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Making Cities – Examples of Urban Development in London



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Abstract

The paper uses the example of Argent's work at King's Cross to explore issues of density in mixed use city development, and the creation of a "human city".

Keywords: Cities, Density, Human Scale, King's Cross, Places, Urban Development

Background

The development of cities has dominated the story of human habitation since the Industrial Revolution first began to attract people from the countryside into places where they had a better opportunity to find work. At first people were thrown together indiscriminately as they were crammed in together to service the great mills and factories of that era.

The period between 1880 and 1980, saw the rise of the company, first of all marshalling armies of blue-collar factory workers and then, as similar sized armies of clerks gathered under one roof to service and administer those factory workers, the rise of a white collared working class, who worked in offices rather than on the factory floor.

In the middle to late 20th Century, those workplaces began to head out to the suburbs, as poor infrastructure, overcrowding, long commuting times and pollution turned city centers into unattractive places to work, or live – but the 21st Century has seen a radical reversal of this trend, and cities have become the places where new and old generations are increasingly seeking to come together again.

This concentration and densification of land use has intensified in recent years and, as the Middle East, the Far East and South America has gone the way of Europe and North America, has resulted in more and more buildings rising higher and higher, to avoid the urban sprawl which characterized "western" city planning during the latter part of the 20th Century.

There are good reasons for this. In its paper entitled "Better Growth, Better Climate" (2014) the New Climate Economy Global Commission postulated that developing denser, smarter cities is the best way to save energy and to minimize the footprint which humankind leaves on the planet and on global resources, by reducing travel times for people, goods and food.

However, increasing density does not automatically necessitate building higher. Historic cities like London and Paris, with their plethora of regulations and ordinances (many of which were written some time ago), do not always have the urban infrastructure which can support tall buildings. Over the last twenty years, these have tended to be concentrated in clusters – for instance at La Defense in Paris, Canary Wharf or the City of London – but not all areas which are capable of development will be able to support tall buildings.

This paper will explore the relationship between density (expressed as a plot ratio calculated as total area of occupied space in relation to site area), site coverage (calculated on the basis of built ground floor area as a percentage of site area) and height (based on numbers of stories) to investigate both the statistical relationship between these metrics and the intensification of city usage from Case Studies in North America, UK and Europe and the quality of the urban habitat which these examples have created.

Principles for a Human City

At King's Cross in London, Argent first began to explore a framework for the 63.5 acre (25.7 ha) site when it was chosen to become the Development partner to the landowners (LCR



Figure 1. Strategic views (Source: Argent)

and DHL) in 2000. Informed by a series of internal seminars exploring the history of urban development since Classical times, the booklet "Principles for a Human City" was published in 2001, which set out the 10 principles which would underpin the emerging masterplan for the area:

1. A robust urban framework
2. A lasting new place
3. Promote accessibility
4. A vibrant mix of uses
5. Harness the value of heritage
6. Work for King's Cross, work for London
7. Commit to long term success
8. Engage and inspire
9. Secure delivery
10. Communicate clearly and openly

These principles deliberately avoided any debate or ideas about architectural style or character, instead they sought to set out a framework within which the urban pattern could evolve, one which was rooted in the European ideas of a "human" city – an authentic and sustainable place which would be built on the strong historic essence of King's Cross, and which would also last for the definable future.

The basic principles of a city with a human scale, tended to militate towards a built form along the lines of a more traditional, tighter European pattern, of more organic streets and squares, with lower rise, higher density

building blocks fronting onto those spaces. This approach was further re-inforced once the physical characteristics of the King's Cross site were further explored.

Parameters for Regeneration

In order to explore how these principles might become manifested in reality, Argent published "Parameters for Regeneration" in December 2001, which set out the physical, economic and social parameters and planning constraints within which the development itself would be brought forward over time.

One of the key restrictions which would shape that development was the fact that most of the site was subject to two Strategic Views of St Pauls Cathedral (from Parliament Hill and from Kenwood House) (see Figure 1) which meant that most buildings on the site could not be taller than c50m.

Parameters for Regeneration also highlighted one of the key advantages of the King's Cross site within the context of central London – its unrivalled transport connectivity. The (then newly completed) High Speed One line, meant that St Pancras was connected directly to Europe (Paris within 2.15 hours); the national network of lines connected cities and towns such as Edinburgh, Leeds and Cambridge to King's Cross; every major London airport has a direct public transport connection; and there are more Underground lines running through King's Cross St Pancras than any other station on the network.

