



FINANCING AND BUSINESS CASES

INTEGRATED GUIDELINES FOR SUSTAINABLE NEIGHBOURHOOD DESIGN

Urban Morphology & Complex Systems Institute

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INTRODUCTION

Neighbourhoods where people want to live, spend time and work generate greater financial value.

Different instruments can recapture a part of this value to finance the implementation of sustainable design. The efficient use of land will create value. Establishing a sense of place will add value. Collaborative engagement will help streamline the planning and delivery process.

Cities can fund the development of areas by capturing the benefits of higher land values created by integrated planning. Land value capture (LVC) mobilizes for the community the land value increases generated by public investments in infrastructure or

administrative changes in land use norms and regulations.

Policymakers and practitioners need to understand the fundamental characteristics of various instruments and adopt appropriate combinations of development-based LVC techniques.

This chapter comprises three sections.

CREATING VALUE
LAND VALUE CAPTURE
PLANNING AND FINANCING INVESTMENT

CREATING VALUE

Developments based on sustainable design principles can raise real estate values by 10–15 %¹.

Sustainable planning reduces costs, increases profits and diminishes risks. The most significant opportunities are to

- save costs by lowering impacts and speeding approval.
- Heighten project revenues.
- Capture land value increases.
- Benefit the local economy.
- Reduce risk with early engagement of stakeholders.
- Build a reputation by promoting environmental efficiency.
- Improve funding with better governance.

Moreover, the benefits of sustainable communities go far beyond mere financial worth. They enhance the residents' quality of life and health by creating places where people feel safe, with amenities and jobs, and with good connections by public transportation.

Neighbourhoods with a mix of uses and tenure, and generous access to open space, are more likely to display²

- Increased civic pride.
- Improved sense of well-being and belonging.
- Strengthened social cohesion.
- Economic vitality.
- Higher levels of physical and mental health.
- Lowered amounts and diminished fear of crime.
- Reduced dependence on the car.
- Minimized waste.

Cities should have a clear vision of sustainable design financial benefits. They can capture value out of the density, accessibility and place quality dividends.

- **The Density Dividend**
Sustainable design creates value through utilizing land efficiently, and planning and distributing uses and building types to create a sense of place. With good design, the profits achieved by higher-density developments can be well above the costs of

¹ English Partnerships and Housing Corporation 2007.

² NWDA/RENEW Northwest 2007.

construction³. The best performing locations present heights and hollows of density. Concentration of real estate value peaks near transit stops or major street intersections and around neighbourhood facilities and parks. The distribution of uses will also have an impact on values. The location of commercial premises should be where they are the most accessible.

- **The Accessibility Dividend**

New interventions such as the creation of streets add value to the neighbourhood. Designers should connect streets and design them as places for people. They should strengthen the amenity of pedestrian and biking experience. Locating major junctions near good public transport links will improve attendance and economic viability.

- **The Place Quality Dividend**

Amenity spaces such as squares, parklands and waterfronts can significantly heighten the economic value of neighbouring properties and of the wider area. A garden can increase the price of

a house by 11%, while a water scenery can give a 10% premium. A view of green can soar values by 8%, while a nearby park can increase prices by 6%⁴. A waterfront with multiple activities, for example, may create a more elevated value. High-quality landscaping increase prices. Existing features may be worthy of being integrated in new developments to strengthen their unique identity. Such a strategy has considerably enhanced the attractiveness of blighted neighbourhoods.

To maximize value formation, the initial phases must demonstrate at an early stage the quality of the area. This can be achieved through the characteristics of the materials used, the design of the public realm and the details. Excellent materials will not necessarily heighten the cost of building. A well-designed public realm creates enjoyable places. It will also be good for businesses. Well-planned enhancements in public space can increase trade by 40%⁵. Improving the quality of street design could add about 5% to residential prices and retail rents⁶.

CASE STUDY: THE PRICE OF HOUSES IN TRANSIT-ORIENTED DEVELOPMENT NEIGHBOURHOODS IN THE UNITED STATES

In the United States, houses in Transit-Oriented Development neighbourhoods (with density and walkability) are worth 3.48 times more than the average American home. Transit-Oriented Developments (TODs) are walkable, mixed-use and dense communities within a half-mile of a train station while Transit-Adjacent Developments (TADs) refer to station areas with low-density, auto-oriented land uses. The TOD index⁷ study has calculated the differences in property values between TODs and TADs. The index includes 4,000 station areas across the United States classified as TODs (dense AND walkable), hybrids (dense OR walkable) and TADs⁸.

Each category is benchmarked according to its density and walkability. To support transit ridership, gross housing density should be at least 4,000 households within an area radiating 800 m from a train station. For walkability, Walkscore.com rates communities with a 70 or greater (out of a possible 100 score) as Very Walkable or a Walker's Paradise (above 90). Each category is then benchmarked against the national Zillow Home Value Index (ZHVI) or the national Zillow Rent Index (ZRI).

³ CABE 2003.

⁴ CABE 2004.

⁵ CABE 2004.

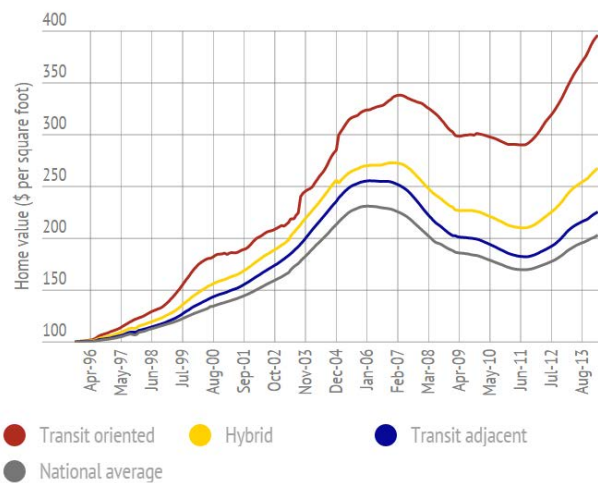
⁶ CABE 2007.

⁷ Renne 2014.

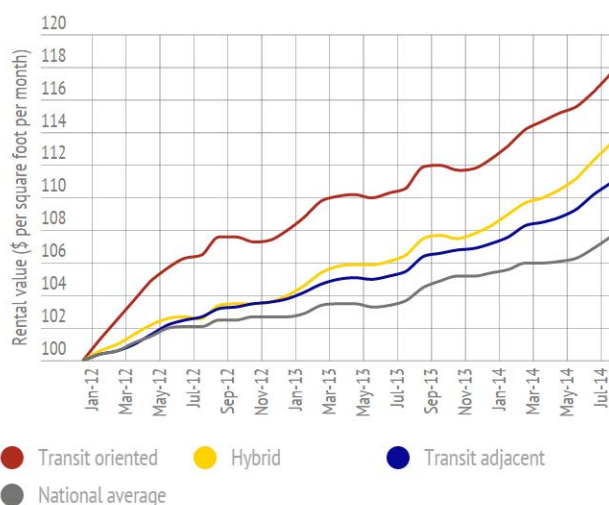
⁸ The study analysed 4000 passenger train stations across the United States, among which 1441 have been

found to meet TOD criteria of density AND walkscore. 1180 have been categorized as hybrids meeting the criteria of density OR walkscore but not both. 1,775 stations across the US are categorized as TAD stations, which don't meet either criteria for a TOD or Hybrid.

The following charts show the combined effects on property prices of density, walkability and proximity to transit. For two analogous dwellings priced 100 in 1996, the home in a TOD district is worth 400 in 2013, while it is 225 for one in a TAD district. The impact on rental prices is also significant. For two similar dwellings rented 100 in 2012, the increase in the rental value of the one in a TOD district is of 18%, while it is 11% only for TAD districts.



Average home value in the United States in transit oriented, hybrid and transit adjacent areas, and national average, since 1996. Base 100 in April 1996. Data: Renne 2014.



Average rental value in the United States in transit oriented, hybrid and transit adjacent areas, and national average, since 1996. Base 100 in April 1996. Data: Renne 2014.

Market and consumer demand for sustainable neighbourhoods are robust. A survey in the US identified strong market preferences for proximity to parks, and other wellness-related locality features, with 76% of US millennials saying walkability was an important community characteristic⁹. Pedestrian-oriented places with access to public transportation

garner higher rents and retail sales¹⁰. Cycle infrastructure can have a payoff, with homes near bike paths commanding a 10% price premium¹¹.

⁹ ULI 2013.

¹⁰ ChangeLab Solutions 2013.

¹¹ Lindsey et al. 2003.

Walkable retail enlivens streets and improves their value¹². In 2012, New York City's *Measuring the Street* report quantified the economic impact of secure, walkable, and more attractive streetscapes. *Complete Street* strategies comprise protected bicycle lanes, pedestrian safety islands, new plazas, and simplified intersections. They reduce the number of vehicles and people accidents and raise commercial rents and retail sales. These improvements served the dual purpose of strengthening the vitality of a neighbourhood and allowing its citizens to be more physically active.

MINIMIZING RISKS AND COSTS

Stakeholders' involvement reduces risks. Engaging inhabitants on key sustainability issues and choices can take place in many ways, encompassing open dialogue on environmental and social impacts, public reporting, and ultimately through including them in decision-making procedures. Consultation leads to shared learning between the developers and the residents. Transparent and frank discussion with affected groups is essential. Perceiving their concerns and interests helps developers to manage expectations, which translates into diminished risk, better access to capital and insurance, cost savings and reduced vulnerability to transformations. Engagement enhances project organizers' ability to appreciate the changing needs and to identify problems that could redefine the way the place is designed. Stakeholder engagement increases community understanding and acceptance of neighbourhood improvement. Failure to have such acceptance can raise operational risks and costs.

