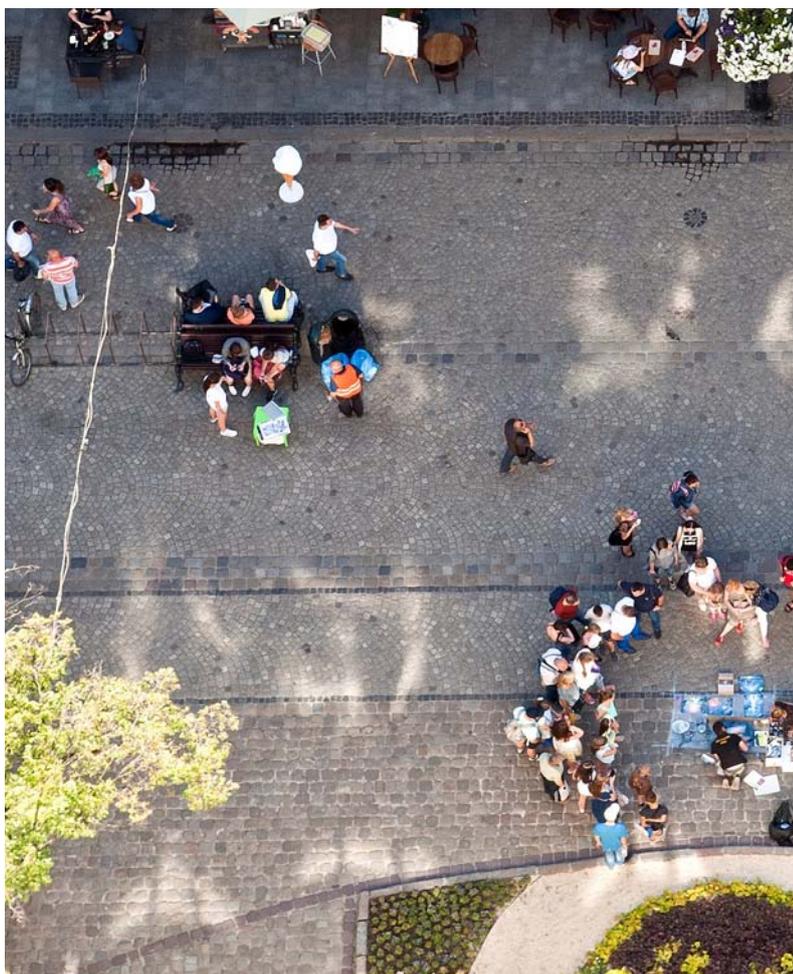

Join the dots

How to make better cities through precincts and connectivity



Making liveable, doable.

November 2017

Cities are fundamental to Australia's prosperity. Not only do most of us call cities home, but cities also contribute over 80% of national income.

Yet our major cities are at a crossroads. Most are struggling with congestion, housing affordability, and inequitable access to infrastructure, amenity and services.

And the situation appears destined to get worse, with Australia reporting one of the highest rates of population growth of medium to large OECD countries.

Australia has the opportunity to make our cities great urban environments that thrive on the growing influx of people and ideas. If we get it wrong, however, we could end up with massive, sprawling cities that are congested, fragmented and unable to meet the needs of all parts of the community.

Unfortunately, urban planning has tended to deal with population growth simplistically, by seeking to curb the densification of our cities by developing the urban fringes. From a political perspective, planning policy has tended to follow 'the path of least resistance' because urban densification is often contested by communities.

But the cost of sprawling growth is disconnection – a disconnection of people to jobs, city centres, nodes of activity, services and amenity. Sprawl also leads to a lack of infrastructure because investment cannot keep up with the rapidly expanding urban footprint, as well as potentially devastating impacts on the natural environment.

But there is another way to make sure the future of Australian cities is bright. We can create places of vibrancy, diversity and productivity. We can create places that attract talent and investment, where people want to live, work and play.

Rather than continuing to push outwards, we should fix our sights on creating great cities that benefit from density. We believe that the secret to creating such cities is to strengthen connectivity.

Towards a 'connected' mindset

People innately crave connection – to each other, to culture, and to a sense of home. Human interaction has and will always be an essential piece of our DNA. While we are developing and utilising ways to be productive remotely, we still naturally gravitate towards and thrive on interaction. This is why communities exist. This is why we live and work in dense environments and why often the most highly desired locations are in our cities.

A city is defined primarily by this concentration of opportunities to connect and share experiences with other people. Connected cities are ones that turn opportunities to connect into real connections. They leverage connections between people, connections to place, mobility connections, communication connections, technological connections and connections between government and people. They are about human-centred urban design, about place-led solutions that help build stronger networks within our cities.

Putting people first

Putting people first is an essential aspect of connective city shaping. Finding out and celebrating what distinguishes a community creates identities and connections to place. Understanding how the community uses existing spaces to inform new infrastructure, facilities and services can lead to stronger social and economic outcomes.

Building cities is like building relationships – it's all about connections. Connection to places, to environments, to buildings, to activities, to each other. Cities with high levels of connectivity tend to be more vibrant, more productive, and more interesting than those that don't.

Focus on precincts

We believe that one of the most effective ways to increase connectivity in our cities is to focus on 'precincts'.

Precincts are areas or hubs that drive connections through a concentration of activity and people. They are vibrant and productive places where people want to live, work and play. Many of the world's best cities are renowned for their precincts: SoHo or Wall Street in New York, Silicon Valley in San Francisco's Bay Area and more recently, Barcelona's 22@ innovation district.

While policymakers in Australia are aware of the precincts approach, there is little in the way of specific guidance to help them create more connected cities through the planning and development of world-leading precincts.

A new framework for decisions

This paper seeks to address this gap by providing a framework for decision-makers to think about how precincts are planned, facilitated and delivered.

Who are these decision-makers? Simply, everyone. We believe that our cities will be better places if we solve problems collectively, encouraging greater collaboration between business and community and allowing government to act as a facilitator.

The framework contains seven principles that address the three cornerstones of connectivity: connected decisions, connected community and connected activity. It can be applied to either existing or emerging precincts.

