OPDC
OLD OAK AND PARK ROYAL DEVELOPMENT CORPORATION

Precedents Study

LOCAL PLAN SUPPORTING STUDY

June 2018

MAYOR OF LONDON

40. Precedents Study

Document Title	Precedents Study
Lead Author	OPDC
Purpose of the Study	Provides a database of local and international schemes relevant to the type of development envisioned within the OPDC area. The study is intended to support Local Plan policies by citing examples of projects where similar polices have worked in practice.
Key outputs	• Precedent schemes have been identified and have been categorised into the following sections: » Major regeneration schemes; » Town centre / mixed use schemes; » Residential led schemes; » Employment led schemes; » Social infrastructure; » Transport infrastructure; and » Environment and utilities infrastructure. • An overview of the main details and features of each project are provided. • For each precedent, relevant Local Plan Policies are noted, and lessons for OPDC are identified from each scheme.
Key recommendations	• A series of lessons are identified for each precedent within the study which act as recommendations for future similar schemes within the OPDC area. • It is advised that further work is undertaken to assess a number of the schemes in further detail to inform the master planning process at Old Oak, or specific future schemes within the area.
Key changes made since Reg 19 (1)	• Additional precedents have been included to cover a wider range of policy issues, particularly industrial intensification and the co-location of industrial and residential uses; • Precedents from the original study which were under construction have been updated where development has progressed or completed; • Some factual errors identified in the previous study have been amended.
Relations to other studies	Interfaces with the Public Realm, Walking and Cycling Strategy, Catalyst Uses Study, Future Employment Growth Sectors Study, Environmental Standards Study, Park Royal Intensification Study
Relevant Local Plan Policies and Chapters	• All the policies and chapters of the Local Plan

Contents

Introduction

This Precedents Study has been prepared by the Old Oak and Park Royal Development Corporation (OPDC) to inform planning policy for the future development of the Old Oak and Park Royal areas, and forms part of the evidence base for the OPDC Local Plan. As one of the largest regeneration schemes in the UK, OPDC has a bold vision for development of the area to be an exemplar in successful urban regeneration, and recognises that learning from previous and emerging examples will be a key tool in delivering this vision.

The Study assesses a wide variety of schemes which are relevant to the type of development and uses envisioned to come forward at Old Oak and Park Royal. This includes looking at largescale regeneration schemes, as well as mixed use, housing, employment, transport and environmental precedents. While the Study has organised precedents within these separate categories, these should not be viewed as exclusive from each other, with many overlapping elements and lessons across each category.

Precedent assessments have been based on a desktop analysis of individual schemes. While some schemes are recognised as best practice examples, the study has aimed to undertake a critical evaluation. For some projects, in particular London based precedents, a greater level of familiarity has been used to inform assessments and lessons. OPDC recognises that more detailed assessment of each precedent is required to fully appreciate what works well, what does not work well, and the particular reasons for this.

The study is intended to be a “live” document, which will be revisited and updated on an ongoing basis. This 2018 study is an update to the version published in support of the first revised draft Local Plan regulation 19 consultation in 2017, and includes additional precedents to support policies on industrial intensification in Park Royal, mixing employment and residential uses and delivering high quality, high density residential development at Old Oak. Some precedents included in the 2017 study which were still under construction have also been updated to reflect progress made in the intervening period.

Major Regeneration Schemes

King’s Cross

London

2008 to Present

1,900 New Homes (43% Affordable)

30,000 New Jobs

7.5 Ha (29%) Public Open Space

2 New Schools and 2 Art Universities

King’s Cross and St. Pancras Stations

Project Overview

Redevelopment of 27 ha of industrial and railway lands adjacent to King’s Cross and St. Pancras International Station. The project is creating a vibrant new mixed-use city quarter, and is already becoming a major new employment centre while maintaining a strong focus on art, culture, and heritage.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
SP8: Green Infrastructure and Open Space
SP9: Built Environment
SP10: Integrated Delivery

Key Project Features

- 300,000m² of new employment space is being created, primarily adjacent to King's Cross/St Pancras Stations, with 30,000 new jobs expected in the area.
- Of the 1,900 homes being delivered, 750 (43%) will be affordable, including provision of key worker accommodation and specialist housing for students and older people.
- 29% of the developable area is being provided as publicly accessible open space, with 10 new public parks and squares. Civic spaces have been targeted towards areas of employment and visitor destinations, while green open space has been delivered in areas of residential development. The site's built heritage has been a key defining element in creating new public spaces.
- Every new building in the regeneration area is connected to a Combined Heat and Power System (CHP).
- Largescale use of green roofs and walls, with 9000m² of green or brown roofs being provided, and 200m of green walls.
- Smart technology has been utilised to collate data on visitor football and activity, assisting with capacity planning.

Precedent for:

- Catalyst uses activating a place.
- Delivery of range of public open space at high density.
- Incorporating canal and industrial heritage into largescale redevelopment.

Lessons for OPDC

- The two Art Colleges have been successful catalysts for place activation, resulting in culture being a key theme from an early stage in the regeneration.
- High quality and accessible public open spaces and public realm have been delivered at key stages of the regeneration resulting in vibrant well used spaces. The approach demonstrates how civic and green spaces may be appropriately located in employment, town centre and residential areas across Old Oak.
- The area has successfully attracted major high profile employers, including Google and Facebook, establishing King's Cross a key tech hub in London.

Hammarby Sjostad

Stockholm, Sweden

1999 to 2017

10,800 New Homes

10,000 New Jobs

30 Ha (19%) Public Open Space

5 New Schools

New Tram Link and 2 New Bus Routes

Project Overview

Due to be fully completed by 2017, Hammarby Sjostad has seen a former industrial area in Stockholm transform into a new neighbourhood with a focus on exemplar environmental design and integrated delivery of urban systems.

Relevant Local Plan Strategic Policies

SP2: Good Growth
SP4: Thriving Communities
SP8: Green Infrastructure and Open Space
SP9: Built Environment
SP10: Integrated Delivery

Key Project Features

- Major emphasis on environmental standards, with closed loop infrastructure systems put in place for water, waste and energy.
- Residential sewage is converted into heat energy and bio-gas for use in district heating plants (providing 50% of the areas energy requirement) and fuel for public transport.
- Low car ownership targets have been supported by the delivery of two new bus routes, a new tram line, a ferry service connecting to the centre of Stockholm, a car sharing programme and a series of bike stations.
- An ENVAC waste system has been installed across the district, meaning waste is collected and transported underground to central collection points.
- A green network of parks and paths run throughout the area, with 40m² open space required per residential unit (25m² public, 15m² private) and minimum daylight targets applied to the design of new open spaces.

Precedent for:

- Environmental performance and standards
- Integrated delivery of infrastructure and utilities

Lessons for OPDC

- While lower density than what is expected to be delivered at Old Oak, Hammarby Sjostad is a valuable precedent for establishing high environmental standards in major redevelopment projects.
- Public funding was provided for the initial up front cost of development enabling infrastructure, all of which has been fully reimbursed by subsequent development contributions.
- The redevelopment programme has placed a strong focus on behavioural change to ensure the practical success of new environmental systems.
- Use of life-cycle cost analysis in planning decisions helped to justify the added cost of higher environmental standards.

Queen Elizabeth Olympic Park

London

2009 to Present

10,000 New Homes (30% Affordable)

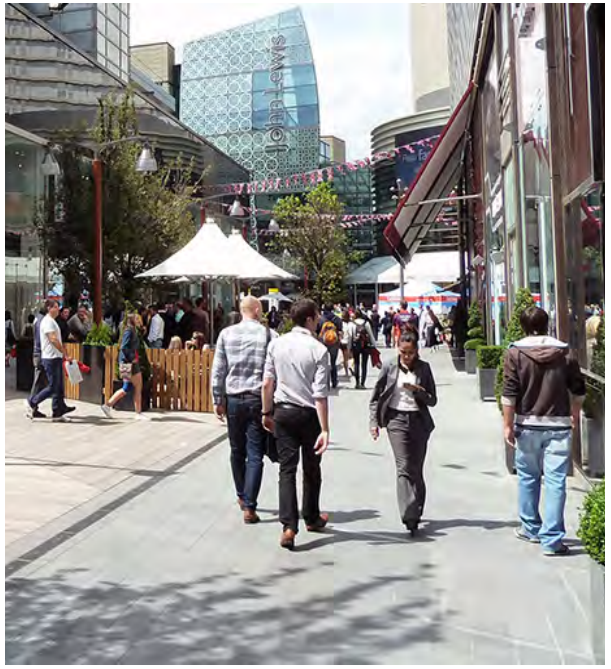
25,000 New Jobs

100 Ha Public Open Space (Including QEII Park)

11 New Schools and Nurseries

New Stratford International Train Station and redeveloped Stratford Station

Project Overview
Using the infrastructure delivered as part of the 2012 London Games as the key catalyst, Queen Elizabeth Olympic Park is creating a new residential, employment and cultural hub in East London.



Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
SP8: Green Infrastructure and Open Space
SP9: Built Environment
SP10: Integrated Delivery

Precedent for:

- Integrated delivery of utilities and infrastructure
- Accessibility of public open space and delivery of new ecological habitats
- Catalyst uses driving the delivery of new development
- Meanwhile uses activating a place

Key Project Features

- Five new distinct residential neighbourhoods are being created delivering 10,000 new homes, 30% of which will be affordable, with half of these homes for social rent.
- Queen Elizabeth Olympic Park itself is the largest new Urban Park built in the UK for over a century, providing 100 ha of Metropolitan Open Land, 45ha of new ecological habitat, and 22 miles of new footpaths and cycling routes. Substantial amounts of public green space has been provided within new residential areas, with a focus on creating biodiversity rich spaces.
- The regeneration is providing employment space for 25,000 new jobs, primarily focused in the “international quarter” business district, while the original Olympics media centre has been converted into ‘Here East’ - a business hub for tech, and media enterprises. The commercial strategy places a strong emphasis on working with existing communities to ensure they benefit from economic development, and support new and existing creative industries.
- “East Village” is the primary residential quarter within the regeneration area, and is formed of the original Olympics athletes village as well as more recent residential development. The design approach has ensured front doors on streets throughout by focusing family units at street level.
- The park is powered by the largest decentralised energy network to be developed in the UK to date, including two energy centres fuelled by 20% renewable energy.

Lessons for OPDC

- Olympic infrastructure has had a major impact as a catalyst for place activation and further development.
- The proper funding of, and integrated delivery of, new infrastructure has been a crucial aspect of the creation of new places.
- While the creation of such a large new open space at QEII Park isn’t possible at Old Oak, it is a good precedent for the delivery of vibrant new public open spaces, particularly children’s play space and ecological areas rich in biodiversity.
- Poor treatment of the primary roads through the park has had a negative impact on the environment for pedestrians and cyclists.

Hafen City

Hamburg, Germany

Ongoing (Expected Completion 2025)

7,000 New Homes

40,000 New Jobs

26 Ha (20%) Public Open Space

4 Colleges, 3 New Schools

New Subway Station on New U4 Line

Project Overview

Making up 123ha of brownfield land on the Hamburg waterfront, Hafen City is Europe's largest inner-city redevelopment project. The redevelopment programme aims to deliver a truly mixed use city district at a fine urban grain, combining employment and residential uses with culture, leisure, community and retail facilities, while setting exemplary environmental standards.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
SP8: Green Infrastructure and Open Space
SP9: Built Environment
SP10: Integrated Delivery

Precedent for:
- Environmental performance and standards
- Catalyst uses
- Climate change resilience
- Affordable workspaces

Key Project Features
- A central activities area called the “Überseequartier” is at the core of the development, providing a major retail and leisure provision.
- Standards have been set for very high environmental performance throughout the scheme. A hydrogen cell fuelled CHP system is being trialled, while residential power requirements are set between 40 and 60kWh/m2.
- Emphasis on providing affordable employment spaces for start-ups and SMEs, with work/live spaces encouraged.
- Strong focus on flood protection, with strict regulations on the flood proofing of properties, while the topography of the entire area is being raised to between 8 to 9 meters above sea level.
- Historic dock structures have been retained, with character and material informing the design of new buildings and places.
- Elbphilharmonie Concert Hall, opening in early 2017, is a key waterfront landmark and cultural destination.
- Social infrastructure provision includes 3 new schools, 6 child care facilities, new health centre, community centre, library and chapel.

Lessons for OPDC
- Innovative approach to CHP systems which looks beyond traditional gas powered systems.
- Technical built environment approach taken to flood prevention and climate change resilience.
- Cost of housing is proving to be significantly higher than average for Hamburg, resulting in a lack of diversity in tenure.
- Mixture of uses and well designed street network is successfully resulting in minimum car usage.

Elephant and Castle Regeneration

London

2012 to Present

5,000 New Homes (33% Affordable)

10,000 New Jobs

3.38 Ha (35%) Public Open Space

£1.5 million Investment in Existing Schools

Redeveloped London Underground Station

Project Overview

Major regeneration programme of the Elephant and Castle area in South London, compromising a mixture of estate regneration and redevelopment of commercial sites, to create a renewed, high density mixed use urban district.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
SP8: Green Infrastructure and Open Space
SP9: Built Environment
SP10: Integrated Delivery

Precedent for:

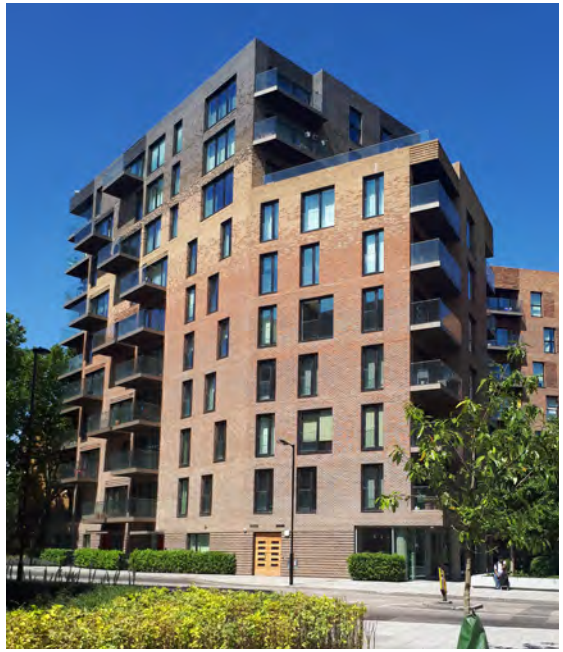
- Delivering new town centres
- Housing at high density
- Environmental standards

Key Project Features

- The regeneration is formed of 15 core projects at various sites across Elephant and Castle, the largest of which is the 'Elephant Park' scheme which is being developed on the site of the former Heygate Estate.
- Delivery of a new high density town centre with revitalised shopping and leisure uses is planned for the centre of the regeneration area on the site of former shopping centre.
- High environmental standards are applied across the development, including requirements for a 30% improvement on current energy efficiency requirements, zero carbon homes, and expectancy for large commercial units to achieve BREEAM 'Excellent' rating.
- The existing London Underground Station is being redeveloped, while a series of public realm enhancements focusing on encouraging walking and cycling have been implemented, including the transformation of the northern roundabout.

Lessons for OPDC

- The design approach, in particular at Trafalgar Place and the emerging Elephant Park, demonstrates how high quality design at high density can be achieved while responding to surrounding built heritage.
- High environmental standards have been successfully achieved in initial schemes, but at a high financial cost which has had knock on effects on viability and units prices.
- The scheme has received negative commentary for giving priority to foreign investors ahead of potential local buyers.
- The approach to public open space has sought to provide one large new park at the centre of the development, with a focus on pedestrianised and shared surface public realm across the remainder of the development.



