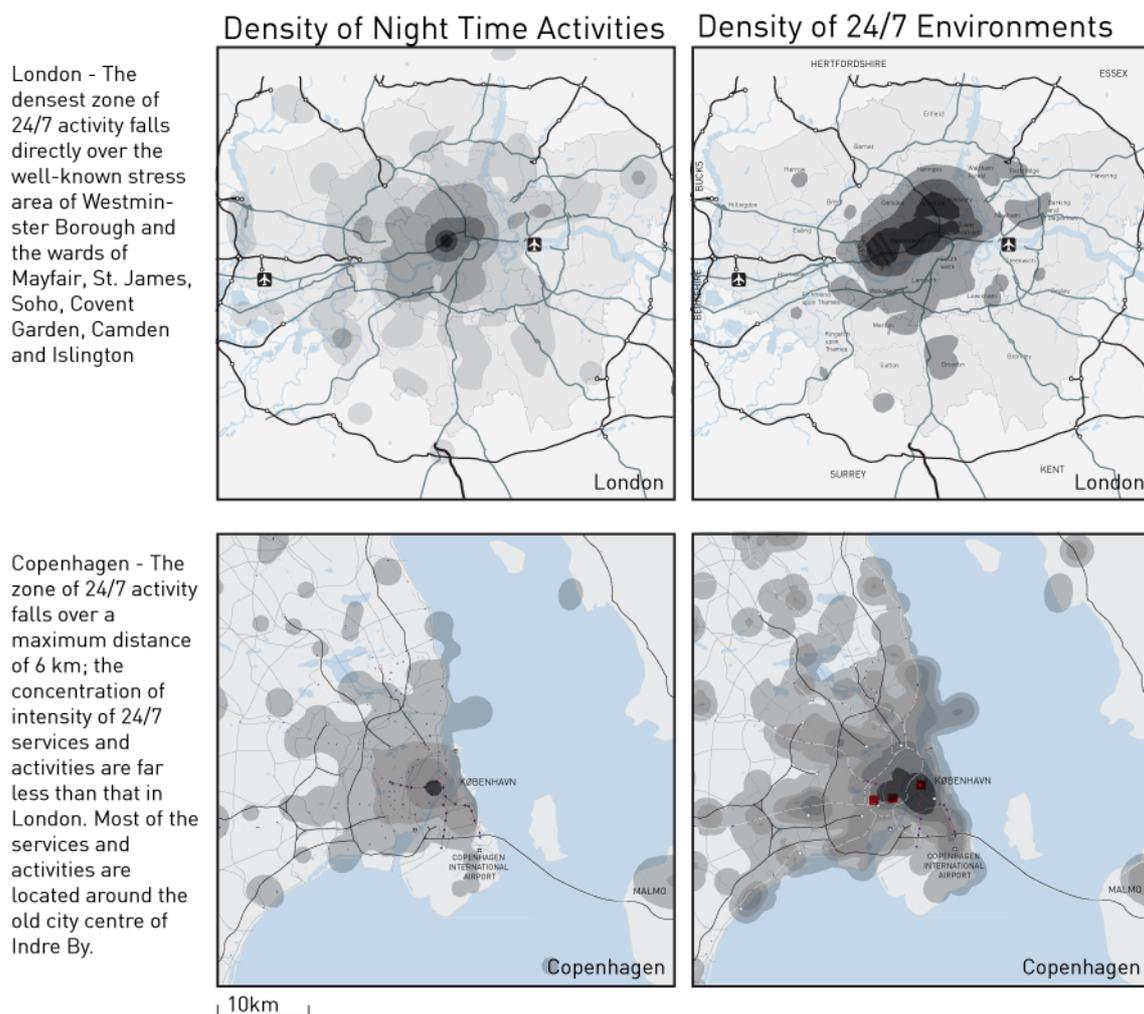
Legend		CENTRAL AREA (CBD/CIVIC DISTRICT)		TRANSPORT LINES/TERMINALS
		24/7 ZONES		ARTERIAL ROADS
		URBAN AREA		SECONDARY ROADS
		PUBLIC SPACE/GREEN/PUBLIC BUILDINGS/LANDMARKS/STATIONS		LOCAL STREET/PEDESTRAIN PATHS

The outcome of mapping these 12 cities was that from a spatial-organisation point of view three types of 24/7 spaces exist, on a metropolitan scale as well as on a city/urban scale: the radially accessed mono-nodal area, the tangentially accessed multi-nodal area and the multi-nodal linear area (Illustration 9). Interestingly enough the same types of spatial organisation principles are encountered when categorising urbanised regions (Klaasen 2004: 121); a further study of a possible logical relation between the similarities in categorisation might be fruitful.

Mapping London and Copenhagen: getting more detailed information

London and Copenhagen were the cities chosen for a more detailed empirical exploration. London for its advanced effort in understanding and studying the spatial consequences of the 24-hour economy and its abundance of 24/7 environments; Copenhagen (Illustration 10) for being the most similar in terms of density, urban area, population, services ranking, geography and cultural backgrounds to Amsterdam (the Dutch region with the most potential to develop into a 24/7 city, according to Van Eck, Van Oort, Raspe, Daalhuizen & Van Brussel, 2004).

Illustration 10 London and Copenhagen compared



London - The densest zone of 24/7 activity falls directly over the well-known stress area of Westminster Borough and the wards of Mayfair, St. James, Soho, Covent Garden, Camden and Islington

Copenhagen - The zone of 24/7 activity falls over a maximum distance of 6 km; the concentration of intensity of 24/7 services and activities are far less than that in London. Most of the services and activities are located around the old city centre of Indre By.

