



Change. Architecture. Discuss.

April 2016

A discussion paper on the future direction of architecture and the built environment sector in NSW and beyond

NSW
Architects
Registration
Board





Prepared by the NSW Architects Registration Board and released in 2016. The NSW Architects Registration Board is an independent statutory authority responsible for the administration of the Architects Act 2003. The Board is fully funded by the registration fees from individual architects, and architectural firms or corporations. The Board's key role is to protect consumers of architectural services by promoting a better understanding of architectural issues in the community; informing the public about the qualifications and competence of individuals or organizations holding themselves out as architects; accrediting architectural qualifications for the purposes of registration; ensuring that architects provide services to the public in a professional and competent manner; and disciplining architects who have acted unprofessionally or incompetently.

Cover photo: The Goods Line, Ultimo designed by Aspect Studios with CHROFI Architects for the Sydney Harbour Foreshore Authority. Image: Photos by Boaz. Unless otherwise noted, photos by Stephen Pierce or Tim Horton.

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Introduction

One thing we all know is that change is constant. Over time as our needs change, the environment we design and build for ourselves needs to change with us. Today, the greatest change is coming from the speed with which we are urbanising. In 1950, just 30% of the world's population lived in cities. Just a hundred years later, that will reverse, with around 30% of the world's population living outside of cities by 2050¹. What's more, the fastest growth is expected to occur in less developed nations, whose infrastructure needs are greatest. Many of these are in our own region of the asia pacific, so it's no surprise that around half of the world's investment in buildings, transport, energy and other infra-

structure is expected to occur in this region in coming decades. The scale of this need is driving the globalisation of services skilled in design, planning and development.

Change in our own local communities may be less dramatic, but still be familiar to all of us. We see it in the move to smaller homes for smaller families, or in single older people who are living longer but looking for care and support as they age. Or in taller buildings that can still promote close, healthy communities. This change can be left to happen over time, or be curated through design and with planning. Understanding change helps us to better respond, plan and assist any transition.

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“...The current process of change has been called many things; the global economy, the information revolution, the age of complexity. Whatever we call it, this break with history has shaken the foundations of our economic and social lives, laid during the industrial revolution, and it has rendered vulnerable the various structures so carefully built upon those foundations, including the structures of the professions and the universities.”²

— PROFESSOR THOMAS FISHER —

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● McKinsey tells us that winning support for change³ is part of making a city great. But architecture also offers something more. It gives physical form to investment, planning policy and business models. And because architecture uses *visual* means to communicate, it is unique in its ability to foster community confidence in the *opportunity* of change by showing how we can do something *better*. Architecture’s tools of trade include drawings, models, visualisations and simulation. All bring to life a kind of positive progress in the world we build around us. We might see this in the ‘artist impression’ prepared as part of a new light rail project; a revitalised town centre, or a proposed apartment building designed around

the existing character of a place, close to where we live. Each of these artist impressions illustrate a precise, 3-dimensional form and scale. Unlike the way we describe a new tax policy, child care regulation or fisheries initiative, the tools of communicating change in the built environment ensure it’s grounded in a place, and is anything but abstract.

But a better built environment is about more than just how our buildings look. It includes better performing workplaces that aim to be more productive, collaborative and innovative; better public spaces that are safe, friendly, and vibrant; better hospitals where we go to get well; better homes more adapted to our needs.

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“..a better built environment is about more than just how our buildings look. It includes better performing workplaces that aim to be more productive, collaborative and innovative; better public spaces that are safe, friendly and vibrant; better hospitals where we go to get well; better homes more adapted to our needs”

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As US architecture critic Paul Goldberger says, “We build, in the end, because we believe in a future - nothing shows commitment to the future like architecture. And we build well, because we believe in a better future”⁴. But do we? When Galaxy Research polled 2,500 Australians aged 18-64 years in June 2015, almost 97% believed that cities and towns are better to live in when public buildings and public spaces are well designed. 96% of us believe that homes and apartments provide a better living experience when they are well designed, and 66% believe it is very important that buildings of all kinds integrate with the community, particularly at the street frontage⁵. The research shows that Australians appreciate

good design, and support design quality. What’s more we understand the consequences of poor design, and of standards poorly applied.