The cost reductions and financial returns of sustainable neighbourhoods.

According to a Smart Growth America survey, smart growth costs one third less for initial infrastructure, such as roads, sewers and water pipes. It saves an average of 10% on the continued provision of police, fire and ambulance services and generates ten times more tax revenue per hectare than conventional suburban growth¹³. However, creating sustainable neighbourhoods needs long-term funding and commitment. Early collaboration with local authorities

Walkable retail environments have significant economic return. Automobile-dependent retail must depend on drive-by traffic alone, sacrificing leasable area for on-site parking. These businesses must have long frontages and large signs for attracting drivers' attention. The result for the investor is a product that must be quickly amortized; for the neighbourhood, it is a property of low community value and high traffic impact.

and key stakeholders will enable developers to understand obligations and to reduce the time needed to obtain planning authorization that can significantly increase costs. Adhering to agreed design principles can help prevent delays in the process. Investing time and resources right from the start can avoid expensive reworking of designs. Certainty about the quality required can foster swifter delivery. Design codes can give assurance that projects that fulfil their requirements will get approval for planning quicker and that adjacent parcels will meet consistent standards. Developers creating successful programs often profit from faster negotiation with local authorities. Well-designed developments also benefit from more rapid sales and rentals. They have a competitive advantage and will better withstand fluctuations in real estate market.

Sustainable neighbourhoods demonstrate cost savings from environmental improvements. They produce the same level of output with fewer resources, emissions and less waste. Employing alternative materials and more streamlined technologies increases eco-efficiency. Some savings proceed directly from using less energy and materials. Others come from lower pollution amounts, in the form of charges for waste handling and disposal. Restructuring material flows can also create benefits. For example, diminishing waste volumes can reduce the need for labour and machines which manipulate waste.

¹² Adapted from ULI 2013.

¹³ ULI 2013 b.

LEVERAGING THE NEIGHBOURHOOD KEY ASSETS FOR CREATING VALUE

The key assets of any neighbourhood can be quantified employing three types of values

- **Node Value** measures the connections of the community to the transportation network of the wider metropolitan area and its centrality within this network¹⁴.
- **Place Value** analyses the quality of the urban fabric and its integration with nature, the mix of uses and their vitality, the availability at walking distance of amenities, schools and healthcare¹⁵.
- **Market Potential Value** describes the place attractiveness for investors. Various metrics include
 - human density (residents + jobs density) with forecasted increases. This draws real estate growth
 - number of accessible jobs within 30 minutes by transit. This drives people's locational choices to reach many diversified job options
 - FARs
 - Developable land opportunities
 - market vibrancy¹⁶.

This Three Value framework¹⁷, described in more details under the first strategy "Plan and Design Strategic Density" allows policy-makers to assess the potential of neighbourhoods in a dynamic way and take the appropriate actions to create value. Metropolitan regions present an uneven distribution of values. Moreover, the three types of values may differ greatly within the same community. The most promising areas are the ones where increased connectivity through public investment comes in places with room for further growth.

Bertolini's¹⁸ node-place model analyses the dynamic interplay of place and node values. Improving network accessibility (node value) of a place will boost the further development of the location. In turn, an enhancement in urban quality will create conditions favourable to extending the mobility system, initiating a positive feedback loop of growth. This model highlights the potential of imbalances between values within the same neighbourhood.

Unbalanced nodes and unbalanced places offer strong opportunities, because their assets are underutilized. When leveraging these opportunities, policies should ensure equity, such as professional training for local populations or inclusionary housing.

¹⁴ Node value can be precisely measured using various centrality metrics of network theory and applying them to the metropolitan subway or street network. For calculating network value within a subway network: see Salat and Ollivier 2017.

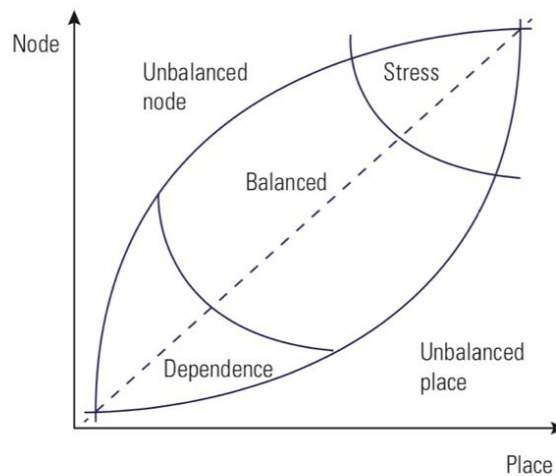
¹⁵ For a detailed set of metrics and the construction of a composite index of place value see: Salat and Ollivier 2017.

¹⁶ For a detailed set of metrics and the construction of a composite index of market potential value see: Salat and Ollivier 2017.

¹⁷ Described as the 3V Framework in Salat and Ollivier 2017.

¹⁸ Bertolini 1999.

The model distinguishes five types of situations based on node and place value



The Node-Place Model adapted from Bertolini 1999

1. **Balance:** Both node and place are robust. Transportation infrastructure and local land use support each other, optimizing market value.

2. **Stress:** The strength and diversity of infrastructure and land use come close to the maximum. Although the area is under stress and at towering development, international experience shows that growth in places with peaks of connectivity and land use intensity tend to continue increasing. In Shinjuku in Tokyo, for instance, real estate is still booming with the addition of new lines.

3. **Dependence:** No competition exists for free space. Demand for infrastructure is low. Both node and place values are relatively weak. Factors other than node-place dynamics (for example, subsidies) must intervene for the place to sustain itself.

4. **Unbalanced nodes:** The provision of infrastructure is stronger than land use. Enhancing place value fosters growth driven by the oversupply of infrastructure. An example is King's Cross Central in London.

5. **Unbalanced place:** The place quality exceeds the supply of infrastructure. Infrastructure that adds linkages prompts local development. In Hudson Yards in New York, for example, anticipated real estate programmes, supported by raising FARs, required the extension of subway line 7. Higher connectivity encourages existing economic activity and increases market value potential.

An example of imbalances dynamic power is Bo01 in Malmö, Sweden. The closing of the Saab factory in 1990 on the original premise of the Kockums shipyards prompted redevelopment. It freed up 140 ha of prime land on the Öresund Strait. Besides, construction of the bridge and tunnel over the Öresund between Malmö and Copenhagen created a thirty-minute transit link to downtown Copenhagen and its international airport and thus to new opportunities. The site of Bo01 became

an unbalanced node where the supply of connectivity was much higher than the quality of the area. This prompted an ambitious visioning exercise which generated two strategic projects

- establishment of the Independent Malmö University
- Malmö's application for one of Sweden's housing expositions sponsored by SVEBO¹⁹

¹⁹ An organization formed by the Swedish National Board of Housing, Building and Planning.



Malmö Bo01 in Sweden. Photo: ©Françoise Labbé.

HOW TO TAKE ACTION TO INCREASE VALUE²⁰

The actionable strategies depend on the relative strengths of values in each community. A location with a high node value, such as King's Cross Central for example, can acquire an elevated market potential through massive investments in quality public space when the market timing is right. Such an approach is transformative. At the other end of the range, in suburban communities on a single line with a limited market potential, infill growth would be favoured. Key strategies to increase value of a neighbourhood development are thus of three types.

Increasing Node Value

Enhancing node value includes linkages to the wider public transport systems and to its core stations through investment in infrastructure. Heightened access will soar real estate value. Capture by the public sector of the increases in land value may allow financing the connectivity investment, a mechanism employed in Hong Kong and Tokyo. In turn, successful subway extensions, such as the addition of four lines in Seoul, cluster most easily reachable stations in the network core where density and economic activity concentrates.

²⁰ This section draws on Salat and Ollivier 2017.



The New No. 7 Subway Station at W. 34th Street and 11th Avenue, New York. Source: © Related Oxford. Image credit: BY-ENCORE.

