CULTIVATING A SUCCESSFUL INNOVATION DISTRICT
Innovation districts concentrate economic, physical, and networking assets in a geographic area to form an innovation ecosystem that produces high quality jobs and economic growth. Cities such as London, New York, and Boston are actively cultivating such innovation districts to attract world class innovators and accelerate the realisation of their social and economic benefits.

Sydney already has a series of high performing innovation hubs spread across the city, including Macquarie Park, Pyrmont and Ultimo, Westmead, and Australian Technology Park (ATP).

Sydney can now use key urban transformation projects like The Bays Precinct, Central to Eveleigh, and Barangaroo to cultivate further, complementary activities.

While innovation districts can deliver significant social and economic benefits, success is not guaranteed. This report lays out 1) Why innovation and innovation districts matter to New South Wales (NSW); 2) The key success factors for an innovation district; and, 3) The strategies governments, private sector, and education and community partners can utilise to create the conditions for innovation districts to succeed.

This report has been produced by UrbanGrowth NSW, drawing on multiple sources including analysis by McKinsey & Company for UrbanGrowth NSW and Jobs for NSW, research by the Brookings Institution, meetings with leading innovation district leaders in the United States, and strategic planning work for The Bays Precinct by Woods Bagot and AECOM.

UrbanGrowth NSW is currently undertaking further economic analysis and planning work related to the site.
The Brookings Institution defines an innovation district as a concentration of economic, physical, and networking assets (see Figure 1 below). When these three assets combine with a supportive, risk-taking culture, they create an innovation ecosystem — “a synergistic relationship between people, firms, and place (the physical geography of a district) that facilitates idea generation and accelerates commercialisation.”

1. WHAT IS AN INNOVATION DISTRICT AND WHY DO THEY MATTER?

ECONOMIC ASSETS
- **Innovation drivers**: Research and education institutions, start-ups, and entrepreneurs
- **Innovation cultivators**: Companies, organisations, and groups that support growth, e.g. accelerators, tech transfer office, shared working spaces, training organisations
- **Neighbourhood amenities**: Local support services, e.g. GPs, local shops, cafés, bars, small hotels

PHYSICAL ASSETS
- **Public physical assets**: Parks, squares, and high energy streets designed to encourage collaboration and connectivity
- **Private physical assets**: Private buildings that stimulate innovation, e.g. offices, shared work, lab spaces
- **Connected enhancing assets**: Major infrastructure, e.g. transport, broadband

NETWORKING ASSETS
- **Strong tie networking assets**: Strengthen existing ties, e.g. workshops, training, conferences
- **Weak tie networking**: Build new or weak ties, e.g. networking breakfasts, town hall events, hack-a-thons, planned and curated open spaces
- **Spontaneous chance connections**

1 Brookings Institution, The Rise of Innovation Districts
Innovative activity matters because it catalyses job creation, income growth, and increased productivity. Innovation active companies are 60% more likely to report increased profitability from incomes and sales; four times as likely to report an increase in the number of export markets they were targeting; and two times as likely to increase productivity and employment.\(^2\)

Entrepreneurship is also critical as fast growing start-ups are pivotal to job creation. Between 2006–2011, “start-ups (firms two years old or younger) added 1.44 million full-time-equivalent (FTE) jobs to the Australian economy, whereas all other firms shed more than 400,000 FTE jobs... just 3.2% of all micro start-ups (less than 10 employees) accounted for 77% of gross job creation by surviving micro-start-ups.”\(^3\) Fast-growing small to medium enterprises (SMEs) also drive jobs growth in NSW. From 2008–2014, all new net jobs growth came from the 6% of businesses that scaled (see Figure 2).\(^4\)

Successful innovation districts work because they are magnets for innovators, entrepreneurs, and innovative industries. They drive above average jobs and economic growth by leveraging the benefits of a clustering of industries or knowledge intensive workers. The economic benefits from industry clustering effects include higher than average income, jobs, gross value add (GVA), and export growth. In the United Kingdom, for example, clusters contribute 20% of the UK’s GVA, but make up only 8% of businesses. In the US, innovation hubs have higher than average concentrations of high skill innovation workers and consistently outperform their state’s economy.