This meant that King's Cross has become one of the most easily accessible places in London, and as such, all of the national, regional and local policy documentation agreed that it warranted as a high a density of development as was achievable.

Development	Site Area (ha)	Gross External Floor Area (m2)	Plot Ratio
Broadgate	8.6	359,200	4.2
Canary Wharf	34.8	1,626,800	4.7
Brindley Place	6.9	146,600	2.1
Charter Quay	1.4	30,629	2.2
Paddington	18.2	675,590	3.7
Postdamer Platz	10.4	357,400	3.4
Battery Park City	37.0	1,814,300	4.9
Euralille	30.5	268,500	0.9
Covent Garden	8.0	199,500	2.5
Manchester Millennium	20.1	279,700	1.4
Mayfair	33.5	824,900	2.5
KX South	6.5	272,300	4.2
KX Heritage	7.7	105,700	1.4
KX North	11.5	415,300	3.6
KX Overall	25.7	793,300	3.1

Figure 2. Plot Ratios Table (Source: Argent)

Development	Site Area (ha)	Footprint of Building (ha)	Site Coverage	Mean Number of Stories
Broadgate	8.6	5.1	60%	8.6
Canary Wharf	34.8	12.1	35%	19.0
Brindley Place	6.9	3.5	51%	5.9
Charter Quay	1.4	0.6	43%	4.7
Paddington	18.2	5.9	32%	11.3
Postdamer Platz	10.4	5.2	50%	11.3
Battery Park City	37.0	14.3	39%	16.5
Euralille	30.5	12.1	40%	4.2
Covent Garden	8.0	5.3	67%	4.6
Manchester Millennium	20.1	11.8	59%	4.0
Mayfair	33.5	14.1	42%	5.7
KX South	6.5	2.8	43%	9.1
KX Heritage	7.7	3.3	43%	2.7
KX North	11.5	5.4	47%	12.1
KX Overall	25.7	11.5	45%	8.9

Figure 3. Site Coverage and Building Heights (Source: Argent)

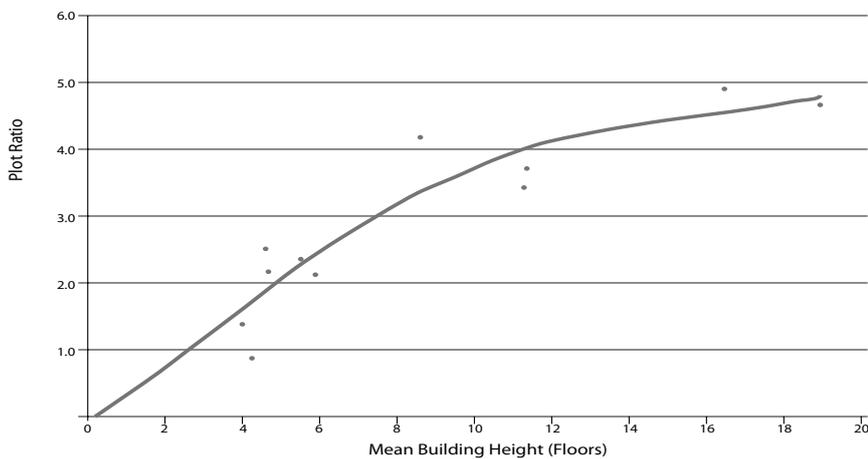


Figure 4. Plot Ratios Vs Building Heights (Source: Argent)

Density and Height

In order to seek to reconcile this need for density with the planning restrictions on height imposed by the St Pauls Viewing corridors, Parameters for Regeneration analyzed a number of contemporary Case Studies – from Broadgate and Canary Wharf in the Docklands area London, to Potsdamerplatz in Berlin and Battery Park City in Manhattan.

One of the areas which were studied was the connection between density, building heights, road widths and site coverage (the inverse of percentages of public realm).

Figures 2, 3 and 4 illustrate that these Case Studies indicate that there is a limit to overall density as buildings get taller. This results from the fact that taller buildings require wider streets and more open area around their base in order to avoid excessive over-shadowing and “canyon-like” public spaces – see the low site coverage ratio for Canary Wharf and Battery Park City.

