Report to the Future Melbourne Committee

Agenda item 7.1

Post travel report by Councillor Rohan Leppert, Hamburg, Brussels and Barcelona, October 2017

6 February 2018

Presenter: Councillor Rohan Leppert

Purpose and background

1. To report to the Future Melbourne Committee on travel undertaken by Councillor Rohan Leppert as part of a City of Melbourne led delegation to Hamburg, Brussels and Barcelona to explore opportunities for exchange and collaboration.

2. The Council on 29 August 2017 approved participation by Councillor Leppert in a five person delegation comprising representatives of the Cities of Melbourne and Port Philip and the University of Melbourne.

Key issues

3. The delegation involved the following key components.

    3.1. Connecting with the City of Hamburg as part of the World Cities project of the European Union (EU) managed by the European Commission's Directorate-General for Regional and Urban Policy. Melbourne and Hamburg have been paired as part of the project which runs between 2017-18.

    3.2. Participating in the 15th European Week of Cities and Regions (EWCR) in Brussels.

    3.3. Exploring Barcelona's 22@ Innovation District.

4. Included as Attachment 2 is an overview of the key insights and opportunities identified during the visit and provides the following:

    4.1. An update on Melbourne's involvement in the EU's World Cities project and further potential partnership opportunities with the City of Hamburg.

    4.2. Access to best practice insights for Melbourne in relation to smart city and innovation districts.

5. The City of Melbourne was also represented by its Director City Operations and Chief Digital Officer/Manager Smart City Office.

Recommendation

6. That the Future Melbourne Committee notes the report by Councillor Rohan Leppert on travel undertaken as part of the City of Melbourne led delegation to Hamburg, Brussels and Barcelona in October 2017.

Attachments:

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Supporting Attachment

Finance

1. The cost associated with Councillor Leppert's participation in the delegation was jointly funded by Council and the European Union. The cost to Council amounted to $7198.15 which included partial costs associated with airfares, accommodation, sustenance and other incidentals.

Conflict of interest

2. No member of Council staff, or other person engaged under a contract, involved in advising on or preparing this report has declared a direct or indirect interest in relation to the matter of the report.

Relation to Council policy

3. The Manager Governance and Legal has confirmed that the travel costs accord with the requirements of the travel guidelines outlined in the Councillor Expenses and Resources Guidelines.

4. The objectives associated with the travel undertaken primarily align with initiatives contained under the following Goals:

    4.1. Goal 5 – A knowledge City.

    4.2. Goal 8 – A city planning for growth.

Environmental sustainability

5. The carbon emission resulting from air travel to attend the program will be offset with the purchase of credits.

Overview of key commitments, insights and opportunities

European Union (EU) World Cities Partnership with the City of Hamburg and 22@ Innovation District Barcelona, 8 - 13 October 2017

Overview

Purpose
1. To represent Melbourne in the European Union (EU)-funded World Cities Partnership project
2. To identify relevant 'best practice' insights for Melbourne in relation to smart city and innovation districts
3. To identify potential partnership opportunities between the Cities of Melbourne and Hamburg

Representatives
City of Melbourne
1. Councillor Rohan Leppert, Chair Arts, Culture and Heritage Portfolio; Deputy Chair Planning and Knowledge Portfolios
2. Martin Cutter, Director City Operations
3. Michelle Fitzgerald, Chief Digital Officer & Manager Smart City Office

Other
4. Claire Ferres Miles, General Manager Place Strategy & Development, City of Port Phillip
5. Professor Lars Coenen, City of Melbourne Chair of Resilient Cities, University of Melbourne

Program
The one week trip to Europe consisted of three parts:
1. EU World Cities partnership - visit to the City of Hamburg (Mon 9 - Tues 10 October)
2. EU World Cities partnership - presentation and participation in the European Commission Regions & Cities conference, Brussels (Wed 11 - Thu 12 October)
3. Barcelona 22@ Innovation District - meetings and tour (Fri 13 October)

1. EU World Cities partnership - visit to the City of Hamburg (Mon 9 - Tues 10 October)

Background

The EU World Cities is a project managed by the Directorate General for Regional and Urban Policy of the European Commission. The objective is to promote the exchange of experience and best practice between the EU and non-EU countries on the theme of territorial development including a focus on urban development, urban-rural partnerships and urban cross-border cooperation.