Cultivating these districts in NSW is critical because NSW will need to overcome a set of economic and social challenges to maintain the growth and standard of living of the past decades. These challenges include the impacts of an ageing population and declining population growth, fiercer global competition, and the risk of jobs being automated. Encouraging innovation and productivity is key.

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**FIGURE 2**

**All of net jobs growth comes from 6% of businesses that scale**

**Jobs thousands: Contribution to jobs growth (June 2008–June 2014), NSW**

Percent of total businesses\(^a\)- June 2008–June 2014

<table>
<thead>
<tr>
<th>Jobs in June 2008(^b)</th>
<th>Existing med-large businesses(^c)</th>
<th>Existing small businesses that stayed same size/shrunk/ceased</th>
<th>New businesses that didn’t grow</th>
<th>Existing small/medium businesses that grew</th>
<th>New small/medium businesses that grew</th>
<th>Jobs in June 2014(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,629</td>
<td>601</td>
<td>758</td>
<td>728</td>
<td>684</td>
<td>374</td>
<td>3,056</td>
</tr>
</tbody>
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\(^2\) Department of Industry, Innovation and Science, *Australian Innovation System Report 2015*

\(^3\) Department of Industry, Innovation and Science, *Australian Innovation System Report 2015*

\(^4\) Jobs for NSW: Calculations based on bespoke data provided by Australian Bureau of Statistics, based on Counts of Australian Businesses database, public sector employment from ABS Cat 6428.

\(a\) Businesses in each category as a percentage of total businesses in existence Jun 08 plus all new businesses to 2014

\(b\) Calculated total employment at June 2008 differs to actual by −250K and June 2014 differs to actual by −20K. This is likely due to shifts in average number of jobs in each employment bracket through time

\(c\) The losses by med-large companies may be overstated due to inability to reflect companies that start and end with 200+ employees. Assumptions used for average employees would not account for additional jobs for those companies
as the economies, businesses, and jobs that will flourish in this environment are more likely to build intellectual assets, run efficient operations, and engage in fast-growing markets.\(^5\)

NSW now has the opportunity to more actively cultivate its network of innovation districts. Sydney already has a burgeoning innovation ecosystem with a network of industry clusters, a strong education and research system, a highly skilled workforce, and a growing community of entrepreneurs and start-ups.

UrbanGrowth NSW’s vision is that The Bays innovation district will extend complementary industry hubs stretching from Eveleigh and Glebe through the CBD, Pyrmont and Ultimo (see Figure 3).\(^6\) This central innovation cluster includes hubs of related activities including digital and creative media in Surry Hills; media and digital innovation in Pyrmont and Ultimo; education around Ultimo and Glebe; ICT, data analytics, and media in ATP; and fintech in the city, which will soon be centred around Barangaroo.

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\(^5\) McKinsey Global Institute, Playing to Win: The New Global Competition for Corporate Profits

\(^6\) UrbanGrowth NSW
2. WHY DO INNOVATION DISTRICTS SUCCEED?

Research into innovation districts globally shows there are five core criteria for their success (see Figure 4). 7

Successful innovation districts achieve a baseline performance against each of the five success criteria and are distinctive against global peers in one to three of these criteria. They also execute effectively to create a long term, sustainable model, avoiding building too far or too fast. They have a clear phasing plan to ensure development will be supported by a sustainable economic absorption model and avoid offering short term regulatory incentives that confer no long term enduring advantage to the site.

While innovation districts can accelerate growth and opportunity, success is not guaranteed. A UK study found a significant proportion of planned innovation districts failed because they did not attract or retain sufficient talent, tenants, or investment to the site. New, planned sites are particularly vulnerable to failure because they have to build a concentration of activity and connectivity from scratch, whereas cultivation of an existing innovation district scaling off a base can exploit existing activity, talent, and infrastructure.

