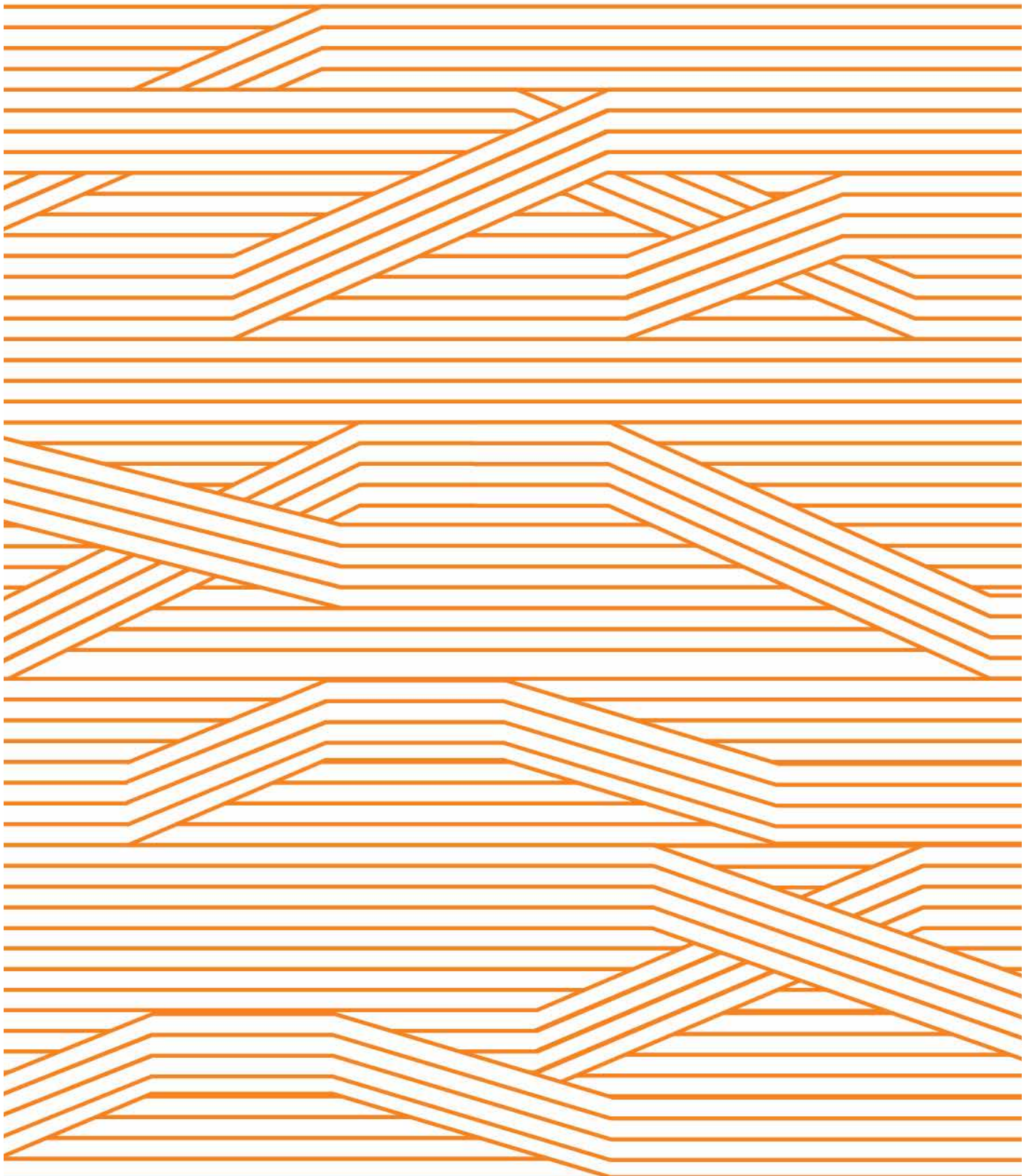


Activating the Smart Precinct:

The Intermix Approach



Activating the Smart Precinct: The Intermix Approach

There is currently much debate about smart buildings and the economic and environmental benefits they can offer by using cutting-edge technology to bring all their operating systems and services under central control.

There is also intense focus on the potential of entire smart cities to save energy and foster creativity and productivity by using smart technologies to orchestrate the flows of people, knowledge and resources within them.

But in between the smart building, which operates at the scale of the individual facility, and the smart city, which encompasses a vast urban plan, is the smart precinct.

Smart precincts are digitally enabled, mixed use districts that combine the latest technologies with new property strategies to support and catalyze the tech-led economy. In an era of rapid business disruption, these precincts can help small start-ups to grow and large corporates to adapt and help the barriers between the minnows and giants to dissolve.

Smart precincts form the essential building blocks to create smart cities - smart buildings alone cannot do this. Yet despite growing interest, there is currently little real definition around how to maximize the impact of these new urban quarters, which might typically combine smart workplace, retail/hospitality, transport, residential, leisure, education and learning elements.

Mirvac has been exploring new ways to think about the tech-led development of smart precincts - and new ways to activate them. We have coined a term, Intermix, to describe

our thinking thus far. This discussion paper is a viewpoint that sets out some key principles and ideas as a conversation opener.

We have identified eight principles in total: One Connected Community; the Sharing Economy; Fluid Boundaries and Flow; the Curated Precinct ; Flexible Space Matters; Makerspace Culture; the Wellbeing Dividend; and Destination, not Dead Zone.

And we have applied these principles to four smart precinct typologies - the workspace-led Enterprise model; the retail led Emporium model; the residential-led Haven model and the transport-led Interchange model.

We welcome your own ideas and feedback.

“Smart precincts combine the latest technologies with new property strategies to support and catalyze the tech-led economy . . . Intermix is a viewpoint on how to bring them alive”

What is Intermix?