The World Cities project will run for two years over 2016-18 and now involves 16 city pairings. The City of Melbourne is participating in the World Cities Project in 2017-18 and has been paired with the City of Hamburg (officially the Free and Hanseatic City of Hamburg).

About City of Hamburg – http://www.hamburg.com/
- second largest city in Germany
- one of 16 German federal states, and one of three city-states
- population 1.8 million (5.3m greater metropolitan catchment)
- area 28,000 km2
- 400,000 commuters coming to the city every day to work
- almost 90 percent of the workforce is employed in services (not industrial – i.e. knowledge workforce)
- the port is the heart of Hamburg

Melbourne and Hamburg agreed in May 2017 to explore three main topics of mutual interest:

- **Urban data platform** – sharing technology and data solutions
- **Smart city urban / living lab** – sharing urban test beds with cultural heritage as a component / driver for smart city service developments
- **Governance** - finding innovation solutions for smart urban planning

Target outcomes from the collaboration:
- Exchange information about strategies, policies, tools
- Share best practice
- Explore opportunities for joint research / projects where there are common challenges or gaps

Phases

The program is funded by the EU and comprises three key phases:

1. Melbourne visit (May 2017): City of Hamburg representatives visited Melbourne. Shared insights on key smart city projects and defined the three areas of focus listed above.

2. Hamburg visit (October 2017): City of Melbourne representatives visited Hamburg. Shared further project insights and defined two key action areas to pursue as 'next steps' via knowledge exchange. Also participated in the EU Regions & Cities conference in Brussels as part of the broader EU World Cities program.

3. Melbourne visit (March 2018): City of Hamburg representatives will return to Melbourne to continue the relationship and appraise the agreed actions.

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Phase 2 - Exchange

Melbourne delegates met with the following Hamburg representatives:

- Thomas Jacob, Senate Chancellery, Head of International Projects
- Thomas Eichhorn, State Agency of Geoinformation & survey, Head of Division
- Hannah Peschel, European Policy, Senate of the Free and Hanseatic City of Hamburg
- Laura Frick, Senate Chancellery, Department of International Cooperation
- Dr. Nicole Schubbe, State Agency for Geo-information and Surveying
- Jens Bley, Director eCulture Lab, HafenCity University
- Roxana Jensen, Senior Consultant, International Project Management, Ramboll
- Pablo Gandara, Manager, World Cities EU

Martin Cutter, Director City Operations presenting an introduction to the City of Melbourne to representatives from the City of Hamburg at the Town Hall

Phase 2 - Insights

1. **Hafencity -** http://www.hafencity.com/en/overview/the-hafencity-project.html
   - Europe's largest inner-city urban development project (2.2km^2), located on the Elbe river island Grasbrook, a former Port of Hamburg area that will enlarge Hamburg's city centre by 40 percent
   - Formally established in 2008, and being revitalised with new hotels, shops, educational, office and residential areas and serviced by the newly constructed underground metro line
   - World class examples of flood protection technologies that are relevant for Fishermans Bend
   - Relevant role model development for Arden Macaulay, City North Innovation District, Fishermans Bend
   - HafenCity Masterplan: http://www.hafencity.com/en/concepts/the-foundation-of-hafencity-the-masterplan.html

HafenCity, Hamburg

2. **City of Hamburg Digital City Strategy**
   - Presenter: Matthias Wieckman
   - Approved in January 2015, and essentially operates as a project management office to oversee the implementation and coordination of a number of digital projects across the city
   - Projects focus on mobility, energy and environment, culture and living, education and science, digital administration, economy and include Hamburg's application to host the global Intelligent Transport Systems (ITS) World Congress in 2021, Smart Port, urban data, Hamburg open online university, digital administration, e-culture agenda
   - The public administration adopts a "digital first" approach with four key principles: 1. Act proactively, 2. Avoid multiple data input (i.e. collect citizen's data once and reuse), 3. Automate (e.g. Residential parking permits), 4. Communicate digitally
   - There is one central technology portal that allows citizens to access all layers of government services

3. **Smarticipate** - https://www.google.com.au/search?q=smarticipate&gws_rd=ssl
    - Presenter: Dr Nicole Schubbe
    - Motto: opening up the smart city
    - Aim: use Open Data to enable real time feedback from citizens in relation to key city problems
    - This seems to be a platform similar to Participate Melbourne, that takes the next step of utilising the city's data (via its Open Data Platform) as part of the engagement process
    - This is an EU project that is being trialled in three cities: Hamburg, Rome and London
    - Example project - Street Tree: use Open Data to find a site to plant a tree (Hamburg)

