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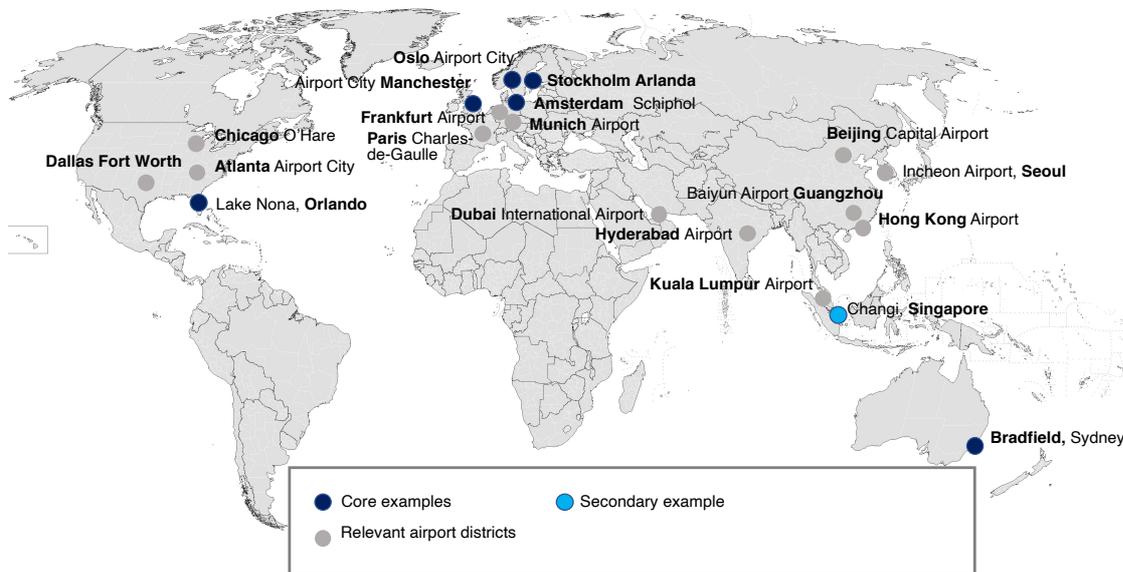
Principles for a Successful Airport City in Oslo after Covid-19

**Lessons and Evidence from
International Practice**

Executive Summary

Airport cities have been an important feature in global development for 15 years. Their emergence reflect the essential idea that well-connected airports are sure to be in demand for the whole of the 21st century - this century of urbanisation where more population is mobile, more industries have become internationally traded, more portions of the workforce are distributed, and more advantage accrues to speed, scale and efficiency. Airports and the strategically located economic land next to them can serve much more diverse and high impact functions in a region that was assumed possible or desirable 20 years ago.

Internationally there have been many important efforts to develop high performing districts next to airports. These are locations that not only host a mix of jobs and companies, but also have ambitions to excel in terms of placemaking, talent attraction, technology development and reputation. There are now at least 10 mature airport cities and a further 50 that have begun their journey. The experience of many of these are relevant to Oslo Gardemoen.



The changed context for airport cities

In 2022, airports and their surrounding locations are now operating in a decisively changed context. There are three aspects to this shift.

- Firstly the impact of Covid-19 on travel, work patterns and population movement mean that airport cities increasingly have to compete on **quality and experience**. Those who work, use, live and consume in airport cities will demand a higher level of urban environment, that takes health and wellbeing - indoors and outdoors - seriously. More human-centred design.
- Second, the success of airport cities depends on decisively **decarbonising** the whole airport system. There is much more scrutiny from governments, regulators, investors and the travelling public, not only to accelerate towards net zero emissions across all airport-related operations, but also to create more comprehensive solutions in the wider areas towards energy storage, on-site generation, mobility, circular economy, waste-to-energy and more. Airport cities will have to be consumers and producers of innovation when it comes to these areas, as well as noise, air quality and other related areas.
- Third, airport cities will evolve from being simply employers, into community hubs that forge **innovation** among local businesses and continually generate technical, engineering and service skills of the future. Airport cities will in many cases become specialist settings to develop local skills, offering apprenticeships, and reaching out to disadvantage communities. Whether through technology R&D, shared university facilities, food innovation, or new kinds of amenities for regional residents, airport cities are succeeding by using their unique assets and location to drive the wider regional ecosystem.

This paper observes that there are 6 key areas where there are some key principles relevant for Oslo Airport City.

1. Vision and set-up

A serious effort is essential from the outset to establish clarity about what the airport and the region really needs from Oslo Airport City. This relies on mapping the expertise that exists in and around the area, forecasting the evolution of the Oslo Region and airport economy over 50 years, and understanding in what way and to whom the airport district will provide a unique and compelling offer. The Airport City has the chance to create real benefits for the economy, the brand, the specialisation, the quality of life and opportunities for local people, both for the municipalities and for Oslo Region. Articulating these is the way to create real credible differentiation for customers and investors, and avoid a generic proposition.

Building a vision of this kind can occasionally be mounted by a single imaginative landowner or leader. But more usually needs it relies on developing a clear relationship between the airport district and the airport itself, and forging a leadership alliance more widely that has some agility, shared risk, and access to a network of experts in a variety of fields. And it requires novel approaches to procurement, planning and public engagement.

2. Place making and physical development

Airport Cities that succeed are imagined as real urban hubs, with distinctive placemaking and mobility, all capable of serving a constantly evolving range of businesses. In some cases this can even include a part-time or full-time residential population.

This transition from a vacant or under-utilised airport site to a 'real place' that is fully operational relies on a number of interim accomplishments: 'smart' office buildings conducive to hybrid working and to wellbeing measures; quality green and public dwelling spaces within a 3-5 minute walk of business buildings; trails and links to nearby communities; and on-demand transport access to the airport itself. The scope to design, build and collaborate for long-term success is important, rather than being unduly constrained by planning rigidity, or maximising gross floor area on the first projects. Demonstrating what 'good looks like', especially around the highest foot-traffic areas such as a key transport nodes, is an important signal that airport cities think about.

3. Economic specialisation

Airport cities succeed when they have a desired and purposeful industry mix. This is especially the case when the project understands the direction of travel in the established economies (corporate, retail, visitor), and seeks a balance with the innovation and tech economies which can support a range of high value jobs.

Airport cities have the ability to create a profile and visibility for a particular industry or technology which does not yet have a clear identity. So far the most popular sectors are: life sciences, advanced manufacturing, digital certification or fintech. Increasingly there is a recognition that these places should not become 'pigeon holed' as one sector, but cross-cutting hubs for excellence including for advanced manufacturing, life sciences, agribusiness or medicine.

4. Talent attraction and skills development

An airport city needs legitimacy with local citizens and governments. At the same time, ambitious talent is becoming increasingly sensitive to the quality of place and amenity when making decisions about where to locate.

So an airport city has to appeal to a more affluent user and tenant base, and at the same time expand the mix of amenities, housing and services that can meet the needs of social groups that may have limited access. To do this, successful districts audit for user diversity, build a strategy into how they engage with occupiers and tenants, and look to wider access and invitation to newcomers.

This usually requires close stakeholder co-ordination, investment in some social outreach capacity, and attention to building design and local messaging. Airport districts can try to call upon their 'anchor tenants', who can commit to local job creation commitments, procurement relationships, and leading by example. As a community of employers, district businesses can engage in workforce development partnerships through internships, apprenticeships and job placement.

5. Sustainable Governance and Co-ordination

The most successful and in-demand airport cities set ambitious and innovative standards for themselves. There is no 'correct' governance model to pursue. Instead the founding leadership initiates a firm and open culture of collaboration between public and private stakeholders to co-create the shared vision, share financing where appropriate, develop some joint responsibilities, plan out the right sequencing of development with infrastructure, and stay aligned with public and social goals.

When an airport city is led and run too narrowly, the outcomes either within or around location are often eroded. Governance and coordination mechanisms are needed to prepare the effective marketing and communications to attract investors and tenants. Successful airport cities realise that it is essential to co-ordinate the messaging within a formal or informal alliance, in order to create cohesion, avoid confusion, and pool the resources and capability of the partners.

Leadership has to convince stakeholders that the project is bringing value to them and adding to their potential, not taking it away. Shifting beyond a zero-sum mindset is key. In addition to cost sharing, partnerships with various stakeholders enable the local government to share and manage the risks appropriately and add more technical capacities.

6. Branding and profiling

Airport district branding and promotion also comes with inherent risks, which need to be effectively managed and mitigated. The story of the airport city first has to galvanise local leaders, get the support of citizens, and establish a clear proposition to domestic investors. It is also important in setting expectations among those people who do not know Gardermoen – the prospective visitors, customers, entrepreneurs, and investors.

Successful airport cities tend to benefit from:

- A **durable identity** that provides ‘the glue’ and the consistency of the project and its different components as they evolve over time.
- A **marketing alliance** that understands shared audiences, builds appropriate brand collateral, and providing the right materials to the relevant stakeholders in ways that build appetite and momentum
- **Visibility at domestic and international levels** through careful consideration of the events, the ambassadors, the champions, and the ‘carriers’ of the project into different international arenas.

