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# The Skycourt – a comparison of four case studies in the context of the Corporatised square and Arcade



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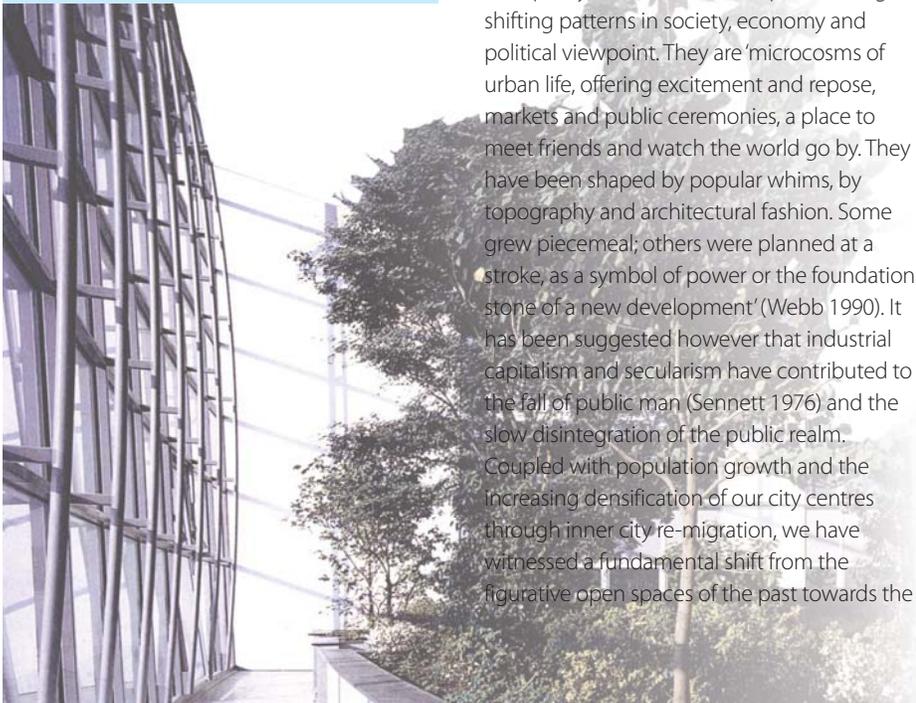
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Jason is a Director of International multi-disciplinary design practice, Broadway Malyan. He joined in 2005 to support the cause of progressive tall building design and vertical urbanism and employs these skills in both practice and the lecture theatre.

His research at Cambridge considered the notion of the tall building as a vertical city and the sky court as an alternative civic space for the 21st century within the sustainable, mixed-use tall building typology. He continues to pursue this vein of PhD research at the Bartlett School of Graduate Studies.

In addition to co-directing the Singapore office, he lectures and publishes widely, and is a visiting professor at various institutions, as well as being a member of the Council on Tall Buildings and Urban Habitat.



"Their ability to link different forms of circulation allows them to metaphorically become vertical arcades in the sky."

The effects of industrial capitalism and secularism have not only seen the fall of public man (Sennett 1976) but the slow disintegration of the public realm. Coupled with population growth and the increasing densification of our city centres through inner city re-migration, we have witnessed a fundamental shift from the figurative open spaces of the past towards the increasingly dense high-rise objects of the present. The need to replenish the loss of open space for the benefit of civil society is as fundamental for the co-presence of future generations as it was in the past. As a development of the paper published in the CTBUH Journal, Fall 2007<sup>1</sup> this paper considers the Sky court as an open space within the tall building object that can help re-establish the equilibrium between open space and built up area. The paper compares 4 sky court case studies with 2 semi public comparator case studies – namely the corporate square and arcade. Through cross comparison, similarities, conflicts or common traits between the comparators and sky courts are made, with conclusions drawn that suggest the viability of the sky court as an alternative public space in dense (high-rise) urban developments in the 21st century, given their embodiment of particular public domain characteristics.

## Disappearing public realm - a figure ground study

The square provides the stage set for the performance that is civil society's social interaction and co-presence as actor and spectator. It enables a diversity of experience; a multiplicity of use that can adapt according to shifting patterns in society, economy and political viewpoint. They are 'microcosms of urban life, offering excitement and repose, markets and public ceremonies, a place to meet friends and watch the world go by. They have been shaped by popular whims, by topography and architectural fashion. Some grew piecemeal; others were planned at a stroke, as a symbol of power or the foundation stone of a new development' (Webb 1990). It has been suggested however that industrial capitalism and secularism have contributed to the fall of public man (Sennett 1976) and the slow disintegration of the public realm. Coupled with population growth and the increasing densification of our city centres through inner city re-migration, we have witnessed a fundamental shift from the figurative open spaces of the past towards the

increasingly dense high-rise objects of the present (Rowe 1997).

Changing social relationships in 18th century civil society resonated through the built environment and greatly influenced the spatial encoding of the public and private domain. The traditional city was determined from the outside to the inside - a rationalized series of interconnected outdoor rooms that dictated the cities spatial layout. The buildings' solid form would accommodate the urban idiosyncrasies by acting as contiguous infill elements that reaffirmed the predominance of space over object. By the middle of the 18th century however, 'public space was implicitly traded for the private object, a deal that formally represented the beginning of the end of the res publica' (Dennis 1986). Rationalised solids dictated the city - the void becoming merely the space left over. By the 20th century, the transformation was complete; the freestanding private object building sat within open, undifferentiated public space, absorbing urban idiosyncrasies and establishing the modern city of towers as the antithesis of the traditional city of spaces.