Increasing Place Value

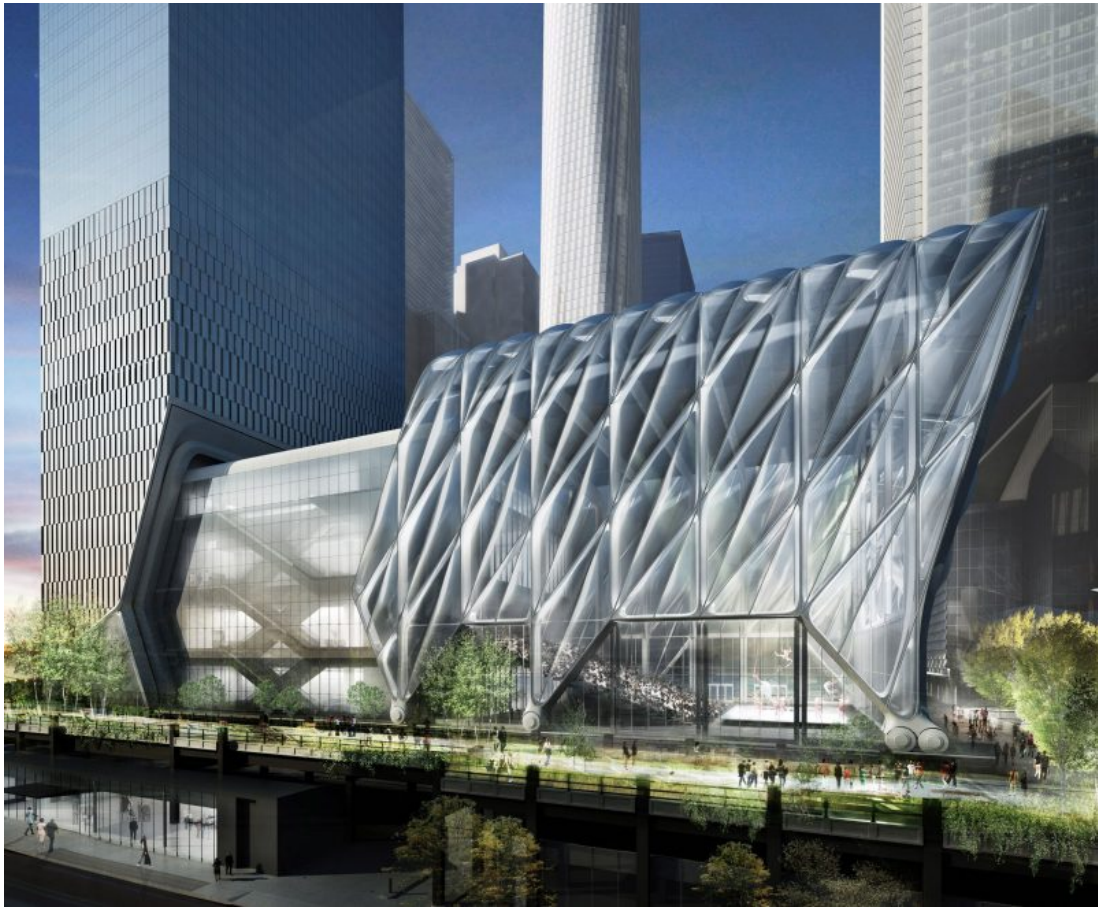
Raising place value encompasses designing high quality public space, diversifying the mix of uses to establish a vibrant street life where a variety of amenities are accessible for inhabitants. A large resident population offers opportunities for social interaction and a feeling of safety. Providing different and complementary activities within the same or adjacent blocks reduces trip lengths and supports the clustering of economic functions.

Design should promote walking and cycling, reclaiming the streetscape from cars. Dense networks of paths and

small blocks enhance walkability. Japanese cities with an average distance between street intersections of 50 metres (even in modern Tokyo) are pedestrian-friendly²¹. European cities built in the 19th century and the historical core of the US and some Asian cities have average distances between intersections of 100–120 metres. A vibrant and active pedestrian public realm plays a major role in stimulating their high place value.

Art spaces heighten value and define a place identity. Designed by Diller Scofidio + Renfro with the Rockwell Group, The Shed at Hudson Yards, for instance, was adapted from the shipyard technology of gantry cranes as a nod to the site's industrial past.

²¹ Salat et al. 2011.



The Shed at Hudson Yards: Architects Diller Scofidio + Renfro and Rockwell Group.

Increasing Market Potential Value

Concentration of residential and employment density, greater diversity of land parcel sizes, and higher FARs increase Market Potential Value.

Density delivers the customer base that encourages a lot of services and amenities and makes local commerce thrive. High-density living can be attractive if supported by the right level of public realm and green space.

Job density feeds productivity because of economies of agglomeration²². Those are the benefits firms obtain by locating near one another. They profit from economies of scale and network effects. As more companies in

related fields of business cluster, their production costs may decline significantly. Even when competing firms in the same sector bundle, they find advantages, because the cluster draws more suppliers and customers than a single firm could achieve. Job density rises market potential values as economic density determines firms' locational choices.

Human density is the number of residents and jobs in a neighbourhood. Human density and the balance between jobs and the working-age population stimulate the development of a strong real estate market. In King's Cross in London and in Hudson Yards in New York, density peaks at 1,750 people + jobs per ha.

²² Across the United States, job density explains half of the variation in economic productivity per capita. Job and business densities are key to reaping the benefits of agglomeration economies, increasing economic productivity, and fostering innovation. Concentrating economic activity enables firms to reap economies of scale and scope and bring talented people together to share ideas and innovate. Job densities reflect such

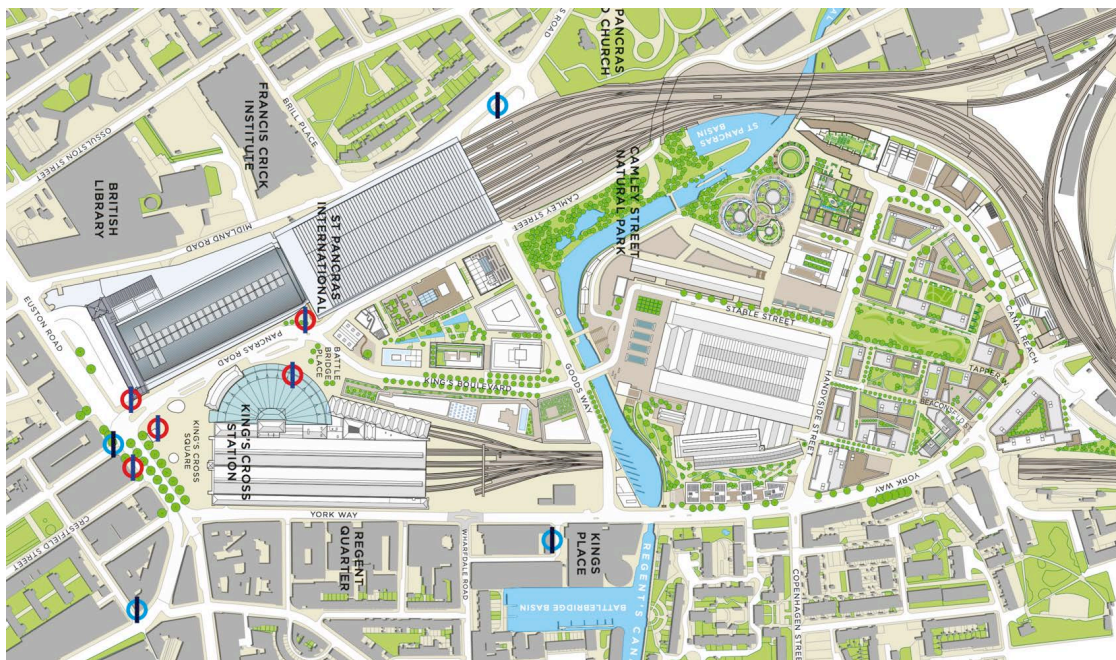
phenomena by exhibiting high peaks of concentration. A doubling of employment density in U.S. cities corresponds to a 6% increase in hourly labour productivity (Haughwout 2009). A study of 261 Chinese cities shows that economic productivity in China increases by 8.8% with a doubling of employment density (Fan 2007).

The activities to foster such increases are to set a vision, build consensus, plan actions to improve economic attractiveness.

Diversifying the size of land parcels can help create an adaptive neighbourhood that can meet future demand. A wider range of block sizes and varied options for development encourage land market vibrancy.

Heightening floor area ratios authorizes densification and generates revenue streams. Their capture allows financing infrastructure (public transport, green spaces). Effective planning raises FARs near stations. Such approach has an impact on both land value and compactness.

CASE STUDY: CREATING VALUE WITH URBAN REGENERATION IN KING'S CROSS CENTRAL, LONDON



A mixed-use high-density programme, with 40% of the land for high-quality public space to the north of King's Cross station. Source: Argent 2014.



The main entrance to Google offices will be opposite King's Cross Tube station. Image: Google

Strategic planning guidance for London, published in 1996, identified King's Cross Central as one of five 'Central Area Margin Key Opportunities.'

King's Cross Central was an unbalanced node. It is a major interchange station at the scale of London, the United Kingdom, and Europe. It presents Europe's highest accessibility and centrality for high-speed rail, national and regional rail, urban rail, and subway networks. It is the biggest inner-city transit interchange in London, linking 6 metro lines and 17 bus routes.

In 1996, it was decided to move Britain's first high-speed railway, the Channel Tunnel Rail Link, from London Waterloo Rail Station to St Pancras. This provided the catalyst for landowners LCR and Exel (now DHL) to develop the King's Cross site. Five international airports are within an hour, with three with direct connections to King's Cross Central.

The area had a strong imbalance, with underutilization and fragmentation of its 27 hectares. The programme is a mixed-use development, with an intensification of density and commercial activities near the station. 316,000 m² of office space are close to 2,000 residential units (including 42% of affordable housing), 46,400 m² of retail and leisure space, a hotel, and educational facilities. In total, some £2 billion were invested in local transport infrastructure and the public realm, comprising £250 million for 20 new streets, 10 new public spaces, and 5 major squares equalling 3.2 hectares. The urban regeneration supported the local people, with a programme of housing and community facilities.

Planners required maintaining features of natural and historic importance to establish a neighbourhood with a distinct character, identity, and image. A well-structured series of gardens and new squares enhanced the site attractiveness. The scheme involves restoration of historic buildings and new construction. It increases local connectivity, accessibility and permeability, with a dense pattern of streets. A new public realm of 10.5 ha fostered towering place value.

This planning process took six years to design and negotiate, and four rounds of public consultation engaging around 30,000 people, leading to a well-tailored solution for urban regeneration.

Density (people + jobs) peaks at 1,750/ha – the equivalent of 175,000 people + jobs/km². Creating place value with a high-quality public realm (40% of the land) spanning ten plazas and gardens); twenty new connective streets; and a mixed-use programme that comprises Google's second global headquarters, digital start-ups, inclusionary housing, a school for the arts, cafes, and retail stores increased place value, which in turn heightened market potential.