This work explores how and where architecture is, can and might help to transform our cities, towns and regions. It explores the social, technological and economic shifts that the sector is exposed to; the policy context in which the sector is positioned; and it offers some thoughts on where fields of growth for the sector may lie. We explore some key drivers of change, look beyond current occupations in an attempt to define the underlying capabilities that are the sector’s strengths, and sketch out an integrated strategy for transforming

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“When Galaxy Research polled 2,500 Australians aged 18-64 years in June 2014, almost 97% believed that cities and towns are better to live in when public buildings and public spaces are well designed.”

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● architecture for the future. We want to better support growth in architectural services in the region, and foster transformation in the domestic market, with new pathways for the next generation of architects, digital designers, coders and entrepreneurs to shape where and how we live. In short, this work seeks to leave the reader with a better understanding of architecture’s potential; now, and in the future.

And why now? 2016 is a milestone year in New South Wales. Two hundred years ago, we decided that wattle and daub was no way to build a nation. The early European settlement in Sydney Cove was in decay, and struggling to meet the needs of

its people. Governor Macquarie harnessed our natural capital; quarried Sydney sandstone from under us, tested our clay to make bricks, and ground our abundant harbour oysters for lime mortar. He surveyed, and set the standard for measurement of roads and our early land economy. And, importantly, he harnessed the human capital needed to transform materials, exploit technologies, apply standards, build and develop. At the centre of his program, Macquarie appointed Australia’s first Government Architect, Francis Greenway. Two hundred years later, we ask; what’s next, and are we ready for it? What are the new standards, materials, technologies, and capabilities needed for the future we want?



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The sector in profile

Who is the client base for architectural services? The client base is split between residential building (36.3%), commercial/industrial building (37.3%), public works (18.8%) and non-building work (7.6%).

— ARCHITECTS ACCREDITATION
COUNCIL OF AUSTRALIA —

Traditionally, the economic contribution of architecture has been based on the construction value of a project, or the property valuation of a built asset. It's true that architecture is a value-add embedded in construction and property more generally. But new research also shows we can measure the social value of architecture, as well as the contribution made by the sector to industry innovation and STEM education in the expanding field of tradeable urban services.

A 2010 study found that an architect can add as much as 17% to the value of a building, and around 5-7% to rental returns. More recently, research commissioned by the ARB showed that the Chau Chak Wing building at UTS, de-

signed by US architect Frank Gehry in association with Daryl Jackson Robin Dyke, contributes around \$46m annually to the local economy, and that nationally, "archi-tourism" can be valued at around \$827m⁶.

You may be able to value an icon and the economic and social value it generates, but can you place a value on the sector that created the icon in the first place?

According to the NSW Government, the NSW design sector - incorporating architectural and other design professions - is the second largest segment within the NSW Creative Industries, after internet and digital services, and is the largest design sector in any state⁷.

Left: Dr Matthias Haeusler (UNSW), Phillip Graus, Lachlan Abercrombie (Cox Architecture)



4,930

Architects in New South Wales

50

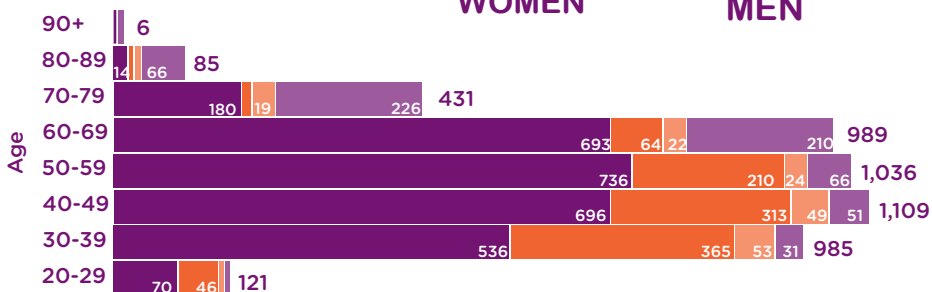
Average age of a practising architect



26%
WOMEN



74%
MEN



■ Practising MALE
 ■ Practising FEMALE
 ■ Non-Practising FEMALE
 ■ Non-Practising MALE