Connected decisions explains how we need to rethink governance in relation to precincts - that it isn't just about our government making decisions, but a collaboration between community, business and government.

Connected communities explores what it takes to increase connectivity among people within precincts and address issues of social capital and inclusion, proximity, and urban fabric.

Connected activities considers what it takes to make precincts come alive and be places that the community wants to live and work; it addresses the importance of catalyzers, such as anchor industries or institutions, as well as the need for focal points, mixed uses, digital connections and 24-hour economies.

Australia's cities are rich in potential. They contain talented people, creative and innovative thinkers, communities who want to be involved, and governments willing to listen and try new ways of working.

The way to unlock that potential is to promote connectivity. All the elements are there – we just need to join the dots. Read on to find out how.

Three core elements underpin active precincts, all of which are necessary to create truly connected cities:



Connected decisions

Facilitating and enabling connections



Connected communities

Who to connect and for what outcome



Connected activities

The physical and digital modes of connection

How to build connection through precincts

Understand the make-up of our cities

Well connected precincts enhance cities and help them thrive. But it's important not to limit ourselves to thinking only of large-scale precincts. Clusters of activities occur at a number of levels, all adding value to our economy and enriching the lives of those who live in, work in and visit them.

If we take Sydney, for example, we can see that the service economy has grown significantly in recent decades, leading to clusters of employment around key institutions, services and commercial activities. But we also see activities on varying scales, such as local centres and around transport corridors. Together these form "a polycentric network of activities hubs or precincts".²

It is helpful for us to understand this structure, as it shows how a city can develop into a complementary network of precincts. It allows us to identify not only where growth is occurring, but where growth potential exists, informing investment decisions and shaping local policy. Additionally, we can identify what sort of development that needs to occur in each precinct to enable it to grow.

Melbourne has long been developing a precinct-based approach to cities, with the Melbourne City Council providing precinct development grants to selected trader associations. The precinct approach has also been used to foster innovation, placing the city at the forefront of translational research and commercialisation in a wide variety of industries. The Parkville Medical Precinct and the Carlton Connect initiative are two key examples of a precinct approach to supporting economic activities.

The Victorian Government has identified eight priority precincts for Melbourne and other parts of the state, with a focus on developing employment and output in the health, education and technology sectors. Institutional-led innovation programs are also enabling the identification of potential innovation districts and fostering their development. For example, the City of Melbourne, the University of Melbourne and RMIT University are partnering to create Melbourne Innovation Districts – a 'smart city' initiative to drive investment in the knowledge economy.

Identify precincts of potential

Precincts either form organically or are identified through strategic vision and policy, or a combination of both. They are, however, most successful when policy supports organic and flexible formation.

History shows us that significant events can lead to the clustering of people, cultures, industries and communities. Understanding the history of our cities, therefore, is vital in understanding *why* people live, move or work in particular locations.

A classic example of an organically-grown precinct is the SoHo district in New York City, which emerged as a flourishing artists' community following the departure of industry in the 1950s and 60s. We need to acknowledge the history of our cities, preserving and enhancing the elements that tell the city's story and point us in the direction of where precincts are emerging.

But as our cities and regions grow, we must also make strategic decisions about where to direct resources. For example, the Greater Sydney Commission (GSC) has set out precincts and their priorities within metropolitan-scale planning. The inclusion of these precincts within District Plans allows for state and local governments to align their strategic direction for the city, understanding where priority investment should occur.

Once a precinct is identified, either organically or strategically, it is important to assess the precinct's potential for growth and connectivity, by building on the inherent strengths of the precinct and how its growth complements the broader city, and then plan accordingly for its development. This approach requires councils and local authorities to consider how best to support the precinct's development by structuring themselves appropriately and developing success indicators that all stakeholders can agree on.

Look to the world's best precincts

While some policy-setters are familiar with the concept of identifying nodes of growth and activities, there is little in the way of guidance to help them create more connected cities through planning and developing world-leading precincts.

We have addressed this gap by creating a Connected Cities and Precincts Framework, based on an analysis of successful and emerging precincts globally. Our framework contains seven principles that address the three cornerstones of connectivity: connected communities, connected activities and connected delivery. The framework can be applied to precincts that are already established, or to those that are emerging, providing a foundation for their planning and development.

Precincts can be considered in a hierarchy, each with its distinct characteristics and contribution to our cities:



Theme-based employment and industry-led precincts, such as the Westmead Health, Monash Precinct and Education Super Precinct



Restructured suburban business parks into more urban precincts, such as the Norwest Business Park and Macquarie Park