Le Corbusiers' Plan Voisin heralded the predominance of object over space. His response to the slum and disease clearance that lay behind the Hausmann facades of Paris, (or any other industrialised city requiring his genevaising cure), was to paradoxically decongest the city centre by increasing the density through high rise building that would contain 'perfect human cells which correspond most perfectly to our physiological and sentimental needs' (Hall 2002). Such ideological visions for the city would greatly influence a global post war generation of qualifying architects, spawning a legacy of skyscraper design. However, developers and local authorities alike failed to understand the importance of semi-public spaces that would offer amenity and promote well-being, good health, productivity and social interaction within such high-density developments. Pruitt Igoe Illinois – an island development divorced from its surrounding context and crudely executed by local authorities, was doomed by social dysfunction and decay in the absence of the physical and social structures that would encourage civility and co-presence (Ibid).

A comparison of figure ground diagrams from the 18th century to the present day demonstrate graphically the slow eradication of figurative public space in lieu of the private object. Certain building typologies sought to incorporate open space as a means of readdressing the balance for civil societies' appropriation. The corporatised square and arcade have attempted to recapture the essence of the public realm despite the privatisation of open space, and in doing so, sets up a hierarchy of void spaces with its larger figurative public space counterparts, thus contributing to the replenishment of open space.

The formers' incorporation of semi-public court within the curtilage of the private property can be used as a destination for social interaction whilst its retail element at ground floor invigorates the street. (Dennis 1986). The latter's incorporation of semi-public thoroughfare can be used as a means of transition between larger public spaces and, as with the corporatised square, provides an

environment for social interaction and co-presence (Geist 1983). Similarly, sky courts are recreational social spaces (albeit in the sky) that can also act as a circulatory interchange in tall buildings. Like its grounded open space counterparts, the courts in the sky are often governed by private entities. Whilst bearing similar public domain characteristics that allow the user a particular freedom of movement or the ability to appropriate the space as a place of recreation, amenity and social interaction, they are nevertheless managed spaces that are physically constrained by the very structures that retains them and are socially constrained by the implicit and / or explicit rules of the institution, company, association or group that governs the tall building (Pomeroy 2007). Both the corporatised square and arcade are considered further in the next section as suitable comparators to the sky court case studies.

#### Research framework and method

An extensive literature review (outside the scope of this paper) sought to identify the social and urban morphological characteristics of successful public spaces by drawing upon key writings that covered the sociological (Sennett 1976, Madanipour 2000), the socio-political (Rowe 1997, Worthington 2004), the philosophical (Foucault 1986,

Lefebvre 1991, Struver and Best 2002), the historical / spatial (Hall 2002, Frampton 1992, Dennis 1986, Geist 1983), as well as empirical methodologies that have helped define the legibility of urban space through mental mapping (Lynch 1960), cognitive mapping and movement through space syntax analysis (Hillier and Hanson 1996) and the quantifiable perception of space through isovistic analysis (Benedikt 1992). It also looked at governmental research projects (DETR 2000, CABE 2001) that have similarly drawn on these influential writings in order to provide governmental guidance in designing good public spaces.

A series of contemporary sky courts of differing scales and building typologies were reviewed from different countries. This provided an opportunity to consider whether a country's social, political, economic or cultural nuances affected the outcome of the sky court in its built form, size or use. Also considered was whether the differing building typologies had any common traits that could help formulate the successful generic sky court. Of the ten reviewed (1), six were rejected (2). The assessment criteria, comprising both qualitative and quantitative questions based on the literature review were arranged into 7 categories (3) and formed a matrix to compare and contrast the square, arcade and the four chosen sky court case studies (4). ↻

## ...high-tech engineering

“It becomes very challenging to serve a lot of these buildings with conventional utilities because you're talking about a density and loading on water systems and energy systems. Some of these buildings have populations in them that exceed their city's neighboring communities.”

*Conserving resources is an important objective for tall-building developers. Architect Soren Simonsen - partner and vice president of urban and environmental design at Cooper Roberts Simonsen Associates in Salt Lake City, Utah – on how many technologies employed stem from an effort to control cost, both in construction and ongoing building operations are energy efficiency and sustainability critical.*

*From 'High-Tech Engineering Helps Skyscraper Developers Reach Record Heights' National Real Estate Investor, February 17th, 2009*

## THE COMPARATORS AND CASE STUDIES

### Broadgate (Comparator)

Architect: Arup Associates  
Developer: Stanhope Rosehaugh  
Function: Amphitheatre, retail, performance space and square  
Height: 4 storeys / 15m from street level  
Building area: 85,000sqm  
Skycourt area: N/A. Amphitheatre area 8000 sqm  
Skycourt floors: N/A. Open space at ground level  
% Skycourt area: 9.41%