Mirvac's use of the Intermix term acknowledges the fundamental nature of the smart precinct as using building intelligence, smart services and big data to mix together a mutually reinforcing set of property offers in one urban quarter for the digital knowledge economy. Technological developments both enable the smart precinct and are accelerated by them.

We are on the brink of the first real 'digital districts' that are all geared up to drive the tech economy forward. These districts build on prior experience and learning in designing for creative clusters and mixed-use developments. But they go a stage further in the way they integrate physical experiences with data-driven services and smart technologies.

These smart precincts are still in the planning and still taking shape. But they're coming. And when they come out of the ground, they will be hybrid in nature, they

will be characterized by fluid borders, cross-functional co-dependencies and a shared sense of connected purpose. We shouldn't be surprised at this: macro trends in workplace, retail and hospitality have been pointing towards a growing hybridity of property for some time. Already schemes from London and Seoul to New York and Sydney suggest some of the Intermix ingredients even if they don't yet spell out the entire fusion of property strategy and smart services.

The Intermix precinct operates on a number of dimensions to:

blend physical and virtual infrastructures, conceiving and considering both in tandem;

conjoin a mix of different uses, from retail and residential to workspace and transport;

bring together big and small enterprises, mingling start-ups, scale-ups and corporates;

encourage public-private partnerships; and

unite different social interests and groups.



The Intermix Dimensions

Woven threads:

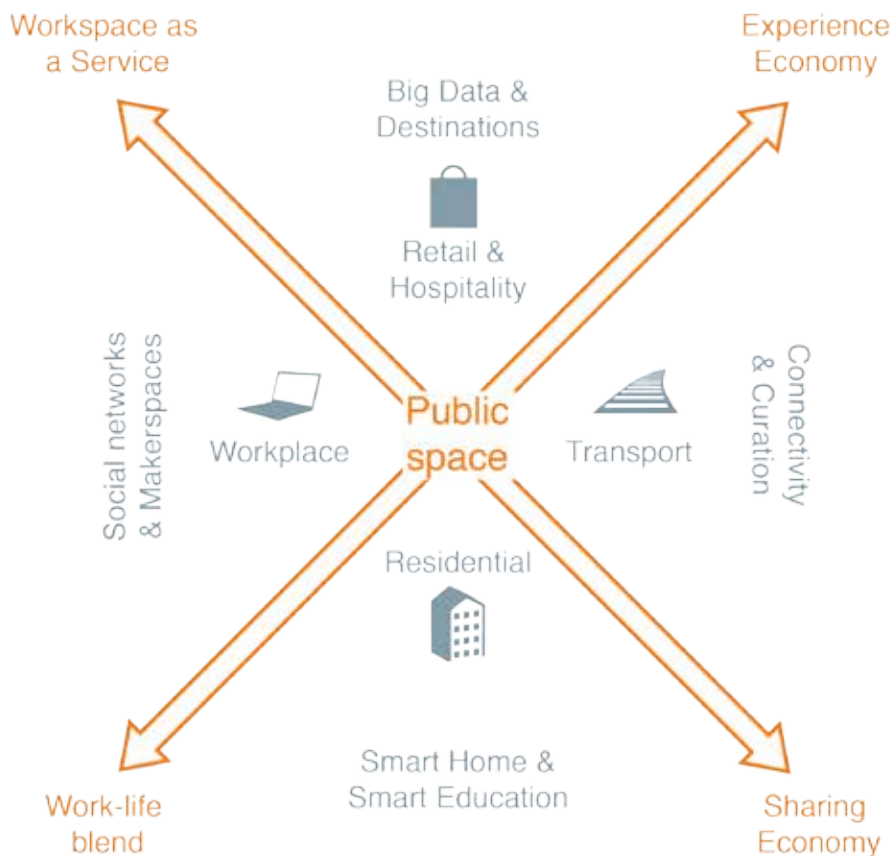
The emergence of hybrid space

The Intermix concept builds on current trends towards blurred boundaries and the emergence of hybrid space. It weaves threads between workspace, retail/hospitality, leisure, residential, educational/learning and transport in digital clusters where software-based platforms can be shared.

Here are 16 key indicators and drivers for the rise of 'hybridized' space, suggesting how macro trends fit with the Intermix concept:

- Co-working spaces are on the rise in major cities around the world with corporates and start-ups looking for environments and services to help them to expand: by 2018, Emergent Research forecasts that more than one million people will be using 12,000 co-working spaces globally
- Employee health and wellbeing is rising up the workspace agenda with a growing focus on creating places that reduce stress, anxiety and depression: absence from work due to poor physical and mental health costs the UK economy more than £14 billion a year according to the Confederation of British Industry
- Workplace design is shifting from design for appearance to design for experience, with more focus on curating a total employee experience
- Smart building 'digital ecosystems' offer the prospect of personalizing the experience for individuals through unprecedented intelligence and connectivity, creating connected communities
- A new generation of freelancers, portfolio workers and entrepreneurs is fuelling the 'rise of the individual' with more career unpredictability and less loyalty to an employer: in Australia, for example, an estimated 3.7 million people (30 per cent of workers) contribute A\$51 billion to the economy each year according to an Upwork study
- Location-aware experiences piloted in retail are on their way into the workplace with opportunities for interaction, collaboration and serendipitous encounters
- There is a general war for tech talent as traditional companies in insurance or banking find themselves competing in the tech sector for the right hires
- Employers are recognizing need to do more to attract Generations Y and Z, new generations with different expectations of the workplace
- Older people are of growing importance to employers on account of their knowledge and experience, and to retail, residential and hospitality service providers on account of their spending power
- Omni-channel retailing that combines tactile and visual store experiences in person with online transactions is beginning to be mirrored in the workplace
- Workspace providers are moving into the lifestyle market - for example WeWork has opened WeLive with flexible, furnished apartments

- There is increasing use of guest-facing tech in both the hospitality and workplace sectors: smartphone apps and digital check-in are set to be more evident
- The global rise of the makerspace movement, which does not fit easily into conventional property use categories, is driving the development of more hybrid and flexible spaces
- Sustainability is a growing feature of planning and systems across all sectors - pressure to save energy, for example, accelerates hybrid solutions
- Social impact is a key consideration in the choices and decisions that people make in relation to work or leisure
- The sharing economy has outgrown its origins in online transactions created by the open source community and is now set to affect the physical world of buildings, districts and cities.