Zuidas

Amsterdam, Netherlands

Ongoing since 1998, Expected Completion 2040

9,000 New Homes

31,000 New Jobs

2 New Universities and 13 New Schools

Major new Rail Station

Project Overview

Located on 270 ha of former greenfield land between Amsterdam and Schipol Airport, Zuidas is the largest urban development programme in the Netherlands, delivering a new global business quarter, as well as 9,000 new homes.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
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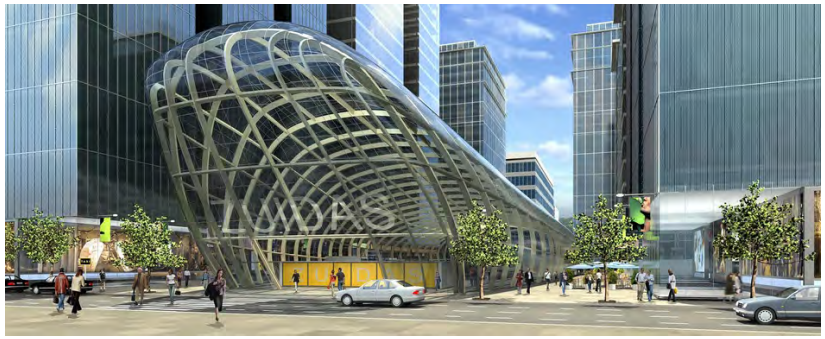

Key Project Features

- Zuidas has already established itself as a major business district, with a strong focus on financial services, providing 31,000 jobs across 700 companies, half of which are foreign based firms. 6 hotels are to be developed in the area to support business uses.
- Amsterdam Zuidas Station, which will be the second biggest rail station in Amsterdam upon opening in 2017, will be the terminus for a new metro line linking the north and south of Amsterdam, making Zuidas one of the best connected areas in the City.
- While nearly 2000 homes have been completed, a further 7000 will be delivered over the coming decades, including collective self building schemes.
- A new University, Vrije Universiteit Amsterdam, has been delivered in the area, with an intake of 25,000 students and 3,000 academics.
- Social infrastructure provision includes 13 new schools, 7 kindergartens, and a new medical centre, while a major new retail centre is also being developed.

Precedent for:

- Integrated delivery of utilities and infrastructure
- Major train station as a catalyst for development
- Developing a major new employment district

Lessons for OPDC

- The Zuidas regeneration area is situated in a very similar context to Old Oak, centred on a major new rail terminus located halfway between Central Amsterdam and Schiphol Airport.
- The creation of new rail and motorway tunnels, thus opening up the north and south of the area, is an example of how the infrastructure barriers in Old Oak could be overcome.

Hudson Yards

Commenced 2014, to be Fully Completed 2019

4,000 New Homes (431 Affordable)

40,000 New Jobs

5.7 Ha (51%) Pubic Open Space

New 750 Pupil Public School

New Subway Station

Project Overview
Located above an active rail yard on the west side of Manhattan, the Hudson Yards redevelopment is the largest private real estate development in the US delivering a major new mixed use urban quarter for the City.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
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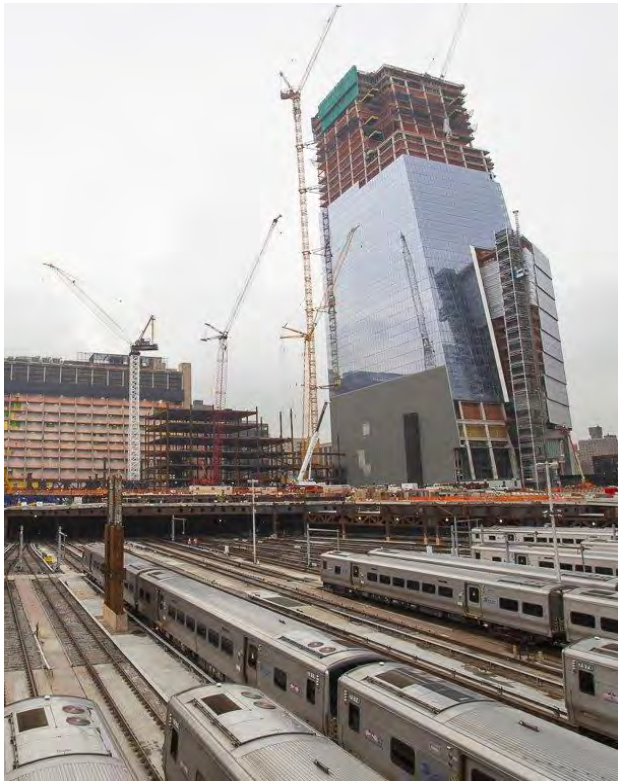


Precedent for:

- Decking over active rail infrastructure
- Housing at very high density
- Social infrastructure at very high density
- Use of smart technology in new development

Key Project Features

- Development of the site has been facilitated by the construction of a platform bridge over 30 active train tracks. The platform is supported by 300 caissons, which form part of building foundations where buildings are located above, while specialist design considerations included a major ventilation system to avoid overheating in the tracks, and soil and irrigation systems to allow for substation planting above the deck. The train tracks have remained active throughout the entire construction process.
- Tall buildings are a key feature of the scheme, both for residential and employment use, with the tallest building standing at 90 storeys.
- Over 50% of the developable area is being delivered as publicly accessible open space, including 3 new parks.
- Smart technology has been integrated into the development, with continual monitoring of traffic and pedestrian flow patterns, energy demand and environmental conditions.
- On-site power generation system which will sustain basic building needs, while a micro grid allows for shared heating and cooling networks, increasing system efficiency.
- Vacuum tube waste management system is in place across the site, accommodating three waste streams for organic, recyclables and other.
- A new subway station on the number 7 line has been delivered on site, the first new subway station in Manhattan in 25 years.

Lessons for OPDC

- The innovative engineering approach to decking over an active railway line, allowing services to continue throughout construction while facilitating high density development above demonstrates the potential for such an approach in Old Oak. There are major costs associated with this approach, and the viability has been supported by high unit prices and limited affordable housing.
- The master plan for Hudson Yard demonstrates how a very high density scale of development with very tall buildings may be delivered while providing social infrastructure and amenities.
- Advanced smart technology has been utilised to for the efficient use and management of utilities and other infrastructure.

Wood Wharf

London
Commenced 2015, Expected Completion 2023

3,610 New Homes (25% Habitable Rooms Affordable)

25,000 New Jobs

2.93 Ha (33.5%)

New Primary School and Community Facilities

New Elizabeth Line Station at Canary Wharf

Project Overview
Major redevelopment of underutilised docklands adjacent to Canary Wharf, creating a new residential led mixed use district, at very high densities, which will broaden and extend the existing Canary Wharf estate.

Relevant Local Plan Strategic Policies

SP1: Catalyst for Growth
SP5: Economic Resilience
SP6: Places and Destinations
SP7: Connecting People and Places
SP8: Green Infrastructure and Open Space
SP9: Built Environment

Precedent for:

- Social infrastructure at high density
- Design of tall buildings
- Delivery of open space at very high density

Key Project Features

- 3,610 new homes delivered at density of 436 dph.
- Affordable housing is being provided by rooms rather than units, with 25% of habitable rooms to be affordable, of which 80% is for affordable rent.
- Tall buildings will be a key feature of the development in delivering the very high densities of residential and employment uses. One Park Drive, a landmark cylindrical residential tower, is the first tall building to commence. It is formed of 3 stacked blocks, each of which are geared towards different residential typologies.
- 35% of the developable area is being delivered as publicly accessible and interconnected open spaces, which will include a new market space, central square , generous water side area and a new “London Park”.
- Master plan has been designed to ensure new residential plots are adjacent to either a park or water.
- The employment space being delivered in the new scheme is being targeted at creative and tech industries, so as to diversify from predominantly financial services employment in Canary Wharf.
- While no new rail or tube infrastructure is being provided as part of the Wood Wharf development itself, residents and workers will benefit from a new Crossrail station which is set to open in adjacent Canary Wharf. Significant CIL contributions towards the Crossrail project were secured as part the of Wood Wharf scheme.
- New social infrastructure will include a Health and Well-being Centre, an “Idea Store” community centre and a new primary school.

Lessons for OPDC

- Allocation of 33.5% public open space demonstrates that substantial amounts of public open space can be delivered at high density, but the quality of these spaces and access to sunlight will be a key learning point as the scheme is delivered.
- While not yet completed, the delivery of new residential neighbourhoods and associated social infrastructure at very high density will provide key lessons for the delivery of similar density development at Old Oak.

Mixed Use / Town Centre Schemes

Barking Town Centre

Barking, London
Completed 2012

Client	**London Borough of Barking and Dagenham**
Architects	**AHMM**
Homes	**518**
Density	**345 dph**
Commercial	**10 Commercial Units**

Project Overview
Award winning regeneration of Barking Town Centre in East London, providing new housing, community facilities, retail units and new civic space.

Precedent for:
- Town centres and community uses
- Well designed buildings
- Civic public open space

Relevant Local Plan Policies

SP4: Thriving Communities
SP6: Places and Destinations
SP9: Built Environment
D2: Public Realm
TCC4: Social Infrastructure

Key Project Features
- The first phase redeveloped the existing 1970's Barking Library. The existing library was retained, but reinvented to provide a modern community library with conference facilities, a one-stop shop, café, art gallery and classrooms. A six storey residential development was built above the library incorporating 246 flats in two blocks set around a courtyard.
- The second phase of development includes a 66-bed hotel, retail units, a large bike parking facility and three new residential blocks.
- The design of the development utilised a distinctive colour strategy, using vivid colours inspired by an Autumnal theme.
- A new formal Town Square has been created which is fronted onto by the existing Town Hall and new Library, helping to integrate the old Town Centre and new development.

Awards
New London Award for Joint Overall Winner 2011; New London Award for Placemaking 2011; RIBA Award for Architecture 2011; London Planning Awards: Best New Public Space 2010; among others.

Lessons for OPDC
- Barking Town Centre is widely recognised as an exemplar Town Centre regeneration project and in delivering improved community infrastructure.
- The scheme provides a good precedent for the thoughtful use of colour in the design of new buildings and spaces.

Bankside Regeneration

Southwark, London
Completed 2011

Clients	**Land Securities, Native Land, Tate**
Architects	**Allies and Morrison (Bankside 123); Roger Sirk Harbour Partners (Neo Bankside); Herzog and De Meuron (Tate Modern)**
Homes	**217 (0 affordable)**
Density	**269 dph (Neo Bankside)**
Commercial	**100,000 sqm (approx)**

Project Overview
A series of adjoining projects, including the Tate Modern, Bankside 123 and Neo Bankside, forming a mixed regeneration of Bankside area of Southwark.

Relevant Local Plan Policies

SP6: Places and Destinations
SP9: Built Environment
E2: New Employment Floorspace
TCC2: Vibrancy
TCC3: A-Class Uses
TCC5: Culture and Art
TCC8: Catalyst Uses

Precedent for:
- Catalyst uses
- Town centre and high street development

Awards
Tate Modern: 2001 Prime Ministers Award for Better Public Buildings;
Neo Bankside: 2015 RIBA National Award; 2015 RIBA Stirling Prize shortlist;
Bankside 123: 2010 RIBA Award.

Project Details

- The Tate modern art gallery, on the bank of the Thames, was developed in 2000 through the conversion of the former Bankside power station, and formed the key catalyst for the regeneration of the surrounding Bankside area. The gallery attracts 5 million visitors annually, and a Herzog and De Meuron designed extension was completed in 2016. The Millennium Bridge, also opened in 2000, links the Tate and the adjacent Shakespeare's Globe Theatre across the Thames to St Paul's.
- Bankside 123 forms an employment led scheme, completed between 2005 and 2007 on a site fronting to Southwark Street. Bankside 1, also known as the Blue Fin building due to its vertical blue tinted shading fins, was completed in 2005. Blocks 2 and 3 were completed in 2007, with a contrasting design of terracotta cladding and deep, one sided chamfered window reveals and uniform street facing facade. The blocks provide active retail frontage along Southwark Street and the pedestrian streetscapes within.
- The Stirling Award nominated Neo Bankside scheme, completed in 2012, is formed of 4 hexagonal blocks of apartments ranging from 12 to 24 storeys in height providing 217 homes with A-class uses at street level. The blocks have been designed with distinctive external bracing, which respond to the historic industrial uses of the area. This approach to the building's structure has removed the need for structural walls internally, allowing greater floor to ceiling heights and maximising natural light.

Lessons for OPDC

- The Tate Modern has been a successful catalyst for the regeneration of the wider area, with the improved connectivity provided by the Millennium Bridge a key factor.
- The neat design of the street facing facades, particularly on Bankside 2 and 3 has helped to establish a strong high street character along Southwark Street.
- A high quality public realm, formed of pedestrian streets and small pocket spaces, has been provided throughout. However, while a particularly rich green landscape has been created within the blocks of Bankside Neo this is not publicly accessible.
- The prominence and intensity of employment spaces within Bankside 123, and in the surrounding area, has resulted in a weak evening/night time economy. This contrasts with much busier periods in early afternoon. This demonstrates the need for a careful balance of uses in new development at Old Oak, particularly in Old Oak South.
- The Neo Bankside scheme has been criticised for providing no affordable housing on-site (though homes were provided off-site) and for the high proportion of units sold to foreign investors.

Aldgate Place

Whitechapal, London
Commenced 2014

Client	**British Land / Barratt**
Lead Architect	**Allies and Morrison**
Homes	**463 (43% Affordable)**
Density	**609 dph**
Employment	**3,350 sqm**
Commercial	**1,160 sqm**

Project Overview
Aldgate Place is a high density, residential led mixed use development located at a key gateway between the City of London and the fast transitioning east end neighbourhood of Aldgate.

Precedent for:
- Tall buildings
- Open space at high density
- Town centre uses

Relevant Local Plan Policies

SP6: Places and Destinations
SP9: Built Environment
D5: Tall Buildings
TCC1: Locations for Town Centre Uses
TCC10: Visitor Accommodation
EU1: Open Space

Key Project Features
- Tall buildings are a key part of the scheme, with three towers between 21 to 25 storeys in height.
- 50% of the development site has been provided as publicly accessible open space, including the provision of pocket parks within the pedestrian street scape.
- Employment space is targeted at a mixture of small and medium scale enterprises.
- A major Hotel and Conference facility is being delivered as part of the scheme, forming an important activation function.

Awards
Highly Commended - Residential Category, 2014 UK Property Awards.

Lessons for OPDC
- The scheme will be a relevant precedent for Town Centre development at the areas of highest density at Old Oak Common.
- 50% public open space has been delivered by utilising street spaces.

Highgate Shoreditch Hotel

Shoreditch, London
Expected Completion 2019

Client	**Highgate Holdings**
Architects	**Gensler**
Homes	**N/A**
Employment	**9,000 sqm**
Commercial	**11,868 sqm**

Project Overview
The Highgate Shoreditch Hotel will be a 105m high mixed use tower, located at the junction of Shoreditch and the City of London, formed of stacked volumes providing hotel, retail, events spaces and offices.

Relevant Local Plan Policies

SP6: Places and Destinations
SP9: Built Environment
D5: Tall Buildings
TCC1: Locations for Town Centre Uses
TCC4: Social Infrastructure
TCC10: Visitor Accommodation

Precedent for:
- Town centre uses
- Ground level treatment in tall buildings
- Multiple uses in tall buildings
- Design and form of tall buildings

Key Project Features
- The 30 storey building is formed of a series of “stacked” blocks, which breaks up the massing of the building and respond to the scale and form of the surrounding area.
- A market area will be located at ground floor, and is intended to provide a permeable space and active street frontage.
- 9000m² of office space is located above the market area, targeted specifically at tech industries, while an events area is located at middle levels, providing spaces for both public use and ancillary spaces office occupiers.
- A 200 bed hotel will be located in the upper sections of the tower, while the top level will be a free, publicly accessible viewing platform.

Awards
NLA Awards 2016, Mixed Use Category (nominated).

Lessons for OPDC
- While not yet completed, the design approach demonstrates how tall buildings can deliver a different dynamic of uses, and puts a strong focus on interaction with the public realm at ground level.

The Shard and London Bridge Station Redevelopment

London Bridge, London

Completed 2012

Client	**Irvine Sellar**
Lead Architect	**Renzo Piano**
Homes	**12**
Employment	**53,585 sqm**
Commercial	**6,763sqm**

Project Overview

Currently the tallest building in Western Europe, The Shard is a mixed use 95 storey tower, with a distinctive spire like design. The scale and design of the building has made it an internationally recognisable London landmark, which forms the centre piece of the wider redevelopment of London Bridge Station and surrounding area.

Precedent for:

- Landmark tall buildings
- Station area re-development
- Multiple uses in tall buildings
- Ground level treatment of tall buildings

Relevant Local Plan Policies

SP6: Places and Destinations
SP7: Connecting People and Places
SP9: Built Environment
D5: Tall Buildings
EU10: Energy Systems
T4: Rail

Awards

- RIBA Best Commercial Building, 2014;
- CUBUH Best Tall Building in Europe, 2013; among others.

Key Project Features

- The ground level of the tower is open to the public, and forms part of an overall scheme of improvements at London Bridge Station. Every major use within the Tower has separate ground level access points, with a total of 40 lifts.
- Office space if the primary use within the Tower, taking up 53,000 sqm of the 129,000 sqm floor space, the vast majority of which is located in the lower half of the building, as well as a private healthcare clinic.
- A 200 bed luxury hotel, two restaurants, and 12 luxury apartments are located in the upper half of the tower.
- The highest occupied floor is a fee charging public viewing platform, providing the highest public viewing facility in London.
- While the design was influenced by the spires of London Cathedrals and the sails of old merchant ships, the nickname of “The Shard”, originally intended as an insult from those opposing the project, was embraced by the developers and became the official title of the scheme.
- Lighter toned reflective glazing system has been used, mitigating against it’s impact on the skyline and minimizing solar gain.
- The Shard has a dedicated CHP unit which provides energy for the entire building.