Table 1. How an airport city's priorities, leadership and outcomes tend to evolve over time

	1 st Cycle	2 nd Cycle	3 rd Cycle
Airport city priorities	<ul style="list-style-type: none"> Establishing presence as airport gateway Early investment wins High spec commercial functions: signature hotels & retail Attract a calibre of initial trade, logistics, data centres, other brands Events and high profile activities Digital technology platform to enable high value activities 	<ul style="list-style-type: none"> Destination Development - entertainment, sport, fashion - 15-18 hour services Economic Development, intentional Clustering Develop lead position in 1-2 key niches/ technologies Talent attraction In-locating educational capabilities Citizens, Community and Commercialisation 	<ul style="list-style-type: none"> Evolve into a fully fledged regional centre Inclusive placemaking - health and wellbeing to the fore Technology pilots, showcases of urbanism and sustainable development Coordinating the infrastructure, land-use, and economy Comprehensive multi-modal approach National hub roles
Lead players	<ul style="list-style-type: none"> Single development team/consortium First steps towards soft governance 	<ul style="list-style-type: none"> Wider coalition of collaborators injecting ideas, innovations and capital 	<ul style="list-style-type: none"> Public-private partnership at scale Fully integrated into wider sub region, shared strategy
Leadership tasks	<ul style="list-style-type: none"> Effective asset audit to consider land use mix potential, potential for R&D functions 	<ul style="list-style-type: none"> Ensure a compelling vision is fully translated into the place and economy offers 	<ul style="list-style-type: none"> Consider new assets and anchors National and global influence

	<ul style="list-style-type: none"> • Supply chain relationships to establish gaps and needs 	<ul style="list-style-type: none"> • Avoid unwanted and wasteful competition 	
Roles of public agencies	<ul style="list-style-type: none"> • Address enabling infrastructure gaps, spatial frameworks, conducive planning for good growth • Skills adjustments to support fast-growth near-airport industries 	<ul style="list-style-type: none"> • Relocate key departments and agencies to create 'hub' benefits and other synergies • Effective citizen communication and education about airport city role and benefits. 	<ul style="list-style-type: none"> • Integrate airport city support across municipal departments and national strategies • Coordinate surrounding land uses for growth and expansion
Place experience	<ul style="list-style-type: none"> • Convenience, reliability, safety, security, hygiene • Overcoming gaps and disconnections between different sites 	<ul style="list-style-type: none"> • Hub facilities, destinations and amenities that draw in those who are not direct target users • Experiential learning, working and consuming • Mix of uses become regular 	<ul style="list-style-type: none"> • Unique sense of place. Enrichment, inspiration, congregation • Maintain high standard of place curation as some sites are sold and new functions embraced
Climate Change	<ul style="list-style-type: none"> • High sustainability standards of initial development • Built-in resilience of the networks and infrastructure 	<ul style="list-style-type: none"> • Whole-area solutions to heating, waste • Producer of energy • First circular economy strategy. 	<ul style="list-style-type: none"> • Testing technologies and approaches with clear chain to elevate whole airport area's competitiveness • System-wide approach

Next Steps

International experience suggests that in the first 24-36 months, airport city development can really benefit from:

- A really authentic and credible story about the airport district, the airport, Oslo and the world
- Clear political commitment to deliver the infrastructure and amenity required to make the place desirable and avoid any risk of lock in a negative perception about the location
- A sustained focus on design and place experience, the co-ordination and coherence across different sites, and a clear path as to how sites should evolve over many cycles
- Raising the profile of the project as a 'complement' to the existing city centre and other locations, to avoid unhealthy competition
- A thorough account of what will be needed from a skills and talent perspective
- Quick wins to head off unnecessary scrutiny on planning, data, access or environment
- Outstanding new or additional public space, that is perceived open and for the community

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1. Introduction

Airports have become essential assets around which a local area can reimagine itself and thrive, and a wider region can diversify and succeed.

It is a fact of the 21st century that successful city-regions grow. As they do so they become one single strongly interdependent housing and labour market. These regions, like in Oslo, depend on multiple locations to succeed and become centres of jobs, opportunity and attractive development.

These locations do not arise everywhere - they gravitate around advantageous assets. An international airport is one of the essential locations in any fast-growing region, due to its ability to operate as a gateway and a destination, and simultaneously create jobs, attract new businesses, improve the way people get around, and upgrade the region's environmental prospects.

In the 21st century, regions benefit both directly and indirectly from the forward-thinking improvements undertaken in airport districts (sometimes called **aerotropolises**). These are areas where development teams and public-private partnerships are able to stimulate a more advanced approach to economic development, placemaking and business attraction, that may encompass business parks, mixed-use developments, residential areas and transport hubs.



These locations are somewhat different from the clusters of aerospace-related activity that congregates around airports - warehouses, transport depots, storage space for businesses directly supporting the airport. They may comprise these but their aim is to achieve a higher value outcome that is more broad based in terms of the companies, talent and citizens they seek to serve.

What is an Aerotropolis?

"A type of urban development that has an airport city at its heart and agglomerates aviation-related as well as non-aviation related businesses around it, transforming it into a vibrant investment hub...[with] air travel at its core surrounded by commercial, educational, entertainment, healthcare and hospitality centers."

- Agrima Nagam, Hyderabad

"A 'smart city' precinct being developed in the surrounding area of an airport, and focusing on business developments in the so-called "first mile" [whose] associated business usually flourish in the fields of innovative, high-technology and high value-added sectors"

- Henry Wissink, University of Kwazulu Natal, Durban

"The Aerotropolis consists of a multimodal airport-based commercial core (Airport City) and outlying corridors and clusters of aviation-linked businesses and associated mixed-use commercial/residential developments that feed off of each other and their accessibility to the airport."

- John Kasarda, US

"An airport as an integral centre of a city."

- Financial Times, London

"A metropolitan sub-region whose infrastructure, land-use, and economy are centred around an airport."

- Sydney CoC

"Where travellers, airlines and businesses can access all the services they need, 24 hours a day."

- Amsterdam Schiphol

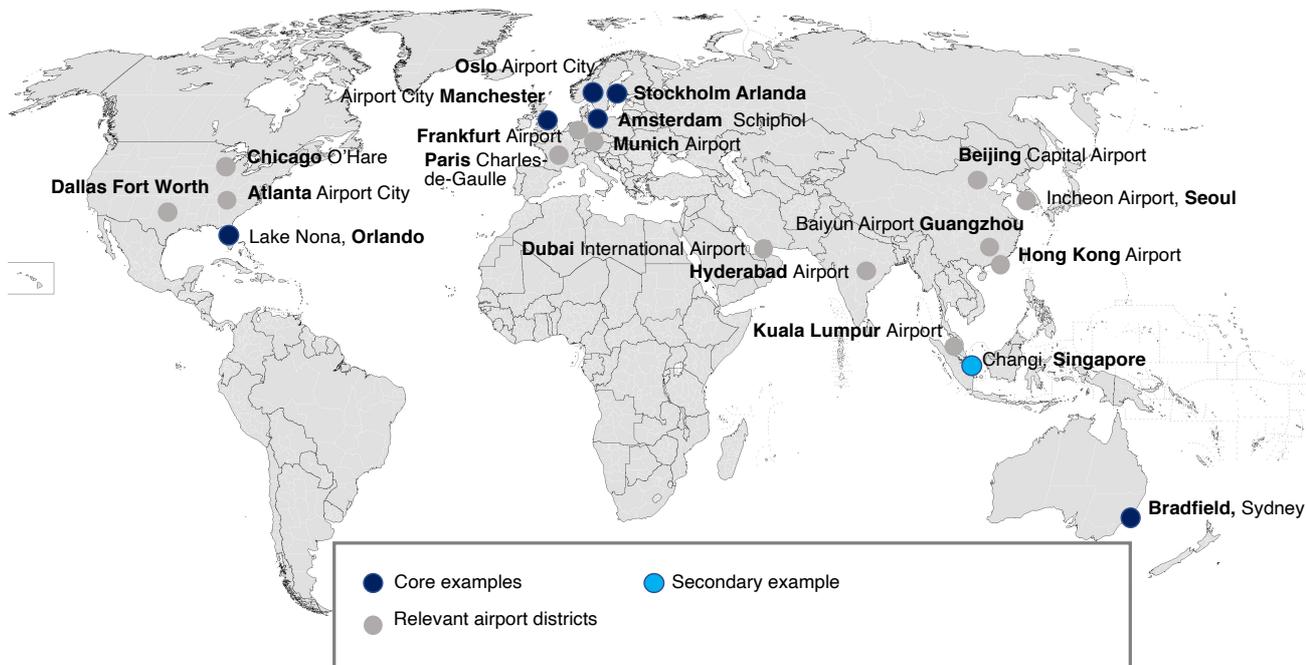
"An airport city – as opposed to a city airport. Traditionally, airports have served their cities but not been part of them...the idea [was] to get in and out of them, and away, without dallying. They're noisy and polluting...[Instead] locating offices and warehouses and other essential infrastructure near airports gives companies faster access to their customers and suppliers...the higher the value of the goods and services involved, the bigger the gains."

- Diana Bagnall, Inside Story

The opportunities for airport districts to offer wider economic and commercial services, beyond their core aeronautical offer, are being actively pursued around the world - in cities small and large, central and remote. They include many locations that are relevant to Oslo - medium sized fast growing cities in regions looking to diversify their economy.

In this paper we draw on a wide spread and mainly feature examples that illustrate a wide range of important practice: **Amsterdam Schiphol to Lake Nona, Orlando and from Western Sydney to Stockholm Arlanda.**

These have been chosen not because their airport context is exactly the same as Oslo Gardemoen; instead it is because these locations are benefiting from a purposeful strategic approach developed by developers and municipalities.