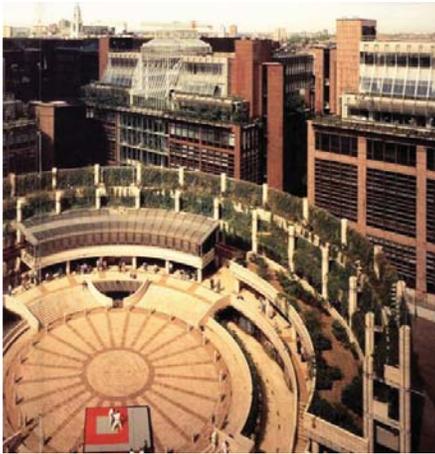


Figure 1. Broadgate Arena, London, UK

Broadgate is a development built by Stanhope properties in the heart of the City of London's financial district and was completed in 1988. Comprising of 14 buildings on a ground area of 29 acres, the development provides the financial services industry 3.5 million square feet of office space. Broadgate arena is one of 3 main open spaces that acts as a nucleus for amenity and recreation. Apart from offering a series of recreational facilities that include shops, restaurants, gymnasia, exercise rooms and a swimming pool, the amphitheatre acts as a transitional node for both city workers and members of the public, as well as an open air ice rink in the winter and a venue for sporting and cultural activities in the summer. It is also a symbol of the corporate power of the various institutions; and whilst it may invite the general public to use the open spaces as a thoroughfare, it is still a managed semi-public space policed by a dominant (private) power, albeit with public domain characteristics.

### Burlington arcade (Comparator)

Architect: Samuel Ware  
Developer: Lord Cavendish  
Function: Shopping arcade and thoroughfare  
Height: 3 storeys excluding basement. 12m from street level.  
Building area: 5340sqm  
Skycourt area: N/A. Thoroughfare area 666 sqm  
Skycourt floors: N/A. Thoroughfare at ground level  
% Skycourt area: N/A. Thoroughfare to built up area 12.47%



Figure 2. Burlington arcade, London, UK

Burlington arcade, London, was the first managed arcade in England with wide-reaching influence on the development of the building type in both England and America. Built for and owned by Lord Cavandish, it embodied fashionable, snobbish London. In August 1815, Cavandish purchased Burlington House and Burlington Gardens that lie between Piccadilly and Vigo Lane. Samuel Ware was engaged 'to create a covered passage that could be lined with handsome shops of uniform appearance, linking Piccadilly through Burlington Gardens to Vigo Lane opposite Cork street' (Geist 1983). The arcade was 'to consist of 2 entrances and 4 double ranges of shops, separated from 3 open spaces in which the walking way [was] proposed to be wider than in other parts. The open spaces are called intershops and the places for selling goods in them and in the 2 entrances are called stands' (from Ware's report of 1815, Geist 1983). To this day, the arcade remains a popular thoroughfare for people wishing to take a short cut from Piccadilly to the back streets towards Bond street and Vigo Lane whilst engaging in high-end retail shopping.

### Commerzbank (Case study)

Architect: Norman Foster  
Developer: Commerzbank  
Function: Commercial office, with shopping mall and public plaza at ground level  
Height: 53 storeys. 259m from ground level  
Building area: 100,000sqm  
Skycourt area: 2916 sqm  
Skycourt floors: 6, 10, 14, 18, 22, 26, 31, 34, 38th floors  
% Skycourt area: 2.92%



Figure 3. Commerzbank, Frankfurt, Germany

Commerzbank, Frankfurt, forms the headquarters for one of Germany's biggest banks and was completed in 1997 as a result of a limited design competition. Hailed as Europe's first ecological high-rise, the tower was conceived as three petals of triangular office floor plates, grouped around a central stem formed by a full height atrium. Sky gardens 4 storeys high rise up through the height of the building, rotating every 4 storeys to the next face, affording the employees an opportunity to view down to the sky court below and the cityscape beneath; or view up to the sky court above and view the sky scape. These spaces provide a social dimension for the office employees who use them for meetings, lunches and social interaction as well as a means of transition between floors throughout the course of the day. Use of ambient energy, landscaped sky courts and the ability for the individual to control their environment through the opening and closing of windows promotes health and well being for the office occupants. The development also provides a community focus and forum for interaction in the shape of a ground level public plaza that acts as both thoroughfare for the Frankfurters and a venue for social and cultural events – the development contributing to the areas' regeneration and identity.

### Singapore National library (Case study)

Architect: Ken Yeang  
Developer: National Library Board Singapore  
Function: Library, media centre, public plaza at ground level  
Height: 15 storeys. 98m from ground level  
Building area: 51,493 sqm  
Skycourt area: 6,300 sqm  
Skycourt floors: 5th and 10th floor  
% Skycourt area: 12.20%



Figure 4. Singapore National library, Singapore

The National library in Singapore was completed in May 2005 as a new library, media centre and exhibition / performance venue. The building consists of two blocks that are separated by a naturally lit internal street with connecting bridges at the upper levels. The larger, rectangular block contains the main traditional library collections. The curved smaller block houses public activities that includes auditorium, exhibition space and multi media centre as well as forming the main public vertical circulation through the development via a network of lifts, escalators, and walkways with its own security control. Over 6,300 sqm is designated a green space throughout the library, creating a series of sky courts that act as environmental buffers to the low angled sun. The two main gardens, each measuring 40m high and situated on the 5th and 10th floors, contain 12m high trees that 'increases biodiversity, helps retain water on site and can have a positive psychological effect in improving general working environments' (Yeang 2005), whilst offering amenity and panoramic views over Singapore for the building users. The library block sits over an open-to-the-sky naturally ventilated civic plaza that also acts as an internal street. This creates a place for social and cultural events and café life as well as the main focal point of the site.