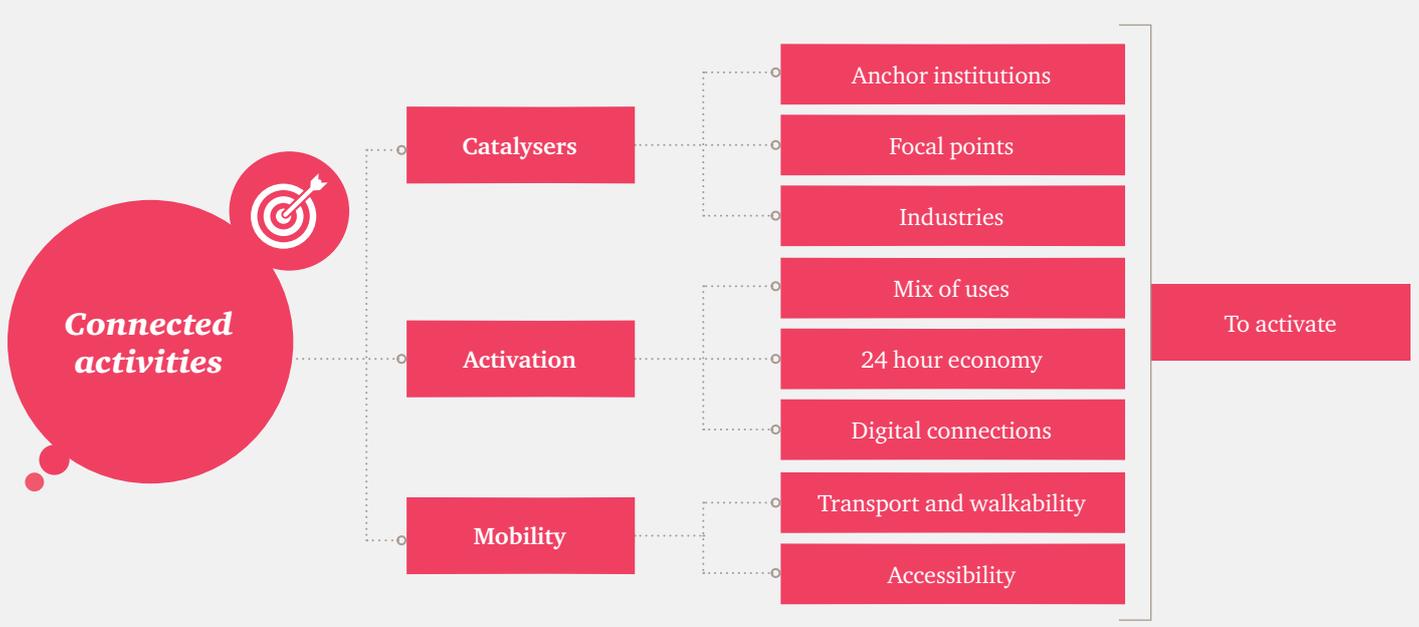
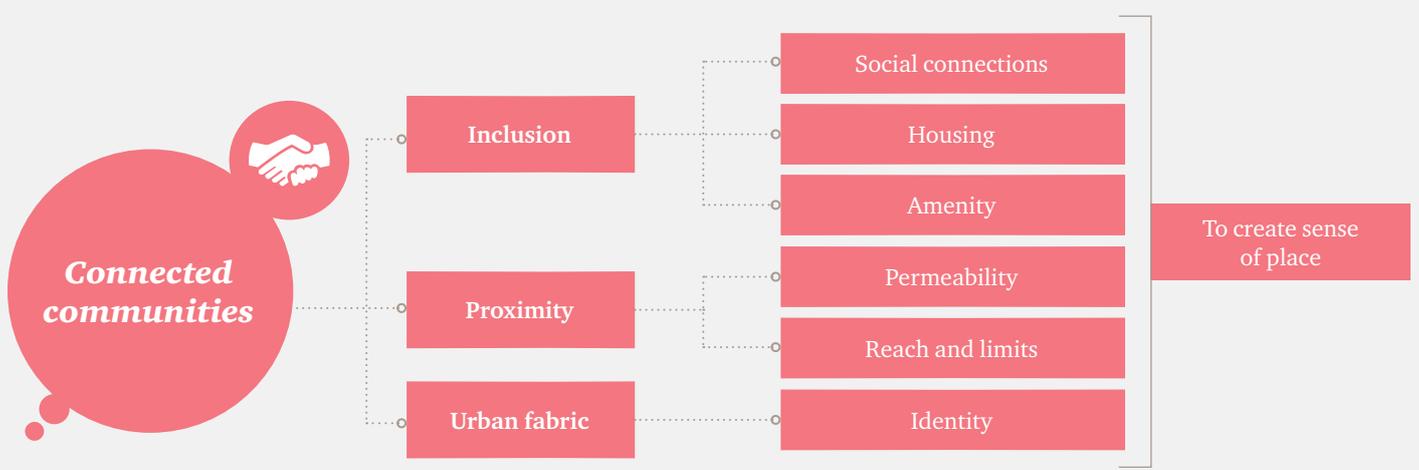
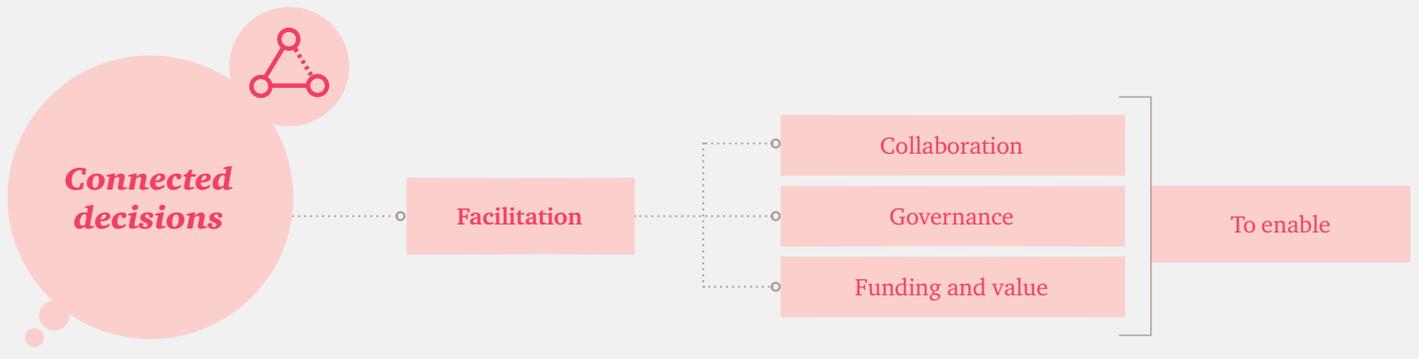
Existing significant employment areas and new urban metro precincts, such as North Sydney and Federation Square East



Local retail or transit-oriented precincts, such as Chatswood in Sydney or Melbourne's Brunswick Street



Connected Cities and Precincts Framework



Connected Decisions



Principle 1: Facilitation

As populations grow and the density of our urban environment increases, decisions are being made that will shape our communities and how we live for years to come. So why is it that governments, which operate through election cycles, are typically the decision makers while the local community and businesses often have a longer-term stake in what happens?

In aspiring to make genuinely connected decisions, we need to rethink government's role, as a traditional top-down approach does not have the depth needed to effect local change. We need to look at 'governance beyond government' and embrace all of society in collaborative decision making. Government has a critical role to play as an enabler of this collaborative approach, making sure that laws and regulations are upheld, that outcomes are transparent and equitable and duplication of effort is reduced. But they don't always have the answers – and nor should they.