The diagram above shows how the physical domains of the Intermix precinct interact with emerging trends around tech and new ways of working

Eight Intermix Principles



1 One Connected Community

Despite the mix of different types of space, an overriding principle is the idea of the Intermix precinct as 'one connected community' in which technologies are shared across different platforms and there are common protocols for digital services. Different functions share a common purpose - for example, the smart precinct might focus on creating a destination, stimulating innovation, sharing energy or promoting learning across its facilities - using the unprecedented ability of connected technologies to do so. The Hudsons Yard development in New York, for example, will provide 12.7 million square feet of new office, residential and retail space when it is completed in 2025. The digital strategy for this connected community features a range of smart urban solutions - from environmental control to security - and it is also working with Google's Sidewalk labs to create a new experience at precinct level for wayfinding and a range of other services.



2 Shaping the Sharing Economy

Unlike previous mixed-use developments, the Intermix precinct is geared up to support the sharing economy that has been catalyzed by digital technology. This will manifest itself in a range of ways for example, places for Uber taxis to park or service delivery drones to land. Residential provision will consider spare rooms to be rented via Airbnb, or more shared facilities with smaller apartments counter-balanced by domestic equipment such as vacuum cleaners and ironing boards to share. Both workspaces and homes might offer access to shared facilities such as learning spaces. There is less car ownership in the shared economy so there is less emphasis on private cars compared to other forms of transport. The Old Vinyl Factory in Hayes, west of London, is a redevelopment of the Art Deco factory site of EMI Records for the digital age. At the centre of the 180,000 square foot campus is a shared hub for makers, inventors and entrepreneurs called The Central Research Laboratory (CRL).



3 Fluid Boundaries and Flow

Previously clearly demarcated 'zones' in mixed-use development give way to a more ambitious and complex intermingling of functions in which there are fluid boundaries between spaces and more consideration given to the 'flow' of people through these spaces, in the same way that visitors explore the paths and passageways of a traditional city centre. Planning devices such as 'activated paths' or a 'central spine' let people explore those fluid boundaries - and way finding technologies linking digital signage to handheld devices can make them more easily navigable. The Battersea Power Station development in London by a consortium of Malaysian investors is creating a new smart district that combines luxury residential and retail with office space. A flowing network of boulevards and squares will flank the original iconic power station, derelict since 1983. Apple is moving its UK HQ there in 2021; this smart district will house 25,000 people by its completion in 2025.



4 The Curated Precinct

Rather than leave everything to the tenants, developers consider taking a more proactive 'curatorial' role in shaping the smart precinct. This might involve activating events in public space or providing a higher proportion of shared and bookable facilities - for example, media editing suites if the ambition is to attract a range of media tech companies. Developers will also forge links to city and local authorities - for example, by providing direct telepresence links to local council services in residential units. Community managers will use digital technologies to play a role in curating the precinct. Developer Mori's Roppongi Hills in Tokyo, Japan, which opened in 2003, is widely seen as a forerunner to the curated precinct with its carefully managed mix of retail, office, residential, conference, hospitality, art and cultural facilities. But now the next wave of smart curated precincts are set to bring digital technologies to the fore: at the King's Cross development in London, for example, digital light events and infrastructure, such as computer-programmed lighting in commuter tunnels, are curated with workspace, educational and hospitality offers.



5 Flexible Space Matters

It is important to provide a mix of workspaces in the smart precinct. The presence of small companies, incubators and start-ups is attractive to big companies seeking to diversify and adjust to business disruption, and vice versa. The provision of co-working and other serviced office space helps to limit long-term liabilities for fledgling businesses, which also need flexible space to accommodate their growth. As trends point to a shrinking of 'corp space' and a growth in flexible space, the Intermix precinct will use advanced space utilization and sensor technologies to get the workspace mix right. ATP (Australian Technology Park) in the Sydney suburb of Eveleigh, for example, is an ambitious urban regeneration project by Mirvac that will help facilitate an advanced innovation district for the tech economy by 2019 with built-in flexibility, diversity and community.



6 Makerspace Culture

In a digital era when maker culture is very much on the rise, the Intermix precinct will provide opportunities for people to come together in physical locations to share knowledge and resources, network and build projects. Like the hackspaces from which they derive, makerspaces have started to flourish outside traditional educational environments where space is at a premium. The emphasis of the maker movement is on self-directed learning, idea prototyping and experimentation. Makerspaces will appear complete with 3D printers in smart homes as well as workplaces as part of the Intermix precinct. Here East, based in the former press and broadcasting centre, on London's Queen Elizabeth Olympic Park is already creating a maker community for start-ups and tech giants. Pier 9 in San Francisco, where Autodesk is building a makerspace community, is another example of the trend.