Lessons for OPDC

- The architecture of the Shard has been heralded as a great example of design quality in a very tall building. The building has become a major London landmark, becoming a major feature in the London brand, demonstrating the role of tall buildings in establishing the brand of an area.
- The public viewing gallery, while open to the public, is not free of charge, while private elements including office space, hotel, restaurants, and residences, are predominately high end luxury products.
- The manner in which the Shard has been delivered along with the redevelopment of London Bridge Station demonstrates how tall buildings may work adjacent to Old Oak Common Station.

Television Centre

White City, London
Commenced 2015

Client	**Stanhope**
Lead Architect	**AHMM**
Homes	**942 (142 Affordable)**
Density	**372 dph**
Employment	**56,581 sqm**
Commercial	**11,053 sqm**

Project Overview
Redevelopment of former BBC television centre at White City, including refurbishment of the distinctive crescent shaped Grade II listed Television Centre building, to create a major new residential led mixed use neighbourhood.

Precedent for:
- Retention of landmark heritage buildings in major schemes

Relevant Local Plan Policies

SP4: Thriving Communities
SP6: Places and Destinations
SP9: Built Environment
D8: Heritage
TCC3: A-Class Uses
TCC5: Culture and Art
EU1: Open Space

Key Project Features
- Of the 942 units, 142 (15%) are allocated as affordable, with 10 of these for affordable rent and remainder intermediate housing.
- The landmark Grade II listed "inner ring" Television Centre building is being refurbished to provide space for a hotel and residential apartments.
- All new build residences will have the use of terraces at ground floor levels and balconies, winter gardens or roof gardens at upper levels.
- Traditional family housing is being provided in the south of the site, in a traditional "Village Green" layout, reflecting neighbouring garden city developments.
- The retention of media uses forms an important part of the scheme, with some existing space to be retrofitted as studio space to be operated by BBC, while BBC Worldwide's new headquarters has been housed in one of the retained structures.

Lessons for OPDC
- The approach of "bolting" additional floor space to the facade of the Television Centre building presented major design and construction difficulties.
- The developers have found that meanwhile uses are playing a key role in establishing a new sense of place for the White City area and assisting with the marketing of the scheme.

Eagle House and Eagle Black

Hoxton, London
Completed 2016

Client	**Mount Anvil**
Architects	**Farrells**
Homes	**267 (26% Affordable)**
Density	**627 dph**
Employment	**3,486 sqm**
Commercial	**1,718 sqm**

Project Overview
Refurbishment of 1930s Art Deco Eagle House, and development of a 26 storey residential tower (Eagle Black) which has been designed based on an Art Deco themes to respond to adjacent original building.

Relevant Local Plan Policies

SP5: Economic Resilience
SP6: Places and Destinations
SP9: Built Environment
D5: Tall Buildings
D8: Heritage
E3: Supporting Small Businesses and Start Ups
TCC3: A-Class Uses

Precedent for:
- Responding to heritage in the design of new tall buildings
- Housing at high density
- Affordable workspaces

Key Project Features
- The 1930s Eagle House has been retained and refurbished as new residential units, while a new tower (Eagle Black) has been developed alongside, providing commercial units at street level, office space with affordable workspace provision in 4 storeys above ground level, and residential units in the remainder.
- 70 units (25% of overall) have been provided as affordable, with a 50/50 split between social rent and intermediate.
- The window openings in the new tower span two storeys. This allows for Art Deco themed window profiles, helps to mitigate the overall height of the tower, and makes the design more consistent with the adjacent Eagle House.
- The limestone facade was inspired by the adjacent Moorfields Eye Hospital, and traditional stonework consistent with many buildings in the area.

Lessons for OPDC
- While Eagle Tower successfully responds to the Art Deco style of Eagle House, the adjacent 'Montalm' scheme which also completed in 2016 is a sharp contrast in style, form and materials, and this has compromised the art deco architectural style of the surrounding area.
- The treatment of the 4 lower storeys above ground level do not utilise the two storey window ope design approach, resulting in a more modernist style which is visually inconsistent with the rest of the scheme.

Residential Led Schemes

Trafalgar Place

Elephant and Castle London
Completed 2011

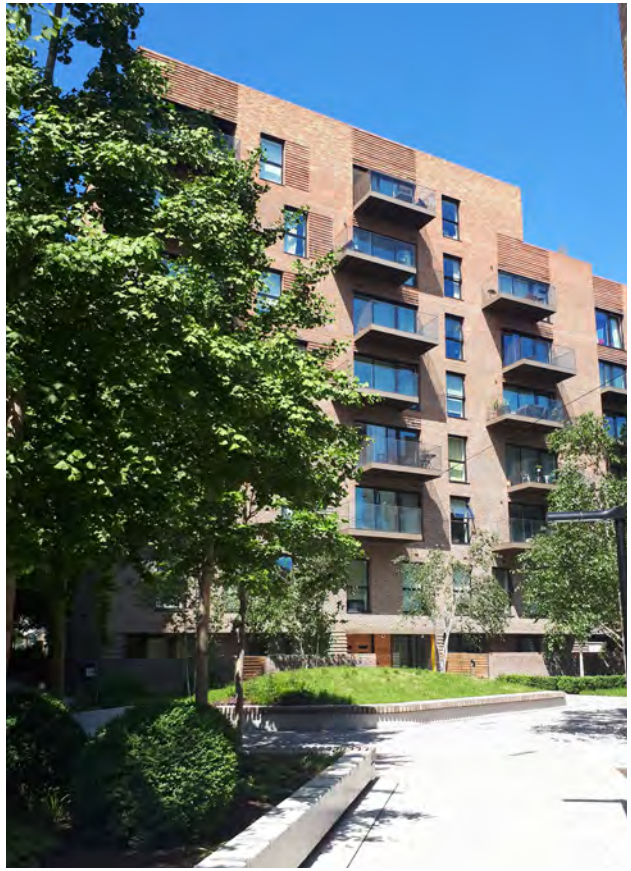
Client	**Landlease**
Architects	**DRMM**
Homes	**235 (25% Affordable)**
Density	**240 dph**
Employment	**N/A**
Commercial	**N/A**

Project Overview
Award winning residential scheme, forming the first major phase of the Elephant and Castle Regeneration project, on the site of a former 1960's council housing estate.

Relevant Local Plan Policies

SP4: Thriving Communities
SP9: Built Environment
D2: Public Realm
D4: Well Designed Buildings
H3: Housing Mix
H4: Design of Family Housing

Precedent for:
- Granular built form with a variety of building heights and types
- Tenure blind delivery of family and affordable housing



Key Project Features
- 235 homes (25% affordable) have been delivered at a net density of 240 dph.
- The built form has aimed to break up the scale of the scheme, with building heights ranging from 4 to 10 storeys providing a range of typologies from terraced homes to higher rise apartment buildings.
- Varied use of brickwork and materials has been used to provide each building with a distinctive but consistent character.
- Family units are located at ground level providing active street frontages; while each property has either a private garden, terrace or balcony.
- 46% of the developable site area has been provided as public open space through the use of pedestrianised streets.

Awards
Best New Place to Live at London Planning Awards; The Mayor's Award for Planning Excellence at London Planning Awards.

Lessons for OPDC
- The delivery of well designed family units in a terraced housing form with frontage at street level has helped in providing a high quality public realm.
- A high proportion of public open space has been provided by utilising the streets within the primary development blocks.

St. Andrews

Bromley by Bow, London
Completed 2011

Client	**Barratt Home**
Architects	**Allies and Morrison, MacCreanor Lavington, Glenn Howells**
Homes	**964 (50% Affordable)**
Density	**320 dph**

Project Overview
Award winning housing scheme in Bromley by Bow, on the site of an old Victorian hospital, delivering 50% affordable housing in a high density, tenure blind and environmentally sustainable development.

Relevant Local Plan Policies

SP3: Improving Health and Reducing Health Inequalities
SP4: Thriving Communities
SP9: Built Environment
D2: Public Realm
D4: Well Designed Buildings
EU1: Open Space
H3: Housing Mix
H4: Design of Family Housing
TCC4: Social Infrastructure

Precedent for:
- Mixture of built forms delivering high densities
- Family and affordable housing at high density in a tenure blind approach
- Delivery of social infrastructure within a residential led scheme

Awards
2010 Building for Life Award; 2011 Housing Design Awards Graham Pye Award, 2012 Housing Design Awards; amongst others.

Key Project Features

- The affordable housing provision is split 69:31 social rented/ shared ownership. 30% of all units are family dwellings, focused at ground level to provide active frontage and doorstep play space.
- The scheme has strong environmental credentials, including the delivery of CHP energy system in which 20% of energy can be met through biomass generation.
- 30% of total site area has been provided as public open space, while each residence has some private open space. Much of the public open space has been provide as “green streets” separating the 3 main development blocks. Green roofs have also been used throughout the development.
- Building heights within the residential blocks vary from 3 to 14 storeys, with lower heights located to the south to maximise the penetration of light. A 27 storey tower is located at the corner of the site next to Bromley by Bow Station.
- A new NHS Health Centre has been delivered in the western block of the site. This was a crucial aspect of the scheme given the historic use of the site as a hospital, and it has helped to establish the development as a centre point for the wider area.

Lessons for OPDC

- The scheme has successfully delivered family dwellings at high density which are actually occupied by families, with low levels of buy to let recorded.
- Different design teams were selected for final design of each development block. This approach has played a significant role in raising the overall standards of design.
- The high level of family housing has resulted in a high demand for the limited number of parking spaces that are available in the development.
- The CHP system is not yet operational as it is not considered viable given the lower than expected energy demand.

Bosco Verticale

Milan, Italy
Completed 2014

Client	**HINES Italia Srl**
Architects	**Boeri Studio**
Homes	**111**
Density	**220 dph**

Project Overview
A pair of heavily planted residential towers in the Porta Nuova district of Milan designed as a landmark “vertical forest” which improves local biodiversity and air quality.

Relevant Local Plan Policies

SP2: Good Growth
SP8: Green Infrastructure and Open Space
SP9: Built Environment
D1: Securing High Quality Design
D4: Well Designed Buildings
D5: Tall Buildings
EU2: Urban Greening and Biodiversity
H1: Housing Supply

Precedent for:
- Landmark Tall Buildings;
- Urban Greenery

Awards
International High Rise Award (2014)
Best Tall Building Worldwide (2015)

Key Project Features

- The project is formed of two residential towers of 19 and 27 storeys, containing 111 apartments. The “vertical forest” has been created by incorporating 800 trees (between 3 and 9 metres in height), 4,500 shrubs and 15,000 plants across balconies.
- The design of balconies, choice of trees and planting and their distribution according to the orientation and height of façades is the result of three years of carefully study where botanists and ethologists worked alongside architects and engineers.
- The plants used on the buildings are native to local region, and were pre-cultivated in a nursery in order for them to become accustomed to similar conditions to those which they find on the balconies.
- The vertical forest creates a localised microclimate which filters fine particles contained in the urban environment. The diversity of plants helps to develop the microclimate which produces humidity, absorbs CO2 and particles, produces oxygen, and protects against radiation and noise pollution.
- The greenery is maintained from balconies and external platforms, which are used for pruning hard-to-reach branches. Plant maintenance costs are covered in the apartment service charges and includes an automatic centralised watering system that reuses water extracted from underground wells.

Lessons for OPDC

- While the concept would be difficult to deliver across numerous schemes, this type of project can be an architectural landmark in Old Oak, make a major contribution to urban greenery and improving air quality and help establish green infrastructure as a key element in the development across Old Oak.
- The ongoing management and costs for maintaining the vegetation is the most important factor in the longer term success of this type of project.

Adelaide Wharf

Hackey, London
Completed 2008

Client	**First Base Ltd & English Partnerships**
Architects	**AHMM**
Homes	**147 (50% Affordable)**
Density	**377 dph**
Employment	**690 sqm**

Project Overview
Adelaide Wharf is a pioneering mixed tenure housing scheme adjacent to Regents Canal in Hackney, delivering over 50% affordable housing, plus affordable employment space.

Relevant Local Plan Policies

SP4: Thriving Communities
SP5: Economic Resilience
SP9: Built Environment
D4: Well Designed Buildings
H1: Housing Supply
H2: Affordable Housing
H3: Housing Mix
E3: Supporting Small Businesses and Start Ups

Precedent for:
- Housing at high density
- Tenure blind housing
- Building systems and approaches
- Affordable workspaces

Key Project Features
- 147 flats, providing 41 Key Worker units, 33 socially rented units and 73 units for private sale.
- Family units are focused at ground level, assisting with street activation and passive supervision.
- 690sqm of affordable workspace has been provided as part of the scheme, with occupancy managed through an approved workspace provider.
- Innovative construction techniques were utilised as part of the build, making extensive use of prefabrication methods and minimising on-site wet trades.

Awards
RIBA Regional Architectural Award, 2008;
RIBA National Architectural Award, 2008;
Housing Design Awards, 2008.

Lessons for OPDC
- Successful delivery of 50% affordable housing, with affordable workspace, whilst ensuring a “tenure blind” environment.
- The design has not clearly established a strong relationship with the adjacent canal.

Granary Wharf

Leeds
Completed 2011

Client	**Waterside Regeneration**
Architects	**CareyJones Architects, CZWG**
Homes	**282**
Density	**400 dph (approx)**
Commercial	**2000 sqm (approx)**

Project Overview
Regeneration of a 2.7 ha site set between Leeds Railway Station, associated rail sidings and the historic Leeds-Liverpool canal to provide a distinct new residential led urban neighbourhood.

Key Project Features
- The scheme consists of three main buildings - two residential buildings at Candle House and Waterman Place, and the DoubleTree Hotel located at the centre.
- Candle House, a landmark 23 storey cylindrical residential tower functions as a key centre piece for the overall site. It provides 160 homes, all with a "very good" Eco-Homes rating, and is designed with a distinctive rotating facade. Deep window reveals and integrated balconies assist with the solar control of internal spaces.
- Waterman Place, the opposing residential building, is a long, narrow block with stepped heights, providing 122 homes. A permeable ground level allows access to the wider site from Leeds Railway Station and City Centre to the east.
- The design approach across the site has focused on a consistent use of red brick and copper to reflect the industrial heritage of the immediate area, while rail and canal infrastructure has played a key role in shaping the public realm.

Relevant Local Plan Policies

SP9: Built Environment
D5: Tall Buildings
D8: Heritage
EU1: Open Spaces
EU3: Water
EU9: Minimising Carbon Emissions and Overheating

Awards
RIBA Project of the Year and Gold Award 2011;
Leeds Architecture Award - Best New Buildings 2011; among others.

Precedent for:
- Canalside development and spaces
- Responding to industrial heritage
- Well designed tall buildings

Lessons for OPDC
- Sensitive use of brick, metal and glass has helped the new development successfully blend in with it's industrial and canalside heritage.
- Well designed building frontages close to the canal edge have created a high quality public realm, but has resulted in poor use of the canal by boat users.

Micawber Street

Hackney, London
Completed 2014

Client	**Notting Hill Housing**
Lead Architect	**Pollard Thomas Edwards**
Homes	**108 (34% Affordable)**
Density	**452 dph**
Employment	**2,316 sqm**
Commercial	**N/A**

Project Overview
Residential scheme on a long but narrow site near Regents Canal in Hackney, providing 108 new homes in a mixed tenure, street oriented approach which pays homage to the traditional London Mansion block typology.

Relevant Local Plan Policies

SP4: Thriving Communities
SP9: Built Environment
D3: Accessible and Inclusive Design
D4: Well Designed Buildings
H2: Affordable Housing
H3: Housing Mix
H4: Design of Family Housing

Precedent for:
- Tenure blind housing at high density
- Family housing at high density
- Contemporary mansion block typology

Key Project Features
- The scheme is formed of 6 adjoining identical blocks, each with its own street entrance and containing a mixed range of tenures.
- Of the 108 flats, 37 (34%) are affordable, with 20 for social rent and 17 intermediate.
- The scheme provides ten four bedroom family houses and two further maisonettes that are set back from the road with courtyard entrances, which have sedum roofs and green terraces at first floor level. The larger three bedroom family apartments are all on the lower floors, and have terraces at the centre of the apartment block as well as balconies.
- All two and three bedroom apartments have a dual aspect, and the apartments are accessed via multiple cores in order to increase the sense of security and neighbourliness.
- The scheme meets Code for Sustainable Homes Level 4 with renewable energy provided by photovoltaic panels. It is also designed to meet Lifetime Homes standards, and eleven wheelchair accessible homes are included within the scheme.