Name of airport	Airport District progress	Key aspects	Mission statements
Bradfield Airport District, Sydney	1st Cycle	70km from the city centre, includes publicly-sponsored advanced manufacturing focus and relocation of government agencies, research.	<i>“a hub of industry and innovation, attracting local and global companies drawn to the enormous potential of the [area] and the airport that serves it.”</i>
Amsterdam Schiphol Development Area	3rd Cycle	Organised effort to unlock sites along a corridor near the airport, home to a sustainability cluster, and popular with trade and logistics HQs	<i>“home to cutting-edge business parks...Featuring global connections, access to international talent and an excellent quality of life...gives your business the space to grow.”</i>
Arlanda Aerotropolis, Stockholm	1st Cycle	Mixed-use development, advanced logistics, high-tech office and event spaces	<i>“a new city is taking shape [that] will play a critical role for growth in the Stockholm region and Sweden...The location is hard to beat, having the rest of the country and world around the corner”</i>
Wythenshawe, Manchester Airport City	2nd Cycle	Consortium committed to an advanced business and logistics hub, hotel district, and multi-modal transport.	<i>“enables businesses to create a bespoke building in a high-specification, highly serviced environment”</i>

Lake Nona, Orlando, USA	2nd Cycle	Forward-thinking private investment in whole community, focused on health innovation, with technology platform, and offering for sport, education and events.	<i>“A Smart City with Soul: a modern mecca for technology, innovation, and community...a place where no dream is out of reach.”</i>
Changi, Singapore	3rd Cycle	High profile retail and leisure offer, demonstrating a denser standard of development by an airport and showcase of engineering and airport urbanism	<i>“A destination, to augment Changi Airport’s position as a leading air hub globally...a mixed-use development with gardens, attractions, retail, dining, a hotel and facilities...integration of nature with engineering”</i>

Advanced and forward-thinking airport districts in different kinds of region

Smaller city-region in more remote, less connected part of the continent	Medium-sized city-region with low-to-medium traffic airport	Larger airport hub nearer the centre of a large region/continent	Smaller city-region in more remote, less connected part of the continent
Dublin	Arlanda, Stockholm	Changi	Dublin
Gothenburg	Manchester Airport City	Schiphol	Gothenburg
Riga	Munich	Incheon (Songdo), Seoul	Riga
Perth	Guangzhou	Frankfurt	Perth
Edmonton	Kuala-Lumpur	Dubai	Edmonton

Selected illustrative examples of forward-thinking initiatives in global airport districts

Premium fashion, Auckland



Integrated logistics, Gothenburg



Environment & biodiversity protection, Changi



Cultural experience in Schiphol Art Gallery



Aerotropolis Multiversity, Western Sydney



Active mobility prioritisation, Wythenshawe, Manchester



Placemaking and place activation, Lake Nona



On-site solar energy park, Frankfurt Airport City



2. What is the changed context after Covid-19?

Airport districts have been emerging in the last decade in response to a number of important trends:

- Airports are increasingly able to **anchor national and international businesses** that desire close proximity to the airport as well as the surrounding market.
- Airports are some of the best connected locations in a region and so can take on **multimodal surface transport hub functions**
- In the right circumstances airport districts benefit from the land opportunity and demand to act as pioneers of **new kinds of employment, meeting and entertainment destinations.**

In the wake of the Covid-19 pandemic, many successful airport districts are increasingly aware of the role they have to play as **agents of decarbonisation and improving the region's resilience** to future shocks.

These are being pursued by:

- Forward-thinking airport operators with large land holdings adjacent
- Self-funded, not-for-profit corporation with a regional mandate to deliver growth and jobs.
- Airports seeking collaborators who can inject ideas, innovations and capital.

The Transformation of Airport Districts after Covid-19 – Key Themes and Examples

Experience	Habitat	Innovation
<p>Premium Retail Beyond the immediate Airport</p>	<p>Green Office Campus</p>	<p>Green Economy Commercialisation Hub</p>
<p>Auckland - First of its kind 120-store fashion retail experience to anchor an established logistics/business precinct. High digital capability.</p>	<p>Dublin Airport Central - Featuring Ireland’s first LEED platinum core and shell building, a high quality office environment is being accelerated with a large urban realm - for Irish and multinational companies who need to be airport-based and want a quality staff experience.</p>	<p>Near Edmonton Airport, Canada, there is a large-scale scheme to test emerging green technologies at a Sustainability Campus, in order to foster environmental innovation. The aim will be a living lab for commercialisation that will really focus on what it will take to:</p> <ul style="list-style-type: none"> • Electrify aviation equipment • Make hydrogen fuel cell technologies viable • Create the world’s largest airport-based solar farm • Use sustainable aviation fuels, biofuels and hydrogen, drones for e-commerce and cargo, and forestry tech to offset emissions

Mixed Use Convenience	Renewable energy production	University-led Living Lab to provide Industry Solutions
<p>Gothenburg Airport has pushed forward with its mixed use logistics and business hub that is designed all around convenience and quality of facilities in order to crowd in quality regional brands that need international access. It also features a whole-district heating programme. The strategy is to create value by successfully developing properties in order to reinvest in the airports' development and competitiveness.</p>	<p>New 400ha renewable energy park emerging by Christchurch Airport with solar farm - to produce 150MW - enough to power 30,000 homes.</p> <p>Other land coming available for green data centres and vertical farming operators to tap into renewable energy.</p>	<p>An airport campus where all facilities can serve as a living innovation lab for University of Louisville. Designed so that researchers specialising engineering to business can find solutions that could be implemented industry-wide - extended lifecycles or aviation operations and regional passenger movements. The advantage of the location is that it can offer experiential learning opportunities.</p>

The Climate Change Imperative

There is no doubt that the largest strategic shift for airport cities has been to adapt to the need to make much larger, faster and more proactive adjustments on climate change. This means both decarbonising the real estate and infrastructure, and devoting land and opportunities to test climate positive technologies.

Airport cities adjacent to the airports themselves recognise that much of what they can achieve depends on working closely with airports themselves to manage and reduce emissions. They see that, quite separate to air travel, airports generate a significant amount of primary and secondary emissions. This includes: fleet vehicles involved in ground operations, energy usage, construction related emissions and emissions from passengers travelling to the airport.

The following shifts are visible among at least 20 airports of Oslo's size, scale and ambition:

- **Taking a lead in developing and trialling net zero technology** is what many airport cities believe will make them best placed to serve the predicted growing demand for air travel up to and beyond 2050. Many airports and their wider districts are making significant steps to reduce these emissions with new technology, infrastructure and practices in order to satisfy reputational, customer and legislative demands.
- **All airport city ground operations being electrified.** This is happening at a rapid pace around the world and means that airport cities can provide complementary support to electrification of airports. **Kansas City Airport** is investing in electric buses with wireless charging technology, cutting down the time they are out of service for charging and allowing short charges between journeys. **Iberia** is investing in remote controlled, electric push back tractors reducing ground emissions from ground movements in and around the airport. A partnership between UK startup Urban-Air Port and **Hyundai** will result in the creation of 65 electric airports for cleaner urban air travel. Clearly there is a role for electric flights in a zero emission scenario, with multiple companies and airport districts investing in the technology. Electric aircraft are already in testing on short haul flights, with **Harbour Air** which operates seaplanes in Canada seeking approval to take passengers on electric planes from 2023.
- **Transforming from net-consumers to net-producers of energy.** With their wide expanses of flat, open space and existing infrastructure, airport cities can be the ideal place to host new renewable energy facilities. **San Francisco Airport** is studying the possibilities of a solar panel farm on the site. **Airbus** is leading efforts to reimagine airports as key producers in the Hydrogen supply chain.
- **The development of alternative fuel and energy sources.** With these technologies airport districts will continue to play a central role in the ecosystem of a region and will support the growing demand for air travel. There are several options airport cities can take in this area:
 - **Become a hub for sustainable R&D.** **Iberia and Cepsa** have signed an agreement to invest in R&D into sustainable fuels and how they can reduce emissions, with focus on airports in Spain.

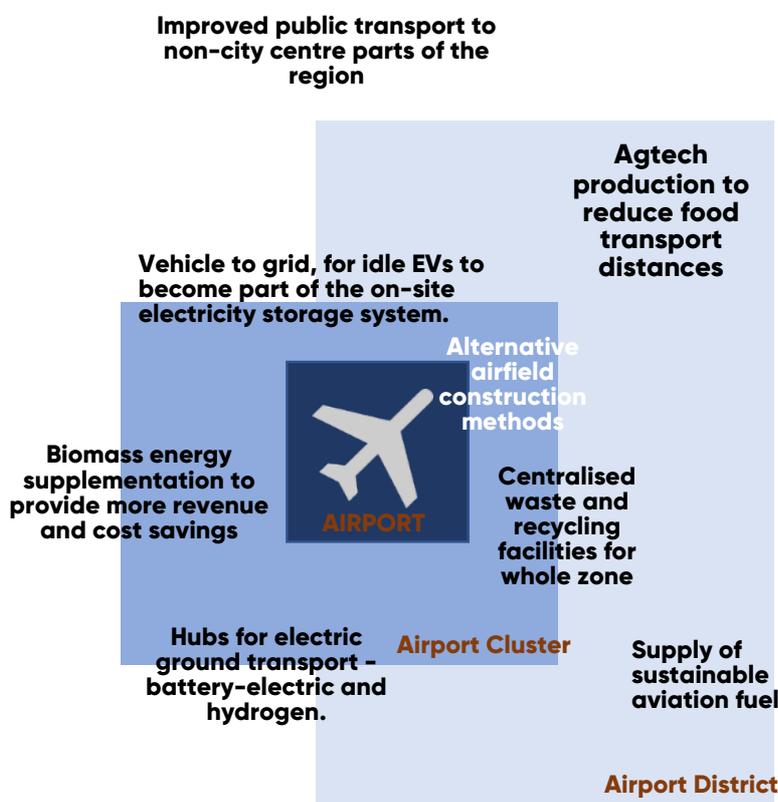
- **Serve and participate in hydrogen economy.** As a long term solution to creating zero emission air travel hydrogen or electricity are the most promising options. Hydrogen technology has emerged as the current front runner for zero emissions long haul flights, due to its energy density and the similarity in engine requirements. There are lots of new initiatives to build hydrogen based ecosystems around airports. **Airbus'** "Hydrogen Hubs at Airports" is piloting this transition with a MOU signed with **SAS Airlines**.
- **Testing new sustainable infrastructure**
 - **Electric mobility.** Near to Orlando Airport **Lake Nona** is building a high-speed, electric air mobility hub in partnership with the City of Orlando and Lilium, the German aviation company developing an all-electric, vertical take-off and landing (eVTOL) aircraft. This tests the use of electric vehicles as short haul taxis, with airports as the central hub
 - **Waste-to-Energy infrastructure.** Not far from **Dubai Airport** partners have committed to a large PPP to treat up to approximately 1.9 million tonnes of waste per year and turn into 200MW of clean energy, partnering with a consortium of strategic and financial investors, including ITOCHU, Hitachi Zosen Inova, BESIX and Tech Group. This is being developed on build and operate basis, under a 35-year concession period with the Municipality. This landmark public-private partnership represents one of the most significant renewable energy investments in the United Arab Emirates.



Waste-to-Energy Plant being constructed next to Dubai Airport in Warsan

- Ensuring adequate public transport access to airports from all parts of the region.** This has taken on a new priority with the demands of reducing emissions. Providing reliable public transport links not just from the city centre but other locations, can reduce passengers' reliance on private vehicles to reach the airport, reducing travel related emissions. **Manchester Airport City** is one of several locations that has completed a metro link allowing passengers from the wider region to reach the airport without using private vehicles.