The area is becoming a global cluster of high-tech firms with the arrival of Google and Facebook headquarters. This is due to the connectivity and the place value created by designing the public realm. In a statement, Google headquarters designer Thomas Heatherwick said he'd been inspired by the site of the new office, which functions as a hub for much of the city's transport links. 'The area is a fascinating collision of diverse building types and spaces and I can't help but love this mix of massive railway stations, roads, canals and other infrastructure all layered up into the most connected point in London,' said Heatherwick. 'Influenced by these surroundings, we have treated this new building for Google like a piece of infrastructure too, made from a family of interchangeable elements which ensure that the building and its workspace will stay flexible for years to come²³.'

The entire Google complex stretches across 330 metres of ground, sitting on a 'plinth' of shops with ground-floor entrances to the offices interspersed between them. This creates a varied and open ground plane that can change with time. Inside will be all the amenities of a mini-city. The roof will be covered in a 300-meter-long garden, divided into

²³ <https://www.theverge.com/2017/6/1/15723642/google-london-office-pictures-headquarters-kings-cross>

different zones, including a 'pause area' filled with wildflowers and woodland plants, a cafe, and a 200-meter 'trim trail' for runners.



Google headquarters in King's Cross: a landscaper with a rooftop garden. It's got space for more than 4,000 employees, a rooftop garden with a running track, and has been dubbed a 'landscaper' for being as long as a skyscraper is tall. Image: Google.



The new Google headquarters in King's Cross Central. Parts of the building will overlook canals in the Kings Cross area. Image: Google.

LAND VALUE CAPTURE

One way for cities to finance neighbourhood development is by capturing the benefits of higher land values created by integrated planning²⁴. Land value capture mobilizes for the community the land value increases (unearned income) generated by actions other than those of the landowner. These include public investments in infrastructure or administrative changes in land use norms and regulations.²⁵ The majority of cities, particularly in developing countries, have not yet fully explored the possibilities of financing projects with land value capture. These cities will have to establish stronger legal and institutional frameworks and consolidate their technical expertise, their capacities and their experience within a coherent vision and strategy. Regulatory mechanisms can allow the public sector to participate in the appreciation of real estate values resulting from public and sometimes private improvements. These improvements may consist in

- making land parcels more reachable in the case of public transport investments
- preparing land for private sector development through land assembly

- supplying network infrastructure (such as water networks and access to sewerage)
- provisioning public amenities such as public spaces, hospitals and schools.

According to Huxley²⁶, Value Capture Finance is the appropriation of value, generated by public sector intervention and private sector investment in an underused asset (land or structure), for local reinvestment to produce public good and potential private benefit. In Kings' Cross, London, Value Capture financed green infrastructure, provided high-quality public space and new streets, and unlocked land for affordable housing. Value Capture Finance heightens the incentive for both public intervention and private investment by creating a win-win situation. It shares the cost of urban projects between the public and private sectors without the public sector necessarily undertaking much initial endowment.

Land-based infrastructure financing will bring the biggest payoff where cities are expanding fast. Rapid growth drives swift increases in land prices and creates large revenue opportunities. Yet it also magnifies infrastructure investment needs, requiring major sources of development finance.

Land values and their attribution ²⁷	
Increases in land value due to population growth and economic development	The government, on behalf of the public, should keep this portion of the land value.
Increases in land value due to public investment in infrastructure and changes in land use regulations	Public service suppliers should capture this portion of the increase to cover public infrastructure costs.
Increases in land value due to landowner's investments	Private land owners should profit from this portion of the increase.
Intrinsic land value	Land buyers (or lessees) pay sellers (lessors) to obtain the property rights of land.

²⁴ Suzuki et al. (2015) describe how cities can use land value capture to finance and encourage more inclusive urban growth. By investing some of the captured value in parks, sidewalks, street lights, and cycle lanes, city governments can work with public transport agencies, developers, and communities to develop efficient, attractive, and safe public places, increasing property

values. By offering bonus floor area ratios (FARs) and other regulatory incentives, they can require developers to provide affordable housing and day care centres in their new facilities.

²⁵ Smolka 2013.

²⁶ Huxley 2009.

²⁷ Adapted from Hong and Brubaker 2010.

CREATING A POSITIVE FEEDBACK LOOP OF NEIGHBOURHOOD DEVELOPMENT

Infrastructure investment leading to enhancements in accessibility and urban quality fosters raises in land value. Capturing them starts a positive feedback loop.

The unlocking of underused assets (land or structures) potential value because of a public sector intervention (rezoning or provision of transit infrastructure) stimulates demand from the private sector. Subsequent investment and development from the private sector ensure the realization of asset value increase. The constant reinvestment of the value created and captured creates progressively more and more value.

- **Value capture** is the arrangements by the public sector for the acquisition of a proportion of private sector returns for local reinvestment. This can take the form of monetary or in-kind contributions from the private to public actors.
- **Local value recycling** is the reinvestment of acquired monetary or in-kind contributions from the private sector within the same development site or scheme. This reinvestment can pay for the initial public intervention but tends to fund further interventions.

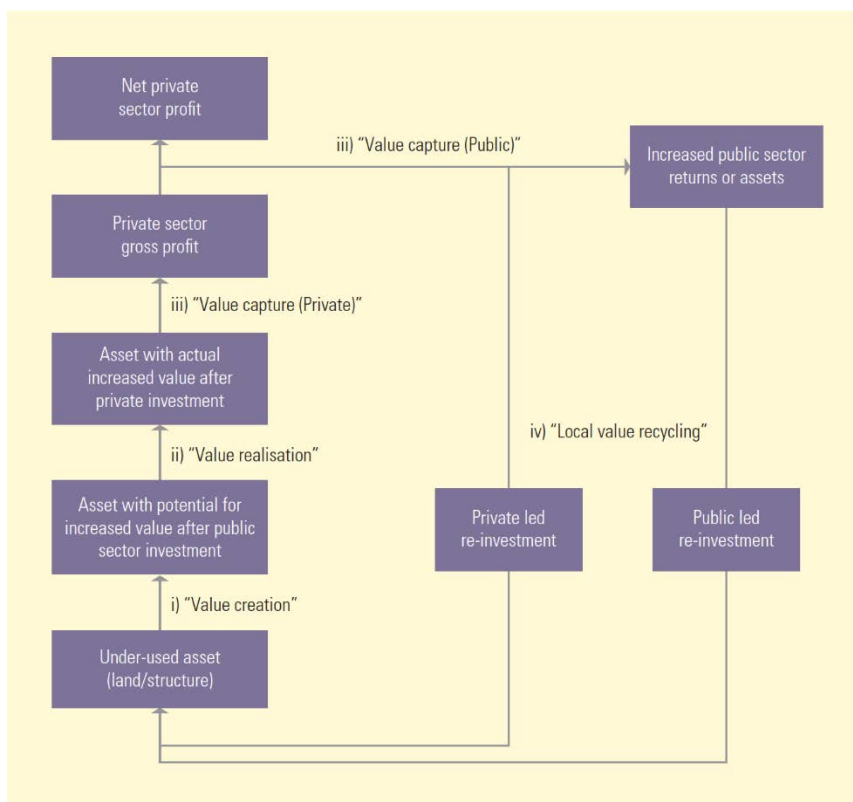


Fig. Positive Feedback Loop of Value Capture Finance. Source: Huxley 2009.

Value creation

In King's Cross Central and along Crossrail in London, and in Hudson Yards in New York, public investment in transport infrastructure and high-quality urban landscaping created value peaks. Several public interventions made these places desirable.

- **Land use transformations using planning and regulatory tools** took the form of rezoning at higher values, with mixed use and with margins of flexibility. This allowed to capture value between base and maximum and to adapt to market changes. Rezoning at higher FARs levels created higher market values in well-connected areas, centrally located, with a high demand at city scale.
- **Enhanced infrastructure provision** took the form of future linkage uniting King's Cross and Euston Square into a single station, with HS1 and HS 2. This will create the biggest interchange across several geographical scales in the U.K. connecting Europe, U.K., and London with High-Speed Rail, National Rail, 6 subway lines, and 17 bus routes. Up to now, investment in local transport infrastructure totals £2.5 billion (3.6 US\$ billion). This makes King's Cross St Pancras London's most significant interchange for local, national and international travel. A central part of the Hudson Yards rezoning and development programme extended the No. 7 Subway west and south from its old terminus at Times Square. This introduces a new station at West 34th Street and 11th Avenue, for a cost of US \$2.4 billion, plus US\$465 million additional investment for Moynihan station refurbishment.



The Western Concourse between King's Cross and St Pancras Stations. Photo: ©Françoise Labbé.

- **Environmental and social enhancement.** King's Cross Central project comprised an important component of combining physical regeneration (e.g. developing sites, refurbishing buildings) with community revitalization (e.g. providing skills, training, facilities). In Hudson Yards area, public sector undertook renovation of the Javits Centre for US\$465 million.

²⁸ Adapted from Salat and Ollivier 2017. We apply and adapt for this discussion the framework developed in Joe Huxley, *Value Capture Finance. Making urban development pay its way*, Urban Land Institute, 2009.

- **Enhanced urban value and image.** High-quality public space and iconic architecture is a crucial strategy in King's Cross Central, in Hudson Yards, and around key stations along Crossrail.²⁹ Three major New York parks (The third section of the High Line, Hudson River Park, and Hudson Park and Boulevard) converge in Hudson Yards with a public investment in these three parks of 660 US\$ million. Including parks, transit infrastructure, and Javits centre renovation, total public endowment in Hudson Yards area amounts to about 3.8 US\$ billion.