Lessons for OPDC
- The scheme demonstrates how to successfully integrate tenures with a Mansion Block approach while positively contributing to the streetscape.
- While substantive communal and private open space is provided, no public open space as been provided as part of the scheme.

PLACE / Ladywell

Lewisham, London
Completed 2016

Client	**Lewisham Council**
Architects	**Rogers Stirk Harbour + Partners'**
Homes	**24 Emergency Accommodation Units**
Density	**82 dph (site)**
Commercial	**940 sqm**

Project Overview
PLACE / Ladywell is a high quality, temporary emergency accommodation scheme, built using shipping container technology. It occupies the site of the former Lewisham Leisure Centre and is intended to occupy the site while a masterplan is being prepared for overall site development, expected to take about four years.

Relevant Local Plan Policies

SP2: Good Growth
SP4: Thriving Communities
EU7: Circular and Sharing Economy
H1: Housing Supply
H2: Affordable Housing
TCC9: Meanwhile Uses

Precedent for:
- Emergency Housing as an interim use
- Principles of the circular economy
- Innovation in construction

Key Project Features
- Twenty four, two bed flats for homeless families living in poor quality temporary accommodation.
- Eight community centred commercial units located at ground level to help animate area and provide social support to residents.
- Scheme is designed to be redeployed up to fives times, and has an overall design life of sixty years.
- All residential units exceed current space standards by 10%.

Lessons for OPDC
- Example of how meanwhile uses can provide an important social benefit to the existing community through emergency accommodation for those in need, while also helping to activate an area.

Dalston Junction

Dalston, London
Completed 2014

Client	**Barratt, TFL, LDA and LB of Hackney**
Design Team	**John McAslan + Partners (Architect)** **AKT (Structural Engineer)** **White Code (Services Engineer)**
Homes	**309 (29% Affordable)**
Density	**277 dph**
Commercial	**1,500 sqm**

Project Overview
Residential led mixed use over station development (OSD) scheme involving the redevelopment of Dalston Station to provide a new 4 platform station at track level, with residential and commercial uses built directly above.

Relevant Local Plan Policies

SP6: Connecting People and Places
SP10: Integrated Delivery
T5: Rail
H1: Housing Supply

Precedent for:
- Over station development

Key Project Features
- Previously closed Dalston Junction Station redeveloped as a new 4 platform station on the newly opened East London branch of the London Overground network.
- Development above the station has delivered 309 new flats, 1,500m² commercial use and 180msq of community floor space, as well as providing a new bus interchange facility.
- 309 flats has been built at a density of 277 dph, providing 89 (29%) affordable units, of which 58 are for social rent.
- A new public square has been created, while new station entrances have been designed to form part of the existing streetscape.

Lessons for OPDC
- Over station development has been achieved while providing the targeted level of affordable housing provision along with new social infrastructure;
- The overall scheme has acted as a key catalyst for the regeneration of the wider Dalston area.

Fish Island Village

Hackey Wick, London
Completion of Phase 1 in 2018

Client	**Peabody and The Tramperys**
Architects	**Haworth Tompkins and Pitman Tozer**
Homes	**580**
Density	**207 dph (site)**
Employment	**4,500 sqm**

Project Overview
Mixed use scheme at the heart of one of London's most creative districts, which will provide a mixture of housing and affordable workspaces with an ambition to support a creative and tech centred community.

Relevant Local Plan Policies

SP4: Thriving Communities
SP5: Economic Resilience
SP8: Green Infrastructure and Open Space
EU3: Water
E3: Supporting Small Businesses and Starts Ups

Precedent for:
- Mixing residential and employment
- Affordable workspaces
- Canalside development

Key Project Features
- A range of unit types are being provided, including a mixture of shared accommodation, personal units and family units.
- Affordable workspaces for small businesses are being delivered in partnership with "The Trampery", a dedicated affordable workspace provider.
- The design aims to reflect the areas industrial heritage through a variety of building types and materials.

Lessons for OPDC
- While not completed, the scheme is an example of a partnership between an affordable housing provider and affordable workspace provider to deliver an innovative mixed residential and employment scheme.
- Design responds to the industrial architectural heritage of the area and canalside location, a similar context to that at Old Oak and Park Royal.

Humanitas

Deventer, Netherlands
Initiated 2014

Client	**Humanitas**
Co-ordinator	**Humanitas**

Project Overview
Care home facility where students are provided with rent free accommodation in exchange for time spent with care home residents.

Relevant Local Plan Policies

SP4: Thriving Communities
EU7: Circular and Sharing Economy
H9: Specialist Housing
H10: Student Housing

Precedent for:
- Innovate provision of affordable housing
- Principles of the sharing economy

Key Project Features
- Rent free accommodation spaces have been provided for 6 students on the site of an existing care home facility, in exchange for at least 30 hours a month voluntary service with160 elderly residents.
- The initiative arose as a result of government cuts to the care homes budget. The students focus on spending recreational time with residents, such as playing games, escorting residents on journeys and trips outside the care home, and assisting with casual tasks such as shopping. With students assisting with these activates, it allows a reduced number of professional staff to focus on the functional operation of the care home.

Lessons for OPDC
- This initiative demonstrates how innovative approaches may provide solutions for affordable specialist and student housing need.
- The approach is a clear example of the sharing economy in practice.

The Galleria

Peckham, London
Completed 2006

Client	**Acme and Barratt Homes**
Architects	**Dransfield Ownes da Sliva / KDS Associates**
Homes	**98 (25 affordable)**
Employment	**1486 sqm**

Project Overview
Redevelopment of a former printworks site as part of pioneering scheme delivering affordable artist workspace studios at lower levels.

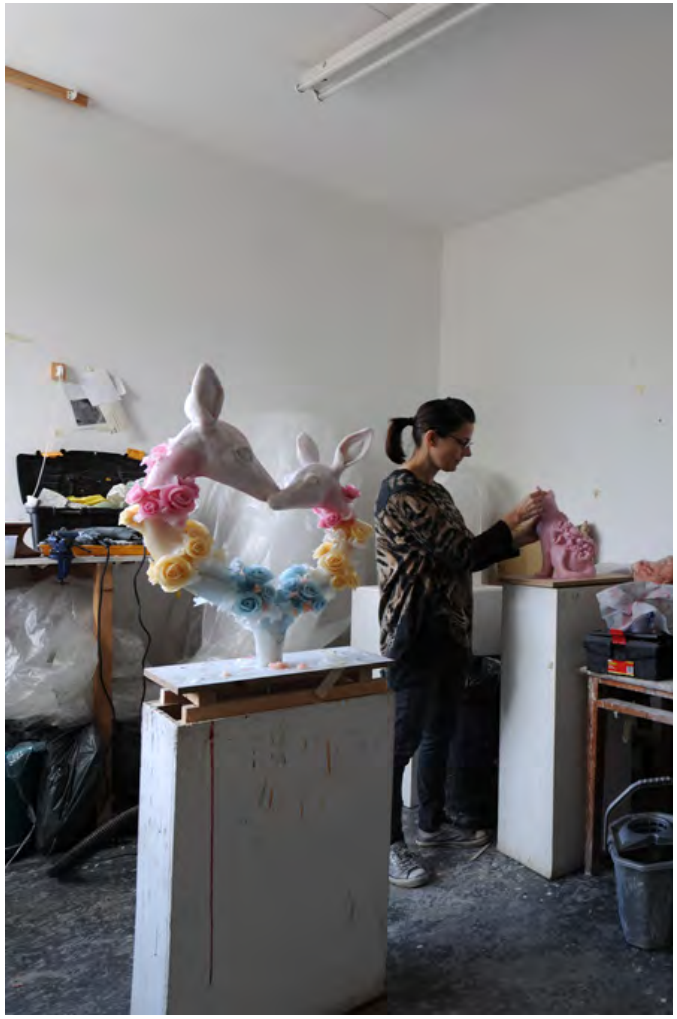
Relevant Local Plan Policies

SP4: Thriving Communities
SP5: Economic Resilience
E2: Employment Sites Outside of SIL
E3: Supporting Small Businesses and Start Ups
TCC5: Culture and Art

Precedent for:
- Delivering artist and light industrial workspaces within residential led development

Awards
What House? Awards 2016 - Best Development (Joint Bronze)

Project Details
- The scheme is formed of connected blocks ranging from 6 to 10 storeys in height, providing 98 new homes, including 25% affordable, alongside 50 artist studios. The studios, providing artist and maker spaces are provided over four lower levels, with residential flats on the levels above.
- The initiative was initially driven by Southwark Council seeking to ensure that employment uses were retained on the site, having refused the original application from Barratt for a wholly residential scheme. Barratt, in seeking to incorporate light industrial type employment which would could sit alongside residential uses, approached affordable artist space provider Acme Studios to partner in providing artist studios. Acme, with the aid of grant funding from Arts Council, purchased a 150 leasehold on the studio spaces and ensured 100% occupation since 2006.
- The studio spaces have separate entrance and servicing access to the residential element. The studios vary in size from 27 sqm to 55 sqm, and both studios and flats have high levels of sound insulation to mitigate impacts on residents.



Lessons for OPDC
- The success of the artist studios is driven by partnership with Acme to manage the spaces.
- A benefit identified by workspace occupiers was the greater levels of safety and security in evening and night time from being located within a residential scheme.
- The inclusion of the artist spaces within the scheme was enabled by national funding from the Arts Council.

Battersea Exchange

Battersea, London
Completed 2006

Client	**Taylor Wimpey**
Architects	**Feilden Clegg Bradley Studios**
Homes	**290 (60 Affordable)**
Density	**225 dph (estimated)**
Commercial	**3,676 sqm**

Project Overview
Residential led mixed use scheme on a complex site at the edge of the Nine Elms regeneration area, providing a new school facility.

Precedent for:
- Sites constrained by rail infrastructure
- Responding to heritage
- Delivering schools at high density

Relevant Local Plan Policies

SP9: Built Environment
SP10: Integrated Delivery
D8: Heritage
T2: Walking
TCC4: Social Infrastructure

Lessons for OPDC
- The scheme demonstrates how the development of smaller complex sites constrained by rail infrastructure and adjacent to residential areas of heritage value within Old Oak may be approached.
- The design of the new school demonstrates how a separate school facility adjacent to, but integrated with, new residential development may be delivered.

Project Details
- The scheme is situated on a complex, constrained site, dominated by intersecting rail infrastructure, adjacent to conservation areas and containing a number of minor listed structures. It forms part of the south-western portion of larger Vauxhall Nine Elms and Battersea Opportunity area
- 290 new homes are being delivered across 11 blocks, ranging from 2 to 18 storeys in height. 60 affordable homes (20%) are being delivered on site, half of which will be for social rent.
- The redevelopment is providing a new school facility for the existing St Mary's Roman Catholic Primary School. The new two storey school building is architecturally consistent with new residential development, and provides a rooftop sports pitch and games hall. The expanded school facility has allowed the school increase intake from 1 form to 2 forms, and provide a new early years centre.
- The scheme has responded to the intersecting elevated railway arches to form new public realm and commercial uses. A new direct pedestrian route between Queenstown Road Station, connecting to the Waterloo and the West, and Battersea Park Station which connects to Victoria Station and the South.

Employment Led Schemes

White Collar Factory

Shoreditch, London
Completed 2016

Client	**Derwent London**
Architects	**AHMM**
Homes	**9**
Employment	**22,018 sqm**
Commercial	**929 sqm**

Project Overview
A new building at the heart of Old Street Yard in London's emerging Tech Quarter, applying the design concepts of a traditional industrial buildings in creating a modern office space.

Precedent for:
- New office space for SMEs
- Adaptable and affordable employment space
- Responding to industrial heritage

Relevant Local Plan Policies

SP2: Good Growth
SP5: Economic Resilience
D4: Well Designed Buildings
EU11: Smart Technology
E2: Employment Sites Outside of SIL

Awards
MIPIM UK Visionary Building of the Year Award

Key Project Features
- The main building, a 16 storey office tower, applies the "white collar factory" design principles, including deep plans, openable windows and high ceilings of exposed concrete slabs and servicing.
- Design focuses on flexibility and adaptability of the space.
- Tall ceiling levels improve comfort levels by enabling better ventilation, daylight penetration and allow greater flexibility in fit out.
- Old Street Yard, a series of refurbished lower rise buildings adjacent to the main tower, provide smaller scale workspaces for SMEs, and a new public open space surrounded by 3 restaurants.
- The building utilises smart technology to manage the internal environment. A traffic light system on each floor guides occupants on when to have windows open, and an app allows users to feed back comfort levels to building management.

Lessons for OPDC
- The scheme demonstrates how industrial heritage can inform and be integrated into new high density development.
- Using smart technology to interact with users is a key part of the high environmental performance of the building.

Francis Crick Institute

King's Cross, London
Completed 2015

Client	**Francis Crick (UKCMRI)**
Designers	**HOK and PLP**
Engineers	**Arup and AKT**
Floorspace	**82,000 sqm**

Project Overview
The Francis Crick Institute is one of the worlds largest biomedical research centres, providing a multidisciplinary life science research facility housing 1,500 scientists and support staff.

Relevant Local Plan Policies

SP5: Economic Resilience
SP6: Places and Destinations
SP9: Built Environment
EU9: Energy Performance and Overheating
E2: Employment Sites Outside of SIL
TCC8: Catalyst Uses

Precedent for:
- Catalyst uses
- Large, single occupier employment spaces

Awards
London First - Investment in London's Future

Project Details
- The institute is a collaboration between a number of leading medical institutions and universities, with the location chosen as it placed it within a cluster of hospitals and educational institutions. It provides primary and secondary laboratory areas, including high containment laboratory spaces, and associated write up, amenity and administration areas.
- The internal design of the building has sought to maximise interaction between staff by utilising open plan spaces, providing collaborative working areas and using transparent materials allowing direct sightlines.
- The building has achieved a BREEAM 'Excellent' rating. A high efficiency glazing and shading system has been used throughout to minimise overheating along with high efficiency lighting control and ventilation systems. A 2MVA CHP unit, together with 1,700 sqm of photovoltaics, provides for energy requirements, and connections have been provided to allow for connection to a future district wide heating network.

Lessons for OPDC
- The institute has acted as an important catalyst for the area of King's Cross west of St Pancras and the King's Cross Central Regeneration Site.
- The design of laboratory spaces needed to ensure they mitigate against the impacts of noise and vibration from surrounding uses so that they did not impact upon lab activities.
- The scale and massing of the building has been criticised for being overly bulky and imposing.

5 Pancras Square

King's Cross, London
Completed 2014

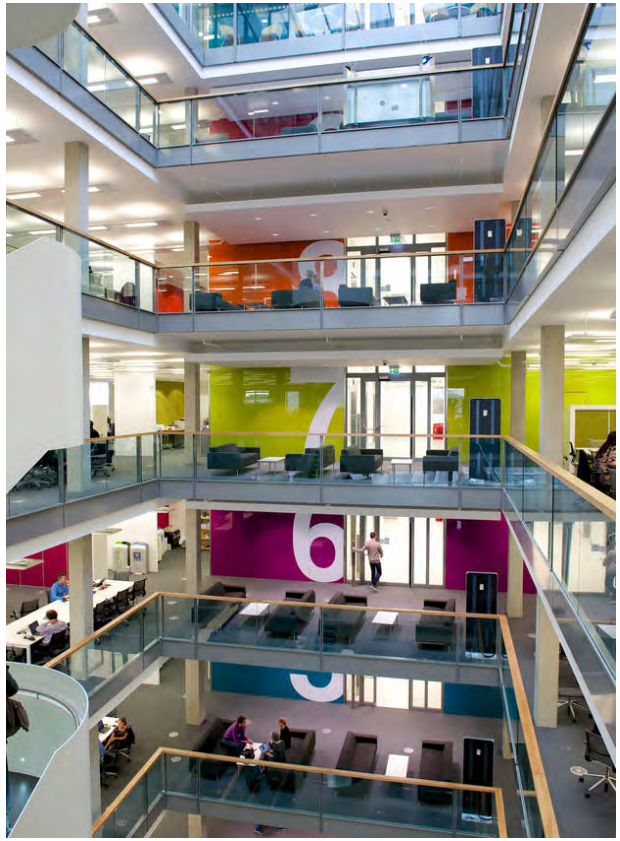
Client	**LB of Camden**
Architects	**Bennetts Associates**
Employment	**17,453 sqm**
Community	**4,760 sqm**

Project Overview
Five Pancras Square is the new headquarters for the London Borough of Camden, located within the King's Cross regeneration area. The building provides both community facilities for borough residents and administrative offices for Council staff.