### Umeda Sky Building (Case study)

Architect: Hiroshi Hara  
Developer: Sekisui, Toshiba, Daihashi  
Function: Commercial office, observatory and restaurant, public plaza at ground level  
Height: 40 storeys. 173m from ground level  
Building area: 147,397sqm  
Skycourt area: 2916sqm  
Skycourt floors: 40th floor  
% Skycourt area: 1.97%



Figure 5. Umeda Sky Building, Osaka, Japan

The Umeda Sky Building is a high rise building in the Kita district of Osaka, Japan and was completed in 1993. It came to represent the regeneration of the suburb of Umeda, having become a major tourist attraction for visitors to Osaka as well as symbolising the rebirth of Osaka as a financial district. One of the main aims of the architect, Hiroshi Hara, was to create city air projects - cities deployed in the air that would be linked by a whole system of escalators, footbridges and hanging gardens. The outcome was a 173m tall building that consists of two main towers of office which are connected via two aerial passageways to a floating garden observatory that features a mid air restaurant on the 39th floor, a panoramic gallery on the 40th and, at 170 meters off the ground, an observation deck and passageway. The observatory measures 54m by 54 m and offers panoramic views of the city for a 700 Yen admission fee from 10am to 10:30pm daily.

### Selfridges at the Bullring (Case study)

Architect: Future systems  
Developer: Birmingham Alliance  
Function: Shopping mall, public plaza  
Height: 5 storeys. 30m from ground level  
Building area: 25,000sqm  
Skycourt area: 2000 sqm  
Skycourt floors: 1st, 2nd floors. 5th roof garden to be finalised  
% Skycourt area: 8%



Figure 6. Selfridges at the Bullring, Birmingham, UK

Completed, in 2003, The new Bullring development in Birmingham, UK, sought to provide 110,000sqm of retail, leisure, catering and markets together with performance areas and a new public plaza in order to repair the urban fabric, resolve the changes in level and regenerate a neglected part of Birmingham. Selfridges forms one part of the anchor of the scheme that is composed on three axes, two of which form a natural extension to the city's principal shopping streets. Between the two a new pedestrian boulevard, restores historic linkages to the city's traditional markets beyond St. Martin's Church and terminates a new public space set to become a hub for social and cultural events. A key element of the design is its permeability and the way in which new open spaces and walkways throughout the three level scheme have been designed to link into the city centre - and form an extension to the existing prime retail pitch. The natural gradient of the site - sloping some 19 metres - has been integrated into the development so that each trading level has access to a ground floor entrance. Selfridges resolves the differences in level within its store, creating multiple entrance points via ramps, bridge links, cantilevered external terraces and road level to create a node point that allows people to congregate in and around the building. ↗

## CROSS CASE STUDY COMPARISON

### Character

Socio-cultural traditions engrained over the passage of time; natural or manmade features and landmarks, significant vistas and panoramas, can all contribute to a society's perception of a place's character and identity. It can therefore be difficult for seismic creations (5) to evoke memories and associations that would otherwise have developed historically, particularly if they are strongly classified spaces that hinder freedom of individual or collective expressions in such a way that contribute to a place's character.

Despite being a seismic creation embedded in the financial district of London, interviewees' memories and associations with Broadgate arena reflected its multiplicity of function that they felt contributed to the character and identity of the place. Burlington arcade has similarly developed a distinct character, through the preservation of its 150 year history. Interviewees' memories of the sky court case studies however were not so clear, often reflecting the dominant function of the building type propagated by the developer or owner. Commerzbank was associated primarily with finance; Umeda sky building with panoramic views of the Osaka skyline; Singapore National Library with knowledge and reading and Selfridges with shopping and markets. When pushed to recollect memories specifically of the sky courts, both Commerzbank and the SNL were remembered for its openness, natural light and fresh air. In absence of history or other phenomenon that can contribute to the sense of character, the Umeda sky building and Selfridges demonstrated how views contributed to a place's identity; the former enjoying panoramic views of Osaka, the latter of St. Marks church and square.

Whilst the corporatised square, arcade and sky court are seismic private developments that offer a public interface, there lies the potential in the future for sky courts to offer a multiplicity of function that allows for the practice of social / cultural traditions that help engrain a character into the place. They could also exploit memorable panoramic views, as in the Umeda sky building and, with time, as in

Burlington arcade, come to develop a distinct character within the confines of the object building (see Figure 7).