The High Line in Manhattan. Photo: ©Françoise Labbé.



The High Line in Manhattan. Photo: ©Françoise Labbé. Parks at Hudson Yards with the last section of the High Line.

Source: Hudson Yards website. © Related Oxford.

²⁹ such as Canary Wharf and Tottenham Court Road.



Hudson Yards Viewed from the High Line. Source: © Related Oxford. Image credit: BY-ENCORE.

- **Population and jobs' growths.** In both Hudson Yards and King's Cross, huge increase in human density is planned for jobs and for residential creating very dense mixed-use communities with human density (people +jobs) around 1,750 per ha.

Value realization

Private sector involvement and investment increase tangibly asset values in many ways.

- **Direct investment.** For example, growth in New York New West Side can be attributed to the High Line. This successful elevated linear park has spurred \$2 billion of private investment, 12,000 new jobs and 29 projects since opening in June 2009.
- **Comprehensive master planning.** In Hudson Yards and King's Cross Central, developers designed innovative master plans, with quality public space and local connectivity. In London, high levels of public participation supported the planning effort.





Top. Hudson Yards Worksite. Source: © Related Oxford.

Bottom left: Aerial View of the Hudson Railyards (West and East Yards). Source: © Related Oxford.

Bottom right: Hudson Yards Master Plan, 2016. Source: © Related Oxford.

- **Area promotion through enhanced destination branding and marketing.** King's Cross Central and the area surrounding Hudson Yards are in a process of transformation from derelict industrial rail yards areas into beacons for creative professionals, a hub for digital tech, fashion, design, communications and the arts. Both areas are becoming the home of Google and other fast-growing technology and digital media firms. Hudson Yards and King's Cross Central will attract and cater to vibrant, cutting-edge communities.

Value capture

Increased asset values are captured for the public good and private profit. The inward rate of return is secured as profit by the private sector. This private value capture is primarily via the rent or sale of new housing, retail or office units. The public sector uses then a range of mechanisms to capture enhanced asset values realized by private actors. We provide below a general list of value capture finance instruments, derived from Huxley 2009.

- **Land transfers.** Land held in private or public ownership is provided to the public promoter for public use.
- **Local taxation.** Local general targeted taxation and local real estate tax increases where revenues are reinvested into the same area in which they were collected.
- **Fees and levies.** Planning approval fees, development levies and infrastructure tariffs.
- **Debt servicing/Loan guarantees.** Securing loans against the increased or future increase value of the land.
- **Local service agreements.** Private actors concur to give priority to the local community for access to new facilities, public space or to manage basic public services.
- **Private-led local infrastructure and amenity arrangement and enhancement.** For instance, schools, community centres, affordable housing, transport links and utility provision and upgrade, were part of the agreement between the local government and private developer for both Hudson Yards and King's Cross Central.
- **Operating revenue.**

Local value recycling

The captured value (in monetary form or 'credit' to leverage in-kind contributions from the private sector) can be recycled or reinvested in the same scheme for the public good in two main ways.

- **Public sector led reinvestment.** Heightened public revenues captured from the private sector through enhanced local taxation, fees and levies pay for additional government interventions within the same development zone. This reinforces asset values and social-economic impacts.
- **Private sector led reinvestment.** The public actor offers private partners the opportunity to deliver community-oriented infrastructure directly. This increases further asset values.

Because of these positive feedback loops, the area surrounding Hudson Yards is growing at a rate five times that of Manhattan. A report released on May 2, 2016, has outlined the substantial economic impacts of the 11.3 ha Hudson Yards development on New York City economy. Hudson Yards, once fully operational, will contribute nearly \$19 billion annually to New York City's Gross Domestic Product, accounting for 2.5% of the citywide GDP. Nearly \$500 million in annual taxes will be generated for New York City upon completion.

VALUE CAPTURE FINANCE INSTRUMENTS

The tables below adapted from Suzuki et al. 2015 describe selected land value capture instruments.

Tax- or fee-based instrument	
Property and land tax	Tax levied on estimated value of land or land and buildings combined, with revenues usually going into budgets for general purposes.
Betterment charges and special assessments	Surtaxes imposed by governments on estimated benefits created by public endowments, requiring property owners who benefit directly from public investments to pay for their costs.
Tax increment financing	A surtax on properties within an area that will be redeveloped by public investment financed by municipal bonds against the expected increase in property taxes. Mainly used in the United States.
Development-based instrument	
Land sale or lease	Governments sell developers land or its development rights, whose values have increased thanks to a public investment or regulatory change, in return for an upfront payment, leasehold charge, or annual land rent payments through the term of the lease.
Joint development	A well-coordinated planning of transit station facilities and adjacent private properties between transit agencies and developers. The latter usually contribute physically or financially to the construction of the station facilities. Their property value will increase thanks to the transit investment. Used in Japan, the United States, and other countries.
Air rights sale	Governments sell development rights extended beyond the limits specified in land-use rules (such as floor area ratios [FARs]) or created by regulatory changes to raise funds to finance public infrastructure and services.
Land readjustment	Landowners pool their land and contribute a portion of their land for sale to raise funds and partially defray public infrastructure development costs.
Urban redevelopment schemes	Landowners and a developer establish a cooperative entity to consolidate piecemeal land parcels into a single site that they then develop (such as a high-rise mixed-use building) with new access roads and public open spaces. The local government modifies zoning codes and increases maximum FARs in the targeted redevelopment areas and finances the infrastructure. Mainly used in Japan.

In development-based instruments, cities use the sale or lease of land, joint projects and air rights agreements. A joint project can ensure good coordination of the development. Under an air rights agreement, administrations can sell development rights that allow higher density or higher structures beyond the limits specified in land use regulations to increase revenues from infrastructure and public services. These agreements have many advantages for cities. They help to link the increased value of regulatory changes and related investments to the financing of development and public transit infrastructure. Besides securing direct income from the creation and sharing of higher property values, cities can also obtain more long-term income, thanks to new retail stores, leisure facilities and residential buildings.

Development-based LVC has the following advantages over taxes and fees for financing neighbourhood development

- It has greater potential for financing investments without significant fiscal distortion or public opposition to additional taxes or charges.
- It can generate not only direct incomes from incremental increases in land values created by accessibility and urban quality, but also more sustainable long-term revenues through added transit ridership and retail stores, leisure facilities, commercial and residential buildings.
- It involves transacting land rights, development rights or air rights whose values have grown due to public investment or regulatory changes. It establishes a clear link between creating value and capturing value. Besides, the increase in land value is calculated using a method agreed by consensus of the stakeholders.
- It has a much better chance of working well administratively in places where the property tax system is inadequate (obsolete cadastres, weak capacity for assessing value), as in most cities in developing countries.

Policymakers and practitioners need to understand the characteristics of different instruments and adopt appropriate combinations of development-based LVC techniques. Land redevelopment and urban redevelopment financing plans – through the inclusive process of land resource allocation and urban planning – are particularly important for cities under a market freehold system. Cities under a state lease system can use sales of development rights with public requirements, and development incentives, to achieve their planning objectives. Cities under a market freehold system may be able to auction public land with development conditions in the public interest and development incentives for developers.

Floor Area Ratio (FAR) distribution is associated with development rights sales, land readjustment projects, and inclusive redevelopment schemes. FARs can be used as a market incentive to achieve several policy objectives. These include the provision of infrastructure and services, open public space and amenities, affordable housing and mixed land uses in private developments or urban regeneration neighbourhoods.

One method for capturing land value does not preclude others. Cities can apply them separately or together in the way that best suits conditions. In choosing how to proceed, governments must consider the project objectives, its regulatory and administrative feasibility and its political acceptability. The perception of land transfers from the public to the private sector can be negative in countries with a lack of transparency. To gain support, governments must introduce a straightforward transaction tracking and recording system. All stakeholders should have access to information on the private partner selection. They should know the predicted public revenue and how it will be used. Perhaps the most crucial is to require that transactions be carried out at market prices based on independent assessments using established and neutral land valuation principles and practices. It is also important to involve civil society organizations in initial planning and post-project development activities.

CASE STUDY: FINANCING VAUBAN, FREIBURG, SUSTAINABLE NEIGHBOURHOOD INFRASTRUCTURE WITH VALUE CREATION THROUGH LAND SALES



Vauban eco-district in Freiburg, Germany.

Vauban is a 41-hectare sustainable neighbourhood in Freiburg, Germany. The city handled the sale of plots to interested investors and undertook the construction of the infrastructure through the gain made from these sales. The city bought the land from the state at a low as-is value and marketed it at prices fixed by an expert in view of the future development. Due to the decision to sell the plots at fixed prices and not by auction, the city could pick the best architectural and social concepts. A purpose-built tram connected Vauban to the city centre. The sale of plots covered the expenses for the construction of infrastructure, including the section of the tram line situated within the project perimeter.

WHAT IS CRITICAL FOR LAND VALUE CAPTURE SUCCESS IN DEVELOPING CITIES

The following factors are critical³⁰.