Precedent for:
- Large, single occupier office space
- Social infrastructure at high density
- Environmental performance

Relevant Local Plan Policies

SP5: Economic Resilience
SP10: Integrated Delivery
D4: Well Designed Buildings
EU9: Energy Performance and Overheating
EU10: Energy Systems
E2: Employment Sites Outside of SIL
TCC4: Social Infrastructure



Key Project Features
- Community centre located at ground level and basement levels providing a leisure centre with two pools and fitness centre, library and café.
- High quality office space located within 8 upper levels housing borough administrative staff and services.
- BREEAM "Outstanding" rating, with key environmental features including:
  - connecting to the King's Cross CHP network;
  - focusing on passive solar design, natural ventilation and photovoltaics to achieve zero carbon status;
  - facilitating cycle storage for workers and users; and
  - embracing circular economy principles as part of construction through the source of materials and disposal of construction waste.

Awards
Prime Minister's Better Public Building Award, 2015; BCI Awards 2015 - Best Practice Award; LABC Building Excellence Awards Grand Final 2015 - best inclusive building.

Lessons for OPDC
- The scheme demonstrates the opportunity for social infrastructure to be delivered at high density alongside public sector workspace.
- A broad range of measures and approaches have resulted in excellent environmental performance.

30 St Mary Axe (Gherkin)

London Bridge, London
Completed 2012

Client	**Skanska**
Lead Architect	**Foster & Partners**
Homes	**12**
Employment	**53,585 sqm**
Commercial	**6,763sqm**

Project Overview
Stirling prize winning 41 Storey office tower in the City of London, with a distinctive circular design which has resulted in it becoming an iconic London landmark.

Relevant Local Plan Policies

SP5: Economic Resilience
SP9: Built Environment
D4: Well Designed Buildings
D5: Tall Buildings
EU9: Energy Performance and Overheating
EU10: Energy Systems
E2: Employment Sites Outside of SIL

Precedent for:
- Well designed tall buildings
- Environmental performance
- Largescale, single occupier workspace

Awards
- RIBA Stirling Prize - Winner;
- London Planning Awards, Best Built Project - 5 Years On;
- Emporis Skyscraper Award 2003;
- London Architectural Biennale Best Building Award.

Key Project Features
- The shape of the tower assists with the smooth flow of wind around the building, assists in maximising daylight penetration to internal spaces, and helps to provide additional public space at ground level.
- The façade has been designed with advanced glazing technologies, including ventilated cavities and blinds, and provides up to 85% solar protection.
- Windows in the light wells open automatically to augment the air conditioning system with natural ventilation resulting in energy savings of up to 40%.

Lessons for OPDC
- The buildings distinctive design has made it a key London landmark, and demonstrates how tall buildings can define the identity and brand of an area.
- The circular floor plan provided a number of benefits to the environmental performance and quality of the building and it's surroundings.
- The development assisted in re-enforcing the City of London as a global financial centre, and initiated a large number of similar developments in the surrounding area.

The Edge

Amsterdam
Completed 2014

Client	**AVG Real Estate**
Architects	**PLP Architecture**
Employment	**40,000 sqm**

Project Overview
Office development in the Zuidas district of Amsterdam, recognised as a world leading example in environmental design, and acknowledged as the "worlds most sustainable office building".

Relevant Local Plan Policies

SP2: Good Growth
SP5: Economic Resilience
EU9: Energy Performance and Overheating
EU11: Smart Technology
E2: Employment Sites Outside of SIL

Precedent for:
- Environmental performance
- Large, single occupier workspace
- Smart technology

Awards
BREEAM Award for Offices New Construction in 2016 - 2015; AIA Continental Europe Awards Environmental Design Award; BREEAM 'Outstanding' new construction certification: 'world's most sustainable Office building';
2015 MIPIM Awards - Best Innovative Green Building (Finalist).

Key Project Features
- The Edge uses 70% less electricity than comparable office buildings.
- All heating and cooling is provided by two 129m deep aquifer thermal energy storage systems.
- Energy use is automatically adjusted through use of an Ethernet-powered LED lighting system integrated with 28,000 sensors to continuously measure occupancy, movement, lighting levels, humidity and temperature.
- Building orientation maximises light and reduces solar heat gain through a north-facing atrium and solar panels on the southern façade that also provide shading.
- Smart technology has been incorporated into all functions of buildings management, including environmental and capacity.

Lessons for OPDC
- Example of international excellence in environmental performance and smart technology in a similar climate to that of the UK.
- Demonstrates how an individual project can help to establish a wider culture of excellence in environmental design.
- While environment performance is exemplar, the project has not utilised sustainable or low carbon building materials and approaches, compromising it's environmental credentials.

Roundhouse Administration Building

Camden, London
Completed 2016

Client	**The Roundhouse Trust**
Designers	**Urban Space Management**
Engineer	**Furness Engineering**
Employment	**2000 sqm**

Project Overview
Five storey office building, providing administrative space for the adjacent Roundhouse events venue, built using 71 re-cycled shipping containers in a modular approach.

Relevant Local Plan Policies

SP1: Good Growth
SP9: Built Environment
D4: Well-Designed Buildings
EU7: Circular and Sharing Economy
T8: Construction
E2: Employment Sites Outside of SIL

Precedent for:
- Efficiency and effectiveness in advanced construction
- Principles of the circular economy in the design and construction process
- Modern office workspaces

Project Details
- The structure of the building is formed of 71 recycled shipping containers, which were prefabricated off-site, minimising on-site works. The design approach kept use of new materials to a minimum, with the original container doors and sheeting used as external façades throughout.
- Rooftop solar panels have been installed providing 38% of the schemes energy need, while passive solar design has been utilised to minimise energy demand.
- A primary reason for choosing this method of construction was to reduce disruption the Roundhouse events venue itself, both in terms of duration and activity.
- The project was designed and built by Urban Space Management Ltd, utilising their trademarked Container City system. The system has been used to develop a variety of projects, including workspaces, education and health spaces, and spaces for creative and artistic industries.

Awards
London Planning Awards 2016 - Best New Place to Work.

Lessons for OPDC
- The scheme demonstrates how modular construction technology can result in high quality, attractive new buildings.
- Shipping container technology, by re-cycling an existing product, and being designed for ease of disassembly, strongly supports the principles of the circular economy.
- As well as a significantly reduced construction time, the building technique minimises site disruption.

Brooklyn Navy Yard

Brooklyn, New York
Completed 2006

Operator	**Brooklyn Navy Yard Development Corporation**
Employment	**560,000 sqm (proposed)**

Project Overview
Brooklyn Navy Yard is a 121 hectare Industrial Park in New York, currently undergoing a largescale regeneration, modernisation and intensification strategy.

Relevant Local Plan Policies

SP1: Catalyst for Growth
SP2: Good Growth
SP5: Economic Resilience
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location
E2: Employment Sites Outside of SIL

Lessons for OPDC

- The largescale development of modern, intensive industrial spaces in Brooklyn Navy Yard is a relevant precedent for aims to intensity industrial uses in Park Royal.
- Development of the Yard is managed and driven by a Development Corporation, demonstrating the role the OPDC can play in the future development of Park Royal as a leading industrial location.
- The redevelopment strategy is utilising historic industrial structures, demonstrating the role larger historic structures can play in the intensification of uses in Park Royal.

Precedent for:

- Intensification of industrial uses in Park Royal
- Future employment growth sectors in industrial areas

Project Details

- Brooklyn Navy Yard is located on the former site of major ship building yard in New York, which now operates as one of the largest industrial locations in the City. The Park currently houses 300 industrial businesses, across over 40 buildings providing 372,000 sqm of leasable industrial floorspace, employing nearly 7,000 people. Development of the Park is managed by the Brooklyn Navy Yard Development Corporation (BNYDC).
- BNYDC has initiated a major redevelopment of the Yard, centred on four largescale projects forming part of a 700 million dollar investment which will more than double the number of people employed in area. The scheme is focusing on developing modern, high density industrial facilities, and aims to position the Yard as an international model for sustainable industrial parks. New buildings and full building renovations are required to be certified at least LEED Silver, and cycle lanes and green infrastructure are being delivered across the Park.
- The first scheme as part of the redevelopment strategy, the Green Manufacturing Centre, completed in 2016. It is a state of the art modern, multi level industrial manufacturing facility, providing industrial floor space for clothes manufacturing, food manufacturing and processing, and tech sector R&D.

X2

Heathrow, London
Completed 2008

Client	**Brixton Plc**
Architects	**EPR Architects / Cornish Architects**
Employment	**21,886 sqm**

Project Overview
The X2 is a two storey warehouse building situated beside Heathrow Airport, the first multi-storey industrial building to be developed in the UK.

Key Project Features
- The development provides 8 industrial units, with 4 on each level, with 6m floor to ceiling heights, plus ancillary office space for each unit.
- Intertwined ramps, dividing up/down traffic, provide HGVs with direct access to the first floor industrial units.
- The site has direct access to the perimeter road, and faces Hatton Cross Underground and bus station.

Relevant Local Plan Policies

SP5: Economic Resilience
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location
T7: Freight Servicing and Deliveries

Precedent for:
- Multi-Level SIL uses in Park Royal

Lessons for OPDC
- The developers reported lower than anticipated rental yields and as a result are examining alternative approaches to multi-level industrial uses for future schemes.
- The second level access ramp presented the most challenging aspect of the design process.

Gewerberhof Laim

Munich, Germany
Completed 2011

Client	**MGH-Münchner Gewerbehof (City Council)**
Architect	**Bogevischs Buero**
Employment	**11,000 sqm**

Project Overview
5 storey industrial building, part of a series developed by the City Council, catering specifically for smaller industrial business.

Relevant Local Plan Policies

SP5: Economic Resilience
E1: Protecting, Strentening and Intensifying the Strategic Industrial Location
E2: Employment Sites Outside of SIL
E3: Supporting Small Businesses and Start Ups

Precedent for:
- Industrial Intensification
- Multi-level SIL uses

Project Details
- Münich is experiencing growing pressures on its industrial land in a similar manner to London. In response to this, ten “Gewerbehöfe” (industrial complexes) were developed by Munich City Council and jointly run with the regional chamber of commerce. They provide high density accommodation for uses such as joinery, leather workshops, garment manufacture and fine metalwork. Tenants are offered long term leases and favourable conditions to provide security of tenure. Gewerbehof Laim has 11,000 sqm of industrial floorspace, with unit sizes starting at 40 sqm.
- There are four heavy goods lifts allowing service to upper levels, shared yard space, 1,500 sqm loading and marshalling areas to internal access corridors, as well as 100 parking spaces in the basement. Upper levels have load capacities of up to 1,000kg per sqm catering for a broad range of industrial activities, and allowing forklift access and operation.

Lessons for OPDC
- The project has been delivered by the local City Council, demonstrating the direct role public bodies can, and potentially need to, play in delivering industrial intensification.
- The project uses heavy goods lifts for delivery and servicing to upper levels, demonstrating that vehicular ramp access is not always necessary in providing multi-level industrial uses.

New Covent Garden Flower Market

Nine Elms, London
Completed 2017

Client	**VSM (NCGM) Ltd.**
Architect	**BDP.**
Employment	**8,250 sqm (B8)**

Project Overview
A temporary, multi-level, wholesale building which is home to the Convent Garden Flower Market for a five year period.

Relevant Local Plan Policies

SP5: Economic Resilience
E1: Protecting, Strentening and Intensifying the Strategic Industrial Location
E2: Employment Sites Outside of SIL
E3: Supporting Small Businesses and Start Ups

Lessons for OPDC
- The delivery of this multi-level scheme a temporary project demonstrates the viability and deliverability of multi-level industrial typologies suitable within Park Royal SIL.
- The project is a potential example for how OPDC could provide medium term accommodation for existing businesses located in areas identified for release from SIL in Old Oak.
- A key factor in initiating the project was the LB of Wandsworth's policy requirements for decanting existing businesses as part of the Nine Elms regeneration.

Precedent for:
- Supporting small businesses impacted by redevelopment
- Multilevel SIL development

Project Details
- As part of the decanting strategy for wider New Convent Garden Market redevelopment, this temporary structure was constructed to house the Flower Market for a five-year period while its previous premise was demolished as part of the Nine Elms redevelopment. The Market is a home to over 40 small scale independent flower traders.
- The building is designed specifically for the needs of the flower market traders. This includes air conditioning to maintain an ideal temperature for the storage of flowers, lighting designed specifically for floral display, and roof top lighting to allow natural light in to aid with flower photosynthesis. A large flower hall housing multiple traders is located at the core of the market, while smaller self-contained units are provided for traders which require different conditions for the storage of their produce.
- The core flower market is located on the ground floor level, allowing bulk deliveries from larger HGVs. Florist workshops are located at the upper level of the facility, with ramp access and and deck allowing the smaller scale commercial vehicles which collect from these businesses direct access to the stores. Internal commercial lifts allow the transfer of goods from the main flower halls below to the workshops above. The upper deck also provides additional parking for workers and customers.
- The building will be dismantled in 2022 when the full New Covent Garden Market complex is fully complete, and site will be redeveloped as a residential led scheme as part of the wide Nine Elms opportunity area.

St . Pancras Way

Camden, London
Completed 2014

Client	**Travis Perkins / Unite**
Architect	**Cooley Architects**
Employment	**3,700 sqm (Builders Merchants)**
Residential	**116 Student Flats (563 beds)**

Project Overview
Mixed use development of an existing Travis Perkins building merchants, re-providing the industrial premise at ground level and delivering 9 storeys of student accommodation above

Relevant Local Plan Policies

SP5: Economic Resilience
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location
E2: Employment Sites Outside of SIL
H10: Student Accommodation

Precedent for:
- Co-location of industrial and residential

Lessons for OPDC
- The project demonstrates how higher density residential accommodation can be delivered together with industrial type uses.
- The lack of a parking required for the student accommodation meant that industrial uses were easier to deliver at lower levels, avoiding the need for a complex basement structure.
- The viability of the scheme was supported by Travis Perkins already owning the site.

Project Details
- The ten-storey development provides 3,700 sqm of industrial floorspace for Travis Perkins at ground level, and 116 student flats (563 bedrooms) on the nine upper levels.
- The project was initiated by Travis Perkins, who intend on replicating the model on more of their sites, to enable the continued viability of their building merchant businesses in an area with very limited availably for industrial uses. This approach was supported by Camden designating the site for employment use in their Local Development Framework.
- A key focus of the design was on ensuring that the non-employment aspect of the scheme did not compromise the continued operation of the employment use at ground level. A clearly distinguishable entrance is provided for the student accommodation, located away from the primary access to the Travis Perkins facility.
- The floor to ceiling height of the ground floor industrial space is six metres, resulting in a significant separation of the residential and industrial uses, and minimising the impact of noise and transport movements on the residential units above.

Yardhouse

Stratford, London
2012 to 2014

Client	**Assemble/LLDC**
Designer	**Assemble**
Employment	**250 sqm (B1c)**

Project Overview
A temporary affordable workspace building, intended as a pilot project for the provision of new creative workspaces, and as an interim use on a site awaiting redevelopment.

Relevant Local Plan Policies

SP2: Good Growth
SP5: Economic Resilience
EU7: Circular and Sharing Economy
E2: Employment Sites Outside of SIL
E3: Supporting Small Businesses and Start Ups
TCC9: Meanwhile Uses

Precedent for:
- Affordable, temporary workspaces for small business

Lessons for OPDC
- The Yardhouse project demonstrates how interim use sites in Old Oak can accommodate meanwhile workspaces, and how a single project could operate across a variety of sites across the 20+ year development period.
- Feedback suggested that applicants the being part of a creative community in a single hub was as much an attraction as affordability of the spaces.

Key Project Features
- Yardhouse was developed as a prototype for new-build affordable workspace provision on the Sugarhouse Studios site in Stratford, an interim use site awaiting longer term redevelopment. The project was constructed over 12 weeks in 2014, and was designed as a modular system allowing disassembly and reassembly at a different location when the interim use of the site ceased.
- The building aimed to create a sociable and collaborative work environment. It was simply arranged, as a two-storey, three-bay structure. The two outer-bays were used as individual studio spaces, opening onto a generous double height communal area. The building was constructed without internal walls. The space was broken down by the timber structural frame and tenants rent bays within this frame rather than separate enclosed studio units. Tenants were allowed to partition and adapt their space as they see fit at their own cost.
- Through utilizing off the shelf materials and taking an extremely economic approach to construction, the building was developed for only £72,777, or £291 per sqm. This is a fraction of the cost of a typical permanent industrial structure, and helped ensure that the spaces could be affordably let to end users. Despite the low construction costs, the project provided the generous scale, light quality and ceiling heights desirable for creative uses.
- There was an extremely high demand for the affordable workspaces, with approximate 10 applicants for each available space.
- The project was dismantled in 201X when the Sugerhouse Studios complex relocated and the site was released for redevelopment, and options are being examined for its assembly on another suitable site.