10 years later, as King’s Cross has become reality, and as the masterplan has been built out over time, the corresponding statistics for the development are:

- Overall density/plot ratio: 3:1
- Mean number of stories: 8.9
- Site coverage: 45%

The statistics for King’s Cross are somewhat distorted by the fact that around 20 acres (8 ha) of the site comprises the historic Goods Yard, low level listed Victorian heritage buildings which have been retained and refurbished, at a very low plot ratio. Within the individual new development zones themselves, plot ratios/densities of in excess of 4.5:1 have been achieved, around very pleasant squares and public spaces (see Site Plan, Figure 5).

As an interesting example of this “ground-scraper” approach, the new 10 storey high Google UK headquarters building, which will be c1m sq ft and will house around 5,000 people, sits on a site at King’s Cross which (at 330m) is as long as the Shard is tall.

These statistics illustrate that significant intensification of city development can be achieved without necessarily having to build to extreme height, and Figure 4 demonstrates

that the law of diminishing returns applies, as buildings get increasingly taller, plot ratios tend to tail off to a maximum of 5:1.

Another key finding from Parameters of Regeneration was the fact that most contemporary developments of a similar scale were in effect mono-cultural in their use, creating concentrations of single types of occupier, be they offices, residential or retail centers – see Figure 5. This preponderance of a single type of use was not specifically correlated with building height, and was more a product of the then prevailing tendency for investment in real estate to be focused on one sector at a time – a trend which has been significantly eroded more recently.

Mixed-use Development

The 10 Principles set out the vision of a city area which would be vibrant and inclusive, open and accessible to all – whether they be working at, living at, or visiting King’s Cross – and the most important way that this has been achieved is through the promotion



Figure 5. Plan 1 (Source: Argent)



Figure 6. Retail Plan 2 (Source: Argent)

of a diverse mix of uses, particularly on the ground floor. The planning permission (or “entitlement” in US nomenclature) which has been built out at King’s Cross was for a total of up to 8m sq ft, of which over half could be commercial/office space, 2m sq ft was required to be residential (2,000 homes in all, including a mix of approximately 40% affordable), and the remainder could be retail, restaurants or arts, cultural, educational and leisure uses (see Figure 6).

Of the 5m sq ft currently completed or committed at King’s Cross in 2015, over 1m sq ft will be in the latter category, including a new campus for Central St Martins, part of the University of the Arts, London; three new buildings for the Aga Khan Development Network, housing students, educational facilities and a new cultural centre; a new, two-form entry primary school, sponsored by the King’s Cross Partnership; the Art Fund’s headquarters and the House of Illustration gallery; two new hotels; along with the leisure amenities and health facilities which are required of any piece of “livable” city.

In addition to this, 0.5m sq ft will be retail or restaurant space – all of which has been liberally spread across the development, predominantly on the ground floor, rather than concentrated in one single area. This ensures that the streets and squares are animated at all times, and that the retail provision can in itself be diversified to suit the different characters and personalities of the different areas of the masterplan – King’s Boulevard and Pancras Square, which are closest to the stations and therefore aimed to cater for office workers and higher footfall; the Goods Yard area around Granary Square and the Regent’s Canal, which are dominated by different, independently minded and carefully chosen outlets to eat and to drink;

Lewis Cubitt Square and Lewis Cubitt Park, which provide a more relaxed and green combination of hard and soft landscaped areas, nearer the residential buildings; and finally the Coal Drops Yard, which will house mainly independent retailers.

The Public Realm

By concentrating these public facing uses in the ground floor spaces which front onto the 35 acres (14.2 ha) of public realm, King’s Cross will, when completed, provide nearly 4 linear kilometers of active retail frontage, becoming both a draw to compel people to move through the development, and a vibrant way to enliven the streets and squares which form the framework of this new piece of city – reinforcing the first (and most important) of the 10 Principles, the creation of a “robust urban framework” (see figure 7).

In 1825 John Nash created Regent Street to open up the (then) “backlands” of Regent’s Park, and to connect them into the thriving centre of Regency London at Piccadilly Circus. In many ways, the North-South “spine” through King’s Cross (up King’s Boulevard, across Granary Square, Stable Street and into Lewis Cubitt Park) is seeking to achieve the same outcome, to open up 30 acres of land north of the Regent’s Canal, which is, in effect, a cul-de-sac bounded by the railways and to connect it into the main transport hub at King’s Cross and St Pancras Stations on the Euston Road and into the rest of London.