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**FIGURE 4**

The success and failure of innovation hubs is driven by five criteria

<table>
<thead>
<tr>
<th>Criteria for success</th>
<th>What is it?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Economic</strong></td>
<td>Diverse mix of economic activity that facilitates and benefits from the exchange of ideas, innovation, and talent</td>
</tr>
<tr>
<td><strong>2. Human capital</strong></td>
<td>The people and talent base needed to drive growth and innovation</td>
</tr>
<tr>
<td><strong>3. Physical and virtual infrastructure</strong></td>
<td>Physical infrastructure to facilitate affordable connectivity and movement of goods, services and labour</td>
</tr>
<tr>
<td><strong>4. Governance, regulatory and cultural environment</strong></td>
<td>Governance and leadership model, regulatory environment and culture that enables and rewards innovation</td>
</tr>
<tr>
<td><strong>5. Identity and brand</strong></td>
<td>Brand which attracts investment, talent, and demand</td>
</tr>
</tbody>
</table>

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7 Sources: How to Create a Successful District (McKinsey & Company), Centre for Cities Industrial Revolution Report, The Rise of Innovation Districts (Brookings Institution), Innovation Hubs US Engines of Competitiveness and Growth
3. TILTING THE ODDS IN FAVOUR OF SUCCESS

Globally, governments and their partners in cultivating innovation districts have adopted nine strategies to increase the odds of successfully meeting the five success criteria.

**STRATEGY ONE:**
Multiple, interconnected core tenants drive innovation, growth, and resilience

Successful innovation districts are more likely to have a mix of economic activity that creates above average economic benefits and attracts top talent for both job and intellectual opportunities. They establish broad networks which facilitate the exchange of ideas, innovation, and talent; provide adaptability and resilience through industry downturns and trends through diversification of sectors and subsectors; and, encourage a range of company sizes, company ages, and job levels, e.g., lower, middle, and higher income (see Figure 5).8

**STRATEGY TWO:**
Mixed use is key to attract and retain talented people

In order to attract and retain the best human talent, successful innovation districts are increasingly utilising a ‘work, live, play’ model, rather than focusing purely on commercial uses as in the traditional technology park model. Mixed use is key to encourage social connections that in turn encourage attractive assets (such as distinctive local shops and restaurants) which need a spread of traffic to be viable; to improve public safety; and to build economic resilience to industry and economic downturns and turnover of tenants at the site. An analysis of innovation hubs globally found that those with a mixed use component were twice as likely to continue to attract public and private investment as hubs with a purely commercial use (see Figure 6 overleaf).9

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**FIGURE 5**
Economic composition that drives growth and innovation tends to include multiple, interconnected, and co-reliant tenants

**Successful models tend to include:**
- multiple core tenants in the environment
- many points of reliance in the ecosystem
- higher interconnectivity between players.

**Unsuccessful models tend to include:**
- two or fewer core tenants in the environment
- single point of reliance to drive activity
- low interconnectivity between players.

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8 McKinsey & Company
9 McKinsey & Company
**STRATEGY THREE:**

**Locate with or near a major education institution**

Innovation districts need to attract the right composition of workers and residents capable of driving a knowledge based economy and innovation, and act as a drawcard for local and global talent. Education institutions (tertiary and secondary) are a key part of the ecosystem that innovation districts thrive in. They create a pipeline of skilled talent to work at the site; provide a supply of research talent for contract research, translational research, and commercialisation activity; and provide the opportunities and facilities for professional industry training. A virtuous circle can also be created where graduates who go on to be entrepreneurs or work in industry return to their alma mater educational institution with collaborative research opportunities. There are three ways that innovation districts or hubs achieve connectivity to university talent:

1. **Organic linkage:** The district is located in close proximity to an education institution and runs activities to build collaboration and connectivity between tenants, e.g. work-integrated learning programs, networking events

2. **Strategic linkage:** The district includes a shared space or attractive facility which a university and industry partner can both utilise

3. **Targeted partnership:** The district attracts a major education anchor tenant to the site to establish a satellite campus with faculty staff, students and dedicated facilities

**STRATEGY FOUR:**

**Invest in transport and ICT infrastructure suited to user needs**

Good transport connections are fundamental for innovation districts because innovators tend to be time poor, highly connected, and collaborative. Sites such as the Brooklyn Tech Triangle and Kendall Square leveraged the presence of an existing train line to grow activity at the site and attract people to the area. Both were also situated in areas close to residential activity that were accessible by walking or cycling. In London, major innovation districts, such as Here East, Silvertown, TechCity, and Canary Wharf will all be connected via the fast, high frequency, and high capacity Crossrail by 2018. ICT infrastructure is also key as innovation districts typically have data-intensive users that need to collaborate with partners in real-time.