Workshop East

Stratford, London
Established 2013

Organiser	**Workshop East**
Employment	**160 sqm**

Project Overview
Located on the Sugarhouse Studios complex in Stratford, Workshop East is a shared workshop, established in 2013 by four graduates of the Building Crafts College in Stratford. Its main aim is to provide high quality shared facilities for trained makers starting their own businesses, enabling them to continue making work in a professional, safe, supportive environment.

Relevant Local Plan Policies

SP2: Good Growth
SP5: Economic Resilience
EU7: Circular and Sharing Economy
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location
E5: Local Access to Training, Employment and Economic Opportunities

Precedent for:
- Affordable shared workspaces
- Meanwhile uses

Key Project Features
- 160 sqm of shared maker workspace in light industrial units, with capacity for 10 to 12 small business, primarily woodworkers and stone carvers.
- A machine room provides high quality machinery which can be shared between users, saving on costs and space.
- The facility is managed by a Community Interest Company, and is able to provide workspace at approximately half the cost of similar workspaces.
- Facility is based on an interim use site, so minimal investment was made in the building fabric, instead prioritising the provision of high quality equipment and well planned working areas.

Lessons for OPDC
- While the facility has the capacity to support 10-12 users, storage and assembly space is limited, which has impacts on the potential outputs of users.

Greenpoint Manufacturing Design Centre

Brooklyn, New York, USA
Completed 2013

Client	**Greenpoint Manufacturing and Design Center**
Architects	**KCA Architects**
Employment	**160 sqm**

Project Overview
Renovated early 20th Century industrial building providing shared affordable workspace for small-scale manufacturing enterprises, as well as a rooftop commercial scale glasshouse.

Relevant Local Plan Policies

SP2: Good Growth
SP5: Economic Resilience
EU7: Circular and Sharing Economy
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location

Precedent for:
- Commercial scale urban agriculture
- Affordable workspaces
- Multilevel SIL uses

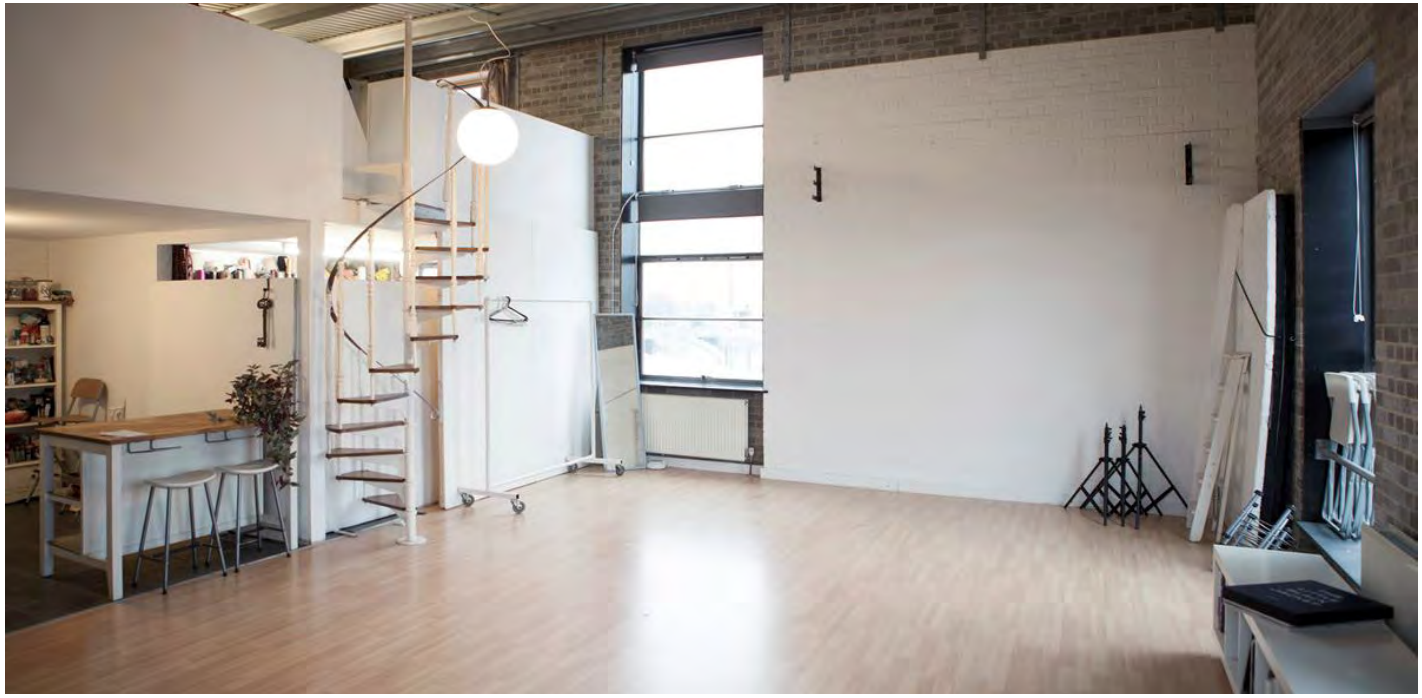
Key Project Features
- A 1,400 sqm commercial scale glass house as been created at roof level, providing 100,000 pounds of fresh produce annually which is sold through a nearby Whole Food Stores.
- The facilities' electrical demands are offset by 60kW of on site solar PV panels with high efficiency design features including, LED lighting, advanced glazing, passive ventilation, and thermal curtains, sharply reduce electrical and heating demand.
- All produce is grown using recirculating irrigation systems that capture all water for re-use and are free of any harmful chemical pesticides.
- The building itself, a refurbished early 20th century industrial warehouse, houses the Greenpoint Manufacturing Design Center, a non-profit industrial developer dedicated to revitalizing existing industrial spaces for small-scale, small-batch, entrepreneurial manufacturing. The complex provides 8,826 sqm of workspace for 12 woodworking firms, and includes shared work facilities.
- Rooftop integration of the glasshouse acts as a beneficial insulator and storm water management system for the building below.

Lessons for OPDC
- This project demonstrates how commercial scale urban agriculture could work in Park Royal and/or Old Oak.
- Glasshouse facility was made viable through a partnership with Whole Foods.
- The workspaces provided are high quality, and larger scale than what's typically available in similar schemes in a London context.

Westferry Studios

Limehouse, London
Completed 1999

Client	**Peabody Trust**
Lead Architect	**CZWG**
Homes	**29 (All Affordable)**
Density	**150 dph**
Commercial	**9 Units**



Project Overview
Westferry Studios is a purpose build, largescale work-live scheme in Limehouse, London. It is a pioneering project, and the longest established work-live project in the UK.

Precedent for:
- Work-live at high density

Relevant Local Plan Policies

SP4: Thriving Communities
SP5: Economic Resilience
EU7: Circular and Sharing Economy
E1: Protecting, Strengthening and Intensifying the Strategic Industrial Location
E4: Work-Live Units
E5: Local Access to Training, Employment and Economic Opportunities

Key Project Features
- The scheme provides 20 open plan work-live units, while 9 B1 commercial units have been provided at ground level with separate residential units above. It forms part of the wider Peabody affordable housing development on the same site. Peabody work with East London Small Business Centre (ELSBC) to select tenants and manage tenancy arrangements.
- The work-live units have been designed on an open plan basis, allowing flexibility for the occupants to design the space to their own needs. Rules on the proportion of space used for work or live are flexible, with many of the units in wholly employment use. However, solely residential use is not permitted.
- Units are provided on a stepped rent basis to ensure affordability, with the intention that tenants can pay full market rent within 5 years.
- The building has been built to a high environmental standard, achieving a Code Level 4 under the Code for Sustainable Homes.

Lessons for OPDC
- The open plan design of units, and lack of strict guidelines over what proportion of the space is used for work/live has been key in the success of the scheme sustaining true live/work uses.
- The land for the scheme was donated, demonstrating that such schemes do require significant financial support.
- The familiarity of the Peabody team with individual tenants has been crucial in proper management of the scheme.

Social Infrastructure

The Plimsoll Building

King's Cross, London
Completed 2015

Client	**King's Cross Central Limited Partnership**
Architects	**David Morley Architects**
Homes	**225 (34 % Affordable)**
Density	**691 dph**
Commercial	**100 sqm**

Project Overview
13 story building in the King's Cross regeneration area, providing two new schools at lower levels and 225 flats above.

Relevant Local Plan Policies

SP2: Good Growth
SP4: Thriving Communities
SP9: Built Environment
SP10: Integrated Delivery
H2: Affordable Housing
TCC4: Social Infrastructure

Precedent for:
- Schools at high density
- Well designed tall buildings
- Key worker accommodation

Awards
New London Awards 2014 - Winner;
RIBA London Award 2016 - Winner

Key Project Features
- Of the 225 flats, 77 (34%) are affordable, and are set aside for key worker accommodation.
- The two schools, King's Cross Academy and the Frank Barnes School for Deaf Children, are co-located, and share facilities, including a two storey playground.
- Multi purpose sports pitches have been provided at underground level, and are accessible by both residents and schools.
- South East portion of the site remains open to provide an important vista for residents and school users.

Lessons for OPDC
- The Plimsoll Buildings demonstrates how new school facilities can be delivered alongside new housing at very high densities, with innovative solutions for play space and other facilities.
- Shared underground multi purpose pitch demonstrates how leisure facilities may be shared between private residents, schools and other groups.

Holy Trinity School

Dalston, London
Completed 2015

Client	**Holy Trinity Primary School, London Diocesan Board for Schools & Telford Homes Plc.**
Architects	**Rock Townsend**
Homes	**101 (0 Affordable)**
Density	**224 dph**

Project Overview
Replacement of existing single story primary school with a 10 storey mixed use building , providing a new school and play facilities on the bottom 3 levels, and 110 flats above. With no funds available for a new school building, the residential element of the development financed the provision of the new school.

Relevant Local Plan Policies

SP2: Good Growth
SP4: Thriving Communities
SP9: Built Environment
SP10: Integrated Delivery
D9: Play Space
H2: Affordable Housing
TCC4: Social Infrastructure

Precedent for:
- Social infrastructure at high density.
- Child play space and high density.

Key Project Features
- 0.45ha site, providing a 3,260m² school facility at ground and first floor levels, allowing for a doubling of pupil capacity in an area of increased demand for school places.
- A double height “play deck” has been provided at the second level for pupils and residents, and counts towards the sites open space provision, increasing it by over 100%.
- 101 new flats have been delivered at upper levels, at a site density of 224 dph.

Lessons for OPDC
- The project demonstrates how a new school facility can be incorporated with residential development on a single site at high density.
- Innovative design of the play deck at second level demonstrates an alternative method of delivering children’s play space at high density.
- The provision of the new school resulted in no affordable housing being provided, demonstrating a potential impact on affordable housing viability issues in such schemes.

University of Arts London and Granary Square

King's Cross, London
Completed 2014

Client	**University of the Arts London / Argent**
Architects	**Stanton Williams**

Project Overview
Conversion of a Victorian warehouse and goods yard at the centre of the King's Cross Regeneration Area into the new home of Central St Martins Art College and major new public square adjacent to an enhanced Regents Canal.

Precedent for:
- Catalyst uses
- Delivery of open space adjacent to canal
- Intergrating heritage

Relevant Local Plan Policies

SP8: Green Infrastructure and Open Space
SP9: Built Environment
D8: Heritage
EU1: Open Space
H2: Affordable Housing
TCC5: Culture and Art

Awards
2012 Public Building of the Year, Building Awards; 2012 World Architecture Festival Award, World's Best Higher Education and Research Building; 2012 RICS Award, Regeneration; Among others

Key Project Features
- The Granary building, a Victorian warehouse and goods yard, has been converted as the centre piece for a new campus for the world famous art college Central St Martins, which aims to create a vibrant world centre for innovation in art, design, fashion, communication and performing arts.
- A new campus building has been developed to the rear of the Granary Building, utilising industrial materials and creating robust spaces for the students, full of natural light.
- The new campus building is flanked by restored Victorian transit sheds which have been converted to commercial units.
- A new open space, Granary Square, has been formed to the front the restored Granary Building, fronting Regents Canal. The square is one of the largest of it's kind in London, and hosts a regular series of events, including markets, exhibitions and concerts.

Lessons for OPDC
- Project is a centre point of the wider King's Cross regeneration, and been a key factor in establishing King's Cross as a cultural and creative hub.
- The dynamic of the University, new public square and enhanced canal area has resulted in a vibrant and well used public space.

Fulham Pools

Fulham, London
Completed 2012

Client	**LB of Hammersmith and Fulham**
Operator	**Virgin Active**

Project Overview
Sports and leisure complex which co-locates public and private fitness and leisure facilities in a single building.

Precedent for:
- Co-location of public and private community facilities

Key Project Features
- The centre has a public swimming pool and fitness suite, and a separate private health club, with shared entrance.
- The public facility includes one main 8 lane gala swimming pool, a children's teaching swimming pool, and a public gym suite.
- The private "health club" leisure facility includes an additional 25m pool, children pool, gymnasium and gym floor, as well as sauna, steam room and spa services.
- Virgin Active have been retained by the Borough to operate and manage the entire facility, both public and private.
- The centre includes a multi-activity, multi-age "Fun Club" for children with a mixture of drop-in sessions, courses and swimming lessons.

Relevant Local Plan Policies

SP3: Improving Health and Reducing Health Inequalities
SP10: Integrated Delivery
TCC5: Sports and Leisure

Lessons for OPDC
- The Fulham Pools project demonstrates how the delivery of public leisure facilities can be supported by co-locating with private uses in a single scheme.
- The combined management of the public and private facilities by a single operator has resulted in the more efficient management of the facility.

The Engine Room

Tottenham Hale, London
Completed 2016

Client	**London Diocesan Fund**
Architects	**Gensler**

Project Overview
The Engine Room is a new multi use community facility, delivered as part of the Hale Village development in Tottenham Hale and managed and part funded by the London Diocesan Fund (LDF).

Relevant Local Plan Policies

SP3: Thriving Communities
SP10: Integrated Delivery
TCC4: Social Infrastructure
DI1: Balancing Priorities and Securing Infrastructure

Precedent for:
- Community uses at high density
- Community delivered social infrastructure

Key Project Features
- Located in an area which was highly impacted by the 2011 London riots, the Centre's vision is to become a catalyst for community building in the heart of Hale Village by running a regular series of events and workshops to bring the community together.
- In addition to two hireable community halls, the centre also includes a 24-space nursery, a community café, and a learning workshop.
- The core structure has been provided on a peppercorn rent by the developer, while the LDF have been responsible for financing and managing internal fit out and external elevations.

Lessons for OPDC
- The delivery of this community facility has been driven by community organisations, as opposed to being provided directly by developers as part of the development. This has resulted in a strong sense of ownership and buy in from the local community.
- The co-location of multiple community uses in one location, with residential uses above, demonstrates how social infrastructure can be effectively delivered at high densities.

Westminster Academy

Westminster, London
Completed 2007

Client	**Westminster Academy**
Architects	**AHMM**

Project Overview
Award winning secondary school building and complex which accommodates over a 1,000 students, situated on a constrained site in Westminster.

