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# Are urban walkway networks a new frontier of real estate valuation?

Urban  
Walkway  
Networks



## *Introduction*

In many cities around the world, there are now pedestrian walkway networks that complement public transport and the road network. The many benefits of these networks feature in government analysis worldwide and are attracting rising interest in the Gulf: reduced congestion, fewer traffic accidents and measurable improvement in the urban environment such as better air quality and less noise.<sup>1</sup>

The second example comes from Asia. Faced with rising temperatures in an already tropical climate on the Equator, Singapore has created retail-focused, double-storey underground walkways connecting the centre of the city with the ocean. The system is linear and nowhere near the size or complexity of the Toronto PATH, but other MRT (metro) stations in Singapore also have underground retail plazas which have been steadily growing in size and turnover.

## *Examples worldwide*

Mainly owing to the challenging weather and relative economic affluence, most urban walkway networks are found in North America. For example, pedestrians can escape the cold winters in Montreal by using the RESO (La Ville Souterraine, also known as the Underground City),<sup>2</sup> and in Chicago the Pedway has connected more than fifty buildings since the 1950s. Houston has its Tunnel System<sup>3</sup> and Minneapolis–St Paul the Skyway system.<sup>4</sup> Hong Kong has had two elevated walkway systems since the 1980s.<sup>5</sup> More recently, China has made very significant investments in these networks, notably in Shanghai where the government has faced the challenge of integrating land parcels.<sup>6</sup>

Two interesting examples come from Toronto and Singapore. The PATH is a mostly underground pedestrian walkway network in downtown Toronto that spans more than 30 kilometres of restaurants, shopping, services and entertainment. The walkway facilitates pedestrian linkages to public transit, accommodating more than 200,000 business-day commuters as well as tourists and residents. The PATH makes an important contribution to the economic viability of the city's downtown by connecting around 1,200 shops and businesses – from restaurants and hotels to subways and aquariums – that generate more than \$2 bn in annual sales each year. Like a small city, the underground connects over 50 office towers and buildings, six major hotels, two major department stores, over 20 underground parking garages and several major tourist destinations.



## What's happening in the Gulf?

It was just a matter of time before the major cities of the Gulf took notice of the possibilities that walkway networks offered and recognised that they too needed to create them. It is also no surprise to see that once they did, they began to jump ahead of existing networks in their vision and execution. It has been of particular interest to see how different cities have approached their design.

In Saudi Arabia, the connected buildings approach has already found its way into the design of the King Abdullah Financial District (KAFD) in Riyadh. All buildings and monorail stations are linked together by air-conditioned footbridges above street level. Those who work there already enthuse about the opportunity this provides to walk not only between offices but also between where they live and where they work, especially in summer. The network provides a clear comparative advantage both for KAFD as a whole and for residential buildings that are part of the network.

Judging from progress nationally so far, Saudi Arabia will take a step-by-step approach to walkways, installing them largely in major mixed-use developments. This is a sensible approach: walkway networks are best suited to traditional high-density CBDs, whereas Riyadh is a large metropolis with a multitude of planning constraints. Building an underground walkway network along the lines of the Metro would be an immense challenge, and one perhaps of limited benefit given the distances involved in the distribution of key commercial, administrative and retail centres. The area bounded by the projected new ring roads is 15km<sup>2</sup>, for example, and the city spreads well beyond that and is growing rapidly. The other point to note is that gigaprojects such as NEOM and the Cube have been designed to incorporate all of the benefits of these networks from the start.

In contrast, Dubai has waited for decades before launching its own network, but has now announced a major initiative based around pedestrian access across the city as a whole. The official total network is 6,500km, but almost all of this is planned to be conventional walkways at ground level.

From a network perspective, what matters is what will be both protected from the elements and also connected directly to buildings. The prototype currently being planned would span 2km, and the architects have more ambitious plans for the future. With this modular approach, networks for individual developments or existing roads will be created gradually over time, connecting directly with public transport for longer distance travel.