- **Inclusive value creation.** The logic behind development-based LVC is creating and sharing incremental value between governments, development agencies, developers, businesses and residents in neighbourhood development projects. Development-based LVC is designed and implemented around the incentives of the different stakeholders. This common interest facilitates various complex real estate development processes such as land acquisition and the authorization of land use changes and zoning codes. Unlike most LVC instruments based on taxes or fees, the assessment of incremental value in development-based LVC is not a unilateral decision by municipalities. The land price is agreed in advance by all parties according to market trends, and the distribution of profits is negotiated, based on the contribution of each stakeholder.
- **Public land ownership is important but not necessary.** Development-based LVC is an exercise in creating value rather than just selling public land or leasing land use rights. Even under a free-trade system, municipalities that do not own land can acquire land with incentive techniques such as 'land redevelopment' or 'urban redevelopment', as applied in Tokyo. These can generate land values that exceed by far the cost of purchasing land. Options should be explored through densification, transit and other investments in urban quality. São Paulo, for example, uses vertical development opportunities by taking advantage of the air rights of privately owned land in densely built neighbourhoods.
- **Sound planning principles.** Maximizing income is important because developable land is scarce in fast-growing cities, but development-based LVC should be based on planning principles that benefit society as a whole. These programmes should not distort the purposes of planning by focussing on

³⁰ Adapted from Suzuki et al. 2015.

extracting profits from developers rather than on residents and businesses' needs³¹. Policy makers and practitioners should design a development-based LVC so that the transaction produces property value that benefits society as much as possible.

- **Flexible zoning.** Development-based LVC facilitates negotiations between planning authorities, developers, landowners and stakeholders for mutual interests and benefits. Zoning codes and site design parameters must therefore be flexible enough to meet changing market demands and diverse local needs. The urban regeneration districts of Tokyo, for instance, have been designated to attract private real estate investments with generously relaxed development codes (maximum FAR greater than 10.0, height deregulation and accelerated approval). In many developing countries, obsolete land use plans or inconsistent regulations enforced by planning and

statutory authorities deter development agencies and real estate companies from exploring development opportunities. For example, the Delhi Development Authority has strictly set the maximum building coverage at 25%, with a FAR of 1.0 for all development activities in metro station areas.

- **Clear, fair, and transparent rules.** The underlying principle of development-based LVC is joint creation and sharing of increased land values. Establishing development opportunities among voluntary public-private contributors in a collaborative effort can generate additional values and greater synergies. It is therefore essential to implement clear and fair rules for sharing costs, benefits and risks between stakeholders to ensure the long-term commitment of public agencies and private entities to deliver projects and maximize the benefits.

CASE STUDY: AIR RIGHTS SALES IN SÃO PAULO³²

Unlike many cities in developing countries, São Paulo cannot generate income by selling land because it has little land to develop. Thus, the sale of air rights is one of the few possible measures for São Paulo to raise funds for investments in infrastructure. In Brazil, a private landowner cannot freely develop air rights above a certain surface area (usually between 1.0 and 2.0 in São Paulo) without paying impact costs for using the air rights. The logic behind the sale of air rights is that owners should contribute to building infrastructure costs in proportion to their air rights volume, since higher density requires additional endowments in infrastructure. Certificates of Additional Construction Potential (CEPACs) are auctioned off as a tradable financial security, and they only apply to designated districts, with revenues to finance predetermined urban infrastructure. Thanks to issuing CEPACs, municipalities can raise investment funds in infrastructure. They sell additional construction rights – such as a higher floor area ratio and possible changes in land use – which would encourage private investment to adjust to the desired transformations.

Air rights sales may be innovative development-based LVC. The greatest advantage of tradable air right sales is that local governments in developing countries with limited developable lands can produce substantial upfront cash flows for capital intensive urban infrastructure projects without increasing their public debt.

In São Paulo, limiting the basic free FAR to 1.0–2.0 over the city artificially raised demand for tradable air rights, thus increasing revenues from sales. However, this downzoning seems to have led to unintended negative urban development impacts.

Cities implementing air right sales should first establish a strong land assemblage system for infill development with air rights sales schemes. Financial and planning practitioners should estimate an appropriate value of tradable air rights

³¹ Rahenkamp 2013.

³² Adapted from Suzuki et al. 2015.

and designate effective zoning codes. For multiple government entities working together using revenues from air rights sales, the world's best value capture practices suggest that they need to develop a transparent project finance scheme with clear rules and mechanisms to share profits and risks among multiple agencies, local government, transit agencies, landholders, residents, developers, and investors, as well as coordination mechanisms between them in planning, financing, and implementing transit and urban development.

PLANNING AND FINANCING INVESTMENT

Infrastructure investment needs scheduling well in advance. If a fast-growing city lacks a comprehensive, forward-thinking plan to offer land for urbanization with provision of basic infrastructure – sewerage, drainage, electricity, clean water, and connectivity – it will have to add them later. That means introducing them inefficiently and at far greater cost, and as afterthoughts and in response to piecemeal demand from individuals³³. Priority investments are as follows

- ***Invest in mass transit services to shape metropolitan growth.*** Infrastructure investment needs to safeguard that urban growth is compact

and well connected by viable and affordable transportation options.

- ***Invest in the creation or intensification of sustainable neighbourhoods.*** Cities should select targeted sites to develop with public endowment, private sector participation and institutional coordination. Pilot projects should be aligned with investments in public transport. Inter-agency technical teams should ensure the quality of local development plans, the adequacy of infrastructure provision, enforcement of building and security codes and private sector preparedness to partner.

INTEGRATING FINANCE AND PLANNING WITH LAND VALUE FINANCE

Land Value Capture agreements are also a means of pursuing planning and public policies which are good for the local economy and the environment and encourage more inclusive growth³⁴.

- By changing land use rules, such as allocating higher floor area ratios (FARs) and converting land from single to mixed use, governments can heighten density for diverse uses while adding revenues.

- By using proceeds for investments in neighbourhood projects (such as parks, street lights, bike lanes, and pedestrian sidewalks), governments, transit agencies, developers, and communities can jointly create efficient, attractive, and safe public places, further increasing property value.
- By providing bonus FARs or other regulatory incentives, governments can require developers to reference social facilities and affordable housing in exchange for the additional rights.

LAND READJUSTMENT SCHEMES

Land readjustment is a key tool in regeneration projects involving private and fragmented land ownership³⁵. It enables the public and private sectors to carry out jointly necessary development projects to

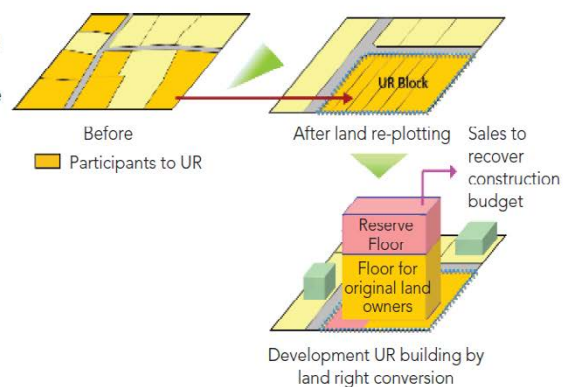
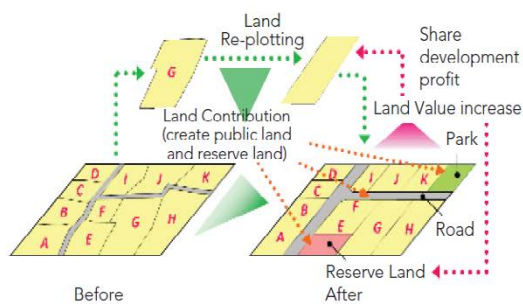
satisfy community interests through provision of infrastructure. Land rights conversion or whole purchase methods are both applicable. East Asian countries, such as Japan and Korea, commonly employ

³³ Collier 2016.

³⁴ Adapted from Suzuki et al. 2015.

³⁵ This section is adapted from Suzuki et al. 2015.

this approach. The local government gathers or assembles various privately owned parcels in a neighbourhood. It establishes a land-use plan for the entire area, including the designation of zones for infrastructure and land use, common services such as roads and open spaces. It then implements the proposal and provides the necessary networks. At the end of the process, the administration gives each titleholder a land parcel. The parcel is proportional to the initial plot but smaller (for example, 50 to 60% of the original one). However, the new lot yields a higher value because it belongs to a sustainably developed urban property. The government retains selected strategic plots that it sells at auction or at market prices to recover the costs of its investments in infrastructure and service delivery.



Left: Land readjustment. Right: Urban redevelopment.

Land readjustment is a key instrument in Japan. It has been used for

- 1/3 of all urban area in Japan (1/4 of land in Tokyo's Wards developed through land readjustment).
- 1/2 of all main residential parks in Japan (totalling 14,000 ha).
- 1/4 of streets designated in City Plans (amounting to 11,000 km).
- 1/3 of station plazas at major train stations in Japan (about 900 squares).

An urban redevelopment project involves the construction of a higher quality building on a site prepared by assembling small plots; and the provision of public infrastructure (such as wider streets, a plaza

In Japan, under the Urban Redevelopment Act, landowners, tenants and developers can create development opportunities in built-up zones. To capture the potential financial benefits of accessibility or urban quality increases, the local government first converts single-use zoning codes to mixed use with higher floor area ratios. Before the urban redevelopment project, the site consists of several small plots belonging to different landowners and occupied by different tenants. Most homes are single- or two-story structures because each plot is too small to replace the old building with a taller one, and the landowners do not have the capital or expertise to do so.

and amenities). The national government finances a third of the expenses of the site study, land assembly and open space foundations, employing the general national budget, and half of the public infrastructure costs using the roadway special fund. Through this process, landowners and owners of initial buildings have the prerogative to retain ownership of the floor areas in the new building which are priced as equal to their early property. The government sells the 'surplus' floor area to new owners to cover the costs of assembling land, state-of-the-art buildings and public facilities in the neighbourhood.