The clean energy imperative means there is huge opportunity for airports and airport cities to become energy agents for each other. They can become 'hardened energy nodes' - microgrids with better-than-average resilience to grid disturbances - able to restore power to the grid network to recover from a total or partial shutdown.



Clean growth innovations taking place in, around and adjacent to airports

It is clear that airlines, airports and adjacent development sites are imagining a new kind of contribution to a low carbon future. Net zero is not seen as an obstacle, instead an opportunity to lead the future of air travel and also create clean neighbourhoods thanks to the potential for development far closer to airports as air and noise pollution reduces and planes get cleaner and quieter.

The journey ahead for airport districts

The level of ambition has grown for the redevelopment and re-imagining of areas around airports, especially those like Gardemoen that are the national hub or are in fast-growing high-performing city-regions.

There is now a recognition that airport districts can attract and serve a more diversified range of innovative businesses than they have before. If each is to succeed in doing so, each one needs a much stronger focus on placemaking to create a district that is attractive for businesses and residents with a unique feel and planning attention given to liveability and amenities. Successful airport districts have managed diversifying their economy and creating a unique sense of place by establishing a committed and coordinated system of governance that brings together stakeholders from across the region and from the public and private sectors.

While each district has its own particular assets and advantages, the shared principles of fostering a diverse economy, creating a unique sense of place and enshrining good governance now underpin how they are preparing for the future and pre-empting the climate change challenge.

The journey to success as an airport district is a multi-stage one. It unfolds over 25-50 years, beyond the term of any political cycle. This means that the success is reliant on a long-term commitment to a vision of vibrancy and economic success. One of the key lessons is that in airport district in particular, development success is not just a matter of real estate, buildings, transport and placemaking. It requires a concerted effort across many other areas.

This paper explores 6 of these areas that have most relevance for Gardemoen Airport City:

1. Vision and set-up of the airport districts project
2. Place making and physical development
3. Economic specialisation
4. Talent attraction and skills development
5. Governance
6. Branding and Profiling

6 Key Principles

- **Vision and set-up of the airport district**
- **Place making and physical development**
- **Economic specialisation**
- **Talent attraction and skills development**
- **Governance**
- **Branding and Profiling**



3. Vision and set-up of the airport district

Airport districts are highly distinct opportunities that rely on very customised approaches distinct to the setting and constraints that proximity to an airport poses.

Yet their development principles share certain features with the development or redevelopment of any large location in transition. The choices around what infrastructure, what uses, what messaging, and what positioning for investment all are usually and usefully informed by a serious effort to **establish clarity about what the project and the region really needs.**

What should an airport district aim to achieve?

They provide the right infrastructure to attract and support innovative businesses.	They seek to be world-class in one or more specialist areas.	They aim for a visibly superior quality of experience for a neighbourhood that has some 'urban' character.	They embed the flexibility to attract and sustain a mixed 21st-century economy.	They provide financial viability for long-term investors.
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The first step successful airport cities have learned is that the relationship between the airport district and the airport itself will benefit from actively shaping. Complex ownership and management models, between airport owners, logistics land, commercial areas, and publicly owned assets make this a challenge. Successful airport districts have worked hard to line up the ambitions of developers with the direction of travel for the airport and wider region.

For a region like Oslo and an airport like Gardermoen, there are good questions to ask and explore about:

- What is the ‘DNA’ of the place, and what particular expertise resides in and around the area?
- How will the area and region most likely evolve over the next 50 years?
- How will an airport district fit within the future shape and specialisation of the region, given likely scenarios, where there will be multiple innovation districts, green hubs, and specialised distributed locations for business, technology, lifestyle and community?
- What is the airport district able to provide that isn’t there already to make the region more competitive, productive and inclusive?

Without answers to these, airport cities have found it hard to shape a clear vision. This can create a lack of differentiation for the district, from other similar airports. A vision with these answers, can ensure that the location and development of the district is motivated by a real specialisation, not just aspiration, and this will help attract businesses, customers and investors.

For example, **Western Sydney Airport** has focused on its role as the anchor of a third centre in the Sydney region, and attracting much-needed medium-to-highly paid and highly skilled jobs into a part of the region that is very disadvantaged economically. **Amsterdam Schiphol** acts as a mainport, in line with the national strategy of making the Netherlands an international logistics hub.

Areas in which the airport district could contribute to the wider region include:

	Create job opportunities for residents outside the urban core
	Put themselves on the map, as leaders in sustainability, mobility and placemaking
	Attract investment to redevelop an underperforming area of the city
	Provide a locus for industries that have distinctive land or co-location needs
	Improve residents’ quality of life and access to amenity
	Provide opportunities to host the innovation economy
	Stimulate commercial development

Taking into account the context of Oslo Gardermoen, we note from international experience that the following areas may be important to pay special attention to.

- 1. Identify the unique differentiating character** of Oslo Gardermoen as a district with a perspective that is rooted in the area's past and present and linked to the innovation vision for the entire region. This allows the district to stand out from international competition and avoid being seen as a generic airport business offering. Gardermoen has many characteristics it could focus on, including exemplifying the "Norwegian model", the country's energy industry, especially in renewables, the natural beauty of the region, or its proximity to the talent pool in Oslo.

Lake Nona, Orlando has developed a compelling story about its role and relationship to Orlando. This includes its proximity to the Orlando labour pool, the speed of development and flexibility possible by private ownership, and a focus on innovation, especially in the space industry due to its access to Cape Canaveral.

- 2. Build a leadership alliance with the right vision-shaping skills and experience.** The competences and experience of Oslo Gardermoen may need to evolve over time as different kinds of challenge arise (e.g. amenities, district management, place making, place marketing, social capital). We have noted that districts that are successful in creating new places that are attractive to businesses will rely on a network of experts in a variety of fields across engineering, placemaking, amenity development and transport infrastructure, as well as from businesses to be able to cope with these challenges.

Stockholm Arlanda Airport is owned by Swedavia (the state owned airport company), the Municipality of Sigtuna and Arlandastad Holdings AB. The involvement of a construction and development company and the municipality has helped development move at a quick pace, but in a way that aligns with the overall goals of the region and in a way that maximises the social impact.

- 3. Consistent, strong messaging that show how the airport city serves and supports the whole region as well as the existing stakeholders and local municipalities.** Leadership from government and other key actors, at all levels, that is consistent and committed in support of the new district, can play a vital role in promoting a new district and boosting its reputation. Without this collective effort a new district may struggle to attract the political support or financial investment needed to succeed.

Amsterdam Schiphol is presented as the international face of the local municipality, bringing support from the area where opposition to development may be expected to be strongest. It is widely publicised as being a key driver of growth from the city of Amsterdam and the country.

- 4. Ensure a continuously high level of co-ordination between partners.** Normally airport cities benefit from a lead partner with the ambition and to develop the right specialist development and communication capabilities. However the project will also rely on consistent well articulated support and commitment from municipalities, regional and national leaders. This relies on a co-ordination function.

Some airport cities find they fall into relationships that are rigid, infrequent and transaction-oriented. Instead they seek formal and informal channels of coordination between the many players that contribute to, manage and develop airport districts over multiple decades. This ensures potential problems can be spotted early and conflicting interests resolved. Without this project partners can be left isolated, working in a way that may not align with the overall goals of the project, and fragmentation can prevail.

Amsterdam Schiphol has benefited from a consultative body, BFD, with representatives from Schiphol Group, government and SADC, the real estate development arm of the airport district. This allows direct and indirect channels of stakeholder input and ability to coordinate action between themselves.

- 5. Be proactive in finding routes to achieve local benefits early on to local people.** Social procurement and purchasing to drive more quality jobs, community budgeting and planning input, dedicated training, career pathways and mentorship, and commitment to health in urban design and social infrastructure, can all be considered as an opportunity to foster public support while boosting the long-term economic success of the district.

Ensuring the project fosters a genuine mix of businesses, from large anchor multinationals to innovative start-ups, will likely be necessary.

Manchester Airport City worked with the regional authority Transport for Manchester to extend the light rail to the airport, as one of the earliest investments in the district. There has also been a consistent programme of sports and cultural events hosted at Manchester Airport City, open to the local community, which has given it the opportunity to invite residents onto the site and demonstrate the benefits it can bring to the area.

- 6. Look for quick wins** where there are fewer development barriers in order to create a sense of excitement and positive energy. Airport districts can explore options to host events and gatherings, and relocate certain institutions or 'anchors', that can speed up the process and leverage investment and brand opportunities. The early presence of a well-known business as an anchor can boost the district's visibility and demonstrate its appeal to other businesses looking to relocate.

Lake Nona has announced several investments from multinational firms which are locating there including KMPG's national training centre, the USA sports centre and Johnson and Johnson. Initial investments from a medical school and university research institute were quickly expanded into a wider human performance institute, as the initial location attracted a wider variety of businesses and institutions.

7. Agree a phased logic that allows districts to dedicate resources to successful transformation one step at a time and avoid spreading the effort too thinly in all locations at once. Airport districts are frequently developed in cycles with the first cycle focusing on core logistics functions, traditional office parks and airport related businesses. This allows the district to establish its brand and reputation before investing in projects that require greater levels of capital and more complex development.

In **Stockholm Arlanda** the first cycle saw the development of a logistics park close to the motorway. The second cycle developments are mixed use districts that position themselves as small CBDs with a variety of amenities and services alongside office space. These have drawn on the success of the original developments to demonstrate the appeal of locating near the airport and attract tenants to higher profile areas with higher development costs.

8. Make legal adjustments and infrastructure investments early on so that the project is ready later to serve the next cycle of growth and the land uses it will require. Many airport districts are given pre-approved planning permission or special status that reduces the barriers to new commercial development and allows for quick growth when it is needed. They also invest in infrastructure early on to ensure the transport mix of the district is appropriate and doesn't default to the motor car, but instead features cycle lanes and bus and rail services connect the district to the airport and the city.