1,344

Architectural corporations & firms in NSW



25,734 directly employed in architectural services

www.business.nsw.gov.au/7



98%

architectural businesses employ less than 20 ppl

AACA Industry profile⁹

Residential
building

36.3%

Commercial/
industrial
building

37.3%



Non-building
work

7.6%

Public
works

18.8%



17%

value added
to a building
if using an
architect

UTS research⁸



\$27.3m

university fees
generated each yr
at 4 NSW schools
of architecture

UTS research¹¹

\$6.4bn

Annual revenue
of Australian practice

IBIS World figures¹²



value of Australian
'archi-tourism'

UTS research⁶



3

The sector in context

“I’m interested in how urban growth can be a means to grow the human and natural capital as much as the financial capital of NSW. Cities represent an important investment in our future”¹³

— DOMINIC PERROTTET MP, MINISTER FOR FINANCE, SERVICES AND INNOVATION —

Australia’s built environment sector is a part of an integrated global value chain that includes the fields of design, architecture, planning, construction, engineering and development. Those involved in this value chain use professional, technical skills to transform materials, products and technologies to shape buildings and the spaces in-between them. So given the field cuts across sectors, and portfolio interests, where does architecture ‘fit’ in to the public policy landscape?

Australian design professionals and architectural practices are part of a globally-respected knowledge-based export market - designing cities, landscapes and infrastructure across the world; including transport projects,

science and technology clusters, universities and market trading centres; advanced prefabricated modular building assemblies and more, using multi-disciplinary expertise through local offices in Vietnam, Thailand, Indonesia, Hong Kong, Singapore, China, the middle east, UK and US.

An international survey of 1,350 architectural practices by the UK’s *Building Design Online* ranked five Australian practices in the top 100. The majority of these firms are based in NSW, including *Woods Bagot*, *Cox Architecture*, *Bates Smart*, *Buchan Group*, *GHD Woodhead*.¹⁴

Understanding how architects, and those involved in the sector, can play



• a *greater* role in this global value chain can help grow the economic and social contribution of architecture in a growing NSW economy, by fostering local industry innovation that, in turn, grows value for local communities too.

To understand how we can do this, we've mapped some of the key priorities of the Australian government, and the government of NSW to align architecture with the funding and resource priorities of our civic leaders, policy-makers and decision takers.

In global terms, we see architecture positioned as a professional services sector that exports local intelligence, as a value-add to infrastructure and industry innovation, and - at home - as

a means of making planning real. The sector delivers the practical end of government goals for stronger, healthier communities through good design that supports growth in the right way and helps win support for change. Forecasts for the sector indicate a growing appetite for integrated service models that include architecture as part of engineering or other skill-sets, with annualised growth of 2.2% over five years from 2015-2020; lifting annual revenue to around \$7.1bn. In 2012-2015, revenue was divided as follows;

- 7.5% (pre design services)
- 10.3% (schematic design)
- 14.7% (design development)
- 29.4% (contract documentation)
- 17.4% (contract administration)

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“China’s rapid urbanisation has led to 80 Australian architectural studios opening up in china, with a further 220 Australian firms winning work. A good example is Cox Rayner Architects which recently won a competition to design china’s 290m national maritime museum - beating a field of 80 of the world’s leading design firms in Tianjin”

— MALCOLM TURNBULL MP, PRIME MINISTER OF AUSTRALIA, 15 SEPTEMBER 2015 —

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- 20.7% in architectural drafting and other related services¹⁵

How are NSW architects positioned to leverage this forecast growth? Are architects integrating with other disciplines to provide an integrated service? And is the sector alone in developing strategies to meet its export potential?