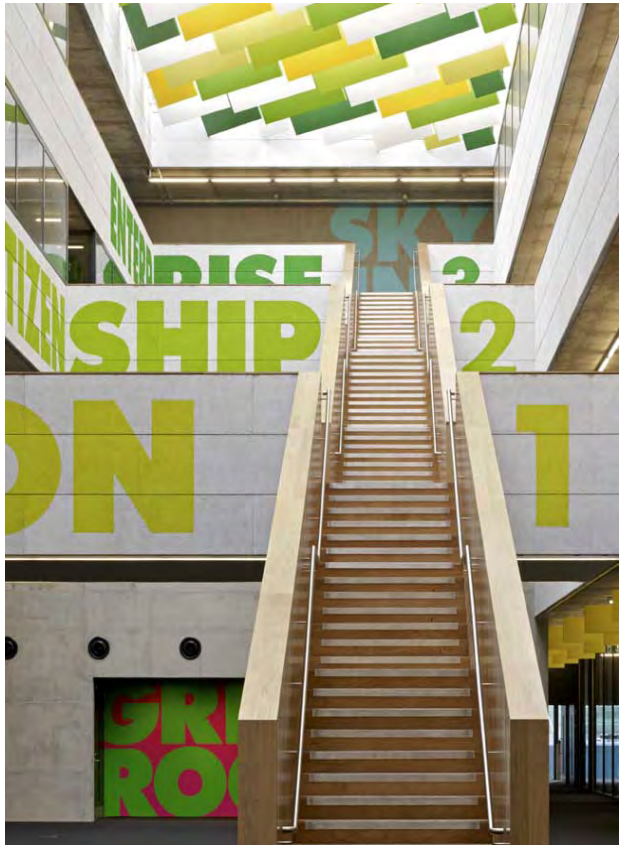
Relevant Local Plan Policies

SP3: Thriving Communities
SP10: Integrated Delivery
D4: Well Designed Buildings
TCC4: Social Infrastructure

Awards
AIA Award for Architecture 2010; Building Magazine: Public Building Project of the Year 2009; Civic Trust Award 2009; Among others

Precedent for:
- High quality school design
- Responding to site constraints

Lessons for OPDC
- The use of school facilities for community uses outside of school hours demonstrates an efficient use of space and resources.
- The approach to the Westway Flyover demonstrates how social infrastructure in Old Oak can work alongside new and existing rail/road infrastructure.



Key Project Features
- Set in a brutalist post war housing area, the school has been designed as a simple rectangular form, with a striking facade treatment formed of a series of green and yellow terracotta tiles.
- Internally, the building has been designed to stimulate learning, while spaces have been formed to encourage the exhibition and display of school work. Space Syntax was used to predict the flow of people around the school, with wide corridors and a large central staircase forming the main circulation for the school. The design also aimed to stimulate passive surveillance and connectivity to increase safety and reduce the risk of bullying.
- The building has been designed to mitigate the impacts of the neighbouring westway motorway, with the entire building sealed to reduce the impact of noise pollution of learning.
- The site area surrounding the school is made up of a large terraced space with new tree planting and green spaces, while the space underneath the westway flyover has been used to provide 7 sports pitches. A separate sports building has been provided on the site, with locker room facilities on the ground floor and a dance studio and sports hall located at first floor level.
- The school building provides a wider role for the surrounding community, with facilities available to community groups for their use outside of school hours.

Ideas Store

Whitechapal, London
Completed 2005

Client	**LB of Tower Hamlets**
Architects	**Adjaye Associates**

Project Overview
The Whitechapal Idea Store is the flagship project in a series of idea store schemes across Tower Hamlets, a contemporary take on the community centre, housing library and continuing education services.

Key Project Features
- Glazed “box” shape design, with coloured glazing inspired by the tents of surrounding street markets.
- The building provides a range of services for particular groups including a community library, group study spaces, open learning provision, exhibition and display areas, sound and image processing facilities, audiovisual/ multimedia areas, health facilities and dance studios.
- The design has placed a particular emphasis on connectivity with the surrounding area, which is dominated by open air markets.

Relevant Local Plan Policies

SP3: Thriving Communities
SP10: Integrated Delivery
TCC4: Social Infrastructure
DI1: Balancing Priorities and Securing Infrastructure

Precedent for:
- Contemporary community centre.
- Use of materials.

Lessons for OPDC
- Innovative and successful approach to rethinking the traditional community centre/ library in an area with a similar socio-economic profile to parts of the OPDC region.

Transport Infrastructure

Rotterdam Centraal Station

Rotterdam, Netherlands
Completed 2014

Client	**Gemeente Rotterdam andProRail**
Design Team	**Benthem Crouwel Architects, MVSA Architects, West 8**
Floor Area	**46,000 sqm**

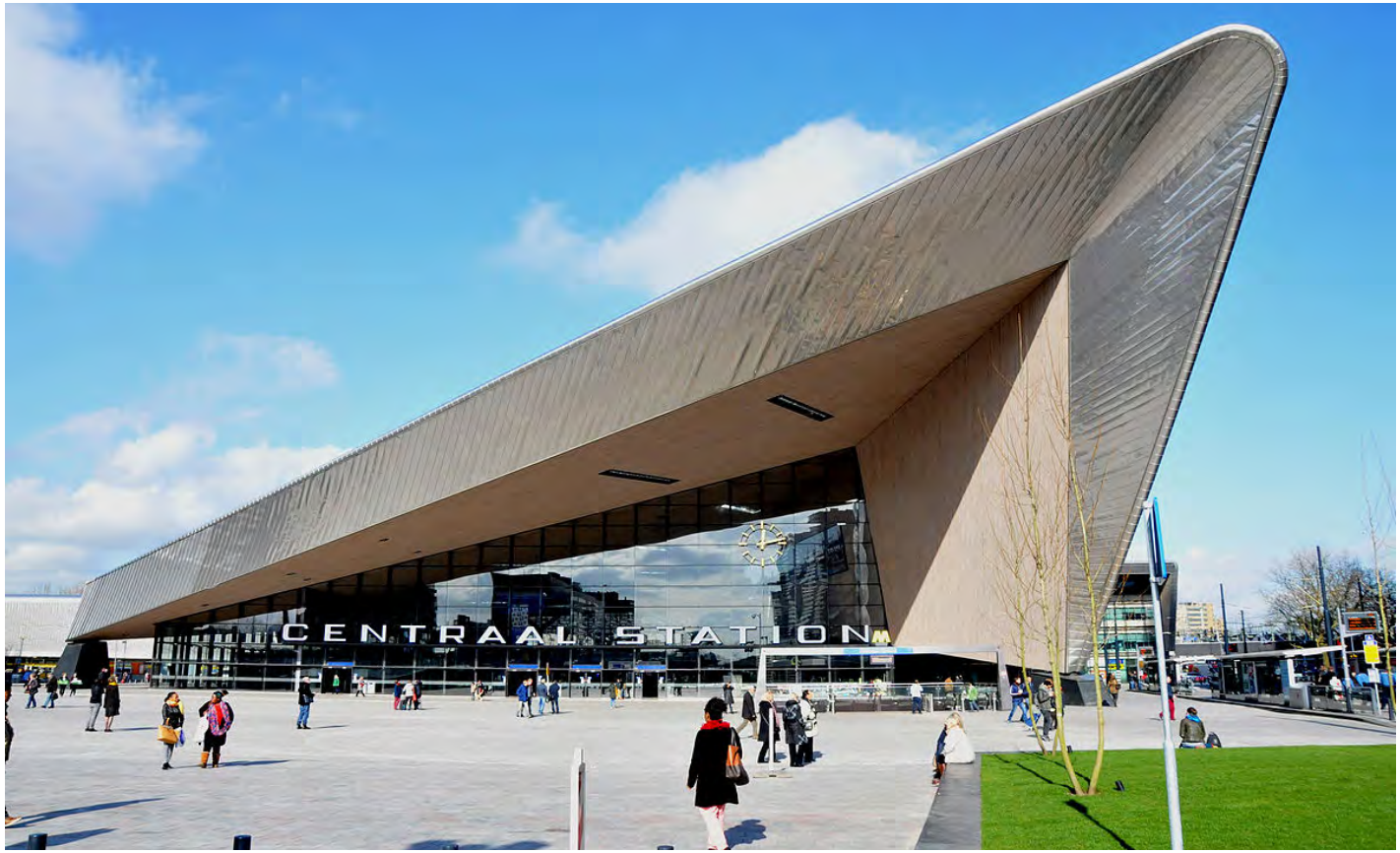
Project Overview
Redevelopment of one of the largest and most important transport hubs in the Netherlands, catering for over 300,000 passengers per day on international, national and metro services.

Relevant Local Plan Policies

SP1: City in the West
SP6: Places and Destinations
SP7: Connecting People and Places
D4: Well Designed Buildings
EU1: Open Space
EU10: Energy Systems
T5: Rail

Precedent for:
- Landmark station design
- Station squares
- High quality materials

Awards
BNA Best Building of 2015;
International Brunel Award for outstanding railway architecture design; among others.



Project Details

- Rotterdam Centraal Station is a major European transport hub. It is the first High Speed Train (HST) stop in the Netherlands when travelling from the south, and only 20 minutes from Schipol Airport. Connecting HST, national rail, and local metro services, the station was redeveloped prior to 2014 in order to cater for a major projected increase in passenger numbers, expected to reach 320,000 daily passengers by 2025.
- The main entrance, formed of a large stainless steel clad peaked roof, marks the station as a Gateway from the City Centre. The elevation fronts onto a large new public square, which has been created by locating car and bicycle parking underground beneath the square, with spaces for 750 cars and 5,200 bicycles.
- Internally, the design has focused on functionality and maintaining a high quality and pleasant environment for passengers. Wood cladding and natural stone have been used to create a warm and welcoming ambience. A glass roof covering the tracks flood the platforms with natural light, while light reaches the lower level platforms through large voids which contain staircases and escalators. The routing through the station seeks to ensure travellers have a direct view of trains, with lighting used to reinforce movement routes.
- The northern elevation is more minimalist in design and lower scale, reflecting the lower density residential development on that side of the station, and lower levels of usage for the northern entrance.
- The station roof contains 10,000 sqm of solar cells, making it one of the largest rooftop solar projects in Europe. The solar cells have been positioned in areas receiving highest levels of sunlight, taking into account current and planned tall buildings on neighbouring sites.

Lessons for OPDC

- The station design has demonstrated how high quality, landmark station design may be achieved while ensuring that functionality and user based approach remains central to the design process.
- The difference in approach to the higher density southern elevation and lower density northern elevation demonstrates how similar differences in environment between Old Oak South and Wormwood Scrubs may be reflected in the design of Old Oak Common Station.

Utrecht Centraal Station

Utrecht, Netherlands
Completed 2016

Client	**ProRail, Utrecht**
Architects	**Benthem Crouwel Architects**
Floorspace	**25,000 sqm**

Project Overview
Redevelopment of existing station into one of the Netherlands primary transport hubs, trebling the stations previous capacity allowing it to serve over 100 million passengers annually.

Relevant Local Plan Policies

SP1: Catalyst for Growth
SP6: Connecting People and Places
SP10: Integrated Delivery
T2: Walking
T5: Rail
TCC1: Location for Town Centre Uses

Precedent for:
- Station design
- Public realm at station areas
- Wayfinding
- Bicycle parking

Key Project Features

- The station has been designed to cater for an expected increase in passenger numbers to 100 million per year. It is the penultimate, and largest, station redevelopment of series of six station upgrades on the Dutch rail network. In addition to the train station itself which contains 8 tracks, the bus station and tram station interchanges are both located within the same station structure.
- The station has a distinctively designed undulating roof form, which has been strategically designed to identify access points and separate spaces within the station. The roof swells in height at the areas of densest use within station, creating an appropriate sense of space for different sub areas and uses.
- Two new city squares have been created at both main entrances, while previous sites adjacent to these spaces are being redeveloped to create vibrant new urban quarters, including the Stadskantoor Gemeente Utrecht.
- A “station promenade” operates as a new public street across the station linking the previously disconnected sides of the rail lines. Large amounts of glazing along the route have been used to frame views along the rail tracks and towards the City, while retail uses and market areas contribute towards the vibrancy of an urban street.
- One of the new City squares contains the largest bicycle parking facility in the world, where a storage area located underneath a large access stairs provides space for 12,500 bicycles.

Lessons for OPDC

- The station has been designed as piece of public realm rather than an enclosed building, and this has had a major positive impact on the dynamics of the surrounding areas. This demonstrates the positive impact a similar approach at Old Oak Common Station could have in providing public north-south public corridors.
- Innovative bicycle parking facilities demonstrate how similar level changes likely at Old Oak Common Station could be utilised.

Liege-Guillemins Railway Station

Liege, Belgium
Completed 2009

Client	**Euro Liege TGV SA**
Architects	**Santiago Calatrava**

Project Overview
Distinctive Santiago Calatrava designed railway station in the Belgian city of Liege, built as a curved dome, accommodating domestic and international high speed rail services.

Relevant Local Plan Policies

SP1: Catalyst for Growth
SP6: Connecting People and Places
SP9: Built Environment
D1: Securing High Quality Design
T2: Walking
T5: Rail
TCC8: Catalyst Uses

Precedent for:
- Landmark railway station design.
- New station as a catalyst for regeneration.

Awards
ESCN European Award for Excellence in Concrete, 2006.

Key Project Features
- The building is formed of a major vaulted structure, constructed of glass and steel, with canopies exceeding 145 meters high.
- The design concept for the station was based on transparency and the need to improve connectivity with the surrounding urban area.
- The design avoids the use of external façades in the traditional sense, with the major roof structure acting as the buildings only exterior. This allows the station to act as an open passageway linking two city districts previously divided by the Railway.
- The Station accommodates five platforms serving Belgium's high speed rail network, and was constructed using bridge construction techniques, avoiding disruption to operating rail services.
- Major public realm enhancements have been undertaken to the Place de la Gare transforming it into a valuable public open space and entry to the new station.

Lessons for OPDC
- The landmark station has helped establish Liege as a European destination, and acted as a catalyst for urban regeneration.
- The "open façade" concept is an example of how Old Oak South could be connected with Wormwood Scrubs.
- Some practical user concerns have been raised since the station opening, including lack of seating, and the internal amenity of the building.

Shoreditch High Street Station and Box Park

Shoreditch, London
Completed 2010 to 2012

Client	**TfL (Station)** **Roger Wade (Box Park**
Architect	**JSA Architecture (Station)** **Waugh Thisleton (Box Park)**
Commercial	**2,600 sqm (approx)**

Project Overview
Shoreditch High Street Station is a London Overground Station located at Bishopsgate Goods Yard, a large site in Shoreditch awaiting future largescale development.

Relevant Local Plan Policies

SP6: Places and Destinations
SP7: Connecting People and Places
EU7: Circular and Sharing Economy
T5: Rail
TCC9: Meanwhile Uses

Precedent for:
- Enabling over station development
- Meanwhile uses
- Principles of the circular economy

Project Details
- Shoreditch Highstreet Station was opened in 2010, forming part of the reopened East London Line. The line and platforms are encased within a 300m long concrete box which will allow uninterrupted operation of rail services as part construction of future overhead development.
- A publicly accessible concourse has been provided at street level, and is designed to form part of a wider public realm and connectivity strategy for the future development of the Bishopsgate Goods Yard.
- Box Park, a temporary retail development of recycled shipping containers, is situated on the parcel of land between the station and Bethnal Green Road. It provides spaces for 40 retail units, cafés, restaurants and galleries. The structure is designed so that may be disassembled and reassembled on a new site.

Lessons for OPDC
- The widely recognised success of Box Park demonstrates the role that good quality meanwhile uses can play in establishing new Town Centre destinations in Old Oak, particularly at Old Oak Common Station and other new stations.
- The design approach to the station demonstrates how new stations in Old Oak may be future proofed to allow for future over station development.

Environmental and Utilities Infrastructure

Sonder Boulevard

Copenhagen, Denmark
Completed 2007

Client	**City of Copenhagen**
Designers	**SLA**

Project Overview
A broad central reserve of the Sonder Boulevard in central Copenhagen was transformed into a linear park forming part of a wider SuDs strategy with a range of facilities for sports and play, combined with shops and cafés.

Relevant Local Plan Policies

SP8: Green Infrastructure and Open Space
SP10: Integrated Delivery
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU3: Water
T1: Roads and Streets

Precedent for:
- Healthy streets
- Incorporating SuDS into the public realm

Lessons for OPDC
- Major emphasis was placed on engaging with the local community from an early stage, and this has played a key role in the new street being one of the best used public spaces in the City.

Key Project Features
- The width of the median strip has been expanded to 15-17 metres at the expense of vehicular lanes, allowing for a new linear green space.
- Trees, paving, and grass have been used to create a strip park with perennial gardens, a playground for toddlers, a fenced ball field with artificial turf, and an asphalted bicycle motocross (BMX) track.
- Instead of planting trees in long, straight lines, they have been grouped to create different kinds of small spaces along the boulevard.
- The grassed central channel forms part of a wider SuDS network, and is designed to manage the storage, treatment, and conveyance of storm water in extreme rainfall events.
- Traffic has been slowed down with speed bumps and the boulevard is now closed to traffic on Enghavevej.