In exploring more flexible governance structures, we need to acknowledge that at times government may need to lead collaboration efforts – either with other levels of government, other departments, non-government entities or a combination of these. Other times, government can take on the role of facilitator, enabling other organisations to step up to the plate. In this structure, government can act as a partner to the community and an enabler of the development through planning, policy and resources. Understanding the appropriate model for a particular precinct or issue will be the challenge.

Our global cities demonstrate a variety of governance structures, shaped by factors including demographics, culture, geography, economics, politics and the environment – with each city having its own unique dynamics. We can, however, determine the strength of each system of governance by experiencing and analysing the liveability, functionality, efficiency and sustainability of each city. We can look to other global cities from which to draw lessons – so long as we embrace the evolutionary nature of our cities and therefore the need for our governance structures to change with this. In a time of rapid change, static governance and a 'business-as-usual' approach will not allow for our cities to continue to grow and thrive.



Governance – how we make decisions – is central to the successful development and growth of precincts. Cities and places are complex, and the governance around a place will have a significant impact on how it functions, how it grows and how it connects with the people who live, work and play there.”

Collaboration: engaging the community in decision-making

The people that inhabit places are increasingly acting as collective problem-solvers and active delivery partners rather than passive recipients of new developments. Each individual will be living, working and playing in these spaces; their needs, as well as the needs of future residents, should be at the forefront of decision-making processes. The 'placemaking approach' is an ideal avenue for empowering the community, building their confidence and collaborative skills, allowing them to self-organise and giving them the tools to solve the problems in the areas where they live and work.

As the key stakeholder in the placemaking process, the community needs to be engaged at all stages and levels.

The city of Auckland, led by its Council, is an exciting example of what can happen when communities shape the places in which they live, work and play. A strategic plan is in place for community-led design which acknowledges the vital role of the community in placemaking, while enabling the people to shape places through their own initiatives. The scale of initiatives ranges from small short-term projects, events and activities – street planting, murals, markets – to large-scale visioning for neighbourhood planning

Also in New Zealand, Porirua City outside of Wellington, has developed the Porirua Village Planning Programme, putting communities in charge of the development of their neighbourhood's vision, then partnering with Council to make it happen. 11 of their 16 villages have developed village plans, resulting in a great increase in community pride, goodwill and connection between Council and its communities.





Government and developers need to embrace more extensive and genuine community partnerships, to realise the community as a partner in progress. To reflect this, we need to explore the potential for communities to form coalitions that can be represented in governance structures. Formally recognising the place for the community within the governance structure can assist in moving away from what has traditionally been reactive, issue-based campaigning, which often occurs during major development processes. Having a central point of contact can also allow governments and developers to engage with the community in a more coordinated way.

The more successful community engagements have been those that target all user groups through various media and modes of interaction while ensuring the process is ongoing rather than having a single moment of input and feedback. Additionally, the ability for the community to access sound data and information to inform their decisions is an important factor.

Governance models in precinct planning

In large precincts and urban renewal sites, a robust governance structure needs to be in place to facilitate decision making at a strategic and policy level. Additionally, the organisational structure around decision making should be sufficiently dynamic to consider the complex needs and issues around precinct planning.

A precinct with a robust governance structure will also provide a sound management strategy, which should include a proactive and flexible management authority to meet the ongoing needs of the precinct. With key responsibilities including maintenance, security, commercial management, programming, marketing, branding and place promotion, a 'place manager' is essential to the success of precincts and urban spaces.

An example of this governance model is the Metropolitan Redevelopment Authority (MRA) in Perth, which was established to oversee the redevelopment of five significant areas across the city. The MRA provides a unique governance model, which involves the authority being a planning regulator, developer and a place manager. The Authority's planning frameworks are customised for each redevelopment area, taking into consideration the unique vision and objectives required. Additionally, the MRA provide value through assistance in urban design, strategy and innovation.

Strong collaboration between all levels of government, the private sector and the community is essential in the design and delivery of large precincts. The MRA demonstrates the value of governance and decision making at a metropolitan scale that focuses on outcomes, people and place.

Governance frameworks also need to allow for flexibility as a precinct or city evolves. An example of adaptive governance is the City Deals approach, which 'bring together the three levels of government, the community and private enterprise to create place-based partnerships'. Applying this approach to precincts may provide the opportunity to collaborate and align investment decisions, strategic planning and policy to drive outcomes that meet the needs of all.

So if all levels of government are focused on placemaking and urban outcomes, with people at the centre of place, then an outcomes-based system should evolve. However, to achieve this and deliver change, governing bodies must be empowered to challenge and look beyond immediate operational considerations and approach cities and precincts through the lens of optimum social, environmental, economic and local benefit. With this focus on outcomes, the traditional structures of governing will be challenged and a new form of governance created to best address the issue at hand.

The Bennelong Bridge connecting two of Sydney's fastest growing communities, Wentworth Point and Rhodes, demonstrates the immense benefits from innovative funding of public infrastructure that can generate significant value for all stakeholders.

The NSW Government initially proposed a pedestrian and cycling bridge to link the two communities. However, the proposal was expanded by an alliance of private developers and landowners, who entered into an agreement to deliver the Bennelong Bridge in return for receiving additional development rights on the Wentworth Peninsula. Opened in 2016, the Bennelong Bridge allows for pedestrian, cycling and public bus and emergency vehicle traffic, but not private vehicles.

Constructed at no cost to government, this \$63 million public asset was privately-funded and handed over to the Roads and Maritime Services. PwC undertook analysis of the value created by the bridge – and by value, we take into account the net benefits to a range of beneficiaries like government, the community and landowners through amenity increase, ease of mobility, sustainability, land value uplift and further development opportunities. In the case of Bennelong Bridge, the \$63 million investment is estimated to have generated a total of \$2.1 billion in value across a range of beneficiaries from 2014 to 2025.

Funding and value

A key issue that underpins any type of development is how to pay for it. Just as we look to multiple stakeholders to work together on solutions and governance, we should also be leveraging various stakeholders and blending finance to reflect the variety of precinct activities. A variety of funding and financing mechanisms can be drawn on from all parts of society – which can help to get precincts developed – but we also need to keep them operating and maintained. Importantly, alignment between governance and funding can bring those with a 'seat at the table' closer to those with 'skin in the game', increasing accountability to achieve the outcomes everyone has agreed on.