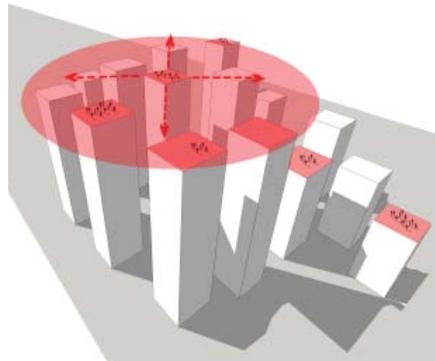


Figure 7. Character

### Continuity and Enclosure

Continuity of frontage and a sense of enclosure can help establish outdoor rooms for social interaction and aid the encoding of what is public, private or semi - public. Invigorating public spaces with active frontages can further increase activity, encourage co-presence and aid security. Whilst Broadgate, Burlington Arcade and the sky courts all define and enclose space in their own way, there are particular similarities between them in their relationship with the urban fabric.

Amphitheatre steps and terraces help define the larger figurative void of the Broadgate Arena development. Burlington arcade offers both continuity and enclosure to its transitional route by both facade and glazed roof covering. The Selfridges 1st and 2nd floor semi -public sky courts define the figurative void of St. Marks square and establishes a continuity of open space with its public counterpart. Similarly, Commerzbank and the SNL show a continuity of facade and enclosure that helps define the sky courts as indoor / outdoor rooms for social interaction. These differing approaches appear to affect the way the spaces are used. Once elevated above the ground plan and with greater connectivity to the external environment, both Selfridges and the Umeda sky building tended to encourage views out – the former towards St. Marks church and square, the latter to the Osaka skyline. The sealed and open environments of

Commerzbank and SNL however, whereby the sky courts are embedded in the footprints of the private object, saw greater social interaction amongst people within – their attention being inwardly focused.

This would suggest that sky courts can be both open and enclosed (subject to environmental constraints), but should maintain a continuity of facade that can relate to both the frontages at ground level as well surrounding buildings at the upper level. Positioning the open sky courts at the lower levels helps define and support the public figurative voids at street and square level (as in Selfridges), whilst the upper levels can potentially be both sealed (as in Commerzbank) to create more community focused environments, or open (as in the Umeda sky building) to allow for recreational or panoramic views as a destination (see Figure 8).

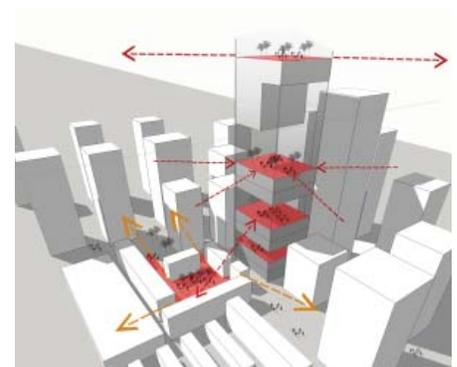


Figure 8. Continuity and enclosure

### Ease of movement

The success of both Broadgate Arena and Burlington Arcade lie in their ability to act as important transitional spaces that, when integrated with transport infrastructure, can improve its local and global integration in the city and beyond. Broadgate Arena provides an important, 24 hour intersection of circulatory routes over a multitude of levels that are linked by stairs and amphitheatre steps. Similarly, Burlington arcade offers a transitional route that improves circulation between existing streets, though is limited to 8 hours, dictated by the shop opening times which, when closed, see the gates securing the transitional space.

Whilst the ground plane of the case studies successfully function as 24 hour thoroughfares in a similar fashion to Broadgate, none of the sky courts act as transitional routes to other private domains. They appear to be dead end destinations that have limited opening times largely dependent on the function of the building, and in this respect are similar to Burlington arcade. Such restrictions also do not readily facilitate the freedom of movement more associated with the city at ground level. The sky courts in Commerzbank seem to be only accessible by lifts within the cores. The Umeda sky building offered greater flexibility by the incorporation of the escalators to the roof top observatory in addition to lifts. The SNL similarly offers a range of circulatory methods. Bridge links into external terraces that function as the transitional nodes between library and media centre start to suggest how developments of differing function can be linked to allow for an ease of movement at the upper levels and in doing so capture space that can be used for recreation as well as transition. However, the sky courts themselves remain unconnected and therefore destinations. Selfridges utilises sky bridges, ramps, escalators and lifts that serve to resolve the changes in level between existing buildings and new internal / external levels. It successfully demonstrates how sky courts currently have a better chance of being used for transition if there are a greater number of access points and a variety of circulation methods that link into the existing fabric of the city (see Figure 9).

Whilst the arcade provides a horizontal link between the primary circulation routes of the city, sky courts could similarly act as a transitional thoroughfare within the object icon, connecting the disparate vertical circulation methods via ramp, stair or lift. If coupled with horizontal linkages via sky bridges to neighbouring sky courts, a new network of places in the air could be created, providing an ease of movement above the ground plane that would establish the sky court as a transitional space more akin to spaces like Broadgate and Burlington Arcade as opposed to being a destination.

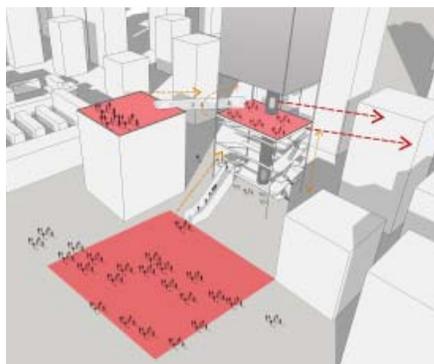


Figure 9. Ease of movement

### Legibility

Landmarks, gateways and focal points help people determine where they are in relation to the built environment; vistas further assisting the legibility of space by creating visual links between places. Whether it is the vista of Piccadilly through Burlington Arcade or Serra's sculpture at Broadgate, such views and focal points are memorable and assist in helping people find their way in and around the city, making them legible places (see Figure 10).