Manchester Airport City was designated an 'enterprise zone' by the UK central government allowing for faster development due to simplified planning laws and reduced business rates by up to 100%. Similar schemes allow districts to retain their business rates for reinvestment.

9. Be ready to share and manage risks. Oslo Airport City entails many risks, associated with the size of the site, the timing and funding of infrastructure, and the different stakeholders involved. These risks can be shared through strong trust building with the key landowners and institutions, and through a commitment to the key investments and market housing programmes. Good channels of discussion and dialogue with investors and businesses are key. Encouraging developers and owners to co-operate and form a mature network and coalition may be important to ultimately tune in to the market and attract new residents.

In **Western Sydney** the airport district is developed by Western City & Aerotropolis Authority (two levels of government working together.) with significant involvement from the state department of planning, ensuring it has support at every level of government.

“The strong relationships between the municipality, SADC and Schiphol Airport ensures a strong shared vision of what the airport can be”

- Erik Feleus, Schiphol Real Estate

10. Think ahead about what will be needed to manage and run the places and neighbourhoods. Who will be responsible for what in future, who will pay for public space and amenities in the long-term, what opportunities there will be to enlist the community and business into partnering to take care of different places, are important questions to have in mind. The management of the various districts an airport city develops may require different skills to those of the airport operator, which often will mean a different group manages the real estate that surrounds the airport.

Amsterdam Schiphol created Schiphol Real Estate (SRE) to develop, invest in and manage quality real estate at and around airports in the Netherlands and in other countries, as a specialist place management company.

4. Place making

The development of an airport district typically occurs in cycles. Each cycle in turn demonstrates the capability and success of the district, which in turn attracts greater investment and public support.

In the first cycle airports can expand beyond their immediate offering and host businesses that desire easy access to airside operations. As airports expand they start evolving and attracting a wider range of businesses, developing transport links to the wider region. In the third cycle these districts can become fully fledged urban hubs, with unique placemaking, a diverse range of knowledge based businesses and multi-modal transport hubs.

Development	1 st Cycle	2 nd Cycle	3 rd Cycle
Industry Focus	Aviation, logistics, conferences, hotels and aerospace	Entertainment, retail, life sciences, product storage and back office	Green economy, data storage, higher education, urban services and advanced manufacturing
Commercial development characteristics	Higher density offices, low rise warehouses, concrete dominated developments	Cold storage warehouses, retail spaces, medium density offices	Medium density, SMART office developments, >50% green and open space, amenities at the centre of developments, clusters of excellence.

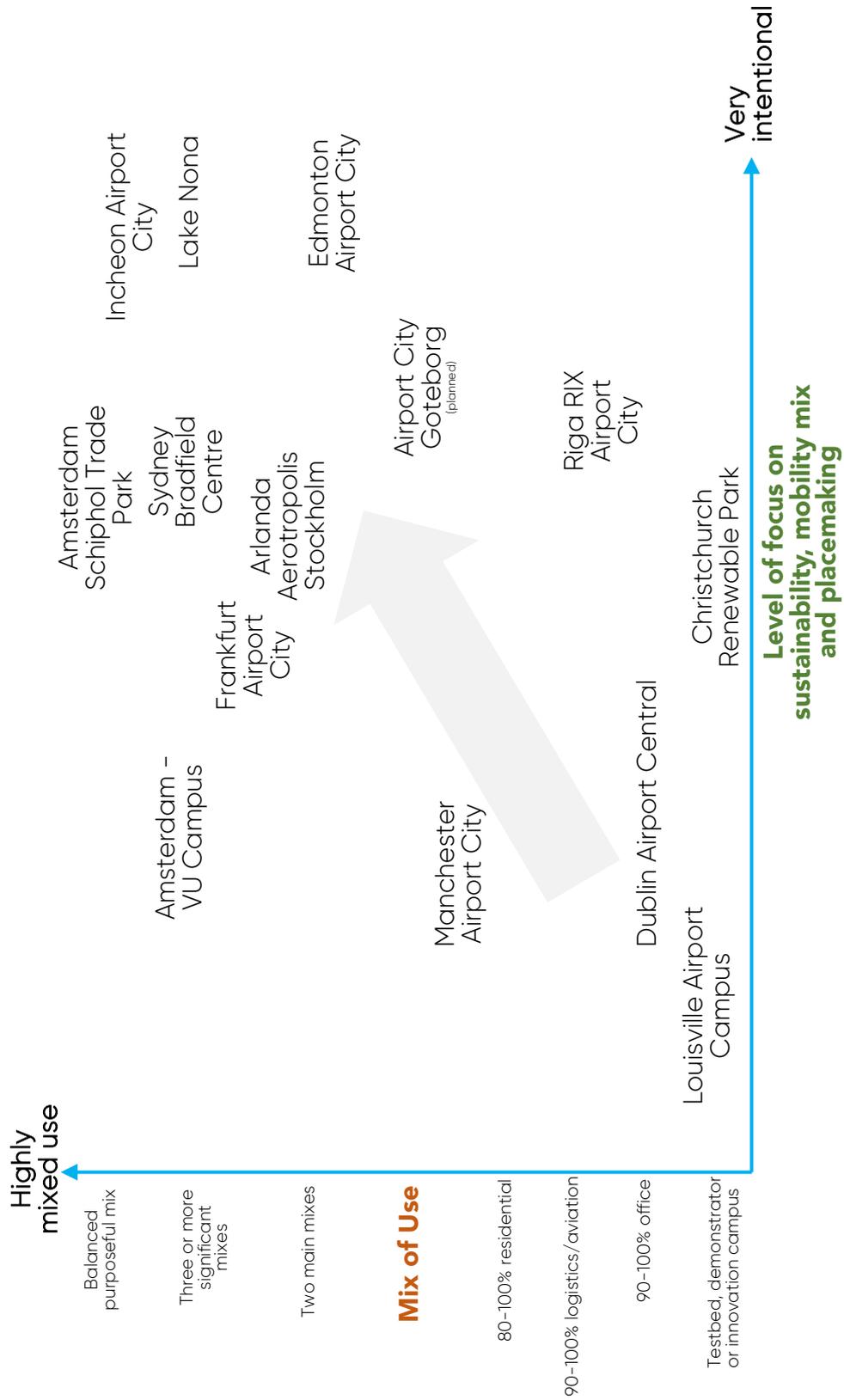
Transport links	Preliminary rail, bus and road links	Metro development, local bus network	Multi-modal regional transport hub
Residential	No Residential development	Initial developments to support the growing economy	Carefully planned neighbourhoods that benefit from close links to the airport
Financing	Airport activity fees and taxes	Land leases/sales, joint ventures	Value capture, municipal bonds, investment fundraising

Airport districts planning and starting now can of course leapfrog cycles and move directly into 3rd and 4th cycles.

The look and feel of an airport district is unique to each place, although some common features do emerge. In general, airport districts tend to be focused on and around businesses and amenities: although residential developments occur, these tend to be less common. Across four flagship developments in the Zuidas corridor of Amsterdam Schiphol, two are 100% office space, while the VU Campus and De Puls both have under 25% of the space dedicated to housing with the rest split between retail, entertainment, labs and offices (see case study for exact split).

Clusters tend to be medium rise developments with plenty of space between buildings and on thoroughfares, although some districts have shifted towards emulating the look and feel of a more traditional city centre, with a few high rise buildings at the centre. Amenities tend to be located centrally for easy access by workers who typically commute in from further afield. Business uses are dominated by offices and logistics warehouses, with manufacturing hubs and laboratory falling in the second tier, along with training and education centres, health facilities and mobility hubs.

Spectrum of airport districts according to their intended use mix and their commitment to a whole place with sustainable features.



Shared characteristics mean that most airport districts also have similar recipes for success.

The global evidence suggests that the most successful airport districts mix several of the following characteristics:

- 1. 'Smart' forward looking office buildings that help to improve sustainability and foster productivity.** Successful developments are investing in smart offices, recognising that while each tenant has unique demands there is a universal desire for environmental sensors detecting CO₂, temperature, humidity, air pressure and noise. As the pandemic has led to increased provision of hybrid working solutions, such as shared working spaces and flexible offices, as well as sensors focused on creating healthy buildings, the most successful airport districts have followed suit, considering not only how to boost natural daylight, but also how to track energy consumption and capture waste heat.

Dublin Airport Central's first phase of development includes 20,000 square metres of Grade A LEED Gold certified office space, an elevated bridge to improve pedestrian access from office buildings to terminal 2, and a large urban realm to significantly enhance the district's green space. The new business campus also includes Ireland's first LEED platinum core-and-shell building and has been shortlisted for an environmental award in recognition of work undertaken by the companies anchoring the district to improve lives of employees and the wider civic environment.

- 2. Easy access to green spaces that form a core of new developments.** The latest commercial and residential developments in airport districts have dedicated significant amounts of space to green areas. As in most successful business districts around the world, the majority of residential developments feature private gardens or are focused around medium density apartments with a park within a 5 minute walk.

Lake Nona has set up an up-front requirement to conserve 40% of the total development area for green spaces, including playground, parks and pools, and will create a 45 mile long network of walking and cycling trails to connect the residential community.

3. Easily accessible mix of transport options, supporting both within-development and inter-region connectivity.

In the most successful districts, bus stops tend to be located no more than a 10 minute walk away from workspaces, with quick links to the airport itself and from there to the wider region. Systematic efforts to promote and prioritise active transport are also a near universal feature among successful districts, with dense networks of cycle lanes, new pedestrian bridges and nature trails all common. Many districts are also prioritising electric vehicles and ensuring they can be responsive to changes in future demand, by installing the appropriate charging infrastructure during the construction process.

Lake Nona is trialling one of the largest networks of autonomous shuttles as a district transport option which connects to the wider regional rail and bus network at the central transport hub.

4. Broad approach to sustainability across development, transport options and businesses.

Many districts are focusing on attracting sustainably minded businesses, by ensuring that commercial developments are as sustainable as possible. Deployment of techniques to improve operational and energy efficiency, electric fleets for public transport, integration of EV charging points and daylight maximising building techniques are all common features. Some of the most successful districts are going one step further, either by co-locating large scale renewable energy sources on site, as for example in Frankfurt or Christchurch, or through efforts to deploy hydrogen infrastructure and next-generation fuels as has been a core focus at Charles de Gaulle and Kuala Lumpur.