Although sometimes unpopular, we have to get comfortable with 'user pays' models for many of the services we enjoy. However, this not need be at the full rate of recovery, especially when considering essential services and low-income individuals.

We can get smarter at promoting lower-cost options, especially from technology enabling utilisation of existing assets, and how we provide information so that people can decide their willingness to pay.

Another aspect of funding that needs to be considered is that of 'shared value'. This approach recognises the fact that the value of development is often shared value across multiple stakeholders. For example, a new train station directly benefits commuters who live in the area, surrounding business from increased retail sales, road users if congestion reduces from modal shifts and improvements in the quality of life for the local community from less congested streets. Such infrastructure can also encourage development, increasing commercial and residential investment, which can lead to additional funding streams.



When a government organizes itself around creating successful public spaces and generating Place Capital, it is often able to accomplish a broad range of existing goals more efficiently. When performing at their best, communities organize to compete to contribute to the public realm and shared value. Indeed, the most loved places were invariably created through this often informally generated culture of governance”.

Recognising and maximising the value of a development for stakeholders can create funding streams when there's an opportunity to tap into or share the value created to help pay for the infrastructure delivering the value. Mechanisms that link the value realized to any value share is critical, ensuring that any contribution is less than the value realized at the time by the stakeholder. The community also has the potential to invest in developments through means such as local businesses and even crowdsourcing. and in doing so is given a greater stake in the development.

Finally, a governance structure based on a partnership between government, developers and the community, and which reflects the sources of funding and financing, can more effectively drive decisions that directly benefit all stakeholders and deliver on the agreed objectives.

Connected Communities



Principle 2: Inclusion

Social connections: building social capital

Social capital means the ability to build relationships and networks with the community around us. It is what makes our communities and societies function, and significantly affects our quality of life. Social capital not only helps those who most need it but it also alleviates pressure on governments and the economy. Successful cities and precincts are high in social capital.

For example, if a young family goes through a destabilising event such as a significant illness or loss of income, they will need strong support networks around them. While governments provide some essential safety nets to support our most vulnerable, there are ways that communities and networks can also help, such as through financial support, job opportunities, or helping out with essential childcare. We should not underestimate the capacity of social networks in providing support in times of need.

Access, amenity and choice

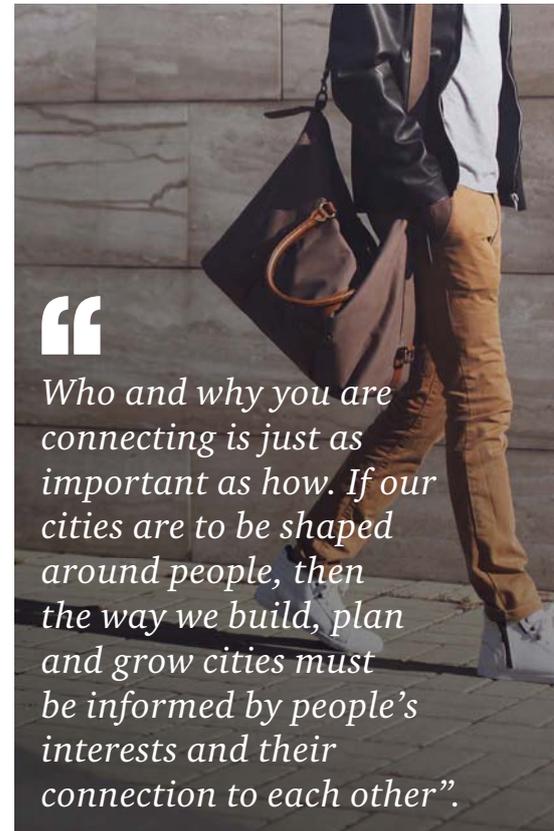
Everyone should be able to feel at home where they live while being connected to their community and having access to the services and facilities that will enrich their lives. But to bring this level of liveability to everyone, our 'Great Aussie Dream' needs to be reimaged.

Although Australians are largely urban-dwellers, we are still in the grip of a suburban mindset. In Sydney, this 'affordable urban fringe' is now 70km from the CBD, and public transport is less likely to work for some jobs, such as shift-workers, nurses on night-duty, police officers and other key workers.

The further out people live, the longer their commute and the less time they have to spend with their family and friends and enjoy a balanced life. It often means being further away from services and amenities, placing a heavy reliance on cars because proximity to public transport is compromised. Infrastructure cannot keep up with the sprawl, and building new infrastructure to the far reaches of suburbia is going to come with significant and unsustainable cost.

Housing and diverse communities

A precinct approach considers housing both in and around a designated area with the aim of meeting the needs of a diverse community – a mix of cultures, incomes and ages provide a rich tapestry from which we can all benefit. By providing housing within and close to precincts, particularly where there is a large employment base, we can reduce commute times, enabling people to spend more time with their families and friends.



“

Who and why you are connecting is just as important as how. If our cities are to be shaped around people, then the way we build, plan and grow cities must be informed by people's interests and their connection to each other”.

Of course, housing within a precinct needs to be of a scale and density reflective of the precinct's desired future character and the agreed objectives for current and future residents.

Technology

In an age of technological advancement, we are at risk of further disconnection from those around us; we risk becoming more isolated and losing the essential social capital to catch us when we fall. We need to leverage technology to open up connections that strengthen our communities, driving positive connections and interactions.

Digital services can assist in facilitating organised opportunities for interactions and allow for this to occur frequently. Take Meetup, for example, an app with over 32 million users in 182 countries that brings people together by allowing them to find others with shared interests and organise gatherings and activities. Such face to face connections within communities would likely not have occurred without this kind of digital support.



Principle 3: Proximity

Permeability

Precincts thrive on proximity – close distances between people, spaces and transportation. When people can easily connect to each other and to the places in which they are living and working, precincts become more active and vibrant and productivity increases.

A key determinant of proximity is the 'permeability' of a precinct, which refers to how easily people move through and within it. Permeability is affected by many things including design, visibility and walkability.