Whilst the Fulcrum as landmark occupies and helps define one of the figurative spaces in Broadgate, the buildings that house the sky courts are themselves landmarks within the undifferentiated space of the city, making them more legible than the sky courts they encapsulate. Interviewees cited the Commerzbank and the Umeda sky building as landmarks due to being high-rise buildings. In the case of Selfridges and the SNL, their contrasting built form from the surrounding context made them landmarks. Despite the Commerzbank being legible from the ground plane, the sky courts are visually disconnected. People have to move through the public plaza to the cores and enter the concealed confines of the lift, negating any visual links to the exterior before arriving at the sky court level; summoned not so much by walking in the general direction of a landmark, focal point or vista but the pressing of the lift button. On arrival however, views to and from the stepped sky courts that coil up through the building make them more legible as employees are afforded views to ground, sky or across to

adjacent sky courts. The SNL and the Umeda sky building are slightly more successful. Open and glazed escalators convey people to the upper level sky courts, allowing for visual connectivity with the destination not dissimilar to negotiating changes in level within the cityscape. The Selfridges 1st and 2nd floor sky courts are probably the most visually legible spaces, being integrated within the changes of level that take place around St. Marks Church and the Bullring development and according to interviewees are clearly legible as means of ingress and egress to Selfridges. The fact that they are external as opposed to within the building curtilage assists in the legibility.

Articulating the sky court so that there is a greater legibility and visual connectivity between the semi- public spaces of the sky court and the public spaces of the street and square, be that through the architecture or public art installation, can then assist in peoples' spatial cognition and movement through the place. It could also encourage people to ascend to the upper levels of the building as an alternative means of transition and can help integrate the object into the urban fabric of the city. Vertical circulation methods that allow for visual connectivity to the external environment should be encouraged to try and maintain legibility and the sense of place as one is traversing from the ground plane to the upper levels.

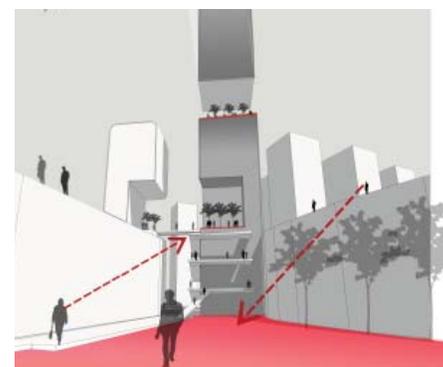


Figure 10. Legibility

## Adaptability

Successful buildings and places, be they warehouses in the docklands of London or squares such as the Campo in Siena have the ability to adapt over time in response to changing social, political and economic parameters. Unlike structures that are over functionalized and inflexible to change, their ability to adapt can help invigorate and breathe new life into the public domain they encapsulate or help define (see Figure 11).

Whilst Broadgate arena as a space retains a level of adaptability for different uses, it is still a seismic creation that is restricted by its built form. The amphitheatre steps and the retail units limit not only its' own future adaptability but also the figurative space created by the financial buildings that surround it. Burlington arcade suffers a similar fate as its transitional space is over functionalised to provide a thoroughfare and access to retail, limiting future adaptability. Like both Broadgate and Burlington arcade, the sky court case studies appear specific to the needs of the end user and their dominant function. The sky courts, as semi-public realm within the confines of the private building development, appear to lack the ability to adapt, given the life cycle of the building, their inherent function and the fact that they are private properties governed by a dominant power that dictates their use. Any form of adaptation or expansion into these void spaces could potentially undermine their initial purposes of bringing space, light and air into the buildings in order to promote, health, amenity and well being, as is the case with both Commerzbank and the SNL.

For sky courts to be truly adaptable, the high-rise needs to be conceived as a vertical extension of the city, and the sky court an area of public realm that can act as the gel that brings the disparate mixed uses and functions together in order to create a community hub that acts as both a transitional and recreational node like the traditional square. When the various disparate functions start to change within the life cycle of the building due to shifting social, political

and economic influences, the sky court should be able to adapt accordingly, and it is therefore important for the space to be neutral in order to cater for a diversity of function and change.

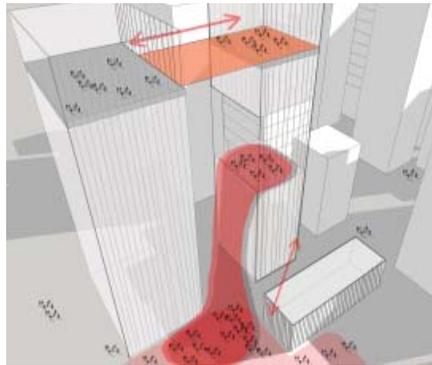


Figure 11. Adaptability

## Diversity

Diversity through a mix of uses can help determine how well used a place and can help the sustainability of communities. Breaking down the overtly programmed can help create diversity and spontaneity, leading to what would otherwise be dead spots in the city becoming vibrant, 24 hour environments.