The infrastructure provided needs to be designed specifically for user and site needs, e.g. transport and ICT infrastructure rollout should be calibrated to the development timeline for the innovation district and it should clearly show that it will accommodate industry needs, e.g. the premium placed on short travel times and connectivity into other clusters.

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**Figure 6**

**Innovation hubs**

% of cases where investment froze

<table>
<thead>
<tr>
<th></th>
<th>n=15</th>
<th>n=17</th>
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<tbody>
<tr>
<td>Mixed use</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Pure commercial</td>
<td>24%</td>
<td></td>
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</tbody>
</table>

**Innovation hubs with mixed use land are less likely to see investment dry up versus purely commercial districts**
Case study: Roosevelt Island, New York

BACKGROUND

The City of New York identified that increasing the pool of science, technology, engineering, and maths (STEM) graduates was critical to fuel growth in New York’s knowledge intensive economy as part of a major economic development review. This was challenging as the city lacked a high-performing tertiary institution specialising in these areas.

The Mayor determined to address this challenge by designating Roosevelt Island – situated between Manhattan and Queens in the East River – for use by a world class institution specialising in STEM. At the time, Roosevelt Island had some limited existing mixed use activity on the site, and tram and metro stops.

APPROACH

The key steps in the process to find an education anchor at Roosevelt Island were:

- Applied Sciences NYC launched a high-profile competition to world class institutions to propose a new or expanded applied sciences and engineering campus in New York City. They offered the winner city-owned land, a seed investment of city capital, and full support of the administration to remove roadblocks to the development.
- The initial request for expressions of interest in 2010 yielded 18 proposals from 27 outstanding institutions in six US states and eight countries.
- In October 2011, the city received seven qualifying responses from 17 world class institutions which sought a university, institution, or consortium to develop and operate a new or expanded campus in the city in exchange for access to city-owned land and up to $100m in city capital.
- Cornell University, in partnership with Technion-Israel Institute of Technology, won the competition and was issued a 99-year lease which allocated 12 acres of Roosevelt Island to the consortium.

IMPACT

The Cornell Tech consortium has committed to build a $2bn, 2,000,000ft² applied science and engineering campus on Roosevelt Island. Cornell Tech will double the number of engineering faculty and graduate students in NYC, improving NY’s ability to compete in the knowledge and information economy of the 21st century. Four new buildings, including a residence for students and faculty, will open in 2017 with the full project currently scheduled for completion in 2043.
Case study: South Lake Union, Seattle

BACKGROUND

South Lake Union is a life sciences hub near Downtown Seattle. The area was developed by property firm, Vulcan, with the backing of local authorities. It has a population of 40,000 employees and 5,000 residents (increasing).

APPROACH

Vulcan was the key initial catalyst for the development. From 1998, Vulcan began acquiring land around the South Lake area. In 2003, they unveiled a plan for a mixed use development, and construction began in 2006. A tipping point came in 2007 when Amazon became the key anchor tenant, leasing 1,600,000m² of space and bringing an additional 40,000+ Seattle employees plus complementary economic activity and businesses.

Government authorities were key facilitators of the site’s success as they:

• enabled a streetcar transport link connecting downtown Seattle with the South Lake area
• released an Urban Centre Neighbourhood Plan setting out the vision for the area
• provided flexible planning support (e.g., relaxed building height limits, mixed-use requirements) and allowed for a diverse housing stock and family-friendly neighbourhoods that matched the demographic profile of Seattle.

The site continues to develop public and private partnerships around areas of mutual interest between the city and community. There is a clear role division between the public and private actors:

• Vulcan is responsible for designing, financing, developing and maintaining the different properties developed upon their land under the different planning and zoning regulations that apply to the area. Development risks and revenues are taken by Vulcan.
• Local authorities are responsible for issuing regulations and maintaining public spaces which they own.