The following table³⁶ presents the respective stakeholder's contributions to the land value and their benefit received through the urban redevelopment undertaking.

³⁶ Adapted from Suzuki et al. 2015.

Stakeholders	Contribution	Benefit
Landholders (A, B, C, D, E, F & G)	Land parcel for the new building	Joint ownership of land for the new building (sections A, B, C, D, E, F & G) with higher access and better local infrastructure and service provision
Building owners (a, b, c, d & f)	Old buildings and housing units	Ownership of the new building (sections a, b, c, d & f) with higher access and better local infrastructure and service provision
Developer	Capital and property development expertise	Profit from surplus FAR
Transit agency	Construction of transit station	Transit-supportive environment/increased ridership
National government	Subsidies for land assemblage and road construction	Save road and other public infrastructure construction costs
Local government	Change in zoning code (from single use to mixed use with higher FAR)	Yields higher property tax revenue; promotes local economic development; builds townships resilient to natural disasters

CASE STUDY: LESSONS LEARNED FROM INCLUSIVE LAND REDEVELOPMENT IN JAPAN

The various techniques used in Japan provide lessons for rapidly growing cities in developing countries.

- All stakeholders must share a clear vision and take collective action.
- Land readjustment and urban redevelopment plans both require a consensus which may necessitate a long time. Successful implementation relies on traditional social ties and adequate economic incentives.
- Development agencies should acquire expertise in real estate investment, urban planning and marketing to define the appropriate parameters, analyse market profiles, offer multiple services and maximize value increases in their development programmes.
- Major landowners or developers in a designated district can stimulate land readjustment projects. With their knowledge and real estate resources, they are more likely to invest in local infrastructure, take strong planning initiatives and optimize the value of their land.
- To create high-quality built environments, substantial density bonuses is an effective instrument. It encourages private developers to supply infrastructure and social services, maximize synergies and mitigate gentrification impacts through inclusive urban redevelopment.

INTEGRATING LAND VALUE CAPTURE FINANCE AND PROVISION OF AFFORDABLE HOUSING

Land Value Capture Finance can generate funds to help pay for housing and infrastructure enhancements that benefit the community. By improving infrastructure and preparing sites, an urban renewal authority or other similar local entity can diminish the cost of private development, making affordable

housing easier to finance³⁷. Public-private partnerships can leverage private investment in mixed-income dwellings near transit. Local governments can help by acquiring and assembling land, modifying zoning and funding environmental remediation, and providing in-kind matching, in-lieu fees, or other government

³⁷ Center for Transit-Oriented Development. TOD 201.

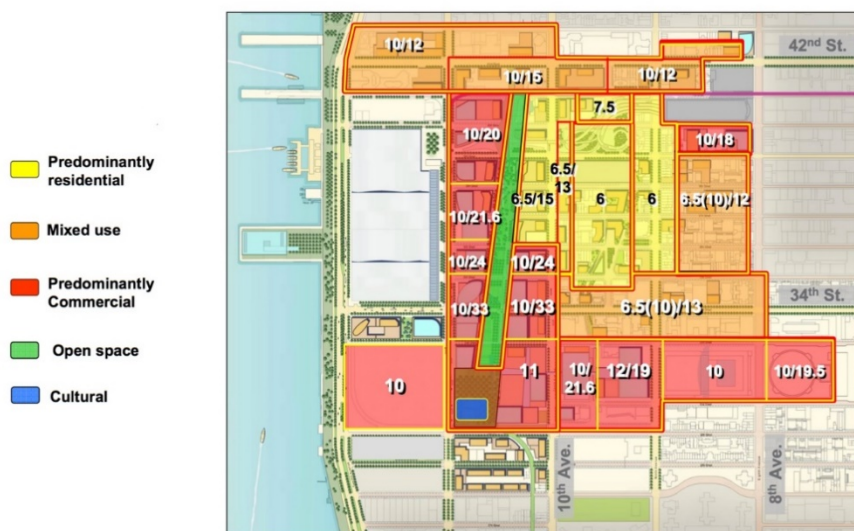
funding. Local governments can also engage the public in a transparent review process that reduces the time and cost.

Predevelopment costs are hard to finance, especially if land has to be held for several years until it is developable because of zoning or design issues. Local governments can supply patient capital from redevelopment funds or other sources. Government can become an equity partner. Value-capture strategies and zoning incentives such as density bonuses allowing developers to build more units if some are low-priced can also help provide for inexpensive accommodation

and infrastructure. **Tax-increment financing (TIF) is an important tool for creating and preserving affordable housing.** TIF funds are triggered by the increase in property and/or sales tax revenues that occur in a designated TIF district after improvements have taken place. TIF funds are calculated over a reference year and are generated by new developments and by their estimated value. A TIF zone is granted if the localities meet a public objective such as the stimulation of economic development. The power to establish a TIF district is accompanied by an obligation to build and/or maintain affordable housing.

CASE STUDY: USING FLEXIBLE ZONING TO FINANCE AFFORDABLE HOUSING IN HUDSON YARDS, NEW YORK

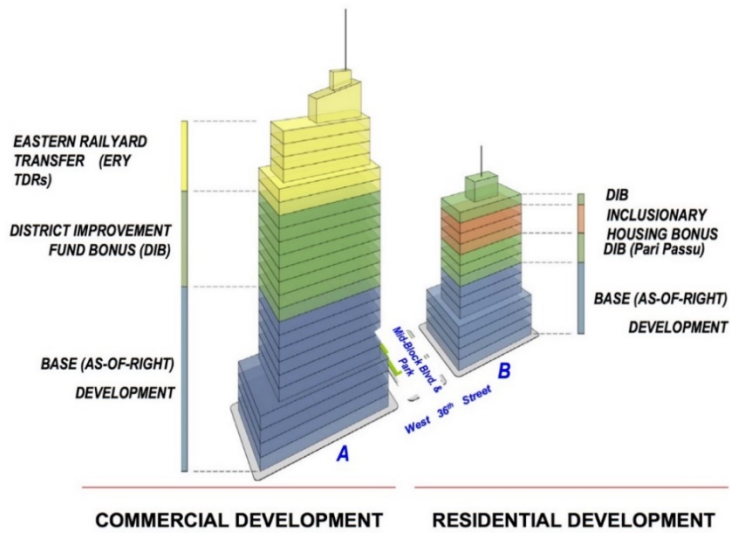
Adapted zoning in Hudson Yards sets varied FARs for predominantly commercial, mixed use, and predominantly residential to introduce flexibility and capture value. Developers of commercial or residential projects in the Hudson Yards area have an opportunity to receive a zoning bonus. This allows their project to exceed the base maximum FAR (or 'as-of-right') established in the zoning resolution by making a District Improvement Bonus (DIB) payment to the Hudson Yards District Improvement Fund (about \$1,350 per square metre), through transfer of development rights, or through provision of inclusionary housing. The inclusionary housing bonus for parts of the development allows 10–15% of the development to be affordable to low-, moderate-, or middle-income families.



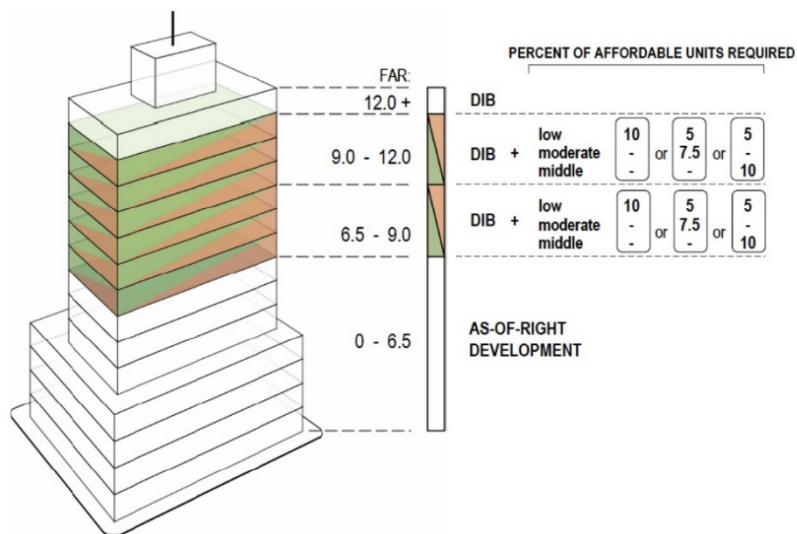
Hudson Yards Land Use Plan showing the flexible range of permissible FAR. Source: © Hudson Yards Development Corporation. Source: Hudson Yards Master Plan Preferred Direction, New York City 2003.



Inclusionary Housing Area at Hudson Yards. Source: New York City Department of City Planning.



Options to Increase Floor Area Ratios against contributions. Source: New York City Department of City Planning.



Affordable housing percentage against additional Floor Area Ratio. Source: New York City Department of City Planning

DEVELOPING A BUSINESS MODEL

Remediating a site and supplying primary infrastructure can last between five and ten years. Development construction can take from three to 25 years. Cash flows of a large project need management over a long period. A significant amount of time may happen before the initial capital injection can be recouped in part or in full. Risk can be reduced and financial efficiency attained so that costs and value creation are aligned as closely as possible. Thorough modelling of public and private sector participation can help fund elements of a plan that cannot be commercially justified with a short investment horizon but that bring added value over the long run. Careful

engineering of the business scheme will be key to making development viable and to achieving environmental benefits and broader social goals.

In a multi-phase project, the value of the development can increase dramatically over time in response to place creation with an identity. This is particularly true where urban regeneration zones have tended to outperform adjacent areas³⁸. This requires initial investments in infrastructure, high-quality public realm and a range of amenities. To capture the value at later phases, a funding model needs to take a long-term view.