Despite the apparent diversity of function at Broadgate arena, the land use of the immediate context is predominantly financial or commercial. Burlington arcade is similarly embedded in an area within its use class of retail or commercial. Their lack of diversity in terms of land use is further compounded by their publicly accessible areas being governed by their respective private dominant powers, negating the freedom and diversity of usage commonly attributed to the public domain of the street or square. At the macro scale of the city, both Commerzbank and the Umeda sky building show a greater diversity of land use incorporating residential, retail and commercial (and also hotel in the case of the latter) elements within the development that help create 24 hour environments that perpetually invigorate the area at street level. However, at the micro scale of the building, the case studies do not show such diversity – limited by not only the non-contiguous,

uni-functional building typologies but also their governance by dominant powers that either own or manage the development. Commerzbank restricts the use of its sky courts to primarily employee and client use only between the working hours of 9am-6pm. Its function as a means of refreshment, amenity and social interaction negates extended use outside of the primary function or user group. The SNL, whilst adopting a programme of activities for the general public that can be implemented in the sky courts forbid eating or drinking and similarly have limited opening times that further restrict the use of the space and discourages diversity. The Umeda sky building's hollow doughnut built form creates a terraced space that pushes people to the perimeter to appreciate the panoramic views but limits the use of the space. Selfridges offers the most diversity as its terraced space appears to be the most adaptable and neutral, and whilst its immediate context is retail, there are also residential and commercial uses in the vicinity thus creating the opportunity for 24 hour environments with vibrancy and sustained activity. Its accessibility, legibility and proximity to St. Marks square and its use as a transitional zone makes it a popular venue for a long programme of events in a fashion similar to Broadgate.

The mixed use high-rise has the potential to create 24 hour environments where people who live, work and play become intertwined in the same area to create a sustained vibrancy and activity, ameliorating the risk of unsafe dead spots in the city and high-rise. Creating a diversity of land use that can contribute to the quality of life vertically and recognize the building as an integrated three dimensional extrusion of the city with a similar latitude and flexibility in terms of access, view, function and transition can make the sky court a crucial piece of civic space that would act as the focal point of the community / neighbourhood (see Figure 12).

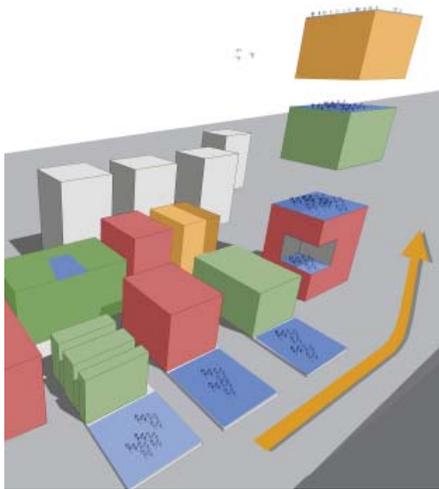


Figure 12. Diversity

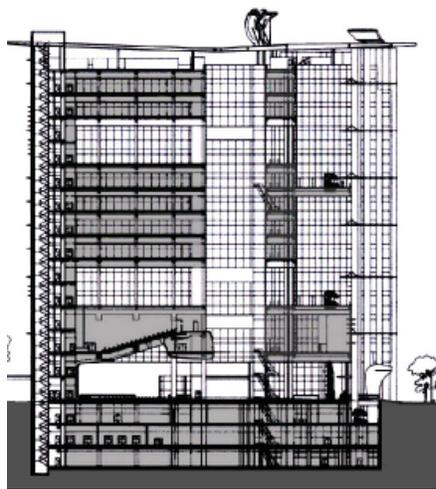


Figure 14. Singapore National Library, Section

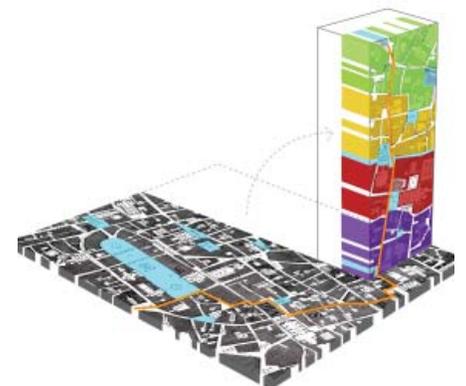
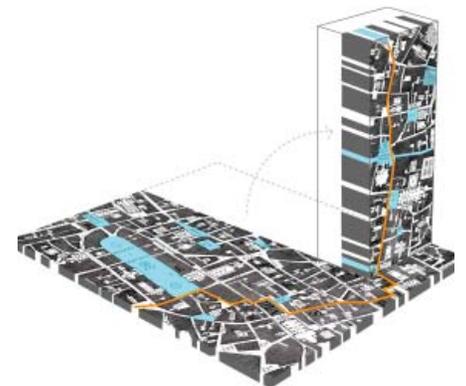


Figure 13. Noll's traditional figure ground plan

### Figure ground / section analysis and density

Figure section analysis provides the opportunity to consider what is void / solid and public / private and in doing so, establish hierarchical levels of poche and space as well as consider the density of building and urban fabric. For the purpose of this study, the sky courts and circulation routes were left unshaded, replicating the open spaces and streets in between buildings within a conventional figure ground plan of the city.