7 The Wellbeing Dividend

The Intermix precinct is designed around the principle of using a mix of physical and tech infrastructure to optimize wellbeing right across all the services and facilities of the district. Just as there is now an international WELL Building certification, there could be a WELL Precinct requirement and certification in the future. Development options that help customers, workers, visitors and residents to exercise and eat more healthily are encouraged. Bio-data gathered from wearable fitness devices is aggregated and analyzed to support decision-making on the district. Levels of noise, air and water pollution are carefully monitored - there is a range of smart tech to help developers and occupiers do this in tandem with city and local authorities. Songdo International Business District in South Korea, which is creating a large-scale smart precinct from scratch on 1,500 acres of reclaimed land along Incheon's waterfront, has been successful in attracting couples and young families out from Seoul due to the use of smart technologies that focus on wellbeing - from wi-fi and waste disposal to water quality and traffic calming measures.



8 Destination, not Dead Zone

The smart precinct is a destination - lively, dynamic, always on. Dead-zone syndrome at night and at weekends - the affliction of many business parks - is avoided by offering retail, hospitality and workspace services as well as good transport links. The patinas, rhythms and colours of conventional city districts are designed into the Intermix precinct, with simplistic, modular, grid-like designs avoided. People make places and dense occupation is encouraged. Just as a mix of space is required in the workplace, so retail should be a mix of small specialists as well as big chains to provide diversity and variety. Leisure and tourism in partnership with city authorities is also part of the mix. Smart video and security systems underpin the whole mix, reinforcing a sense of agreeable destination. The redevelopment of the iconic doughnut-shaped BBC Television Centre in west London by developer Stanhope is creating a new smart, always-on precinct with 950 state-of-the-art apartments ringed with shops, gym, cinema, members' club Soho House and two million square feet of office space. Due for completion in 2018, its technology approach includes refurbishing three historic television studios in a strategy that leverages the BBC's heritage to create a dynamic digitally enabled destination.

These are eight principles we have identified. Can you think of others? At Mirvac Group, we welcome your thoughts. Please get in touch.

Enabling Intermix technologies

A number of emerging technologies are set to transform the development and activation of the smart precinct, improving the efficiency of how these sites operate and creating new experiences for users. Here we run down some key terms:

Intelligent Building Management Systems:

Functioning as the 'brain' of a smart building, an Intelligent Building Management System (iBMS) connects to all building's systems and services over an Internet Protocol (IP) network. Data captured from these systems is then used to optimise the operations of the building and connect to other smart buildings within the precinct.

The Internet of Things:

This network embeds sensors in billions of connected devices and pieces of infrastructure so that they can share information over the Internet on their current state. The Internet of Things (IoT) will help to automate decision-making, increase efficiency and reduce operating costs in the smart precinct of the future.

Open Protocols:

Common protocol languages (such as BACnet or LonWorks) will enable interoperability and data exchange between different building systems.

Predictive Analytics:

Data collected by IoT sensors and exchanged over open protocols can be used to forecast the performance of the building and its different systems throughout their lifecycles, helping to predict how the building will perform under different circumstances, and when maintenance is required.

Hypercat:

A global alliance and standard driving secure and interoperable Internet of Things (IoT) for industry and cities. The Hypercat specification allows IoT clients to discover information about connected devices over the Internet. With Hypercat, developers can write applications that will work across many servers, breaking down the walls between vertical silos.

User technology:

Smartphones have become the primary channel for engaging with consumers in industries like retail, financial services, education and healthcare. In a smart precinct, a variety of services are generally available via an app, which may allow users to do things like interact with retailers, navigate around the precinct or summon a taxi. Beyond smartphones, new technologies like virtual reality (VR) and augmented reality (AR) are entering the mainstream: AR, for example, overlays digital information in the real world via a smartphone or wearable to provide a live 'heads up' display on building fixtures and technologies.

The Intermix Approach: Four Core Typologies

Big Data:

Applications of big data are already impacting physical space by allowing buildings to identify the tastes and preferences of users down to an individual level. Retailers, for instance, can access data on the location and movement of customers through telecoms operators. Commercially available technologies can capture footfall data and build heat maps reporting in-store conversion rates and the effectiveness of displays. Video analytics software can even identify the age and gender of a customer and then use this data to trigger targeted advertisements on display screens.

Cyber security:

The security of any Internet-connected device can never be completely guaranteed. With more connected devices installed in buildings and greater dependencies between different technology systems, property managers should aim to stay one step ahead of any potential hackers through putting robust security procedures in place and ensuring that all building technology systems use best-in-class security protocols.

The Intermix approach enables smart precincts that are different and distinct in character by altering the scales at which the mix of functions appear. Four main typologies are presented here - however there are many more and different tech-led mixes that can be achieved:

The Enterprise Model (workspace led)

The Emporium Model (retail led)

The Haven Model (residential led)

The Interchange Model (transport led)

Each typology presented reflects some or all of the Intermix principles:

Connected Community

Sharing Economy

Fluid Boundaries

Curated Precinct

Flexible Space

Makerspace Culture

Wellbeing

Destination

Typology 1: Workspace-led The Enterprise Model

This model is built around the idea of a dynamic workspace campus dominating a large part of the district.

The main accent: business innovation, acceleration and incubation.

Retail/hospitality and residential facilities also feature, with a smaller amount of space devoted to public and event space, cultural amenities and transport infrastructure.

This model features a cluster of large commercial buildings with unfettered floorplates that can be easily landscaped and subdivided for different functions and workstyles.

Excellent transport links support commuting.