Australia’s global position

The Australian government places the contribution of the professional, technical services sector at around \$3.5bn. Architectural services are included in this - as well as being embedded in other sectors, including the largest services-related export sector; education. One of the key characteristics of the industry is that many design

workers do not work in design-related industries, but rather add value to other sectors of the economy such as public administration, manufacturing and more.¹⁶

Of all these sectors, the greatest investment surge is expected in urban development, resulting from rapid urbanisation in the Asia Pacific region. The volume and focus of investment in cities - here and in the wider region - will define the next two decades. It’s forecast that US\$20 trillion will be invested in urban infrastructure by 2050 - around half of that will be in our own region.

This throws the focus on the liveability of existing and new cities. It is driving



● growth in *tradeable urban services* like planning, architecture, design, engineering, waste management, housing development, water and energy. To this, we might add 'big data' handling, the application of the Internet of Things; and those involved in the sharing economy¹⁷.

Architecture as a trade services export
Recent trade agreements negotiated by the Australian government have removed operating restrictions for Australian architects, engineers, urban planners and construction firms in Asia, and South America.¹⁸ In 2015, PwC published research on *The Asian Century*. It showed that in ten years, half of the world's economic output will come from Asia. Yet only 9% of

Australian businesses operate in Asia now. It turns out Australian business invests more in New Zealand than it does in China. Labour needs to be mobile, and professional services are integral to the new economy. ASEAN is looking to promote greater labour mobility between economies. But most of our businesses are focused on short term investment; including some architectural practices that chase the project, without investing in presence.

Investing in setting up a studio in another country is significant. Partnering with a local practice is an option, but how do you do it when it's ten hours flying time to meet? PwC shared 8 tips relevant to architectural firms engaging in the region, including;

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"I am a strong believer in the ability of innovation to improve the NSW economy as well as the wellbeing of people. A key part of this is innovation in our cities and built environment. Design puts people at the centre and architecture shapes the physical environment through which innovation can be brought to life. I am passionate about teaming ideas and investment to discover solutions to unmet needs."

— VICTOR DOMINELLO MP, MINISTER FOR INNOVATION AND BETTER REGULATION —

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- Lead with a strategy and take a 'portfolio approach'. This might mean; avoid setting up a studio overseas off the back of one project win.
 - Invest in learning the culture, and don't assume all places and people are the same.
 - Don't be fooled by 'Guanxi' - trust and relationships matter. Understand how and where decisions get made.
 - Understand 'uniquely Asian' market dynamics, which can be complex and not without risk
 - Keep timelines realistic and be patient - don't be tempted to bail too soon, and make sure you plan beyond your own immediate priorities
 - Proceed with caution - too often, risks can be grossly over or understated.
 - Triangulate your information - transparency can be lacking so validate from as many sources as possible
 - Go easy on the integration and remember the 80/20 rule (in other words, remember 80% of results from 20% of effort)
- But in summary, PwC advice for architectural firms came down to three important factors;
1. Take long term view
 2. Have the backing of bigger, patient support
 3. Have a local presence - don't FIFO (Fly in, Fly out)¹⁹

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“Liveable, vibrant cities are absolutely critical to our prosperity. Historically the Federal Government has had a limited engagement with cities and yet that is where most Australians live, it is where the bulk of our economic growth can be found. We often overlook the fact that liveable cities, efficient, productive cities, the environment of cities, are economic assets...We have to ensure for our prosperity, for our future, for our competitiveness, that every level of Government works together, constructively and creatively to ensure that our cities progress.”

— MALCOLM TURNBULL MP, PRIME MINISTER OF AUSTRALIA —

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Government initiatives such as Aus-trade’s *Export Management Development Grants* program help to assist a firm’s expansion overseas. Over the last five years, more than 108 grants totalling around \$4m were awarded to architectural service firms. However the trend is down 28% since 2009, with only 1% of these grants going to architectural services firms²⁰. So what’s going on? Has a vigorous local domestic market cooled our drive to find those markets offshore?