The key activity provided by the ground floor retail and restaurants helps to keep those routes and spaces vibrant and alive, as does the strategic placing of “anchor” users such as Central St Martins, in and behind the Granary Building in the middle of the site, and the new Cultural and Arts Centre and University facility to be built by the Aga Khan Foundation on Lewis Cubitt Square.

Creating and Curating – The Importance of Content

This network of streets, linked North-South to the Euston Road, and knitted East-West into the surrounding areas of Camden and Islington, provides the “skeleton” around which the different elements of the development have been brought forward through the property cycles.

Keeping those “spaces” alive and turning King’s Cross into a destination in its own right, is more than just about creating beautifully designed public realm, it is also about “curating” and programming what goes on both around and within those spaces – in order to turn them into real places for people. The King’s Cross management team have hosted a continuous program of arts activities throughout the development schedule – these include “Across the Buildings” by Felice Varini, which generated 120,000 visitors in 2013-14 (insert picture) and in 2015, “Of Soil and Water – the King’s Cross Pond Club” (insert picture), a natural swimming pool which has been built 2.5m above Lewis Cubitt Park to afford visitors the opportunity for an urban, immersive experience in the centre of a hive of construction work. Interestingly this art facility has generated not just physical visitors and critical acclaim in the press and on radio/TV, but has also resulted in a doubling in virtual visitors through social media traffic – all of which works to reinforce the increasing popularity of King’s Cross and cements the place into the psychic geography of London.

In addition to these set-piece art installations, King’s Cross has been host (since London 2012) to an annual “Stories” festival, working closely with partners in the surrounding area to host a variety of daily and weekly events of all types and for all ages, ranging from a free “Strawberries and Screen” to watch the Wimbledon Tennis Championship to daily “Kerb” street food outlets that feed the increasing volumes of workers, and people who are living, learning and visiting. (see Figure 8)

A Sustainable Piece of City

Not only does the framework of public realm provide the opportunity for people to move around and enjoy a gracious and active piece of city, but it also houses vital infrastructure to service the development plots and buildings themselves which front onto it. Fundamental to this is a District Heating and Cooling Network, centrally served by an Energy Centre housing two Combined Heat and Power

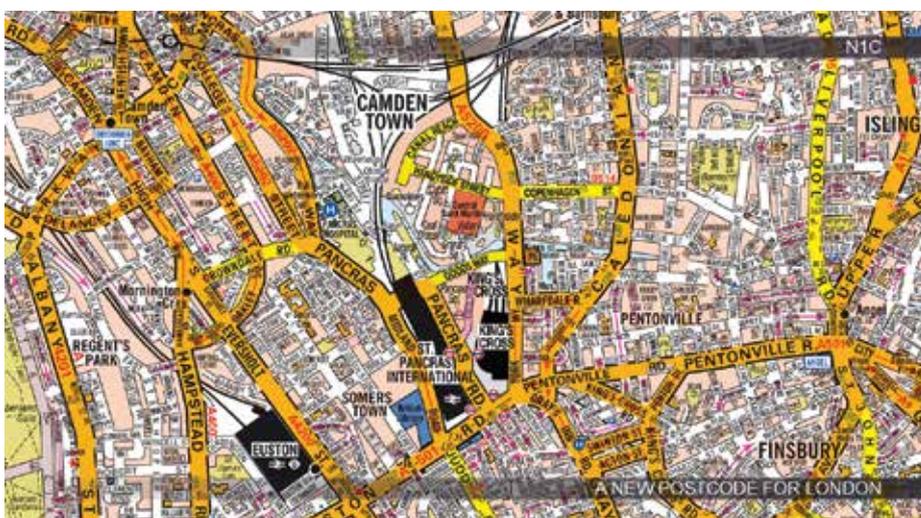


Figure 7. Plan 3 (Source: Argent)



Figure 8. Events at KX (Source: Argent)



Figure 9. District Heating Network (Source: Argent)

engines and (from 2016) a Fuel Cell, which together generate almost 100% of the heating requirements of the whole site and 80% of the electricity, delivering carbon efficiency savings which will be 80% better than the average in London. (see Figure 9)

This shared system, run by an Energy Service Company funded by the King's Cross Partnership, has been one of the key elements in ensuring that all of the buildings designed and constructed at King's Cross achieve the highest possible sustainability ratings (5 office buildings have scored BREEAM "Outstanding" – broadly equivalent to LEED Platinum). While not the subject of this paper, there is active debate amongst professionals about the ability of taller buildings to achieve environmental sustainability targets (largely due to the energy used to run their pumps).