Findings from studying London and Copenhagen are that

- The critical mass of functions is dependent on the size of the city as well as the population density. In London, a population of around 8.5 million supports a 24/7 zone of around 8km in diameter, in Copenhagen a population of 1.5 million is able to support a zone of slightly less than 5 k m. A minimum population size of 1 million seems necessary, while any larger number will give a diminishing return on the active zone, due to infrastructural demand of travel.
- Users of the 24/7 functions are limited to the daily urban system within the city/region, and thus limited by the transport system. London has extensive day and night transportation systems, which

may allow for the large overall area of the 24/7 environment (a combination of different types of these environments). The 24/7 environment in Copenhagen (like Amsterdam) is heavily dependent on the bicycle. In both situations the areas of 24/7 activities are supported by surrounding districts of high residential density (between 10.000 and 20.000 inhabitants/km). These districts form the backbone of the 24/7 environment.

- A small-grained urban fabric is indicative for a 24/7 environment (Illustration 10). This intensifies the functions and activities that can happen within in cel block and allows for an abundance of pedestrian paths and more chances of activities and transactions.

Illustration 2: Grain cell size of urban fabric



London Cell Size: 50-300m



Copenhagen Cell Size: 50-200m

- Dense layouts of functions within short city blocks seem to be the keystone in allowing for a 24/7 environment. In Istedgade in Copenhagen the daily urban services of electronic stores, bakeries, 'laundromats', etc., slowly give way to the extended hours' services of restaurants, bars and pubs, then flowing into the night time economy of all night dance clubs and music events - all the while fronting two residential blocks, enabling activity on the streets and the public space.
- Diversity of functions is also a key threshold for a 24/7 environment. One type of activities and user groups does not provide synergy (agglomeration and symbiotic effects) to the area.
- Necessary 24/7 functions, like hospitals, and functions that span unusual hours contribute to the development and preservation of a 24/7 environment (agglomeration and symbiotic effects). They can be considered to be 'generators'.

6 The role of urban planners regarding 24/7 environments

At this stage we have found answers to the first three questions formulated in the introduction. We defined 24/7 environments, explored the conditions needed for these environments to develop and indicated their benefits and their potential detriments. To answer the question about the possibilities of planning a 24/7 environment from the perspective of urban planners, we should distinguish non-spatial conditions from spatial ones as well as conditions changeable by planning and those that are not (or at least not likely to be changed just for the purpose of developing a 24/7 environment).

With regard to the non-spatial conditions summed up in Section 3, we have to conclude that they cannot actively be planned, with the exception of governmental rules like licensing rules - although of course rules like those are closely linked to social- cultural conditions. Obviously urban planning experts, apart from those pointing out the benefits of 24/7 environments, have a role in pointing out all these related conditions when ideas about developing 24/7 areas are being discussed. As far as the spatial/environmental conditions go, they do belong to the domain of urban planning - apart from the factor 'climate'. In striving for higher densities in cities and urbanised regions and when improving accessibility conditions, including those of pedestrians, developing 24/7 environments will be at most a secondary objective, if not an accidental socio-economic opportunity. Just as with the non-spatial conditions, one of the tasks of the urban planner will be to point them out. They should also make clear

that are always different levels of scale involved, and that there are different types and combinations of 24/7 environments to be considered.

In the framework of the general conditions, some planning engagement is possible though. Urban planners can indicate where in an urbanised region potentials exist for developing a 24/7 environment and where, possibly, already indications are present that such an environment is developing.

Guidelines for identifying potential areas are basically:

- Are there any signs that activities are present during the determinative 'unusual hours' - even if they are mainly mono-functional?
- Which neighbourhoods have a catchment area that allows for enough potentials users needed for a 'critical mass' - both with regard to people actually living in the area and in adjoining residential areas, as well as in the region.
- Where in the urban fabric has sufficient grain size indicative of potential for proximity and intensity of functions, and therefore also for activities, transactions, etc. (symbiotic effects).
- Which functions, in which locations are potential generators (hospitals, university complexes, clusters of hotels, etc.)
- In the case that a 24/7 environment is already present: which adjoining areas have potentials for extending this environment.

Once areas are judged to have potentials and it is decided that these potentials should be used, urban planners have a task with regard to improving accessibility on the neighbourhood scale, in stimulating the quality of public space, in possibly adding 'generators' and in diversifying functional programs. Most certainly planners have the task to prevent or minimise the problems that 24/7 environments tend to cause: anti-social and criminal behaviour, waste pollution and others. A good design can make a world of difference between a successful and a problematic 24/7 area - as shown in London's Soho West End (Roberts, 2006).

7 Closing remarks

As usual when exploring a subject trying to answer questions, some answers are found but new questions are raised, for example, the value of encouraging 24/7 environments as a tool for urban regeneration. Further study, both theoretical and certainly empirical should, and hopefully, will be done.

Early on in the profession of an urban planner, one learns that one cannot function on one's own; gone are the days of the master city planner. Each city studied in this research has shown that a city is an effort of an army of organizations, both public and private and a city of 24/7 environment is even more so the case. The lessons learned from London included at least a dozen different organisations: that of greater London, borough authority, associations and business development organisations. One key instrument that comes back in the 24/7 city is that of an active and overseeing influence from the central authority with a strong vision and identity, without the support of which no vitalisation effort will succeed.

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