For example, new developments in **Amsterdam** are frequently located on brownfield land to prevent over-development of natural spaces, while 6,000 solar panels atop the long-stay car park at Schiphol airport together with its thermal energy storage systems help to sustainably manage the temperature of surrounding buildings with far less need for gas power. All passengers are shuttled between gates and aircraft using electric buses, and there are plans to phase out all fossil-fuel powered vehicles in the wider district in the coming years.

- 5. Careful management of surrounding districts and alignment with wider local government strategies and objectives.** Many of the most successful districts have placed greater emphasis on ensuring that districts are appropriate to the local context, are able to respond to changing needs, and are built for long-term success than on maximising gross floor area or short-term financial return.

For example, **Schiphol Group** is currently in talks with the municipality of Haarlemmermeer about how to ensure that valuable land is sold to developers whose visions align with those of surrounding districts, rather than to the highest bidder for the land.

- 6. Designation as a Special Zone in order to catalyse redevelopment.** Special Zone status may be accompanied by local business rate retention (and relief), fast tracked planning procedures, and government sponsored infrastructure investment. In some cases, the Zone may even be used to test training and skills initiatives in relevant sectors.

For example, large areas of **Amsterdam Schiphol** are predesignated as commercial zones by the municipality, allowing for faster commercial development.

- 7. Commitment to intensifying land use around transportation nodes in order to create density, vibrancy, viability, flexibility, diversity, complexity and quality.** Successful projects have incorporated multiple uses at scale including housing, retail, culture, education, hospitality and leisure. In so doing, they have helped to set standards for new and distinctive kinds of retail, shared services, and business partnerships. Such intensification, particularly when supported by high levels of public transport accessibility, can also facilitate modal shift and support carbon reduction objectives.

For example, **Stockholm Arlanda** is specifically planning its development around key nodes which form the centre of its new districts, having identified the positive spill over effects that locating similar nodes alongside each other can achieve.

8. Alignment of planning across all levels of government, and across all departments. Formal and informal channels of communication can help to ensure future decision making is focused on achieving the same goal and that decisions taken by government can support the airport district and vice versa. There is also evidence that improved regional planning and collaboration for new transport and housing infrastructure can help to give confidence to firms to move out to more remote areas of the city.

For example, the 2010 region plan for **Stockholm Arlanda** focused on linking the airport with Arlandastad and the town of Märsta. The subsequent developments of the airport city have focused on aligning themselves with the aims and ambitions of this plan.

9. Adoption of planning tools to steer processes that are often organic and unpredictable. Although district planning plays an essential role, project leaders often face imperatives to consider options that allow agile responses, for example to changes in the operational management of the airport. Many airports are establishing a real estate division to act as a developer, contractor and construction project owner and manager of landside commercial properties as well as development in a wider district. Many also enter into JVs with larger developers, which can bring in additional experience and flexibility with developers able to commit greater resources to new projects.

In **Amsterdam**, for example, the SADC and SRE are charged with acquiring and investing in land, providing political independence while retaining the political power of the region. The SADC helps firms with their location choices, connects businesses and government agencies to developers and provides knowledge of planning laws and regulations. In **Manchester**, the MAG group created MAG property to oversee all non-airport related property developments in its portfolio. It is also in partnership with BCEGI at Airport City, which provides construction and development expertise. Meanwhile in **Lake Nona** Tavistock is a private developer and owns the entire site, working closely with Orlando airport in its development and management of the area.

	Lake Nona, Orlando	Amsterdam Schiphol	Stockholm Arlanda	Manchester Airport City
Ownership model	Private ownership	Multiple joint ventures	Joint venture	Joint venture
Owners	Tavistock	Schiphol Group and Municipality of Haarlemmermeer	Swedavia, the Municipality of Sigtuna and Arlandastad Holding AB	MAG Group (owned by Manchester councils, BCEGI)
Real estate division	N/A	Schiphol real estate	N/A	MAG property
Industry focus	Medical, Health and wellness, education and aviation	Consumer goods, renewable energy, life sciences and smart logistics	Logistics, mobility, hotel, entertainment, business support	Logistics, Hotels, Life sciences, medicine, advanced manufacturing, consumer businesses

For many of the successful districts that already espouse these success principles, the challenge for the next cycle will be around agreeing the approach on how to reach critical mass, and how to time the arrival of different parts of the jigsaw to achieve maximum impact. International experience suggest success is more likely when there is a focus on:

- **Quick wins.** To accelerate development, many projects have opted to develop easy sites with fewer development barriers in order to create a sense of excitement and positive energy. This approach helps to show investors the potential investment opportunities the area offers. It is a step in the right direction in attracting people and businesses that will have a knock-on effect in other planned neighbourhoods.

For example, in **Manchester** 2 of 4 high profile hotels were completed in the hotel zone by 2021, with 2 more to follow shortly after. THG signed a £1bn campus agreement which was heavily advertised, showing the benefits and capability of the site.

- **On-time Infrastructure investment.** Developing rail transport with rapid connectivity to other locations and hubs have been essential catalysts for many cities. Integrated public transport and road connections also help to spread demand across a metropolitan region and provide access for both high and low-income workers required to serve the area. International experience reveals that infrastructure investment is often the priority in the first cycle of large-scale transformation projects and continues to be important throughout the whole development period and after, as density increases, and more capacity is required. In addition, upfront capital investment in digital and utilities infrastructure has been a big advantage to other development projects, by improving the attractiveness and long-term efficiency of the site.

For example, in **Manchester** the earliest projects were focused on improving transport infrastructure to the airport, including extending the city metro out to the airport's transport hub and building a motorway link road.

“The mission from the start was to create the ideal place that inspires human potential through innovative collaboration”.

- Jessi Blakely, Tavistock Group, Lake Nona

- **Achieving wider modal shift and other catalytic regional spillovers.** The medium-term prospects of transformation projects often depend on rail infrastructure connectivity helping to shift from a car dependent mode to a higher scale mode. Active transport is also facilitated through infrastructure investment and micro-mobility options are available to increase convenience and reduce congestion.

Lake Nona is investing in miles of nature trails, providing cycle lanes on most roads and trialling the largest autonomous shuttle network in the United States.



5. Economic specialisation

The economic disruption caused by Covid-19 is pushing district planners to actively pursue strategies around their desired industry mix, future value creation and the implications for what kind of spaces are needed to support this. Many view the corporate, visitor and consumption economies as radically disrupted and a low growth priority in the medium term. However, the innovation and tech economies are seen as a major growth opportunity which are able to support a range of high value jobs in key locations. In the medium to long term airport districts that are able to specialise in a few key industries, rather than try and become global leaders in 5+ areas, have seen the most success.

Airport districts desire homes for high-growth industries that will grow in the aftermath of Covid-19. So far the most popular sectors for airport districts are:

- **Life sciences**
- **Advanced manufacturing**
- **Digital certification**
- **Fintech**

Fostering a specialised and productive location for an industry that does not yet have a clear identity or culture of clustering can be a major contributor to urban transformation. The role of particular buildings, hubs, incubators and innovation community managers is important, but so too is the remit of airport master planning. Global evidence suggests that this should be expanded to include other functions that the district may wish to specialise in, including logistics, advanced manufacturing, agricultural exports, life sciences, retail and mobility.

In **Western Sydney** the airport district is working in conjunction with the local government and businesses to create a new district with specialist business hubs for advanced manufacturing, life sciences, agribusiness and medicine. The visibility of the district planners has helped encourage investment in the site, creating successful new districts.

The global experience suggests that successful airport districts combine a deliberate focus on a small set of economic specialisations with the flexibility to allow these locations to adapt to changing market conditions and morph into larger clusters as new businesses are attracted to the area and it experiences regional success. These specialisations draw from the region's existing strengths and are frequently based around anchor institutions and businesses or key local infrastructure. Universities can also act as anchor institutions as they attract knowledge focused businesses which benefit from their proximity to research institutions.

For example, **Lake Nona** initially planned for 3 specialisations health and wellness, technology and education. The health and wellness cluster, which began with the University Research Institute and Medical School has since morphed into a wider human performance cluster, as sports and training businesses, such as the USTA have relocated to the area due to the concentration of expertise, facilities and other businesses.

Many projects provide a way to create visibility about the presence of growth industries and have positive effects on the confidence of talent, investors, venturers, and innovators. They become locations that give industries a home, a focus, and access to one another.

Land use restrictions can be put in place to ensure that businesses that do develop are desirable and relevant to the cluster, as has been done in **Amsterdam Schiphol**. Here, conscious efforts to co-locate businesses in the same industry together, anchored by a major international business, have helped to boost the visibility of the site and act as a signal of the value of the cluster, creating a virtuous cycle of investment and relocation.

In some airport cities, the relocation of government agencies has helped to anchor the emerging district, stimulating economic growth and attracting businesses which value proximity to their expertise and knowledge. Government agencies typically play two significant roles - regulation and fostering investment and growth. Proximity to these functions can be significant for businesses that wish to understand how regulations may affect them and how best to boost investment. This relocation can also serve as a signal of confidence from national government as these agencies often play significant roles in their country's economy.

In **Western Sydney** several government agencies, including the government research organisation, have relocated to the new airport district. This commitment from established government agencies has helped to encourage knowledge-intensive, innovative businesses to set up in the area as well as advanced manufacturing and defence specialists.

District leaders and managers can play an important role as a convenor, by introducing new businesses to the right officials, improving their understanding of regulations and incentives. As projects seek funding from city, state or national governments to support the growth of new sectors and develop new technology centres, many airport districts are leveraging acting as a facilitator for businesses who wish to relocate to the area, with early proactive outreach demonstrating the value of the site and potential partners. Their knowledge of local contacts, regulations and possible incentives can all help encourage businesses to move to the airport district.

In **Lake Nona**, Tavistock Development Company, the district owner, frequently acts as an intermediary between potential businesses, the City of Orlando and the State of Florida, connecting them to the appropriate officials and passing on its knowledge of local laws, benefits and regulations. In this case, it has enabled the district to become one of the fastest growing areas in the USA with a close working relationship with the City of Orlando despite being entirely privately owned.