*The rise of urban walkway networks is redefining real estate valuation in the UAE, making walkability a key asset. In Dubai, developments like Downtown Dubai and The Walk at JBR highlight how pedestrian-friendly designs drive value, reflecting the goals of the Dubai 2040 Urban Master Plan. Abu Dhabi's Saadiyat Cultural District and Al Maryah Island set benchmarks for sustainability and community living through integrated walkways. Meanwhile, Ras Al Khaimah leverages eco-tourism zones like the Corniche and Al Marjan Island to enhance appeal. Urban walkways are not just infrastructure—they are catalysts shaping the future of real estate.*

**Vidhi Shah**

Partner, Head of Commercial Valuation

Network Name	Location	Design Approach	Date of Inception	Total Length
Skyway	Minneapolis and St Paul – two networks	Connected buildings at above-street level	1950s	22.5 km
Pedway	Chicago	Subway	1951	8 km
Tunnel System	Houston	Subway linked to some connected buildings	1930s	11 km
RESO	Montreal	Underground street facsimile	1962	33 km
Marina Parade Link Mall	Singapore	Underground street facsimile on two levels	1980s	5 km
PATH	Toronto	Underground street facsimile	1960s	33 km
Future Loop	Dubai	A mixture of street and above-street levels	2024	Total 90km projected. Initial phase – 2km

What has not yet been established is the commercial underpinning of the new Dubai network. In Houston, where the network enjoys extensive air-conditioning, there has been a system for decades of fees and charges imposed on the building owners who benefit from the tunnel network. As the Dubai network expands, we can expect dialogue

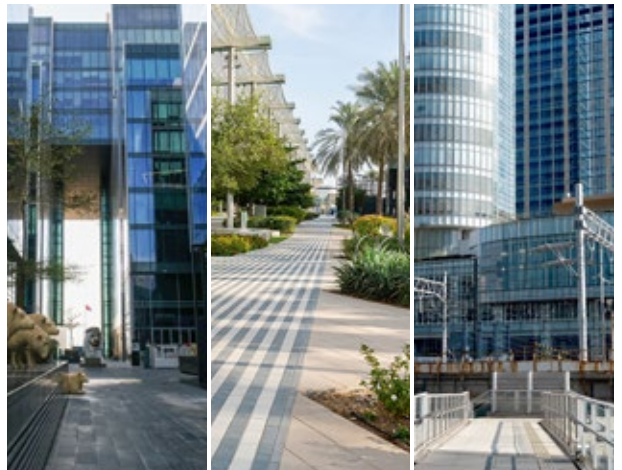
between business and government on how to apportion costs in proportion to benefits. This will inevitably mean that the implementation of a successful urban walkways plan will involve not only technical issues, but economic and financial ones as well.

## Classifying walkway networks

There is as yet no acknowledged international classification system for urban walkway networks. Each currently celebrates its individuality and close connection with the history of its city. However, there are many potential criteria which could be used, and these can be divided into three categories: physical, economic and financial. The most obvious physical criterion is size, although this can include a number of different measurements, such as the combined length of walkways, the total area enclosed by the outside 'ring' of the network, and the maximum span from north to south and east to west. Architecturally, of critical importance is the level at which the network has predominantly been built – below ground, at ground level or above ground. Does the network primarily connect buildings or function as a street facsimile? What is the average distance from the entry point to the network to building entrances? The two design approaches are of course not incompatible. Some cities may use both at different points, for example connected buildings in a development that are then integrated at one or more points into a wider street facsimile network.

Heating and cooling systems are also physical criteria. Cooling in summer is naturally the main issue for walkways in the Gulf. Air-conditioning is intended for the prototype in Dubai and is part of the fit-out for the KAFD inter-building bridges, but to scale up a less energy-intensive solution will be necessary unless air-conditioning itself can be powered exclusively from inexpensive renewables. A range of competing technologies is already available, all of them undergoing continuous improvement. Examples include the use of specialised vegetation to absorb heat and shield those below, measures to reduce the heat island effect, and the construction of shadeways and pedways.

Abu Dhabi took an early lead in institutionalising these alternatives through its design manuals,<sup>7</sup> but there are still significant challenges with successful implementation at scale. Until these challenges are overcome, temperatures in large-scale Gulf walkways will still be higher than optimal. This in turn raises the importance of economic and financial criteria. So long as the network remains free at the point of use, which is currently the case for every walkway network, usage statistics are only relevant as economic indicators. Financial criteria would include construction and maintenance costs, ownership, in-network retail and associated rents, advertising revenue and, where relevant, access rights and charges.