4. **Management of Networked IOT Wearables (MONICA)** very large scale demonstration of cultural societal Applications - http://www.monica-project.eu/
    - Presenter: Julie-Ann Shiraishi
    - MONICA is a large scale demonstration of multiple existing and new IOT technologies for smarter living that can be applied at urban, large scale, open air and sport events
    - Aim is to enhance security and visitor experience through wireless, connected technologies for sound and security
    - Pilot projects across the EU include Copenhagen for Friday rock concerts (sound regulations and sound monitoring); Bonn festivals; Hamburg funfair – scale of these events range from 20,000 visitors at a single event, up to 10 million across a series of events
    - Focus:
      o Real time display of sound levels for monitoring and control for the neighbours, visitors, artists, etc. eg a bracelet that shows different colours to indicate different sound zones
      o Security for private and public events through cameras, wearables and smartphone apps, E.g. Real time visualisation of crowd size and density, guidance of security staff to incidents; guiding visitors to a safe route out of a venue in the case of a security incident; Kinderfinder: wearable tech bracelets to detect lost children via GPS

5. **My SmartLife** - https://mysmartlife.eu/cities/hamburg/
    - Presenter: Jutta Wolff
    - Lighthouse project from EU Horizon 2020 which runs from 2016-21
    - Lead Cities are Nantes (France), Hamburg, Helsinki (Finland)
    - These are district based experiments to translate smart city strategies to implementation
    - 28 partners: municipalities, universities, large industries, SMEs
    - Focus areas: energy, mobility and ICT

6. **City ScienceLab** - https://translate.google.com.au/translate?hl=en&sl=de&u=https://www.hcu-hamburg.de/research/csl/&prev=search
    - Presenter: Jorg Rainer
    - Hafencity University in cooperation with MIT Media Lab
    - CityScopes - interactive city models where you can interact, plan for future cities to help with citizen engagement processes. Apply to key city problems e.g. Housing, mobility, energy etc.
    - Data cockpits - help the public get information out of the data

- Project example: Findingplaces.hamburg: citizen participation in finding locations for refugee housing (May-Sept 2016). 500-600 residents participated in moderated sessions to identify housing locations for refugees. Allowed residents to better understand the options and trade-offs. 3D model (lego) allowed an interactive experience, to help the residents understand the basis for decision-making and to debate the pro's and con's of different possible location for the housing. A lot of emotional discussions.

FindingPlaces.Hamburg presentation – community engagement and decisioning supported by a 3D mapping tool

7. **Urban Platform and Cockpits -**
http://urban.jrc.ec.europa.eu/?ind=popden&ru=fua&s=0&c=1&m=0&f=1&p=0&swLat=33.7243396617476&swLng=-49.130859375&neLat=61.01572481397616&neLng=70.927734375
   - Hamburg has 1.9 million people, and 10 million connected devices
   - The Urban Platform is comprised of three layers: 1. Knowledge system (represents the data that has been collected, e.g. Visualisation); 2. Assistance systems (urban data that supports actions that users do in the urban context e.g. Healthy bike navigation) 3. Decision systems (decision support and autonomous decision making e.g. Disaster mitigation, traffic control, automated building permits)
   - Platform users: citizens, enterprises, researchers/ academics, authorities
   - User cockpits: present in an easy format, visual, relevant data for the different users. eg citizen cockpit- public park monitor, route planning for cycling, co-designing cycling path routes, ship viewing monitor; business cockpit - location finder, job access portal, digital education, social monitor (eg. Education level, employment rate across different city wards)
   - Kit: the hardware and screen is commercially available for approx.. €20k, software developed in house but will make available via open source

8. **Smart Square project**
   - The Smart Square is located in a historic site in central Hamburg. It is an urban test bed with cultural heritage as a driver for smart city service developments, utilising digital cultural storytelling, digital signage and shop windows in combination with big data analytics.
   - Collect a lot of data eg. Surveys, social, mobile location data, motion tracking, observations, photos. Insights: usage, relevance, services.