Connectivity and proximity are the underpinnings of strong district ecosystems. A well-connected district is paramount to its success—transit, bike paths, sidewalks, car-sharing, and high-speed fibre. At the same time, districts should measure their success by steps not miles. The experience of proximity—or a physical concentration of firms, workers, and activities—is what differentiates a “buzzing” district from a boring one”.

The Brookings Institute

Visibility enables users of the precinct to identify key markers and improve efficiency and ease of moving through the precinct. The use of frequent intersections and grid systems assists in wayfinding, familiarity and identification of how to use the precinct.

Technology can play a significant part of enhancing permeability. Location-based services, such as GPS, are now an integral part of how we move, function and connect with people and places. The acceptance of these now commonplace apps and devices is evidence that society is evolving and adapting to new ways of using the spaces around us.

Reach and limits

Reach and limits is closely linked to the permeability of a precinct. Short links and intersections are advantageous and likewise, shorter distances are optimal for interaction and knowledge transfer. Research indicates that walkability is optimised within an 800m radius, while knowledge transfer extends to a 1600m radius.

Cities, like commercial office design, can be optimised to increase the 'bump factor' between people to promote engagement and collaboration. Social cohesion and face to face interaction, both inside and outside an organisation, is a positive predictor of productivity. Allowing organic as well as organised opportunities for interaction is vital to strengthening networks and connections in a knowledge economy.



Krakow's Rynek Glowny Grand Square is the largest of its kind in Europe and forms the lively hub of the city since the 13th century. With a rich history and architectural form, the square is the centre of Krakow's gathering and activities.

Permanent places of gathering including shops, restaurants, residences, commercial spaces and nightlife, the square is also the city's most popular site of open-air events, regularly bringing the city to life. The history in the buildings is strongly identifiable, giving the area its rich character and attraction.

As we adopt new ways of working and activities-based workplaces, cross-discipline and industry mixes are on the rise, leading to more collaborative and productive work environments. With careful planning of our precincts, we can curate these collaborative and cross-disciplinary environments – from open hubs for start-ups to innovation centres to novel ways to interact in the public realm. But to really harness these new ways of working, we need to challenge the traditional workplace, both in its physical environment and approaches to working and interacting.

And while technology and automation has the potential to further isolate individuals, we are seeing workplaces interacting and collaborating more than ever thanks to the benefits that technology can bring. The ability to contact colleagues in locations not only within the office, but all over the globe, through video conferencing and online tools, means that we are communicating more than we did in enclosed offices. Because technological systems enable us to connect faster with each other, it also helps facilitate more planned and frequent face to face contact.



Principle 4: Urban Fabric

The urban fabric of a precinct is expressed primarily through the built form. This includes the physical treatment of the streetscape, the architectural elements, the character of the buildings, and the diversity of built form in terms of materiality, scale, height and function. These physical aspects underpin the 'character' of a place and can invoke strong associations. The Rocks in Sydney, for example, is strongly associated with a rich history, heritage, tourism and its link to Sydney Harbour. These associations are a result of the built form: the sandstone retail strip, the terraces of the backstreets, the historic paved streets of the markets.

How built form and spaces are arranged, how inviting they are and what they offer to the community can have a significant impact on how the community identifies with and uses a precinct, and can either encourage or discourage connectivity. Successful precincts incorporate an appropriate balance of building scale and expression, with the right mix of open space and buildings.

To achieve this outcome, mechanisms like well-considered design guidelines and governance structures should be implemented to ensure quality spaces of high amenity are delivered.



Connected Activities



Principle 5: Catalysers

Anchor institutions and tenants

We believe that a precinct needs a key economic driver in order to grow and thrive. Large precincts with high productivity and economic output are centred on well-established institutions or industries, referred to as anchors. These anchors act as catalysers for the growth and development of the precinct, providing significant economic output and access to jobs and services for the community in and around them.

In smaller precincts, there may not be an obvious anchor, so we need to consider what might activate the precinct. For example, large retail can play a significant role in defining and driving precincts, influential commercial tenants might drive the influx of other businesses, or cultural facilities could attract residents and tourists.

In addition to having a clearly identified economic driver, successful precincts also provide infrastructure and housing to support those living and working in these anchor institutions, helping to deliver on the agreed objectives and success indicators for the overall precinct.

Focal points

Precincts not only need to provide functionality but must also stand as identifiable urban centres. The 'branding' of a precinct can be as important as the physical assets. What attracts people to a precinct? What do they identify with the precinct? Is the precinct a destination? Is the precinct legible?

Focal points can be created by iconic structures or an attractive offering such as retail or open space, as well as stand-out functional features such as transit hubs. For example, Circular Quay boasts the Opera House, the most iconic structure in Australia; Sydney's Surry Hills provides the largest rail network at Central Station; Brisbane's South Bank showcases the arts with the cluster of GOMA, Queensland Art Gallery, QPAC, the State Library and the Brisbane Convention and Exhibition Centre; Elizabeth Quay enjoys a vast multi-purpose waterfront park. These focal points are an important part of each precinct's identity and success.



Precincts come alive when they are active. We need to design and develop precincts in a way that energises and incentivises human activities and allows people to connect in a diverse variety of ways”.