Creating Shared Value

The final significant impact which the King's Cross development has had on London and the surrounding area is the shared value which has been created for both the existing community and the new community being created by and for the people who are now living and working there. (see Figure 9)

The new schools, recreational facilities, Multi-use Games Areas, Health facilities and other amenities all provide the essential elements of making cities livable on a human scale, and these, like the retail and restaurants have been distributed around the masterplan in the best place to service the community and also to provide further activity in areas of the site which might otherwise be difficult to animate. Social value and economic opportunity is also

of vital importance to the community. The first building which was built at King's Cross was a Construction Training Centre, which has delivered nearly four hundred apprenticeships both on the King's Cross site and around London. Meanwhile, the KX Recruit employment centre, staffed and operated by the King's Cross Partnership, has created almost two hundred jobs for local residents since its inception, 18 months ago.

The Designers and Occupiers

All of this has been achieved through maintaining the highest quality of design and delivery – using internationally renowned architects, consultants and a partnership based construction program – and has attracted a list of global businesses to occupy the commercial office space.

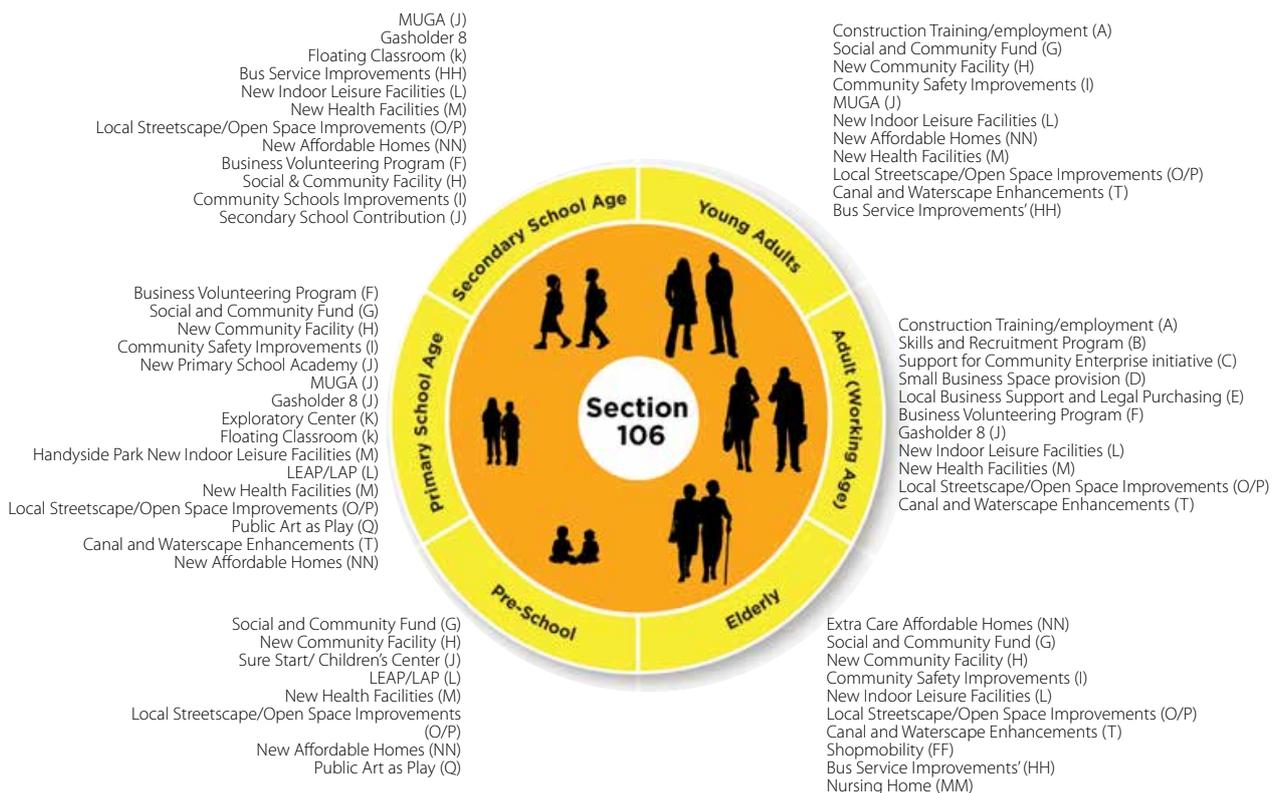


Figure 9. Shared Value Wheel (Source: Argent)