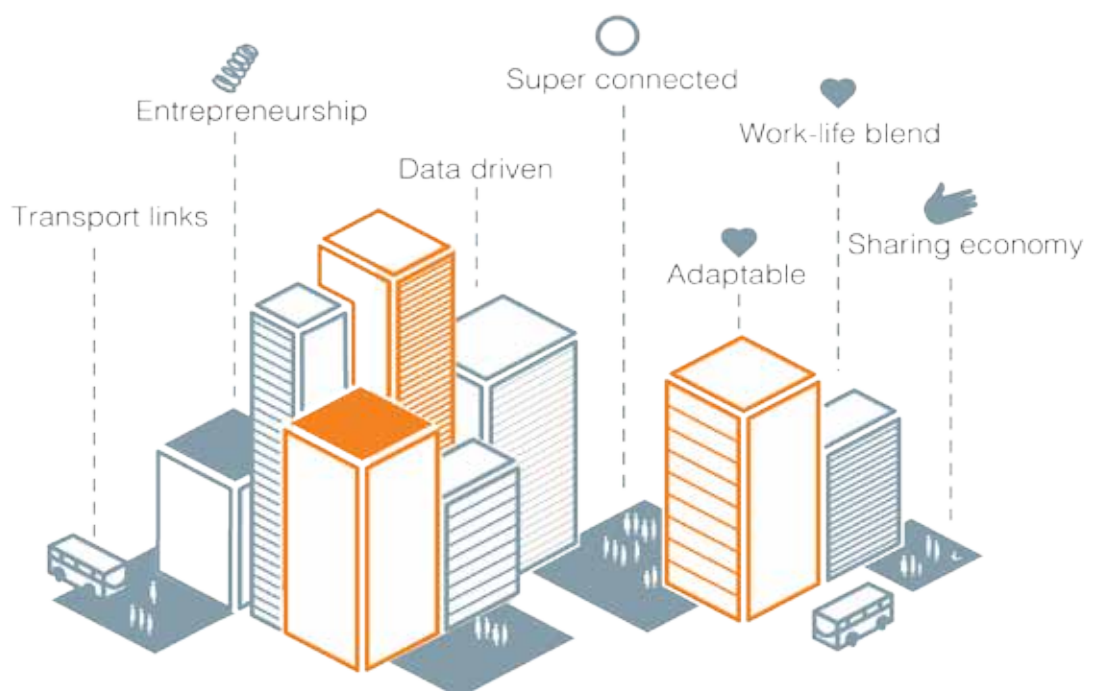
Retail, culture and hospitality support the work-life blend, with such facilities as gyms, walking paths and healthy eating outlets underpinning the wellbeing agenda.

This model has very high connectivity

requirements and utilises the latest smart technologies to generate volumes of data on people, movement and location within the precinct's buildings to orchestrate patterns of collaboration and interaction. Data captured via the Internet of Things from wearable fitness bracelets give building managers useful information to adapt the environment to support health and wellbeing. Precinct apps are a feature.

The Enterprise model especially reflects the Intermix principles of connected community, sharing economy, flexible space, makerspace culture and wellbeing.

Its benefits are in achieving 'real-time real estate' - a super-connected work campus that would use smart technologies to optimise use of space, manage energy efficiently and orchestrate patterns of collaboration and innovation. The chief risks are around security, privacy and data issues associated with open source protocols and networks.



Where it's already happening:

In Sydney, Mirvac's ATP (Australian Technology Park) development is creating a connected working environment for collaboration and exchange in the digital economy. There is an intelligent and imaginative intermix of workspace with public and recreational facilities to take the 14 hectare site's industrial story forward 'from steam to silicon'.

The precinct is activated an Innovation Plaza, Locomotion Street plus village squares, greens and sports facilities. Elsewhere in Australia, Ipswich is working on a Smart Digital City blueprint that features an innovation hub called Firestation 101 that will bring mentors, investors, entrepreneurs and volunteers together.

In London, accelerator spaces for start-ups and high growth companies in the tech economy are flourishing within an advancing digital ecosystem. Level 39 in London's Canary Wharf district, for example, is Europe's largest technology accelerator: opened in March 2013, this now has more than 170 start-ups. The brand new £3.5 billion Silvertown development in London's Royal Docks will create 50 commercial buildings to form a major new tech hub for the east of the city. Elsewhere in the UK, the relocation of the BBC to Salford Quays has already created a new smart precinct at MediaCityUK serviced by a hinterland of small creative and digital firms.



Credit: Mirvac Group



Credit: Level 39



Credit: David Dixon

Top: Australian Technology Park, Sydney, Mirvac Group; Middle: Level 39, Canary Wharf; Below: The BBC offices at MediaCityUk, Salford.

Typology 2: Retail-led The Emporium Model

This model is built around the idea of a lively shopping centre dominating a large part of the district.

The main accent: smart retail destination.

Workspace and residential also feature, with a smaller amount of space devoted to public and event space, cultural amenities and transport infrastructure.

This model features a cluster of 'authentic urban' streets with a variety of building types at different scales, avoiding a monotonous grid but offering simple, intuitive routes aided by way finding technologies.

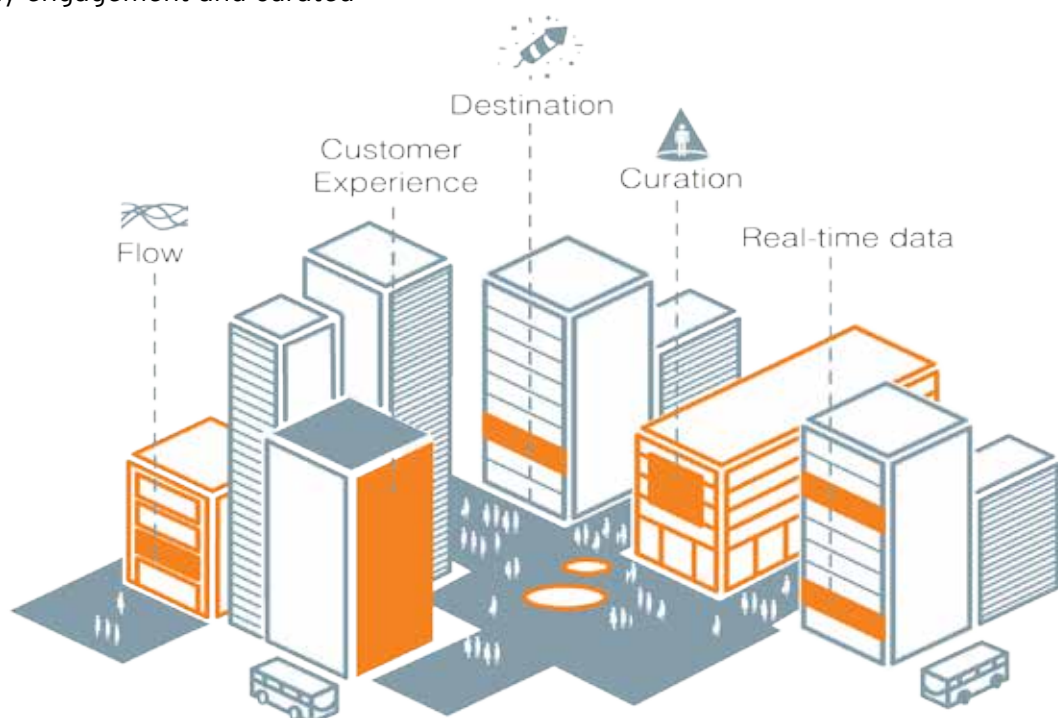
Excellent transport links support the flow of customers.