Differentiated industries

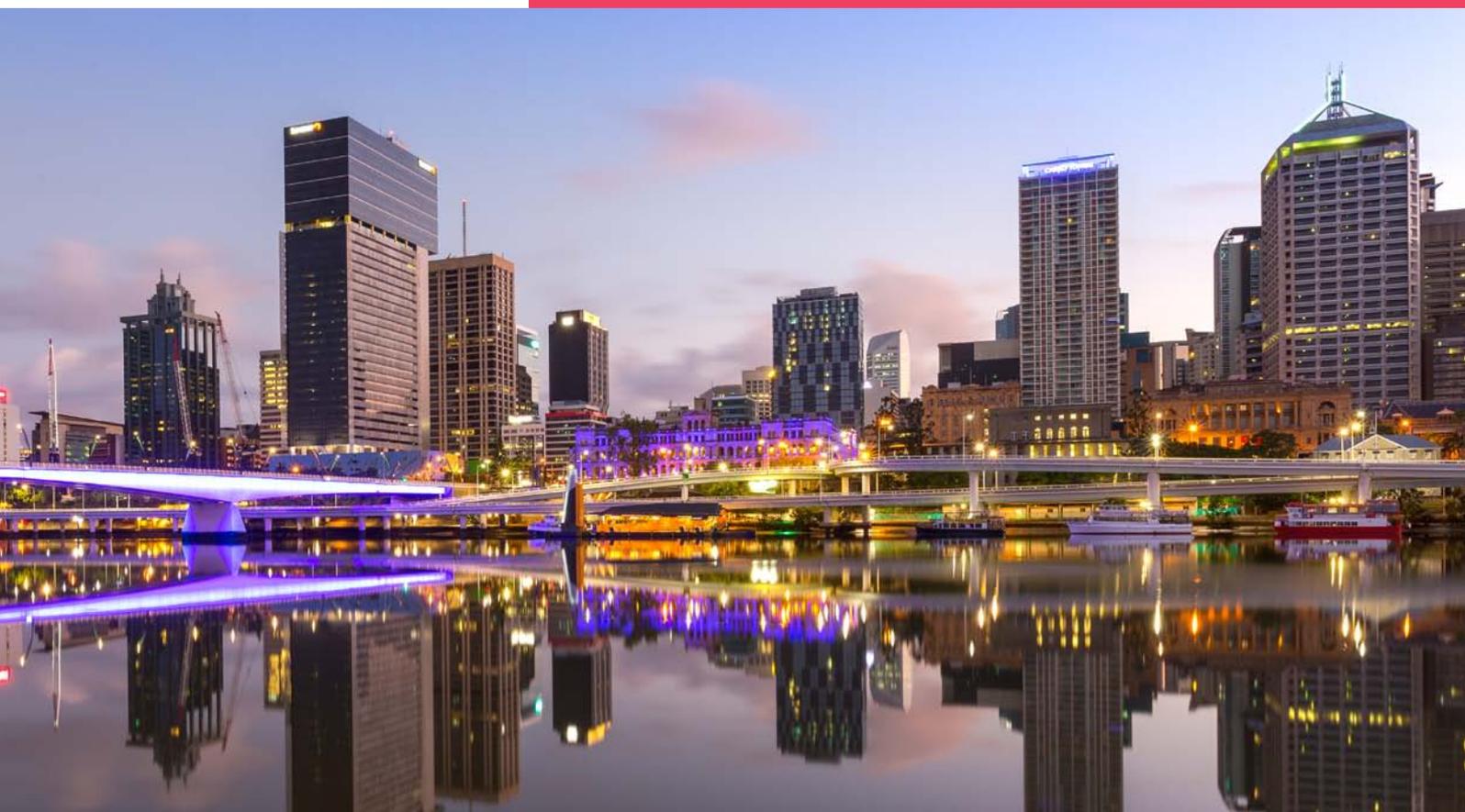
A precinct needs to consider the existing industry mix and the potential for economic growth and productivity. How well the key industries provide for the precinct and interact with the rest of the precinct is essential. Where a particular industry has the potential to provide a strong anchor, we need to consider how it can be enhanced in the strategic phases of precinct development, considering complementary industries and supply chain, to further enhance the anchor industry's productivity.

Cambridge's iconic innovation district centres on the Massachusetts Institute of Technology (MIT). While the campus already occupied a significant geographical area, it sought to partner with the commercial sector and private institutions to develop and nurture innovation and collaboration – 80 organisations have formed the Kendall Square Association to share the vision and planning for the area.

The Cambridge Innovation Center provides shared spaces for start-ups and venture capital firms, promoting collaborative working. Additionally, the award-winning “@Kendall Square” development offers a mixed use “live, work, play” community with recreation, markets, offices, labs, residential and retail spaces.

The involvement, presence and collaboration of MIT has led to the growth of a number of industries within Cambridge, as well as led to the provision of residential housing. The precinct has encouraged entrepreneurs and start-ups through the Cambridge Innovation Center, while also attracting large tech companies including Google, Apple, Microsoft and Amazon.

With the growing presence of students, graduates, academics and high-profile companies, residential accommodation has become a necessity, allowing for these individuals to live, work and study within this district. Since 2005, 1000 new residential housing units have been built, with retail and food outlets to support this population.





Principle 6: Activation

The activation of precincts relies on a number of factors including vibrant industries, land uses, temporal accessibility, and the harnessing of technology.

Mix of uses

When it comes to the use of spaces, successful precincts consider both horizontal and vertical integration. Instead of just focusing on how street frontages are activated at the ground level, we need to think about the mix of uses vertically through the built form and how they might assist in activating each other. How can we, for example, harness the spaces on rooftops which are often under-utilised? How can we activate community interaction by mixing residential units with retail, commercial and entertainment? With the inevitable densification of our cities, the use of vertical elements is vital.

However, we do need to consider the challenges with mixed-use areas, particularly the interaction of residential and non-residential uses. We want active and vibrant precincts, but how do we ensure residents' amenity and privacy are protected?

A mix of uses further supports the potential for a 24-hour city, providing a richness of experience for the community and significant economic growth.

Digital connections

Digital connection in our cities is now an unquestionable commodity, and the successful activation of precincts will increasingly depend on integrating technology and harnessing of its benefits. Cities that are technologically enabled can better connect their citizens with each other, provide connections to education, services and resources that may be otherwise unattainable and, in some cases, can reduce costs for consumers.

But even though we are progressively reliant on technology to assist us in how we move through precincts, we still have a long way to go. 'Smart' is a word increasingly applied to cities around the world that are leveraging technology solutions to solve urban problems. 'Smart' has also become ubiquitous with the proliferation of devices connected to the internet (IoT). However being 'smart' is not just about products, it is about people, and how digital solutions can enhance the lives of those in our cities. While we need to ensure that the end-user is always top of mind, we also need to embrace experimentation with technology and seek ways to build on systems and infrastructure we already have in place.

Local Councils in Australia are beginning to consider how to utilise smart systems in existing street infrastructure, such as lighting, to assist in safety, wayfinding and how we use spaces. But to take this further, cities around the world are beginning to incorporate the ability to provide data on how we use the street, namely through sensors. This requires no new infrastructure but instead builds on existing systems. The collection and analysis of data can then inform how the street might be improved, developed or enhanced.