## The valuation perspective

If business and the wider community are to be expected to contribute to urban walkways, how can their benefit be properly assessed? How can connectivity be valued? A number of different valuation methodologies have been proposed for the valuation of underground space itself, of which the most common is the contingent valuation method (CVM). This method directly examines the willingness of survey respondents to pay for goods or services in a hypothetical market and uses this as a value measurement.<sup>8</sup> If business and the community become engaged in the walkway development process, this will happen automatically. The most plausible estimates of willingness to pay are based on a percentage increase in sales. As stakeholders will want to take into account the wider benefits of the network, rather than simply the direct impact on sales, this method may well underestimate value. This in turn has led to methodologies that closely resemble traditional government cost-benefit analysis, for example the service replacement cost method (SRCM) developed for application in China.<sup>9</sup>

What about the impact on nearby real estate? If the way Metros have been incorporated into valuation models is to serve as a precedent, the street facsimile network will use 'distance from an entry to the network at street (or above-street) level' as a linear variable. We have evidence of the percentage increases in value that could be delivered from existing research into the valuation uplift that proximity to a Metro station delivers now. In London, the Nationwide Building Society reported in 2021 that valuations of equivalent properties less than 500m from underground stations attracted a 9.7% premium. In Glasgow, there was an equivalent premium of 7.2% and in Manchester there was a 6.1% premium for proximity to suburban rail.<sup>10</sup> Another line of research is the impact of urban pedestrian precincts on commercial valuation. Perhaps surprisingly, these too generate valuation uplifts. Lancaster, California, saw a 9.5% rise in value,<sup>11</sup> while in Hong Kong, a figure of 17% was observed,<sup>12</sup> although this study predated the era of internet retail.

However, for several reasons, percentage increases of this order may be an underestimate when applied to walkways in the Gulf. First, the cut-off at 500m is arbitrary: we must presume the premium is higher closer to the station. The reduction in the premium out to 750m is of the order of 50%, so it would be reasonable to assume a similar increase in the other direction. Secondly, almost all existing studies have aimed at quantifying the positive effects of pedestrianisation and walkability generally, especially in temperate climates, not that of interconnectedness itself. The equivalent for the connected buildings version of the network is moreover the straightforward question of whether a connection exists or not. Effectively this is the same as asking of the street facsimile model what is the valuation uplift at a zero distance from the entry point to the network. A valuation study in Hong Kong specifically analysing the impact of skybridges produced much higher values: office properties with skywalk network connectors were an impressive 40% more expensive than those without connectors.<sup>13</sup> This may be a pointer to future mixed-use gigaproject valuations.

Thirdly, and perhaps most importantly, the move towards integrated mixed use communities – especially with the growing impact of climate change – is highly likely to result in purchasers and tenants emphasising their ability to live 'under one roof' as far as possible. It is no accident that in both Riyadh and Dubai, flagship real estate initiatives have been the first to acquire skybridges and access to urban walkway networks. These networks will generate positive signalling effects. Valuers will therefore focus their attention increasingly on just how much benefit this brings, but it is likely to be substantial.



*As Dubai's population grows, traffic congestion becomes a pressing issue affecting residents' daily lives. Urban walkways offer a solution by reducing vehicles on roads, much like proximity to rail networks in other global cities. Climate-controlled walkways connecting and within communities can enhance capital values and quality of life, with closer proximity commanding higher premiums. Areas like DIFC already benefit from linked underground walkways. Expanding such infrastructure across Dubai would not only ease congestion and benefit the environment but also boost property values and improve residents' overall experience.*

**Ronan Arthur**

Head of Residential Valuation



# Conclusions

As with so many other new transport innovations, the growth of urban walkway networks has not proceeded uniformly around the world. Different models of how best to encourage these networks depend on many factors, principally the prevailing climate in the city and the rate of change, the state of existing real estate and transport infrastructure, planning decisions and funding choices. It is now clear that the Gulf will play its part in our understanding of how cities will develop in the future. From a policy perspective, the potential benefits to the future inhabitants of these cities are evident.

These networks also have significant valuation impacts. Chartered surveyors such as Cavendish Maxwell are now actively engaged in their quantification in order to present walkway network access choices and funding structures to developers and potentially also to existing real estate owners.

## Key Contacts



**Julian Roche**  
*Chief Economist*  
julian.roche@cavendishmaxwell.com



**Ronan Arthur**  
*Head of Residential Valuation*  
ronan.arthur@cavendishmaxwell.com  
+971 50 296 1411



**Vidhi Shah**  
*Partner, Head of Commercial Valuation*  
vidhi.shah@cavendishmaxwell.com  
+971 56 690 3186

For the complete list of references, please refer to our [website](#)

If you'd like to speak with one of our specialists, or for more information, please reach out to us.

**Dubai**  
+971 4 453 9525  
dubai@cavendishmaxwell.com  
2205 Marina Plaza, Dubai Marina, P.O. Box 118624, Dubai, UAE

**Dubai | Abu Dhabi | Sharjah | Ajman | Ras Al Khaimah | Muscat | Kuwait City**



cavendishmaxwell.com



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