Madrid Rio

Madrid, Spain

Completed 2012

Client	**MRIO arquitectos**
Lead Architect	**Municipality of Madrid**

Project Overview

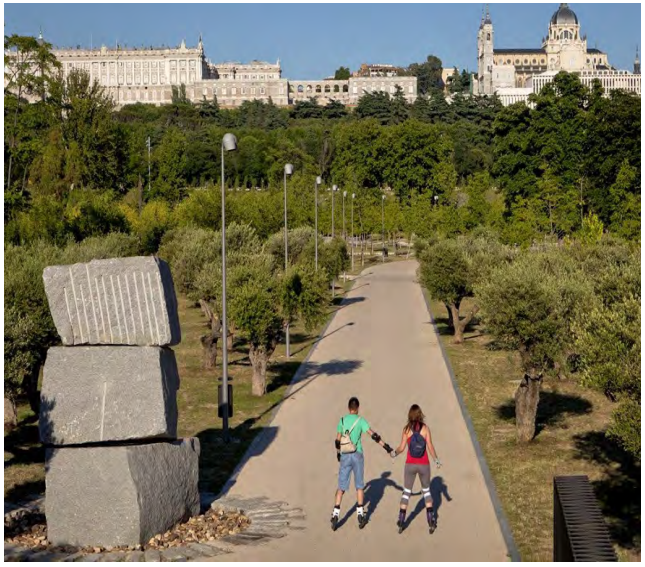
Madrid Rio is a major series of new green areas of 649 ha which has been created along a 6 kilometre stretch of the River Mansanares, on land formerly occupied by a now tunnelled motorway. The parkland is divided into six districts with numerous environmental, sporting, leisure and cultural facilities.

Relevant Local Plan Policies

SP3: Improving Health and Reducing Health Inequalities
SP8: Green Infrastructure and Open Space
SP10: Integrated Delivery
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU3: Water
T1: Roads and Streets
TCC5: Culture and Art
TCC6: Sport and Leisure

Precedent for:

- Interconnected series of green spaces
- Canal crossings
- Pedestrian and cycle routes
- Children's play spaces



Awards

Asprima-Sima Award for best urban development plan or urban renewal 2012 (Spain), COAM Awards to the Work of Architects 2012 (Spain), FAD Award in City and Landscape 2012 (Spain), Biennial Prize for Urban Project - XIII International Biennale of Architecture in Buenos Aires 2011 (Argentina), Finalist Dutch Design Awards 2011 (NL), Golden Swing Award 2010 (Spain).

Key Project Features

- Madrid Rio is formed of a series of separate “spaces” each serving a separate function and purpose.
- Salon de Pinos is a new linear green space, which links the existing new spaces delivered through the project with existing areas.
- Avenida de Portugal provides a new garden space for surrounding residents to grow their own food and plants;
- Huerta de la Partita, on the site of an Old Royal Palace, is the location of a new orchard.
- Arganzuela Park in a green space dominated by water, set upon the River Manzanares and including a series of streams and ponds.
- Puentes Cascara is formed of a series of landmark bridges, forming a concrete dome over the river;
- The entire project has delivered a new cycle and pedestrian network with 17 new footbridges, 25,000 newly planted trees, and 17 new playgrounds.

Lessons for OPDC

- Madrid Rio provides a number of precedents for potential green spaces along Grand Union Canal and enhancement of the Wormwood Scrubs.
- The use of space previously occupied by a major highway demonstrates the role space above transport infrastructure in Old Oak could be utilised.
- Art and cultural uses have been a key aspect in establishing the success of the overall park.

Tumbling Park Playground

Queen Elizabeth Olympic Park, London
Completed 2013

Client	**London Legacy Development Corporation**
Designers	**Land Use Consultants**

Project Overview
Children's play space in Queen Elizabeth II Park which aims to deliver a series of stimulating play experiences for multiple ages in an inclusive, high quality ecological landscape.

Relevant Local Plan Policies

SP3: Improving Health and Reducing Health Inequalities
SP8: Green Infrastructure and Open Space
D9: Play Space
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU7: Circular and Sharing Economy
TCC6: Sport and Leisure

Precedent for:
- Play spaces for all ages
- Integration of play space and natural area
- Circular economy

Awards
Finalist - European Prize for Urban Public Space 2016.

Key Project Features
- The design of the new play space has been created around a strong concept of ecological processes, set on the creation of interactive natural areas, the river and linked to the new Timber Lodge café and community hub.
- A series of bespoke play spaces and potential event opportunities have been provided. The play facilities range from den-building, sand and water play, to adventurous and challenging playing in the Scots Pine forest.
- The space contains a series of character areas, which tell plant life-cycle stories and have distinct soft and hard material palettes to enhance the sensory and experiential qualities of these spaces.
- The project placed a strong emphasis on sustainability, achieving a BREEAM excellent rating. Spoil from other Olympic Park developments was used to create landforms, while construction waste such as tumbled concrete and timber was used to create new structures.

Lessons for OPDC
- This project is a good example of challenging play for multiple age groups and integration of natural features and biodiversity into play space.
- The re-use of construction material highlights the role open space can play in embracing the principles of the circular economy.

Tassinge Square

Copenhagen, Denmark
Completed 2017

Client	**Københavns Kommune**
Designers	**GHB Landscape Architects**

Project Overview
Taasinge Square is a retrofit of an existing green space at the centre of Copenhagen´s first climate resilient neighbourhood. Located in a densely populated inner city district, it is designed to protect the community from extreme rain fall events following severely damaging floodings in recent years.

Relevant Local Plan Policies

SP8: Green Infrastructure and Open Space
SP10: Integrated Delivery
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU3: Water
TCC5: Culture and Art

Precedent for:
- Climate change resilience
- Public open space at high density

Awards
Finalist - European Prize for Urban Public Space 2016

Key Project Features
- Innovative Sustainable Urban Drainage System (SuDS) utilising a combination of underground water tanks, terrain-based waterbeds and permeable surfaces.
- Square is furnished with illustrative sculptures which are designed for interaction and play, as well as assisting in rain water collection as part of the overall SuDS scheme.
- Planting and species have been incorporated to be adaptable and thrive following heavy rainfall events.

Lessons for OPDC
- Creation of high quality, publicly accessible open space incorporating innovative SuDS techniques proven to work in extreme rainfall events.

Mile End Floating Market

Mile End, London
2012

Project Lead	**Canal and River Trust**

Project Overview
A temporary floating market on the Regents Canal during the 2012 Olympics, with over 20 boats selling art, crafts, food and other goods.

Relevant Local Plan Policies

SP4: Thriving Communities
SP6: Places and Destinations
EU3: Water
E3: Supporting Small Businesses and Start Ups
TCC5: Culture and Art
TCC9: Meanwhile Uses

Project Details
- The market took place along a 600 meter stretch of the Regents Canal in Mile End, an area close to the Olympic park.
- In additional to market sellers, free entertainment was also provided adding to the atmosphere of the area.
- The project was initiated by the Canal River Trust using internal funds, and returned an overall profit.
- The provision of water was remedied by negotiation between IWA volunteers and Queen Mary University (on the far side of the canal) to allow use of their private water supply for the four week period.

Precedent for:
- Canal uses
- Meanwhile uses

Lessons for OPDC
- Such events could be nomadic rather than temporary, similar to land based markets, and potential exists to work with the CRT and others to manage a regular series of events.
- Installation of facilities for boaters, such as water connections and the provision of a regular boat service are crucial aspects of such initiatives.

Chicago Riverwalk

Chicago, USA
2009 to 2016

Client	**Chicago Department of Transportation**
Architects	**Ross Barney Architects**

Project Overview
Programme of improvements carried out over the last decade along the main branch of the Chicago river running through downtown, transforming the riverfront into a vibrant corridor for commercial and leisure activities.

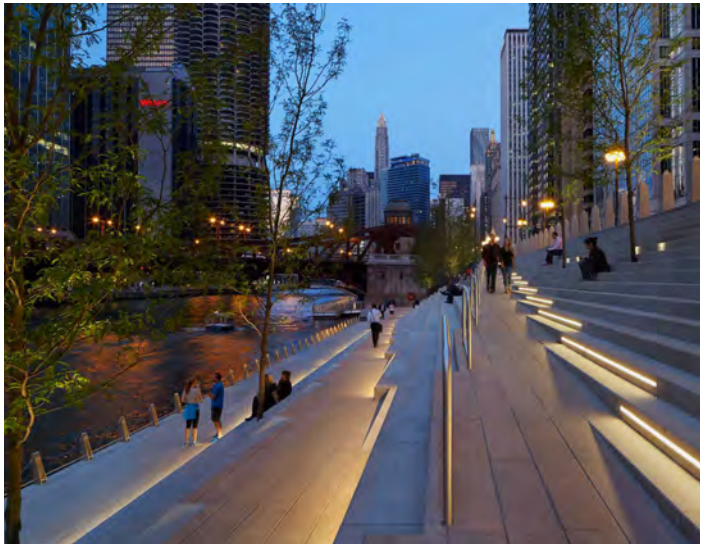
Relevant Local Plan Policies

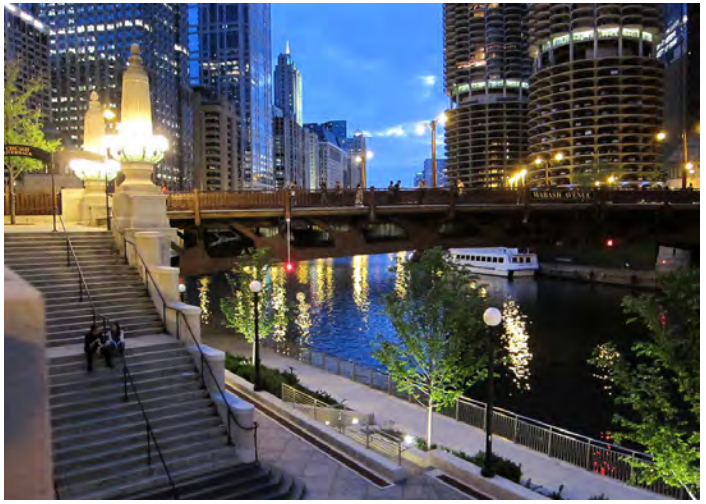
SP8: Green Infrastructure and Open Space
D2: Public Realm
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU3: Water
T2: Walking
TCC2: Vibrancy

Precedent for:
- Vibrant canalside environment
- Canal uses
- Canalside open spaces

Awards
International Downtown Association, Pinnacle Award – Public Space Category.

Key Project Features
- A new pedestrian link has been created at river level between the lake and river confluence, providing a new riverside walking and cycling link between the Downtown and Lakeshore areas.
- The design framework has created a series of distinct spaces along the waterfront, allowing a variety of uses and ensuring a mixture of day and night time activities.
- The drop from street to river level has been addressed through a mixture of stepped open spaces and river front retail and leisure units.
- A careful design approach has utilised previously difficult to navigate bridge junctions as key connection points between the street and the riverfront.





Lessons for OPDC
- The approach taken to the change in level from the street to the river provides an interesting precedent for the potential decking of Old Oak Common Station at the junction of Grand Union Canal.
- The project demonstrates how commercial and leisure activates can create vibrant clusters along the Grand Union Canal.

Promenada Velenje

Velenje, Slovenia
2009 to 2016

Client	**Velenje Municipality**
Architects	**Enota**

Project Overview
A new riverside public space, incorporating a bridge and amphitheatre, situated at a key axis in the centre of the small city of Velenje, which connects the City Centre with adjacent residential community.

Relevant Local Plan Policies

SP8: Green Infrastructure and Open Space
D1: Securing High Quality Design
D2: Public Realm
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU3: Water

Awards
European Public Space Awards.

Precedent for:
- Public open space adjacent to canal
- Use of materials

Key Project Features
- The existing bridge, which was much wider with harder boundaries, has been replaced with a realigned, more slender pedestrian bridge. This has allowed the reclamation of space for a distinctively designed new amphitheatre space to be created, which functions as a public space for recreation and events.
- The space has been designed to allow for the seasonal swelling of the River Paco, with harder landscaping used at lower levels and softer landscaping, which is more susceptible to flood damage, located at higher levels.
- The space has been designed to form part of a wider pedestrian network in the area connecting residences and key social facilities such as schools and health centres.

Lessons for OPDC
- While the River Paka is different in nature to the Grand Union Canal, this project is an example of exceptional design of a new open space centred on a river corridor.
- The new space has become a centre of leisure and cultural activity in the City of Velenje, and has played a key role in the City reconnecting with the previously disregarded river network.

Eastern Curve Gardens

Dalston Junction, London
2010 to Present

Organisers	**Exyzt**

Project Overview
Community garden and green space, created on a disused strip of railway line, containing natural areas, urban agriculture spaces, and spaces for events, workshops and gatherings.

Relevant Local Plan Policies

SP4: Places and Destinations
SP8: Green Infrastructure and Open Space
EU1: Open Space
EU2: Urban Greening and Biodiversity
EU7: Circular and Sharing Economy
TCC9: Meanwhile Uses

Precedent for:
- Community led and managed open spaces
- Meanwhile uses

Lessons for OPDC
- The community led approach to the management of the space has been key in creating a vibrant and well used space with a sense of community ownership.

Key Project Features
- The garden was built by Exyzt, an architectural collective who had been involved in a previous temporary use on the same site, Dalston Mill.
- A design of the garden has placed a strong emphasis on creating natural areas which support wildlife, including the use of hazel, hawthorn and birch alongside butterfly bushes, bracken and other planting.
- A series of raised plant beds for food growing are located throughout the garden. Visitors can pick ripened produce, and are invited to get involved in weekly gardening groups to help manage the space.
- The garden provides commercial and night time activities, with a Garden Cafe and Pizza Oven offering food a drink.
- Regular activities are provided in the Garden, including weekly music sessions, craft and herb sessions, and various activates for children.

Frontside Skate Gardens

Hackney Wick, London
2012 to Present

Client	**LLDC and LB of Tower Hamlets**
Designer	**Frontside**

Project Overview
Frontside Gardens is a temporary skatepark and events space on a site awaiting longer term development in Hackney Wick.

Relevant Local Plan Policies

SP3: Improving Health and Reducing Health Inequalities
SP8: Green Infrastructure and Open Space
D9: Play Space
EU1: Open Space
EU7: Circular and Sharing Economy
TCC6: Sport and Leisure

Precedent for:
- Meanwhile uses
- Play space for all ages

Lessons for OPDC
- The strong emphasis on community engagement and local partnerships was key in ensuring community buy in and the ultimate success of the project.
- Use of the facility can be limited by weather, and it is closed when volunteers are not available to manage.

Key Project Features
- The project has reactivated an unused space, using reclaimed and waste materials to become a flexible event space for families.
- The initial scheme developed the site into a skate park. However, there are plans to expand the facilities on-site, including a cafe and using the site to deliver regular music entertainment, an open air cinema, Christmas markets, and displaying work for local artists.
- The skate park facility can be used by BMX riders, scooter riders and skate boarders. Programmed sessions are provided, which include specific session times for each of the user groups as well as open sessions for all users to participate together.
- There are several ramps and other facilities for skateboarders, BMX riders and scooters to practice and learn new skills. There is also a “flexible area” used for a range of activities.
- The opening event held in September 2012 linked to the Hackney Wick Festival, which aimed to promote the facility among the local community.

Riverside Anaerobic Digestion Facility

Mitcham, London
Completed 2015

Operator	**Bio Collectors**

Project Overview
The Riverside Anaerobic Digestion (AD) Facility, the largest of its kind in London, processes food waste from around London, which would otherwise go to Landfill, and utilises bi-products to produce energy and agricultural products.

Relevant Local Plan Policies

SP2: Good Growth
SP10: Integrated Delivery
EU6: Waste
EU7: Circular and Sharing Economy
EU10: Energy Systems

Precedent for:
- Principles of the circular economy in waste management
- Energy from Waste (EfW)

Project Details
- The facility, which covers approximately 0.87 hectares, is designed to process up to 77,500 tonnes of waste per annum, including meat, fish, dairy products, fruit, vegetables and processed foods.
- Prior to processing in the AD facility itself, food waste is “pasteurised” and pre-processed at an adjacent thermophilic aerobic treatment facility, where plastic packaging is separated, washed and sent for reprocessing.
- The remaining food waste is delivered to the digester via a network of steel pipes. The digester process takes place at 35 degrees celsius for up to 60 days.
- The digestion process emits biogas, which is drawn from the digester and upgraded to biomethane and injected into the gas grid. Excess biogas is used to fuel a 1.2MW CHP engine and produce electricity and heat.
- The digestate bi-product which remains after processing is separated into solid and liquid fractions and used off-site for use in horticulture and agriculture as a highly valuable fertiliser.

Lessons for OPDC
- Anaerobic Digestion (AD) has the potential to play a significant role in waste management and energy supply in the OPDC area, and can help inbed the principles of the circular economy into the essential infrastructure of future development.
- Odours arising from the storage and movement of organic waste prior to processing will need to be carefully considered if proposed close to high density development at Old Oak.