Workspace, hospitality and residential facilities help to 'normalise' and energise the artificial environment of the brand-oriented, retail-led precinct. A public events space forms a dynamic part of the mix, offering community engagement and curated entertainment.

This model has high connectivity requirements and utilizes the latest smart technologies so that analysis of big data can respond in real time to customer spending patterns. High-impact, large-format, LED advertising displays, laser shows and other customer communications feature in the precinct. Retail apps are also a feature.

The Emporium model especially reflects the Intermix principles of connected community, fluid boundaries and flow, the curated precinct and destination.

Its benefits are in using real-time data to drive footfall and in personalising the customer experience. An omni-channel view of the retail customer would blend physical and sensory experiences with smart, cloud-based services. The chief risks are also around privacy and data issues, as well as the disruptions to traditional bricks-and-mortar retailing as stores become showcase destinations for online sales.



Where it's already happening:

In New York, the Hudson Yards development is billed as 'a triumph of culture, commerce and cuisine' and places a big accent on retail destination. Around 100 luxury and specialty stores will be present, including Neiman Marcus making its New York City debut. The presence of 400,000 well-heeled, digitally savvy residents in the area drives the retail numbers. Hudson Yards is the largest private property development of its type in America's history and data-led retail services and digital communication will feature strongly. The masterplan by architects Kohn Fox Pedersen effectively expands the midtown Manhattan business district with a new smart precinct: the first of the 16 skyscrapers at Hudson Yards opened in May 2016.

In London, Westfield Stratford City is a giant shopping precinct (the largest in the European Union) with 1.9 million sq ft of retail space sited next to the cultural and education amenities of the Queen Elizabeth Olympic Park and the transport hub of Stratford International. Its capacity to be a smart precinct will be enhanced by the work of Westfield Labs, a global digital lab based in San Francisco and focused on better connecting users of digital technology and social media with the physical world of shopping.



Top: Public Square, Hudson Yards, New York; Below: Westfield Stratford City, London

Typology 3: Residential-led The Haven Model

This model is built around the idea of prime residential accommodation occupying a sizeable share of the district.

The main accent: the smart home quarter.

Retail/hospitality also features quite strongly, with a smaller amount of space devoted to workspace, public and event space, cultural and health amenities and transport infrastructure.

This model features a cluster of lower rise, less intense, high-quality apartment buildings with sensitive massing and landscaping.

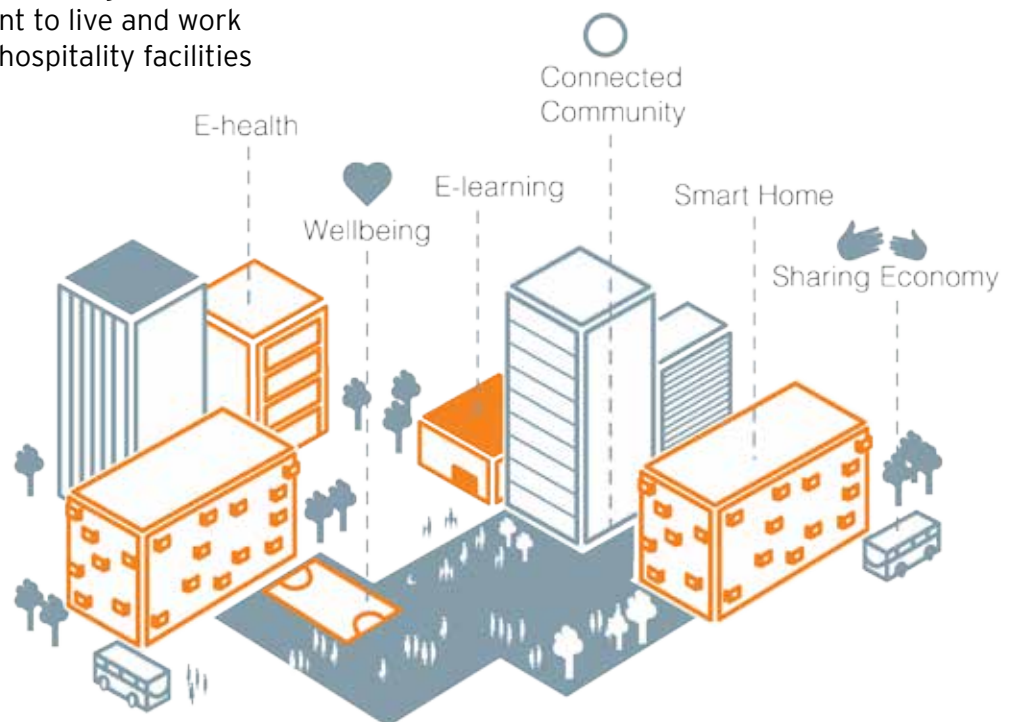
Excellent transport links are required for residents. Attention is also paid to the proximity of schools, doctors and other community services nearby. An educational and lifelong learning facility might be part of the mix.