CASE STUDY: A BUSINESS MODEL OF URBAN REGENERATION AROUND KING'S CROSS IN LONDON



King's Cross Central site before regeneration. Source: © King's Cross Central Limited Partnership.



The welcoming King's Cross Square after regeneration. Photo: © Françoise Labbé.

Under the supervision of DfT (Department for Transport), LCR (London and Continental Railways) has been mandated to maximize its long-lasting asset value. Its development strategy is to use its major sites as equity to participate in joint-

³⁸ Urban Regeneration Index 2007.

venture development companies. The aim is to make long-term profits with urban regeneration around HS1 (High Speed 1) stations – chiefly King’s Cross Central and Stratford. ‘Opportunity areas’ were identified, and regeneration proceeded after the local authority approved the plans in 2006, with a target completion date of 2016. According to an assessment by LCR in 2009, the incremental economic impacts of HS1 through the King’s Cross regeneration are estimated to be steep, with about 22,100 permanent jobs and 2,000 dwellings in the area³⁹.



Public realm in King’s Cross Central. Photo: @Françoise Labbé.

To regenerate King’s Cross Central, the partnership has made a £250 million investment in public realm infrastructure since 2009. This has unlocked the 557,000 m² of development in the project. The partnership’s equity funding went in priority towards the creation of the public realm. This featured 20 new streets and King’s Boulevard, new public spaces and Granary Square, a new bridge across Regent’s Canal, canal-side improvements, and the Energy Centre and its associated district heating and distribution networks. Also, the partnership entered a £100 million construction contract with Central Saint Martins – University of the Arts London for its campus⁴⁰.



Granary Square and Central Saint Martins – University of the Arts London. Photo: @Françoise Labbé.

³⁹Suzuki et al. 2015.

⁴⁰ ULI 2014.



Public realm in King's Cross blends the contemporary and industrial structures. Photo: ©Françoise Labbé.

The total estimated value, including construction, professional fees, and interest costs, is expected to reach £3 billion⁴¹.

King's Cross Central has been funded through a combination of equity, senior debt, and recycled receipts. Cash flow management has enabled the partnership's equity to be used across a variety of projects to create the demand and interest from potential buyers.

Around £300 million of senior debt secured since 2009 has been used to fund some direct building costs of the residential and office properties. This senior debt package, from four leading banks, supplied loans for three commercial buildings, the final phases of infrastructure, and 272 apartments. The facilities comprise a combined revolving credit and term facility of £75 million from Barclays Bank, an investment loan from Hypothekbank Frankfurt AG London, and two development loan facilities totalling £104 million from Deutsche Postbank AG and HSBC. The U.K. Homes and Communities Agency has provided £42 million in public funds to support affordable housing.

As a component of the HS1 project by LCR, the Department for Transport (DfT) provided financial assistance to the then private LCR. This covered part of the construction expenses, the project's debts, and the operations of LCR and its subsidiaries. LCR was also granted property development rights around King's Cross and Stratford Stations. This agreement was to continue until the concession contract expired in 2086, at which point the assets would return to the government. Based on the 1996 arrangement between the government and LCR, DfT expected to receive a 50% share of LCR's net profit after deducting the costs for the King's Cross scheme⁴².

The developer – Argent – was selected as a private partner in 2000. Argent joined a collective ownership purchase and development agreement with the landowners. This deal included an arrangement that the land was to be valued following the approval of planning permission and completion of the Channel Tunnel Rail Link. Upon valuation, Argent would have the option to acquire the land from the landowner or enter into a 50/50 partnership. The price paid by Argent was to be discounted according to the land open market value, with that discount increasing as the value of the land rose. The deal incentivized Argent to optimize the value of the scheme⁴³.

⁴¹ ULI 2014.

⁴² Suzuki et al. 2015.

⁴³ Suzuki et al. 2015.

Ultimately a long-term 50/50 development partnership (KCCLP) was decided with U.K. property developer Argent (owning 50% interest via Argent King’s Cross Limited Partnership); the U.K. Government-owned LCR, holding a 36.5% interest; and DHL Supply Chain (formerly Exel), a 13.5% stake. Argent brought the backing from a large pension fund (BTPS managed by Hermes Investment Management), essential for the private development of the site.

In 2009, LCR became owned by DfT due to its accumulated public debt, and was restructured into a property development and management company in 2011. A central feature of LCR’s current business profile is that returns from LCR’s property interests are expected to be mainly in the form of capital appreciation in the 5–10-year time horizon.

By March 31, 2014, over 57% of the redevelopment project by floor area had been either completed or committed. The King’s Cross redevelopment continued to make good progress and started to make financial contributions to LCR in line with its 36.5% share of KCCLP as shown on the graph. The increases in the profit contributions and investment carrying value are predominantly arising from re-evaluation of properties. Loans were also provided by LCR to KCCLP for the regeneration.

Keeping the Master Plan Flexible

Two master planning teams and four independent design review panels led to a highly tailored scheme responding to multiple stakeholders’ needs. Planning balanced the developer’s long-term aspirations to create and manage a long-term asset and the local authority’s desire to integrate it into the deprived communities that surrounded the area through urban regeneration.

The master plan unifies the site with a comprehensive vision, but it is flexible enough to accommodate change. This flexibility will enable King’s Cross to adapt to changes in social and technological trends. Development is not functionally locked but has been left enough margin to evolve with needs and market shifts. Planning is conceived more as a continuing process than as a once and for all exercise. It integrates changes in uses proportions and buildings’ transformation to respond to market evolution.

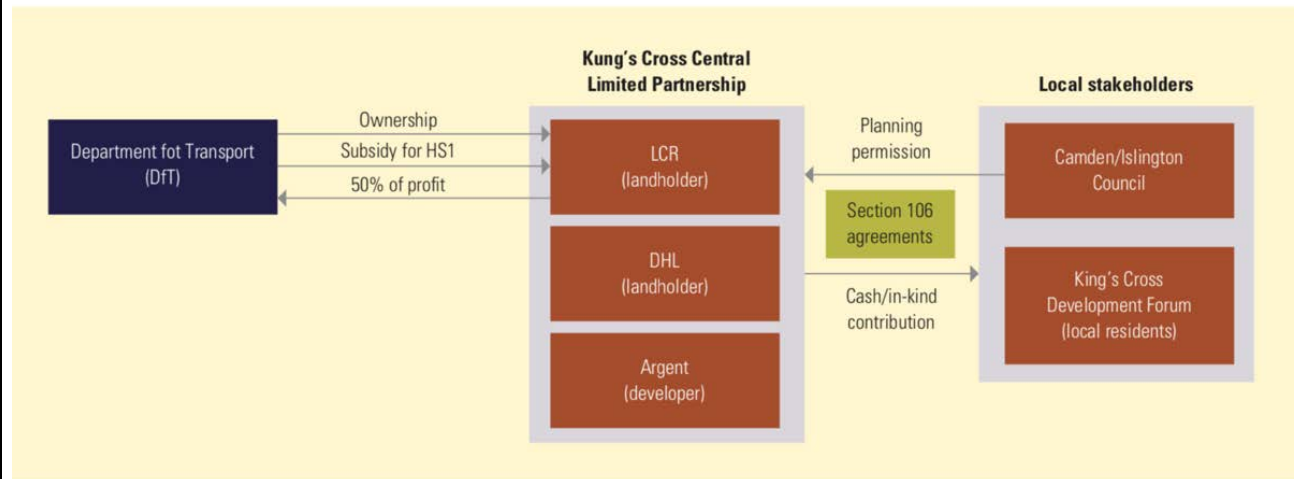
Use	Floor space (sq. m.)
Mixed-use development—total permissible	739,690
Offices	Up to 455,510
Retail	Up to 45,925
Hotels/served apartments	Up to 47,225
D1 (nonresidential institutions)	Up to 74,830
D2 (assembly and leisure)	Up to 31,730
1,900 homes	Up to 194,575

Floor Space maximums at King’s Cross, by use. Source: Suzuki et al. 2015.

The agreement for the redevelopment of King’s Cross set floor space maximums stimulating diverse site use. The agreement allows for flexibility in land uses to enable the developer to adapt to market conditions, as redevelopment is likely to take 10–15 years to complete. Use within the total floor space is allowed to vary by 20%. Floor space allocated to one use can be traded against another, to a limited extent.

Land Value Capture

One key Land Value Capture (LVC) technique adopted by local governments in England and Wales is their use of Section 106 of the 1990 Town and Country Planning Act. This section provides a means for local authorities to negotiate agreements or planning obligations with a landowner or developer. The granting of planning permission is conditioned to measures to offset the impact of development. In the case of King's Cross, Section 106 agreements have been crucial in incorporating desirable planning principles into public-private funding and property development.



Stakeholders in the land value capture scheme and Section 106 agreements. Source: Suzuki et al. 2015.

The Section 106 Agreement around King's Cross encompasses cash and in-kind contributions to the provision of local infrastructure, public space and community services by the joint developer for the Camden Council. This includes creation of 24,000–27,000 local jobs through a Construction Training Centre and Skills and Recruitment Centre; 1,900 homes, more than 40% of which will be affordable housing; cash and in-kind contributions for the community, sports, and leisure facilities; new green public spaces, plus new landscaped squares and well-designed and accessible streets, accounting for about 40% of the entire site; a new visitor centre, education facilities, and a bridge across the canal to link streets; and cash contributions to improve adjacent streets, transit stops, and bus services.

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