Architectural education export

The Australian government values education-related travel services at around \$14.5bn in 2013. Architectural education in Australia generates at least \$126m alone in annual fees, and

another \$10m in research undertaken in the sector.²¹

Australian schools of architecture offer a consistent, high quality education that is formally and independently accredited on a 5-yearly basis. In NSW, the ARB provides oversight to this accreditation framework; delivered in conjunction with industry via the National Standard of Competency for Architects, developed by the *Architects Accreditation Council of Australia*.

This Standard acts as a consistent datum governing the education of aspiring architects, registration as an architect, and setting the standards for architectural practice in Australia. The Standard details the four units



of competency for architects in design; documentation; project delivery and practice management. As a result of these well crafted and accredited standards, Australian schools of architecture are highly regarded in the Asia Pacific region. Capitalising on their leadership position, our local universities are increasingly teaming up with international partners to allow students to move between countries and gain valuable cultural experience in the APEC region.

Signs of a closer, more shared model of exchange between China and Australian universities are reflected in programs like that launched by UNSW and Tongji University in 2014. The two universities have announced a 4 year

dual degree to be earned through time spent in both Shanghai and Sydney.²²

Taken in the context of the China Australia Free Trade Agreement, this dual degree may just be the incubator for the next generation of bilingual, bicultural graduates that move easily between China and Australia, and head up a new generation of architectural practices that identify as local to both countries.

National policy

Australia's national priorities

In September 2015, Prime Minister Malcolm Turnbull stated that Australia's cities and towns represented where most of us live, and where the bulk of economic growth can be found. In early 2016, the priorities of *Cities* and *Digital Transformation* were brought in to the Prime Minister's own department.

This focus on our investment in city planning and delivery is reflected in the announcement of a *Greater Sydney Commission* to better integrate planning and design across metropolitan Councils. As Australia's largest state economy, architecture and construction in NSW often drive innovation in new materials, systems, assemblies and products from businesses

both within NSW and beyond. Consider the downstream innovation advantage from internationally awarded buildings that are a 'first' such as *30 The Bond* for Lend Lease - the first 5 star *Greenstar* commercial building in Sydney's CBD resulting in 30% lower carbon dioxide emission than a typical office and using between 30 - 40% less power than today's best-practice buildings)²³. Or *1 Bligh Street* for DEXUS Property Group, DEXUS Wholesale Property and Cbus Property - the first 6 star high rise commercial building with a custom-designed naturally ventilated double skin glass facade, incorporating 1,774 automated blinds and controlled by a system created for the unique elliptical design of the building²⁴.



● Innovative fire safety engineering integrated in to the design of the newly opened Epping to Chatswood Rail Link stations allowed a more open pedestrian environment.

Clearly, the built environment sector in NSW plays an important part in achieving national priorities designed to build Australia's innovation capacity for the infrastructure of the 21st century, and local industry innovation.

Sydney as a global infrastructure hub
In October 2014, leaders of the twenty largest global economies, the G20, agreed to establish a global infrastructure hub in Sydney, in order to increase global investment in infrastructure. The Hub will coordinate the infrastruc-

ture plans and activities of governments, the private sector, banks and other organisations.

As the site for a global hub, Sydney has the potential to develop and export global expertise in the design and delivery of major road and rail infrastructure, urban regeneration projects, transit-oriented developments as well as airport logistics and infrastructure.

Architecture can play a part in this infrastructure hub by pooling local expertise and applying research in high performance commercial buildings that achieve worlds best practice in energy efficiency and promote the development of local green technologies that compete globally; in the develop-



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*“A Global Infrastructure Hub will collect and disseminate leading practices across the infrastructure life-cycle, with the objective of increasing the pipeline of bankable projects, improving the productivity of investments, and accelerating the development of infrastructure as an asset class”.*²⁵

— B20 PRESS RELEASE, G20 MEETING—

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ment of high quality housing suited to the diverse needs of communities; in the design of international standard transport infrastructure like heavy and light rail stations, bus transitways and ferry terminals; in medical research facilities, hospitals, schools and public spaces where resilient social networks are formed.