9. **Ministry of Urban Development and Housing**
   - City model:
     o This is a physical version of the City of Melbourne's 3D Development Activity Model (3D DAM)
     o Handmade model, now shifting to 3D printing
     o Requires ongoing cleaning and maintenance from technical staff
     o Est 25% of the model has been taken away to be re-constructed
     o Colour coded – brown structures represent planned developments

- Civic participation and the planning process: land use planning is a national law. Participation and planning competition - this has been very successful. Start with a general public discussion about what is important about the place (eg. "Everyone needs to have open access to the water / river"); this information is used to inform a Planning competition. Jury is architects and planners as well as the general public. Transparent process end to end e.g. Mitte Altona- co developed the planning scheme / goals with the community. The developers were required to comply with this.
- Digital engagement with citizens – why? scalable, transparent, democratic, cost effective etc. Reach only 10% of the population through traditional engagement. Goal: every community participation project needs to have a digital engagement option. Use open source software for webpage.

City Model at Hamburg Ministry of Urban Development and Housing

10. **Energiebunker** - http://www.iba-hamburg.de/en/projects/energiebunker/projekt/energy-bunker.html
    - Former WWII air raid bunker which has been renovated and transformed in to an "Energy Bunker"
    - Utilises a combination of solar energy, biogas, wood chips, and waste heat from a nearby industrial plant to supply much of the Reiherstieg district with heat, while also feeding renewable power into the electricity grid.

Energiebunker. Image 1 from Energiebunker website. Images 2 to 5 taken on site.
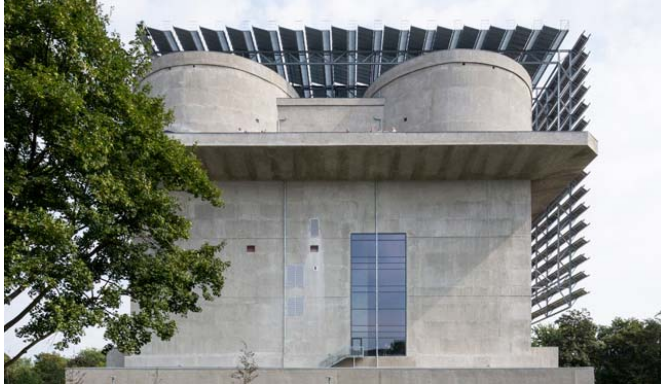
Phase 2 - Actions

Actions agreed between the Cities of Melbourne and Hamburg to commence in late 2017 and continue until phase 3 (Hamburg delegation visit to Melbourne) in March 2018:

Objectives: to continue knowledge exchange and collaboration between the Cities of Melbourne and Hamburg with a focus on two key action areas that bring together data, digital tools and community engagement to solve city problems:

1. **Community engagement via digital and data tools**: consider trialling selected, relevant tools from Hamburg such as My SmartLife, City ScienceLab, Urban Labs, Citizen Cockpits, Smart Square to address community priorities and enhance citizen participation in city planning and development, e.g. For Melbourne Innovation Districts, Arden-Macaulay district.

2. **IOT and Major Events: consider trialing MONICA** (Management of Networked IOT Wearable) at selected City of Melbourne events to address sound and security issues, e.g. New Years' Eve, Moomba.

This will occur via:

- **Staff and academic exchanges** to provide in-person learnings and coaching support

- **Knowledge sharing** via remote mechanisms, e.g. Skype for Business, document exchange, GIThub

Other opportunities for knowledge exchange:

3. **Construction site data** – the City of Hamburg publishes this data in real-time. It is collected via sensors that connect via a Lorawan network, and are placed on street signs that are erected at construction sites by the construction companies/ developers.

Hamburg delegation to visit Melbourne in March 2018.

Hamburg and Melbourne to explore funding sources for future collaboration projects.

2. EU World Cities partnership - presentation and participation in the European Commission Regions & Cities conference, Brussels (Wed 11 - Thu 12 October)

1. **World Cities co-presentation by the Cities of Melbourne and Hamburg (Wed 11 October, 2:30-5:30pm)**
   Presented by Martin Cutter (Director, City Operations, City of Melbourne) and Thomas Jacob (International Relations, City of Hamburg)

2. **Insights from other city presentations at the conference**

   - **City of Milan, Italy**
     Many relevant projects to CoM focusing on smart cities, bike share, car share, sharing economy, cultural hub

   - **City of Jun, Spain**
     Focus on social media as a citizen-government engagement tool to enable open government and "horizontal democracy", as part of a project with MIT Media Labs: https://www.media.mit.edu/projects/responsive-communities-pilot-project-in-jun-spain/overview/