IMPACT

The site has seen the rapid revitalisation of South Lake Union, from a run-down, low-rise warehouse district to a hub of housing, transit and global technology and life science firms. It supports the growth of innovative industries in South Lake Union including biotechnology, information technology, environmental sciences and technology, and sustainable building. It is a vital and eclectic ‘live and work’ neighbourhood, with excellent transit-connectivity, ‘active transit’ through walking and cycling, a range of housing choices, diverse businesses, arts, a lively and inviting street life, and amenities to support and attract residents, employees and visitors.

Key achievements include:

• attracting a strong core of commercial and education tenants, including Amazon, Microsoft, Cole & Weber, Group Health, plus major life sciences research and global health institutions, e.g. University of Washington Medicine, SBRI, PATH and SightLife
• securing investment of over $3bn at the site
• attracting and retaining a high volume of individuals with university and advanced degrees in fields including life sciences and computer science.

Sources: Downtown Seattle website; South Lake Union website; Urban City Neighbourhood Plan; Tech Crunch, Startup Juncture investor report; 2012 American Community Survey 3-year estimates (Demographic and Housing estimates); press releases.
STRATEGY FIVE:
Establish an effective governance and leadership model

Innovation districts benefit from active cultivation by a group of committed players. This group must be committed to maximising the economic and social benefits, and culture and ecosystem at the site, in addition to trying to optimise the value of the sale proceeds. The group can include governments (see Boston Seaport case study); a private developer or key anchor tenants (see South Lake Union case study); and education and community organisations, e.g. a university, accelerator or industry body (see Roosevelt Island case study).

This group is integral to designing and executing the district’s vision and value proposition; ensuring a patient and sustainable investment model; and inspiring excitement and confidence amongst partners, tenants, stakeholders, and community.

The activities the group can consider include establishing the governance structure; appointing employees and champions with relevant industry and innovation expertise; designing a stakeholder engagement program; cultivating an attractive mix of tenants; coordinating and cultivating economic, physical, and networking assets; role-modeling the site’s ethos and values; and managing risks.

The governance and leadership model typically takes a partnership approach. As the site moves from the strategic planning to procurement and detailed design phases, the governance and leadership model needs to evolve to oversee different types of activities.

STRATEGY SIX:
Create a master plan for the site

A master plan sets out the vision and strategic commitments for the site; provides certainty on the pace and phasing of the development; and builds in resilience to change at each stage of the site’s development. It is a core document for aligning partners, tenants, and the community around a common vision and approach.

STRATEGY SEVEN:
Curate a connected ecosystem and culture

Innovation districts work because they facilitate a connected culture and innovation ecosystem (refer to Figure 1) that attracts great talent and enables collaboration and new idea generation. Successful innovation districts actively cultivate a collaborative culture and encourage connection between tenants. This can include:

• Appointing a champion/s to lead engagement: Successful sites often appoint industry leaders and champions to convene key stakeholders, cultivate an attractive mix of tenants, and lead an active program of engagement.
• Role-modelling a great culture: Great sites develop, cultivate, and role model the culture they want to encourage. This includes the design of the physical and built environment of the site; the expression of their vision and brand; communication with key stakeholders; and the use of innovative market mechanisms, digital technologies, and services.
• Cultivating engagement and connections: Successful sites actively facilitate engaging programs of activities that build weak and strong connections amongst tenants. This can include scheduling regular social, networking and capability building activities at the site, and providing facilities at the site that make it easy for tenants to connect.

STRATEGY EIGHT:
Incentivise attractive assets or tenants

Innovation districts can use procurement and development controls to bring attractive assets, innovators, or anchors to fast-track a desirable tenant or facility at the site. This can include incentivising ‘attractive’ mixed use assets; actively attracting key tenants or people that in turn become an attraction for later tenants; and committing to a clear, long term vision to provide certainty for tenants and investors. For example, Boston Seaport District used tax breaks to attract key anchors to get momentum early and Tech City UK has the license to endorse 200 ‘exceptional talent’ visas per year.

STRATEGY NINE:
Leverage unique features to create a distinctive brand

A distinctive brand or identity can rapidly build culture and attract talent and anchors to a site. An identity for an innovation district can evoke a common theme or value, rather than an industry. For example, Silvertown in the UK is themed around product innovation, bringing together iconic consumer brand companies from a range of industries.