In many cases, advertising and creating incentives for businesses to locate in or around an airport district can serve as catalysts to airport district development.

Airport districts may be designated as enterprise zones, or benefit from special tax incentives. These can be used in promotional materials and directly advertised to prospective businesses as part of the effort to create an economic specialism.

Manchester benefits from its enterprise zone status and subsequent low business rates as well as a dedicated business concierge service that offers legal and professional services exclusively for businesses located in the Airport City, which has helped to attract major investments from consumer facing businesses such as THG. Providing specific incentives or offers to businesses can help a district create a unique business identity that is clearly open to investment and innovation.

For technology intensive clusters, the presence of cutting-edge technology infrastructure can act as a draw in and of itself.

Innovative businesses, industry 4.0 and digital-orientated businesses often rely on access to high-capacity data networks and investing in the right infrastructure from the start can help a district attract the right kind of businesses to its clusters. This infrastructure can include fibre networks, 5G technology and road networks that are capable of supporting autonomous vehicles, but may also be accompanied by a regulatory environment that is supportive of testing new technologies so that the self-contained district or cluster can be used as a living lab for the latest innovations.

Amsterdam Schiphol has attracted knowledge-intensive industries to its technology cluster by leveraging its high-quality fibre infrastructure that connects directly to two of Europe's leading internet exchange hubs, using this competitive advantage to attract innovative firms specialising in data, AI and digital. Similarly, proximity to Changi Airport, fast fibre broadband and availability of large spaces has enabled Changi Business Park to establish itself as an R&D and innovation hub for high-tech companies, such as Huawei and Dell. IBM also recently launched Singapore's first 5G Industry 4.0 trial to develop, test and showcase 5G-powered solutions in the park.

The vast majority of successful global airport districts feature specialised logistics clusters with easy access to rail and air links. Typically these have significant floor space for warehouses, with a small amount of space dedicated to offices to support these warehouse functions. The most successful logistics areas also dedicate areas for green space and are investing in creating smart warehouses, with the latest technology that are prepared for new fuelling options including alternative fuels and electric vehicles.

The Roserberg Logistics area in **Stockholm Arlanda** features automatic robotic storage, rooftop solar panels and is built using recyclable materials. These features have been advertised by the site as vital to attract the latest growth in demand for logistics space from the e-commerce sector.

Advanced manufacturing is another prominent specialisation, whose success seems to depend on the strength of collaboration between universities, existing successful research institutes and major businesses. As a group, these three types of organisations can more easily fund and occupy a central manufacturing hub with the latest technology including 3D printers, next-generation computing and purpose built interactive spaces. This in turn attracts suppliers and smaller businesses who wish to access the technology and companies to locate around it.

For example, **Western Sydney** is creating a world leading manufacturing cluster at the Bradfield Aerotropolis, in partnership with the Advanced Manufacturing Research Centre (AMRC) in Sheffield. The AMRC is the anchor for the cluster which includes a training facility and has signed Memoranda of Understandings with BAE Systems, Northrop Grumman, Hitachi and others. The New South Wales government has committed \$1bn to the Bradfield city centre, including \$100m for a state-of-the-art building that will house share-use advanced manufacturing equipment. Utility company Jemena is also building hydrogen-ready gas infrastructure in Bradfield city centre.

“Clusters don't always work if businesses compete with each other so promoting cross sector collaboration was a key aim”

- Joep Schroeders, SADC

6. Talent attraction and skills development

“Health, technology and education are at the core of our appeal, with pre-K to PHD education available within 5 miles and pioneering technology including the longest autonomous shuttle route in the US” - Jessi Blakely, Tavistock Group

Interviewees and project leaders explain that much of the success of an airport city also depends on the legitimacy a project has with local citizens and governments.

Initiatives are needed to ensure that access to new jobs and growth in the area can be distributed across all income groups in the region. The airport city development is most effective when, as in the cases of Manchester and Orlando, there are also city government initiative to link local people to jobs-specific skills development, expand career pathways and provide careers support. These are important to ensure a vibrant mix of uses and incomes in the new district, and to maintain long-term political support for change.

Airport cities present opportunities to appeal to a more affluent user and tenant base, and at the same time expand the mix of amenities, housing and services that can meet the needs of social groups that may have limited access. The opportunities the successful ones pursue include:

- Audit the area for the diversity of users that can access and use it
- Optimise where possible the mix of users, owners and tenants
- Broaden access and invitation to newcomers.

This usually requires close stakeholder co-ordination, investment in some social outreach capacity, and attention to building design and local messaging.

At the same time, ambitious talent and the businesses that employ them, are becoming increasingly sensitive to the quality of place and amenity when making decisions about where to locate. While access to the airport is a compelling draw for

certain highly mobile talent, successful locations appear to have developed a concentration of amenities beyond the airport which help attract individuals in different industries. Reliable physical infrastructure is universally important, and the presence of efficient multi-modal transport hubs where travel options not just varied but also frequent and extend into the evenings (see also Section 2). When these locations also incorporate elements of vibrancy, density and enriching cultural and entertainment experience, the propensity to appeal to internationally-oriented talent grows.

Examples include a Dutch masters art gallery at **Amsterdam Schiphol**, sports complexes at **Lake Nona** and an entertainment complex in **Changi** airport.

Local residents, especially those who may have faced barriers to employment, can benefit from workforce development opportunities led by airport district leadership that is linked to the business community. Where possible, airport districts try to call upon their 'anchor tenants', who can commit to local job creation commitments, procurement relationships, and leading by example. As a community of employers, district businesses can engage in workforce development partnerships through internships, apprenticeships and job placement.

Manchester Airport City developed a skills strategy that involved working with region-wide employment initiatives, providing apprenticeships across the district and a pilot programme that brought together airport businesses, local colleges and universities and local businesses to create a **Young Person's Airport Skills Academy**. This programme has helped the airport district support a long-term pipeline of jobs and contributed to the wider region's long-term employment goals, creating stability and opportunity for historically disadvantaged communities.

Customised workforce initiatives are sometimes developed directly by airport districts themselves when they have reached sufficient scale. Or they work through partnerships formed with existing workforce development programs to match local talent with business needs. In recent years, a majority of districts intervene to match local residents to precinct job opportunities. This is a shift from earlier years where districts assumed a 'trickle-down effect' or that the geographical proximity of new employment opportunities would naturally benefit local talent.

7. Governance

From conception to execution, the most successful and in-demand airport cities are those that set ambitious and innovative standards for themselves. Their founding leadership initiates a firm and open culture of collaboration between public and private stakeholders to co-create the shared vision, share financing where appropriate, develop some joint responsibilities, plan out the right sequencing of development with infrastructure, and stay aligned with public and social goals.

This culture benefits from a strong initial impetus in local government to support the transformation and repurposing of an area that already may be producing some value. It also needs leading and galvanising by the landowners, developers and real estate investors. Larger local and global companies who are developing a 'place consciousness' for the first time, or wish to test infrastructure of the future, are also often key players in a district - not simply 'occupants' but also sources of ideas. Airport districts that have or attract institutions such as university departments, sports clubs or hospitals also benefit from their input.

In other words, leadership of an airport district has to be distributed. When it is led and run too narrowly, the outcomes either within or around the location are often eroded. Successful airport projects embrace the fact they are complex and multi-stakeholder as they evolve, and start to design their strategy and governance accordingly from the outset. It helps to have a catalyst to galvanise everyone - such as a major event, company or even a crisis - but the commitment to work together is essential.

Governance and coordination mechanisms are also needed to prepare the effective marketing and communications to attract investors and tenants. Successful airport cities realise that it is essential to co-ordinate the messaging within a formal or informal alliance, in order to create cohesion, avoid confusion, and pool the resources and capability of the partners. Here the project development team comes together with a local

Council, investment agencies, business leadership groups, key sporting anchors or universities, and others, to ensure messages support each other.

There is no 'correct' governance model to pursue. International experience shows that there are many governance structures in mature airport cities, and the roles and responsibilities of the public and private sectors can vary significantly.

Many are led by a private sector lead development partner that provides capability across the attraction, development, planning and promotion stages of the chain.

At **Stockholm Arlanda** the municipality and state-owned airport company own the project alongside Arlandastad Holding, which acts as the lead construction and development partner. The Holding Group has benefitted from a clear vision for the area over 15 years, successful purchase of 200 hectares of strategic land over 10 years, a targeted approach to create a business cluster. With the experience acquired over this time, the Group has become an astute leader in development, co-ordination and communication.

Some benefit from effective management by a strong public sector-owned and run agency.

At **Amsterdam Schiphol**, the Schiphol Area Development Company (SADC) which governs the airport city was founded as a PPP between airport, municipalities, provinces and national investment bank to manage the land and effectively share revenues. The SADC helps firms with their location choices and connects business and government agencies to developers and research agencies. It provides vital knowledge of planning - zoning plans, building regulations, laws and regulations, municipal area development plans, and possible financing sources. Given the rapid changes unfolding in the logistics sector, SADC also plays a key role in future-proofing development for the long-term benefit of the whole region.

Some are a coalition convened by a loose public leadership.

Manchester Airport City is a JV between MAG Group (which in turn is owned by Manchester City Council and the surrounding boroughs) and BCEGI which both operate under the umbrella of the Airport City.

Some are solely led by a visionary single private sector developer.

Tavistock owns and is the primary developer for **Lake Nona**. Its Development Company is a standard setter in thinking about the future of design, technology and human experience.

The important thing for an airport city project is to optimise the model it is working within. Leadership needs to understand whether and how it should dictate outcomes or negotiate them. It needs to establish what kind of relationship it should develop with the public and private sector, and what it should ask of it (or charge it), to deliver whole-project outcomes.

Transformation around airports also requires a higher standard of place management than local governments and even many developers are often used to providing. Responsibility for a district's street-scaping, security, marketing and business partnerships is also an increasingly specialised and influential activity. Mechanisms to introduce local, civic and business involvement are important.

Amsterdam Schiphol established SRE to act alongside SADC partly for this purpose, as it manages real estate in the Airport City, rather than simply developing it. Business Improvement Districts are also effective tools around many American airport city communities.