Co-working spaces provide individual work settings for entrepreneurs and high net worth individuals who want to live and work in the same place. Retail/hospitality facilities support living needs.

This model has medium to high connectivity requirements and utilizes the latest smart home technologies for modern living, including the latest in streamed entertainment tech. Smart robotics and artificial intelligence to support an ageing population could also be considered here.

The Haven model especially reflects the Intermix principles of connected community, sharing economy, the curated precinct, wellbeing and avoiding the dead zone.

Its benefits are in bringing residents into a connected living community, giving access to the sharing economy, creating human interaction and avoiding social isolation. From smart concierge services to e-health, there are opportunities to support living, working and caring in the same place. The chief risks are in financial viability for individual purchasers of the smart home, and in privacy and security issues.



Where it's already happening:

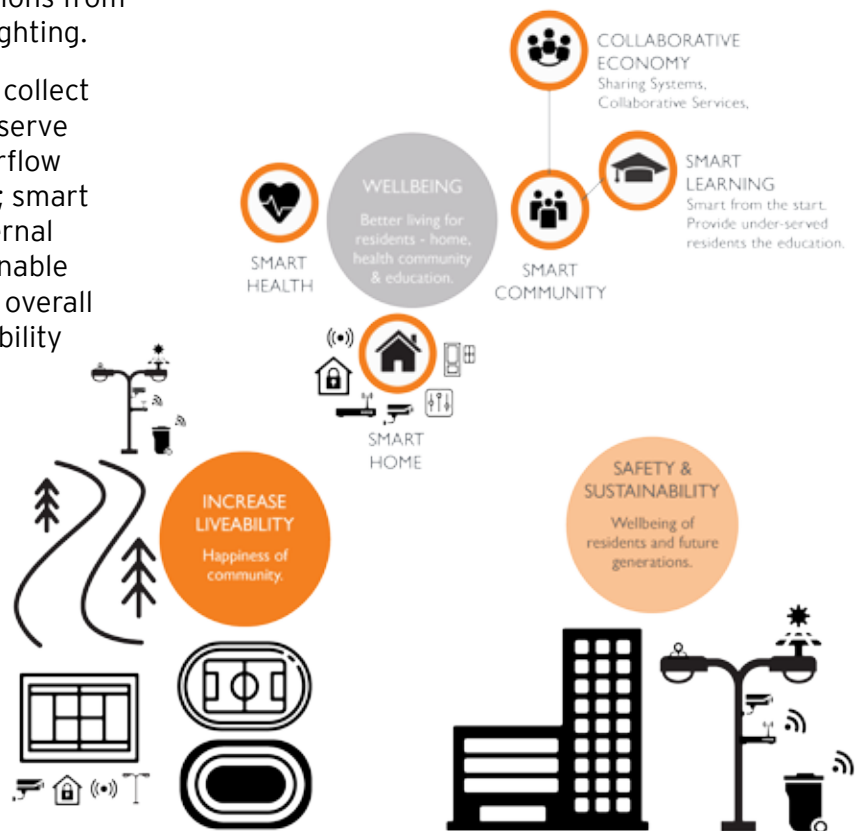
In the South Korean smart precinct of Songdo near Seoul, residents in apartments can video-conference with their neighbours or even attend classes remotely, using new technologies for social interaction and learning. Songdo International Business District includes homes, schools, universities, hospitals, office buildings and cultural amenities, using smart-city principles to shape its development with sensors gathering data on traffic flow and energy use.

In Melbourne, Australia, a joint venture between Mirvac and VIP is planning a new smart community called Woodlea; this will be a dynamic addition to the city, eventually housing more than 18,000 residents on completion. The suburb will use smart technologies with a range of applications from health and education to safety and lighting.

Smart street lighting at Woodlea will collect data to reduce maintenance and conserve energy; smart bins will deal with overflow issues by alerting councils to pick up; smart homes will enhance security and internal climate control; smart learning will enable classes to be attended remotely. The overall aim is to improve liveability, sustainability and wellbeing.



Credit Designbuildnetwork



Credit Mirvac Group

Top: Songo smart precinct near Seoul, South Korea. Above: diagram describes smart strategy for Woodlea development in Melbourne.

Typology 4: Transport-led The Interchange Model

This model is built around the idea of a transport interchange taking centre stage in the district.

The main accent: the smart mobility hub.

Retail/hospitality, workspace and residential would also be evident within the precinct, but to a lesser extent, with the smallest amount of space devoted to public and event space and other cultural amenities.

This model infiltrates the iconic architecture of a landmark transport hub - an integrated rail station, bus terminus and cycle park, for example - with a mix of other facilities such as meeting room suites, co-working spaces, small convenience retail, digital banking hotspots and citizen advice desks.

Retail supports the work-life blend, with gyms and healthy food restaurants helping the wellbeing agenda.