IMPROVING THE ODDS

While adopting these nine strategies cannot guarantee success, global experience shows they improve the odds of a district building the concentration of activity and innovation that is essential to its success.
Case study: Innovation district, Boston Seaport

BACKGROUND

Boston Seaport is a former industrial area that has undergone an urban transformation to become an innovation district. The vision for the district was that it would be a place for people and firms that facilitates idea generation, accelerates commercialisation, creates jobs, and attracts investment.

APPROACH

The then Mayor of Boston, Tom Merino, was the instigator of the Boston Innovation District. He convened a network of leaders from the public, private, and civic sectors to design, deliver, market, and govern the district. The network was critical in activating the development and guiding the realisation of the vision. That vision was to create a district that holistically met the needs of independent entrepreneurs, established companies, and new ventures alike. The vision was largely cluster-agnostic, encouraging occupation of the site by different kinds of companies.

The Mayor worked directly with a team of ~10 individuals on the project, leveraging his reputation and relationships. Structured, cross-sector interactions with companies and organisations strengthened the community for the site and iterated the vision throughout the process.

The public entrepreneurial approach drove the impressive speed with which the innovation district vision was realised. The Mayor and his team brokered deals with corporate executives and real estate developers to encourage movement and the district gained significant traction early. The Mayor’s office kept development costs to a minimum and determined that the district would be developed in line with market forces once the strategic framework for the district was set.

IMPACT

The district created growth of >4,000 jobs in the first five years, with an estimated regional GDP contribution of $US10bn in 2012. More importantly, it generated excitement, connections, and sense of community amongst the innovators it brought together.

As Mayor Merino said in 2012, “We could have just thrown up some skyscrapers and high end condos. Instead, we insisted on building connections – in addition to new space. So now more than 100 new companies have brought 3,000 jobs to the waterfront – and more are on the way.”

Sources: Seaport Innovation District website, City of Boston Innovation District website; Brookings Institution publication, The Rise of Innovation Districts; US Census Bureau, 2009-2013 American Community Survey; press releases
Case study: Here East, London

BACKGROUND

Following the London Olympics, the London Legacy Development Corporation (LLDC) developed a concept plan to see the area and buildings surrounding the former Olympic Press and Broadcast Centre transformed into an innovation hub, now known as Here East.

APPROACH

The London Legacy Development Corporation commissioned a concept master plan for the site which set out a specific vision for its post-Olympics transformation. The LLDC also signed BT Sport as the first key anchor. The combination of a secured core anchor tenant and concept master plan for the site provided a clearer branding and investment proposition, which in turn proved effective in procuring iCity the master developer of Here East. Once designated master developer of the site, iCity revised the master plan to:

• set a vision that Here East would provide a district where ‘makers’ - innovative individuals and companies who push technology boundaries - can share expertise, learn from each other, and create the products of tomorrow
• define the economic identity of the site as focusing on business, technology, media, education, and data uses. This leveraged the existing advantages of the site – such as its incredibly fast data connections leftover from the media centre of the Olympics, and its connection to the originating ‘Olympics’ identity through media and sport uses – and East London’s reputation as the cultural hub of London
• commit to create exceptional transit infrastructure and connectivity for the site as a magnet for anchors and talent. This included a tube station a 10 minute walk away; proximity to Stratford station, a major transport hub, with direct access to 150 tube stations; 7 minutes to a central London railway terminus with access to international connections; and a commitment to a Crossrail stop, High Speed 1 and direct international links to mainline Europe
• take a “smart phasing” approach to the design and sequencing of lots for release via procurement to maximise value creation.

IMPACT

The site is on track to create a successful innovation district with a clear vision that will deliver strong economic benefits. Achievements include:

• signing tenants for 1,000,000ft² of commercial space, including BT Sport, University College London, Loughborough University, Infinity SDC data centre services, and Hackney Community College
• attracting commitments to invest more than £100m
• the site is forecast to create more than 7,500 jobs, including 5,300 on site and more than 2,200 in the local community, and to stimulate long term economic growth, contributing £450m to GDP and £340m to the local community.

Sources: Here East website, Laing O’Rourke website, Queen Elizabeth Olympic Park website; press releases
Cultivating a successful innovation district

WHITE BAY POWER STATION