   - **Paris, France**
     "City Telling" a set of services and digital devices (toolkit) for city story telling with public authorities, cultural institutions and urban stakeholders http://www.citytelling.fr/en/

3. Barcelona 22@ Innovation District - meetings and tour (Fri 13 October)

1. **Institute for Advanced Architecture Catalonia (IAAC) - https://iaac.net/**
   - Hosts: Silvia Brandi, General Manager of IAAC and Alex Mademochoritis, Coordinator of the Masters in City and Technology at IAAC
   - IAAC is a centre for research, education, production and outreach, with the mission of envisioning the future habitat of our society and building it in the present
   - **Fab Lab Barcelona**: the first and most advanced digital production laboratory in EU, and the Green Fab Lab, the first digital fabrication laboratory oriented to self-sufficiency (circular economy principles).
   - **3D printing**: using orange peels, used coffee grounds
   - **Events space**: for presentations and panel events that are open to the public, ranging from teenagers through to retirees
   - **Smart Citizen Toolkit**: community engagement tool to help solve city problems comprising an engagement approach, IOT sensors and open data platform, e.g. train the community to use the IOT sensors to measure noise
   - IAAC may be profiling Melbourne as the main case study for one of its Masters programs (Cities and Technology) in 2018, which would involve a delegation of teachers and students from the IAAC to visit Melbourne in ~Easter 2018

   Introduction to IAAC from Silvia Brandi

2. **Introduction to 22@ Innovation District and Media TIC Building**
   http://www.22barcelona.com/content/blogcategory/49/280/lang,en/
   - Host: Jaime Font, International Programs School of Architecture, Barcelona (introduction from Councillor Nick Reece)
   - About Barcelona:
     o The city boundaries are naturally restricted by two rivers, mountains and the sea
     o The central city is a grid, each block is distinctive, multi-use
     o Very consistent height limits across the city; these have only changed two times since 1859 (from 3 floors to 5 and then 7 – current height limit is 7 floors)
   - About 22@ Innovation District – planning perspective
     o Historically, this was an industrial area (e.g. textiles) that was quite distinctive from the rest of Barcelona city.
     o The original zone was "22a".
     o The industrial area fell into decline and the new zone "22@" was implemented in 2000 in an attempt to rejuvenate the area, "a new model to create a city".
     o The area was mostly under private ownership, so the 22@ zone includes measures to free up some of this space for public use:
       ▪ *"The City of Barcelona was not the owner of the land, but it was the owner of the law"*
       ▪ Goal: 70% private land, 10% open space, 10% university space, 10% social housing. This was to attract people to come into the area to live, study and work. The 30% doesn't need to be consolidated in one block, it may be spread out across multiple blocks.
       ▪ Standard allowance: floor area to height ratio of $2.0:1.0m^2$.
       ▪ $+2.0m^2 - 2.7m^2$: activities specific to the @ conditions
       ▪ $+2.7m^2 - 3.0m^2$: social housing
       ▪ No building is able to exceed the height of the highest tower in the city (La Sagrada Familia), as a general rule.
     o Current challenges with the 22@ zoning - the current conditions do not specify guidelines for:
       ▪ How buildings should face the street, ideally this would be changed (presumably to enable better ground floor activation).
       ▪ Preferred location of open space, to enable a more even and strategic distribution
     o Heritage: the Architecture Advisory had a catalogue of every building across the district that it thought was important to maintain. There were different levels of protection.
     o A lot of the land in 22@ was vacant at the time of the change. Over time, some of the landlords (old textile families) started leasing space to startups.

3. **Media MIT building**
   - This is the physical "front door" to the district used to show-case the district to potential investors and tenants – it is a marketing tool
   - Paid for by the Chamber of Commerce (presumably using funds and land from the 22@ rules?), tenants include the City of Bristol, startups, incubators, corporates (e.g. Deloitte), universities (e.g. RMIT Europe)
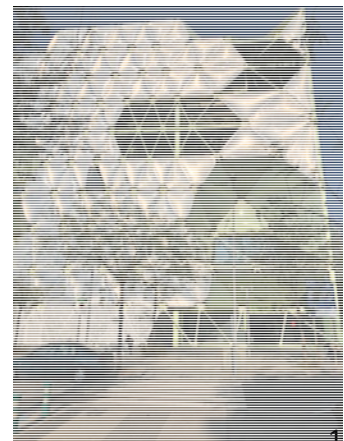
4. **Super Blocks**
    - This is a pilot to close parts or all of selected streets and convert them to public open space to use as a park, market, tennis or a pool (for example)
    - This has generated a lot of citizen debate, e.g. some residential balconies demonstrated "yes" or "no" flags