Industry innovation

With smart procurement and design management, architecture can be a lead customer for locally-grown materials, products and technologies that can be integrated in to high performance buildings, precincts and large scale infrastructure. High performance architecture refers to advanced cladding and insulation materials, low en-

ergy heating or cooling strategies; intelligent facades; integrated data and communication systems in transport and energy infrastructure; building and precinct information modelling that can more easily enable the industry-wide collaboration needed for innovation in procurement and delivery. And because architects design the shape and form, select the materials, and prepare the project specification for domestic housing, it's not just our iconic buildings that can drive demand for local industry innovation. Our homes and apartments can act as a consistent marketplace for innovative local products, mandated in to use through smart design codes, standards, and guides.

Left: Chatswood Interchange by Cox Architecture with Design Inc Image: Brett Boardman

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“We both see examples every day - of students experimenting with a new material to get the desired shape, of sound editors staying up to all hours mixing to get the desired impact, of web designers testing versions to get the most intuitive experience. The artists’ and designers’ passionate pursuit to express themselves - to make an impact - gives the technology in their hands purpose and makes innovation come alive. STEAM is gaining traction.”²⁶

— JOHN MAEDA, RHODE ISLAND SCHOOL OF DESIGN, HUFFINGTON POST, 2012 —

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● *Gaining STEAM*

The Turnbull Government’s *National Innovation and Science Agenda* aims to boost industry competitiveness into the future by lifting our capacity in Science, Technology, Engineering and Mathematics in primary and secondary schools. STEM skills are essential in creating and turning new ideas and inventions into lucrative, internationally competitive Australian products, services and exports.

STEM studies also develop generic skills such as problem solving, critical thinking and creativity, which are used in a wide range of environments and occupations.²⁷

Architecture is generally classified as a capability within the STEM disciplines; showcasing the value of creative thinking in complex problem solving resulting in tangible outcomes. In countries like the US, UK and China, STEM is also being expanded to include an explicit statement on the role of art, design and creativity in applying STEM in new ways to create value in the 21st century. Adding the ‘A’ in Arts and creative capacity to STEM is the basis of a worldwide interest in moving from STEM to STEAM.

In the US, organisations like the *Clinton Global Initiatives*, and performer Will.i.am are funding programs to build STEAM capacity in young people.²⁸



THE
WATER
HOTEL

☆☆☆☆☆☆ Five Star Hotel!!!!!!
LNE HERE

19



NSW state policy

NSW is Australia's largest state economy with housing, construction and urban development a central part of the state's economic engine. NSW is the strongest State for new home construction, with starts more than 36% above decade averages. Construction generally is rated at just over 15% above decade averages.²⁹ In 2015, the NSW Government released 'A Plan for Growing Sydney', with an ambition for 50,000 dwellings a year. In addition, the government announced a new authority to integrate planning across Sydney's metropolitan Councils; the Greater Sydney Commission. Clearly architecture plays a role in delivering better homes, schools and hospitals for a growing Sydney. Can it also promote safer communities and make public transport even more appealing? And if so, where's the evidence?

Architecture and design is implied in any integrated approach to urban development. Consider the work of *GHD* and *Aspect Studios* in Sydney's Inner West Light Rail project; *Grimshaw's* precinct planning work for *Urban Growth NSW* between Central to Eveleigh or the collaboration between *Hassell* and *Populous* in designing the Sydney International Convention, Entertainment and Exhibition Precinct at Darling Harbour. Or in the knowledge share assumed in the text of the MoU signed between NSW and the Indian government in January 2015 to advise on smart city planning³⁰.

Together, these projects and programs help deliver on a wider state strategy, called *NSW: Making it happen*³¹.