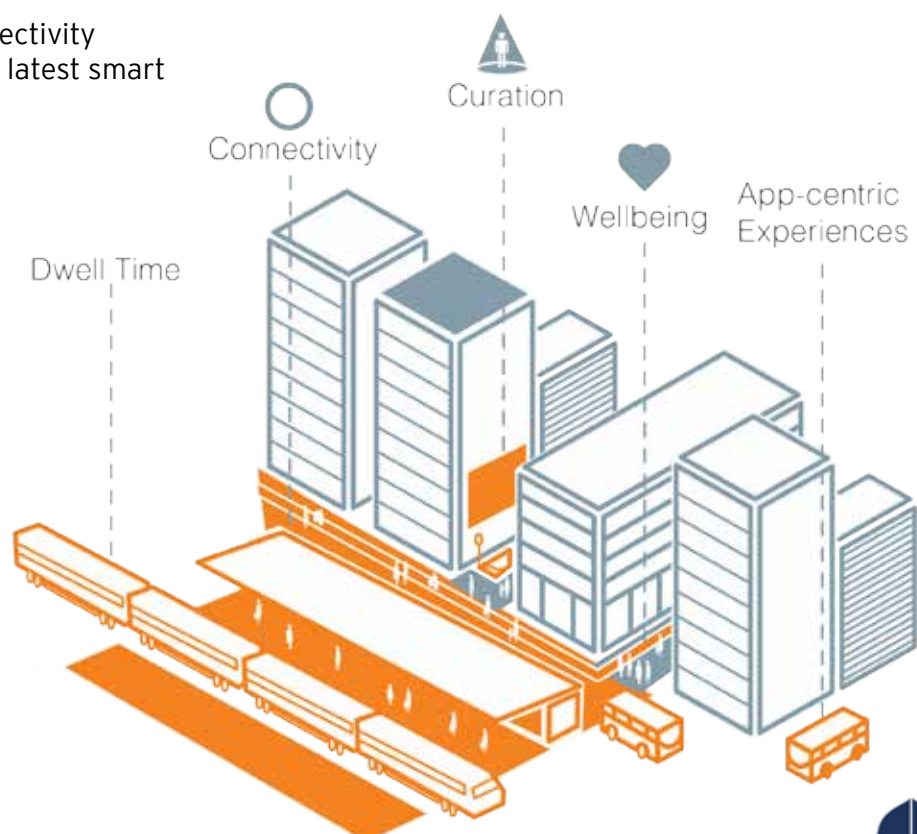
This model has medium connectivity requirements and utilises the latest smart

technologies to enable people to work, collaborate and communicate on the move.

The Interchange model especially reflects the Intermix principles of the sharing economy, flow, the curated precinct and wellbeing.

Its benefits are in creating greener transport hubs and in utilizing the wait time of people in transit, diverting travellers to other commercial services. This model provides a platform for a host of app-centric experiences; data captured from smart wearables and devices lets the precinct know who is present and what their preferences might be.

The chief risks would be around security and protection from terrorist or cyber attack, also in identifying relevant cohorts for specific services from within the transitory flow of people through the smart precinct.



Where it's already happening:

In London, the redevelopment of King's Cross by Argent has created a vibrant destination precinct built around an historic transport hub. This 67-acre digital district intermixes transport infrastructure with offices (including Google's London HQ), retail/hospitality, residential and education - the University of the Arts occupies a restored granary building.

In Melbourne, Mirvac's new AGL commercial building on Collins Street sits directly opposite the city's largest transport hub, Southern Cross Station - further proof of how transit-oriented development (TOD) is catching on.

In New York, the World Trade Centre's new transportation hub, known as the Oculus, and opened in 2016, combines a spectacular physical presence with a 'digital layer' using location-aware beacons and apps to connect customers to retail and dining offers in the vast subterranean rail station.

In Singapore, the Jurong Lake District became the transport hub testbed for a series of urban digital experiments in 2015. More than one thousand sensors were used to monitor everything from traffic to street lights while people were ferried around in driverless vehicles.



Top: King's Cross station in London redeveloped. Above: Mirvac's AGL building in Melbourne close to major transport hub, Oculus.

Credit: Mirvac Group

Intermix: From ideas to action

Intermix is a concept for the smart precinct of the near future. As yet there are few built projects that demonstrate all of its key principles. However the picture is shifting rapidly and it is now entirely feasible that the collision of property development with smart technologies around the world will introduce the new hybrid states that this viewpoint report describes.

Not only is it feasible, it is desirable too given the macro customer and employee trends that we are seeing, and also viable as service providers increasingly focus on the commercial opportunities afforded by the digital economy.

While this report has speculated around four core typologies related to workspace, retail, residential and transport, there are many others. In each typology, for example, education has a role to play and universities are set to be early adopters in the smart precincts of the future. Public and cultural infrastructure is also a key element across the typologies.

To go from ideas to action with Intermix, here are three starters to consider:

1 Think beyond your boundary:

Developers, councils and managers and occupiers of single smart buildings should start to think about how an assemblage of several smart buildings might help create a smart precinct - and what the benefits of taking a broader view might be. Smart precincts can take advantage of the economies of scale of the larger district and the interoperability of different smart systems.

2 Engineer a mix of different scales:

Smart precincts entirely dominated by large corporations or large retail chains do not achieve the intermix that leads to innovation or community. So think about a blend of different business scales - in workspace, for example, the co-location of large corporates with start-ups will be advantageous to cross-fertilize ideas.

3 Plan the physical and digital in tandem:

The smart precincts of the future will depend on a weaving together of physical and digital infrastructures. So these need to be planned, designed and delivered in tandem. Trying to introduce smart services retrospectively once the built environment is fixed won't maximize the benefits of the Intermix fusion. Joined-up thinking should also extend to marketing the smart precinct as a mix of offers which blur the boundaries and depart from a siloed approach.

4 Focus on what you want to achieve:

It is important to be explicit about what you want your smart precinct to achieve. In the Enterprise model, this might be accelerating company growth using flexible space, fast connectivity and sensor-based, smart space and people management to build momentum. Whatever your main focus, build your precinct around a governing set of ideas.

Getting in Touch

The Intermix report has been compiled by Mirvac in partnership with WORKTECH Academy, a global knowledge network on the future of work and workplace.

If you would like to learn more or discuss the ideas contained in this report, please contact

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