5. **Meeting with former Director of 22@**
    - Host: Josep Pique, International Association of Science Parks and Areas of Innovation (IASP)
    - About 22@ Innovation District (continued)
        o Size: 200 Ha
        o Space: 4 million m^2 new gross floor space since 2000
        o Facilities: 145,000 m^2 new facilities since 2000
        o Investment: Private sector investment €2,500 million
        o Jobs: 90,000
        o In the first phase of 22@, key performance metrics were tracked and reported monthly (e.g. number of jobs)
    - **Governance** of the 22@ District
        o In 2000, the Bristol City Council set up a public company with Josep as the CEO and a Board
        o In 2011, changed this to a different model – the governance needs to evolve with the maturity of the district
    - Designed the 22@ District as a **smart city**
        o E.g. designed systems for mobility, fibre optic cable, energy networks, heating and cooling system, pneumatic waste collection
    - City as a **living lab**
        o Encourage startups to create pilot projects including city challenges, e.g. experiment with a new lighting system in the district; includes open innovation competitions.
    - Focus on creating **economic clusters** in the 22@ District, e.g. Media:
        o Start by attracting large companies, e.g. Mediapro (owns the rights to the football, private media company) located into the 22@ district to access cheaper land and more space
        o The University of Communication then co-located next door
        o Social housing was then constructed within the same block, which included student accommodation
        o Some of the university students are now doing internships at Mediapro, and will likely be hired by Mediapro
        o Next large company coming to 22@ is Amazon, this will create 400 jobs and again there will be a relationship and proximity with the local university to connect students and jobs
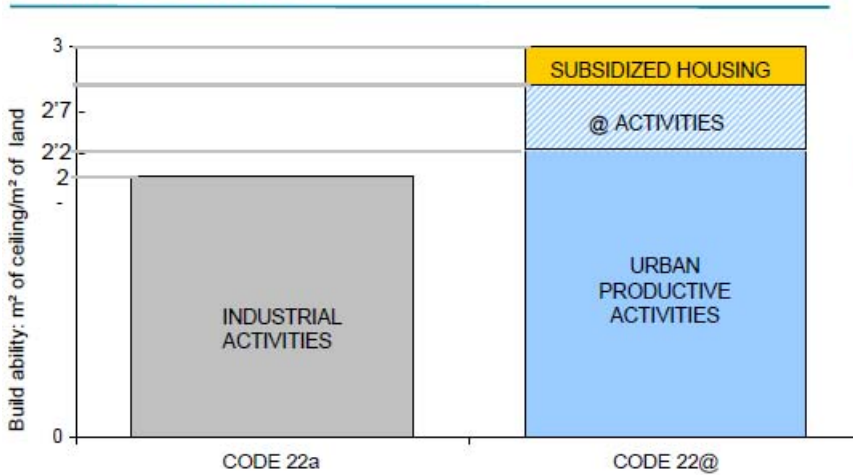

6. **Meeting and tour with the City of Barcelona and RMIT Europe**
    - Hosts: David Martinez Garcia, Barcelona Institute of Technology (new management organisation for 22@), City of Barcelona and Sergi Mari I Pons, GM Enterprise and Tourism, City of Barcelona, Patricia Lora Febrero, RMIT Europe
    - **Media TIC Building**: designed to be a communications hub and meeting point for businesses and institutions in the ICT, media and audio-visual sectors.

- The City of Barcelona has only paid a portion of the total investment for the 22@ Innovation District to date – the gap has been funded by the private sector as enabled by the 22@ planning laws

High level description of purpose and breakdown of floor area ratio controls in 22@Barcelona

Increase density:

Balance public and private benefits:

PRIVATE BENEFITS	PUBLIC BENEFITS
• More productive uses: 22a → 22@	• Free cession of land: • 10% for 7@ facilities • 10% for subsidized housing • 10% for green areas • Eventual opening of streets
• Higher density: 2 → 2,2 / 2,7	
• Leadind edge infrastructures	• Financing a part of the Special Infrastructure Plan

Taken from the English publication describing origins, purpose, planning and delivery of 22@Barcelona (recommended reading):
http://www.22barcelona.com/documentacio/22bcn_1T2010_eng.pdf