The figure section void to solid analysis correlated with the ratios of built-up area (solid) to sky court area (void). The Umeda sky building had the greatest built up area to sky court void (50.5:1, or 1.98%), followed by Commerzbank (34.3:1 or 2.9%) and then Selfridges (12.5:1 or 8%) with the SNL having the lowest built up area to sky court void ratio (8.2:1 or 12.20%). Whilst this may suggest that the building with the greatest area of sky court was less efficient in terms of maximizing the net internal area and therefore rate of return for the investor / developer, it conversely suggests a greater efficiency in terms of social space provision and opportunities for natural light and ventilation, albeit dependent on governance. In central London and opportunity areas (such as the Thames Gateway), planning policy guidelines recommend that plot ratios should be

maximized with ratios in and above 5:1 (GLA 2001). This obviously varies from city to city, and is largely dependent upon the density of the particular local context, the existing character, plot sizes, and public transport capacity. It is therefore difficult to predict a particular ratio of open sky court (void) to built-up area (solid) as standard. However, what the figure section and density analysis can suggest is that a similar context specific ratio could be employed within the building, scaled accordingly to further create a hierarchy of spaces that support the larger open spaces of the ground and, in plan, would suggest a similar density more akin with the urban fabric as opposed to the scale of the high-rise.

If we turn Noll's traditional figure ground plan representation 90 degrees, we end up with an interesting figure ground section that starts to illustrate how semi-public spaces can be incorporated into high-rise structures, and be suitably placed into a hierarchy that supports the primary figurative voids on the ground or, in their absence, create them in the sky (see Figure 13). It therefore advocates a combination of the two urban philosophies – the incorporation of figurative semi-public void space that harness the characteristics of the public domain within the figurative private object as an alternative civic realm for the 21st century. ↻

## CONCLUSION

The following observations were drawn from the case study findings, and can act as a prompt for thinking for the design of sky courts in the future:

1. Skycourts, depending on their position, provide an opportunity for memorable panoramic views that can prove to be a lingering iconic reminder of its position within the cityscape. Skycourts that are not afforded such views need to consider more of a neutrality of space that can cater for civil society's socio – cultural events, traditions, and past times to evoke a character over time
2. A continuity of façade provides an opportunity for space to be appropriated by social groupings as an outdoor room for social interaction – lower levels helping support and define public spaces on the ground and address existing urban morphology, such as changes in level or transport interchange connectivity; mid level tending towards inward looking environments for social interaction, higher levels being outward looking for the appreciation of views
3. Their ability to link different forms of circulation allows them to metaphorically become vertical arcades in the sky - a highly integrated, semi public, transitional space that provides opportunities for greater local and global connectivity to other buildings and transport networks; thus rooting the sky courts into the network of open space within the Urban fabric
4. Their positioning and form within the tall building should consider sight lines to ensure maximum legibility in order to provide greater spatial cognition amongst occupiers and visitors; promoting an ease of movement through the tall building and beyond as well as visually signposting the space for social interaction and co-presence.
5. The sky court can often be constrained by the tall buildings' footprint and the dominant power (be that corporation or management company) that regulates function and use. This can be a limiting factor in terms of future adaptability and

use, and places the skycourt in the realm of a privatized or semi-public space that bears public characteristics

6. Tall buildings' that incorporate sky courts tend to still be homogeneous tall buildings that lack the diversity and mix of use that would suggest the potential of it being a heterogeneous vertical city. But with increasing inner city densification and population increase, the move towards mixed use high-rise live, work and play environments may become more commonplace, activating sky courts as new semi public environments for social interaction and movement.

7. Consideration should be given to the formulating of a vertical plot ratio system that apportions open recreation space to built-up area for civil society's appropriation, just as open space is a prerequisite with grounded urban developments. This could be a legislative part of the planning process, which will see the symbiosis between developer (private) and state (public) in the provision of sky court semi public space for the appropriation by civil society. ■

## Notes

(1) The following buildings were also considered for the case studies:

Dutch pavilion, Hanover, Germany, MVRDV

Menara Mesiniaga, Kuala Lumpur, Malaysia, Ken Yeang

MIT halls of residence, Boston Mass., USA, Steven Holl

City hall, London, UK, Lord Foster

Carre d'Art, Nimes, France, Lord Foster

Swiss Re, London, UK, Lord Foster

Genzyme, Cambridge Mass., USA, Stefan Behnisch

(2) The rejected sky courts tended to be either strongly classified space (for example, as a restaurant terrace); rooted within the private domain, (and therefore for the sole benefit of the end user) or not offering any public amenity (such as a thoroughfare or community space).

(3) The organizing categories were drawn from CABA's 7 Objectives of Urban Design, taken from "By Design – Urban Design in the Planning System: Towards Better Practice"

(4) This aimed to establish the ingredients as to what constituted successful civic spaces and to see whether sky courts embody similar physical and social characteristics across the case studies and with their grounded open space counterparts

(5) Worthington, in "Giving Meaning to the Experience Economy", describes new build developments as seismic as opposed to organic growth of unplanned development

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