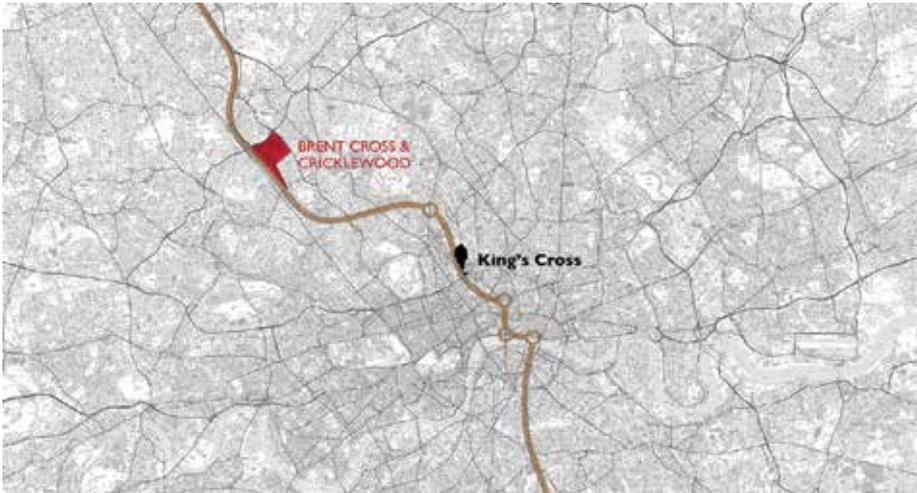


Figure 10. BXS Site Plan 4 (Source: Argent)



Figure 11. Brent Cross South Masterplan (Source: Argent)

Brent Cross South and Other Developments

Other examples of opportunities to achieve this ambition to create “human” or livable cities which Argent are currently pursuing elsewhere in London are around the new transport infrastructure at Tottenham Hale and at Brent Cross South in Cricklewood. (see Figure 10)

At Brent Cross South, Argent and the Related Group from New York City, working together in a new Partnership formed in 2015, have been appointed Preferred Developer by the main landowner and local authority for the area, the London Borough of Barnet. The site, which is c192 acres (78 ha) in area, has the benefit of an outline planning permission which will deliver

10.1m sq.ft GEA of development, including 6,700 new homes and 4m sq.ft of offices over the next 25 years on the land south of the Brent Cross Shopping centre in North London. A new railway station on the Thameslink over-ground line into St Pancras and connecting to the new Crossrail line at Farringdon (15-20 minutes journey time), will ensure that connectivity for workers and residents will be significantly improved. (see Figure 11)

The masterplan for Brent Cross South has been laid out with similar principles to Argent’s approach at King’s Cross – a network of streets and squares connected into existing assets (such as Clitterhouse Fields) and both the new

station and the newly refurbished Brent Cross Shopping Centre.

As cities increasingly become the primary engines of growth and opportunity throughout the globe, and take on the role of driving intensification of usage to minimize the impact of humankind on the planet’s resources, concentration and densification become inevitable – and indeed welcome, for all sorts of social and environmental reasons of sustainability. New technology is delivering faster and faster communication, and the desire for immediate experience, which further exaggerates the need for people (and goods) to travel shorter distances, leading to even greater intensity.

Cities can answer all of these needs, and urban practitioners alongside politicians and planners are increasingly understanding (and attempting to satisfy) the need for resilience in infrastructure and the growth which investment in transport and connectivity can promote.

On the other side of this equation is the need for the urban habitat to become more “livable”, or “human”. It is the cities (and pieces of city) which can reconcile these forces and which provide authentic places to gather, to interact and to relax, which will be the most successful and ultimately the most lasting and sustainable. Lower scale development around well planned and intensely populated urban realm provides the opportunity to satisfy the increasingly “experimental” demands of the demographic which is occupying cities now and into the future. This does not necessarily have to be achieved at the expense of density.

Argent’s work at King’s Cross, along with the opportunity to evolve and to expand this approach to open up new areas of London, provides an interesting case study of a nuanced philosophy of city-making, one which takes its roots from a European tradition going back to classical times, and which proposes a compelling vision for the future.