The 24-hour economy

With a growing Millennial population in our cities and technology disrupting our work habits, the needs of society are changing. We need to consider how precincts can offer productive, entertaining and safe environments across a 24-hour cycle. For example, the late night economy in many of Australia's cities is not reaching its potential due to limited commercial and retail operating hours. Our precincts would benefit significantly from a more vibrant night environment and a mix of uses that activate spaces at various times of the day and night.



Principle 7: Mobility

Transport and walkability

Mobility is not just about transport – it is about how we move in our everyday lives. As we move towards innovative methods of mobility that are more efficient, healthy and sustainable, we should be considering not just our mentality towards mobility but also our behaviours: how we move and how we should be moving into the future.

Private vehicles have in the past been the most time-efficient way for people to travel in and across our cities (in some cities, they still are). But rapid population increase and the subsequent increase in the number of cars on the road is causing dire congestion in our major cities. Congestion leads to a loss of quality time, reduces productivity and has a range of environment and health impacts, including road accident fatalities.

The move towards autonomous vehicles is inevitably occurring. PwC has identified that with autonomous vehicles will come increased mobility for the young, the elderly, and people with disabilities, while as much as 90% of vehicle accidents will be eliminated – equating, most importantly, to saved lives, but also a potential saving of \$31.9 billion annually to the Australian economy.³

The key step in addressing issues of mobility is to focus on the needs of people. Focusing on giving time back to the individual to spend with their families, friends, at work or in leisure, while increasing health benefits as well as gaining back land and enhancing the livability and attractiveness of our urban spaces, points to increasing public transport as a solution.

We also need to invest more cleverly in walkability and the significant impact this will have on the health and connectivity of our communities. We can then consider the opportunities for interactions *between* destinations – what will walkers encounter on their way to work or home and how can this improve both their lives and the productivity of the city?

Accessibility

Precincts must be accessible. Accessibility for persons with a disability is essential, but so is providing access for young families with prams and small children, and the aged population. But the physical accessibility is not the only consideration. In charging fees for the use of public spaces are we excluding lower-income individuals and families from using these important spaces? Are we providing adequate public transport and personal mobility options for these spaces to ensure those without private vehicles have access too? This is a question of equity, and our precincts must be equitable.



Following an increase in the number of traffic accidents around Times Square, New York, the City temporarily closed off Broadway to vehicles in 2009. The success of this initiative led to the permanent changes, transforming parts of Times Square into pedestrian-only zones, as well as providing designated activities zones (including the “Chill Zone,” where people can “sit, nosh, meditate” and the “Express Lanes” which allow for unencumbered pedestrian access through the plaza). The removal of cars from these zones has led to an improved experience for both locals and tourists, and importantly has significantly improved pedestrian flow and safety, with a 40 percent reduction in pedestrian injuries and 15 percent reduction in vehicular accidents. Visitors can easily access the cab network and subway in one of the world’s most-visited precincts.



A way forward for our cities

Growth and diversity enrich our society – whether it be the diversity of housing, communities, culture, employment or activities. Fortunately, Australia’s cities are rich in diversity; it is part of what makes them so attractive. The way to unlock the hidden potential in our cities is to tap into this diversity by enhancing and promoting connectivity – the connection of our communities, activities and decisions.

We have great reason to preserve and build on what makes our cities unique, and we have the means to do so at our fingertips.

We have significant talent across our major cities, with global city-shapers at the helm of decision-making. We have communities who want a high quality of living and better spaces to work, live and play. We have innovative and creative societies who are ready for collaboration and ready to embrace new ways of connecting through technology. And we have governments willing to invest in significant infrastructure and drive policy change to support the growth of our cities – to ‘make liveable doable’.

¹ http://www.oecd-ilibrary.org/sites/factbook-2015-1-en/evopop_g1.html?content-Type=%2fns%2fStatisticalPublication%2c%2fns%2fChapter&itemId=%2fcontent%2fchapter%2ffactbook-2015-1-en&mimeType=text%2fhtml&containerItemId=%2fcontent%2fserial%2f18147364&accessItemIds=&option6=imprint&value6=http%3a%2f%2foecd.metastore.ingenta.com%2fcontent%2fimprint%2foecd&_csp_=4c076bdd9393ccf0422808ed2ced01cf

² Watt, T. & White, G. *Places in the new spatial geography*, New Planner, September 2017

³ PwC, *Nudging people into autonomous vehicles*, 2017



PwC Cities Agenda

Making liveable, doable

Everyone is in agreement that our cities need excellent planning and strategies to ensure the best possible quality of life for all those who live there. The only debate is around what we need to do now and how we do it.

Cities need connectivity to enable vibrancy and to truly thrive. A balance between commercial needs and human needs is critical for success.

PwC has risen to this national challenge by making cities one of its key agendas. We understand the urgency around getting our cities right and we are playing an active role in bringing people together to help solve the big issues.

This paper has unearthed some valuable insights on how we need to rethink city shaping, and proposes some real-world strategies to help ensure all stakeholders can work together to get it right.

Great places don't just happen by chance, and the PwC Cities Agenda is helping to ensure we play a leading role in making liveable, doable.

Contacts



Joseph Carrozzi

Partner, Cities Agenda Leader
+61 (2) 8266 1144
joseph.carrozzi@pwc.com



Clara Cutajar

*Partner, Cities Agenda
Infrastructure & Urban Renewal*
+61 (2) 8266 3497
clara.cutajar@pwc.com



Kylee Anastasi

*Partner, Cities Agenda
Infrastructure & Urban Renewal*
+61 (2) 8266 5069
kylee.anastasi@pwc.com



Stephanie Hall

*Associate Director,
Cities Agenda
Infrastructure & Urban Renewal*
+61 (2) 8266 5399
stephanie.a.hall@pwc.com

© 2017 PricewaterhouseCoopers. All rights reserved. PwC refers to the Australia member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details. This content is for general information purposes only, and should not be used as a substitute for consultation with professional advisors.

Liability limited by a scheme approved under Professional Standards Legislation.

At PwC Australia our purpose is to build trust in society and solve important problems. We're a network of firms in 157 countries with more than 223,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.au.