International experience reveals that building trust and sustaining motivation has to be a core task in creating a coalition of stakeholders. A first important step is to show stakeholders that the project is bringing value to them and adding to their potential, not taking it away. Shifting beyond a zero-sum mindset is key. In addition to cost sharing, partnerships with various stakeholders enable the local government to share and manage the risks appropriately and add more technical capacities. A transparent risk-sharing approach can help build confidence among the various stakeholders and credibility for the ambitions of the project.

Amsterdam Schiphol has been particularly successful as it has established direct and indirect channels for stakeholders to steer the district's development, including a consultative body with representatives from the government, SADC and the airport.

Chart: Manchester Airport City's 2019 mapping review of what the area's stakeholders needed their development project deliver, by order of importance.

OUR MATERIALITY MATRIX



A wide array of skilled people is needed to deliver successful urban regeneration and collaboration between these individuals is key to success. City leaders can play an active role in encouraging this collaboration and ensuring the needs and views of the end user are considered throughout the development process.

Tavistock, the owner and developer of **Lake Nona**, has ensured that housebuilders are involved in the planning process for its new developments from the start, using their expertise to shape the development and making the final output closer to the needs of the end user.

A common flaw in airport district shaping projects is local government issues which often work against a coherent strategy to steer development towards specific centres. Competition between municipalities for tax base can result in competing development and wasteful duplication that ultimately prevents an ambitious airport districts from acquiring the attributes to be competitive. Fragmented governance also usually results in a lack of joint planning and advocacy to endorse an innovative redevelopment effort, and often fosters social and political divides between different factions that create negative brands around potential new development areas.

“Orlando is known as the city of collaboration with the mayors, land owners and airports supportive of one goal. A focus on how all stakeholders can benefit together is part of the ethos”

- Jessi Blakely, Tavistock Group

8. Branding and profiling

A strong brand and powerful identity are essential to ensuring that an airport district proposition can stand out locally and internationally. The story of the airport city first has to galvanise local leaders, get the support of citizens, and establish a clear proposition to domestic investors.

It is also important in setting expectations among those people who do not know Gardermoen – the prospective visitors, customers, entrepreneurs, and investors. People ascribe or assume things about a neighbourhood based on the signals they receive, the differentiating elements they convey, and the sense of how credible this location really is. These all affect the appetite they have to engage or participate in the airport district.

There are three core aspects to building the kind of distinctive profile, edge and brand value:

1. **Identity** that is meaningful and durable and provides the glue and the consistency of the project and its different components as they evolve over time.
2. **Communication and Organisation** decisions that relate to building a marketing alliance, understanding one's audiences, building appropriate brand collateral, and providing the right materials to the relevant stakeholders in ways that build appetite and momentum.
3. **Visibility** at domestic and international levels through careful consideration of the platforms, the events, the ambassadors, the champions, and the 'carriers' of the project into different international arenas.

Airport district branding and promotion also comes with inherent risks, which need to be effectively managed and mitigated. The promotion and profile development of an airport transformation is not something 'done' at one moment in time, by a single wise stakeholder, with a host of good ideas. It involves a complex set of interventions, which spans everything from distilling identity, respecting existing communities, place marketing, sales, marketing collateral, placemaking, co-ordination and governance. This is not a one-off exercise, it requires a multi-annual programme of animation, events and activation, sequenced over the different stages of airport city development to reveal the progress and keep the momentum.

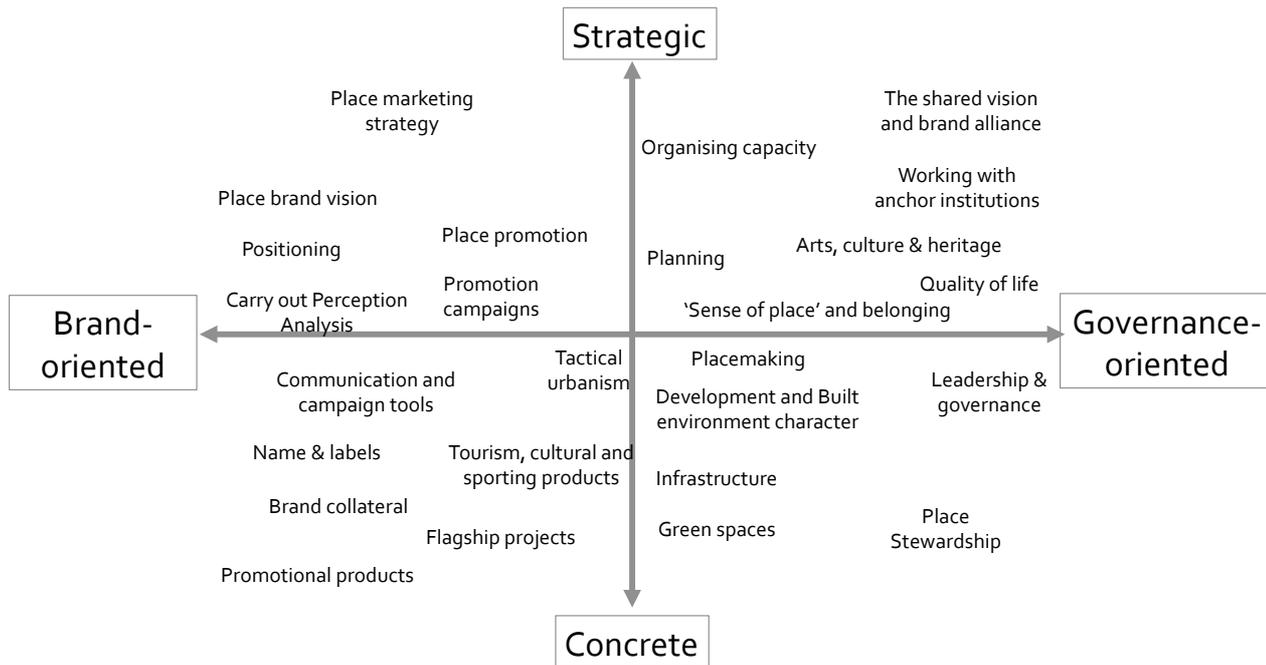
The area around **Amsterdam Schiphol** has developed a strong story of innovation and experience to communicate to investors, users and visitors that it is more than simply an airport. A wide variety of tools should be considered as possible means of curating the airport district's image as a district that is far more than an enabler of airport efficiency.

Today, building profile for a new or redeveloped airport district requires consideration of many other factors, including a **sharp business offer, fostering character, community engagement, stakeholder participation and co-creation, and the depth and breadth of its history and identity.**

Manchester Airport City's slogan - "a place to embrace a changing future" - makes clear its connectivity and access to the city, while **Amsterdam's** Amsterdam brand features prominently in the airport's marketing materials and certain unique aspects of the region. These could be sustainability in **Stockholm**, culture and nature in **Lake Nona** or the "Netherlands lifestyle" in **Amsterdam**.

To be successful, some of the required tasks are strategic, while others are much more concrete and local. These are mapped in the chart below. Preparing to work well in all four quadrants is critical. Experience shows that many branding efforts only work well in one or two.

Chart: Brand efforts are required at all ends of the spectrum, not just narrow streams.



It is important to remember that branding does not pay off in the short term: the cycle of return on branding investment is much longer than any political cycle. Preparing for the long-term, and the allies who will commit to the brand over that time, is essential.

The press releases and website branding from **Stockholm Arlanda** make it clear that the development of the Airport City is still a work in progress, mitigating the risk of overpromising the speed of transformation.

Political cycles and changing leadership mean that the purpose and emphasis of redevelopment projects changes, both rhetorically and on the ground. It involves multiple audiences: in this case long-established residents of the Gardermoen region, current stakeholders in the airport, prospective investors, potential retailers, people not in Gardermoen who do not yet go to or rate the area, and city leaders of all political parties.

Manchester Airport City clearly has directed its branding efforts towards particular audiences. By focusing on the completed construction and business investment in the region, it is highlighting the appeal of the site to businesses and entrepreneurs but also publicising the contribution of the Airport City to the wider community through hosting sports events and exhibitions, helps keep local stakeholders invested in the success of the project.

“The area is promoted as a whole by Amsterdam Airport Area, a PPP between SADC and 20 other public and private partners including banks, service providers, recruitment, and legal firms all united behind the main goal of promoting the area.”

- Joep Schroeders, SADC

9. Learning from others

Why do many airport districts fail to live up to their initial promise?

Aside from elements that are more outside the control of project leaders (such as a downturn in the business cycle), the most common reasons that an airport city fails are:

- Absence of authenticity about what makes the proximity to the airport really distinctive and advantageous, creating an image of a generic real estate proposition that just happens to be near an airport.
- The offer that is brought forward does not translate into real demand as it is not what the market perceives to be needed. There is also low market confidence that the infrastructure and amenity required to make the place become desirable and well connected will be forthcoming. Long-term deficiencies in the road, bus and rail links lock in a negative perception about the location.
- Limited focus on design and place experience. Low levels of co-ordination in delivering coherence across different sites, and the absence of vision for the different spaces and how they should evolve over many cycles.
- Gap between the aspiration of the masterplan and the economic and commercial reality of the proposition. This may include ultimately a reliance on a single or dominant use that reduces the variety, and the sense of cohesion and community.
- Existing centres near to the airport but also nearer the city centre respond to the perceived competition of the airport by changing their own plans to increase capacity or upgrade quality.
- The project does not successfully bring in the skills and talent needed to attract the businesses and investors that are being targeted.
- Nearby resident or political opposition to the development results in continual scrutiny on planning, data, access, environment or inclusiveness. All of this can result in a more incremental approach that cannot achieve the kind of scale to become visible in wider markets or attract new kinds of talent and businesses.

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Co-founded in 2008 by Prof Greg Clark CBE, Dr Tim Moonen and Emily Moir, The Business of Cities is an emerging urban intelligence firm working with more than 100 cities and companies worldwide each year. Headquartered in central London, with partners and associates worldwide, our work helps leaders to navigate the rapidly evolving relationships between business and cities, and respond purposefully to the twin dynamics of urbanisation and globalisation.