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“Studies have found that students with the most daylighting in their classrooms progressed between 20-26% faster on certain tasks over a one year period, and had 7-18% higher scores than those with the least daylighting”

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● *NSW: Making it happen*

The *NSW: Making it happen* plan sets the Government’s agenda for change in NSW. It is a plan informed by five State priorities, including;

- Strong budget and economy
- Building infrastructure
- Protecting the vulnerable
- Better services
- Safer Communities

We think architecture makes a contribution to almost all the priorities in *NSW: Making it happen*. As an example, we’ve mapped how architecture helps deliver against the Premier’s own 12 priorities which include;

- Creating jobs
- Building Infrastructure
- Reducing domestic violence
- Improving service levels in hospitals

- Tackling childhood obesity
- Improving education results
- Protecting our kids
- Reducing youth homelessness
- Driving public sector diversity
- Keeping our environment clean
- Faster housing approvals
- Improving government services

Architecture isn’t only central to *Building Infrastructure*, or in achieving *Faster Housing Approvals*, but also plays a role in tackling childhood obesity through the planning and design of precincts and buildings that encourage walking and biking to get around. Research has found that children who live in neighbourhoods with few parks and numerous junk food takeaways, have a higher chance of becoming obese than those who don’t.³²

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“[comparing] patients whose rooms had windows overlooking natural landscapes with patients who looked out onto a brick wall...found that the patients with open views had shorter post-operative stays - 7.9 days compared with 8.7 days, and had lower rates of minor post- surgical complications”

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So how can architecture improve education results? Studies have found that students with the most daylighting in their classrooms progressed between 20-26% faster on certain tasks over a one year period, and had 7-18% higher scores than those with the least daylighting³³.

How can architecture help to improve service levels and outcomes in hospitals?

A study in a suburban Pennsylvania hospital examined the records of patients recovering from cholecystectomy. It compared patients whose rooms had windows overlooking natural landscapes with patients who looked out onto a brick wall, and found

that the patients with open views had shorter post-operative stays - 7.9 days compared with 8.7 days, and had lower rates of minor post- surgical complications.³⁴

The point is that architecture is the physical frame in which services are delivered, and where people connect. Investing in good architecture and urban design can avoid future costs in remediation programs or repairs. Healthy, connected communities can more often provide the support and services for themselves, avoiding the cost and resources of government. Applying some design thinking can help us address multiple priorities at once - physical, social, environmental and economic.

PLACE/POLICY

NSW: Making it happen

PRIORITIES

NSW Premier's personal priorities



HOW ARCHITECTURE HELPS DELIVER

How and where architecture makes its contribution to the priorities

Regional infrastructure and facilities based on local skills and materials that boosts cultural capital of regional communities and production of local trade and manufacturing innovation

Contribute to development of STEM and STEAM capabilities in our next generation of founders and job makers through schools and university teaching and research.

World class rail, bus and light rail facilities suited to Australian conditions; safe, bright and welcoming

Desirable, walkable precincts activated with people, business and culture to promote walking and biking as a preferred option. Design-in open stairs, green roofs and open sight lines in buildings to promote incidental exercise in the workplace.

Patient-centred hospitals and other health facilities to aid faster recovery; medical research institutes, laboratories and universities to promote discovery.

Accessible, inclusive and dignified housing, public space and community facilities suited to self-directed care and consistent with Liveable Housing Australia design standards

Continue to develop innovative affordable and social housing models that reduce up front & ongoing costs

Schools, VET & University campuses and buildings designed to promote new education standards and promote NSW as a smart education state.

Designing out crime through environmental design and informal street surveillance from active building frontages, technologies and community action.

Courts, remand & other justice facilities that balance the need for security with transparent and humane spaces for support and rehabilitation.

Precinct master planning that embeds principles of liveability and sustainability in buildings and the spaces between. Innovative buildings that retain and reuse water, generate power and reduce demand on the grid.

Precincts, apartment buildings & houses that promote strong healthy communities with strong social networks.

Buildings designed to allow adaptation and use by community groups for gathering & social enterprise

Direct involvement by local communities in the design and planning decisions to ensure local knowledge and culture is retained and enhanced, and development is supported.

Design of facilities that integrate sport, culture, recreation and creative enterprise in innovative, well located and well used facilities, connected to public open space.

Visually-engaging, evidence based design collateral to communicate the opportunity of change through improving the environment we build around us.

Events, talks & festivals designed to inform, engage and educate the NSW community on the options and alternatives for our future built environment.

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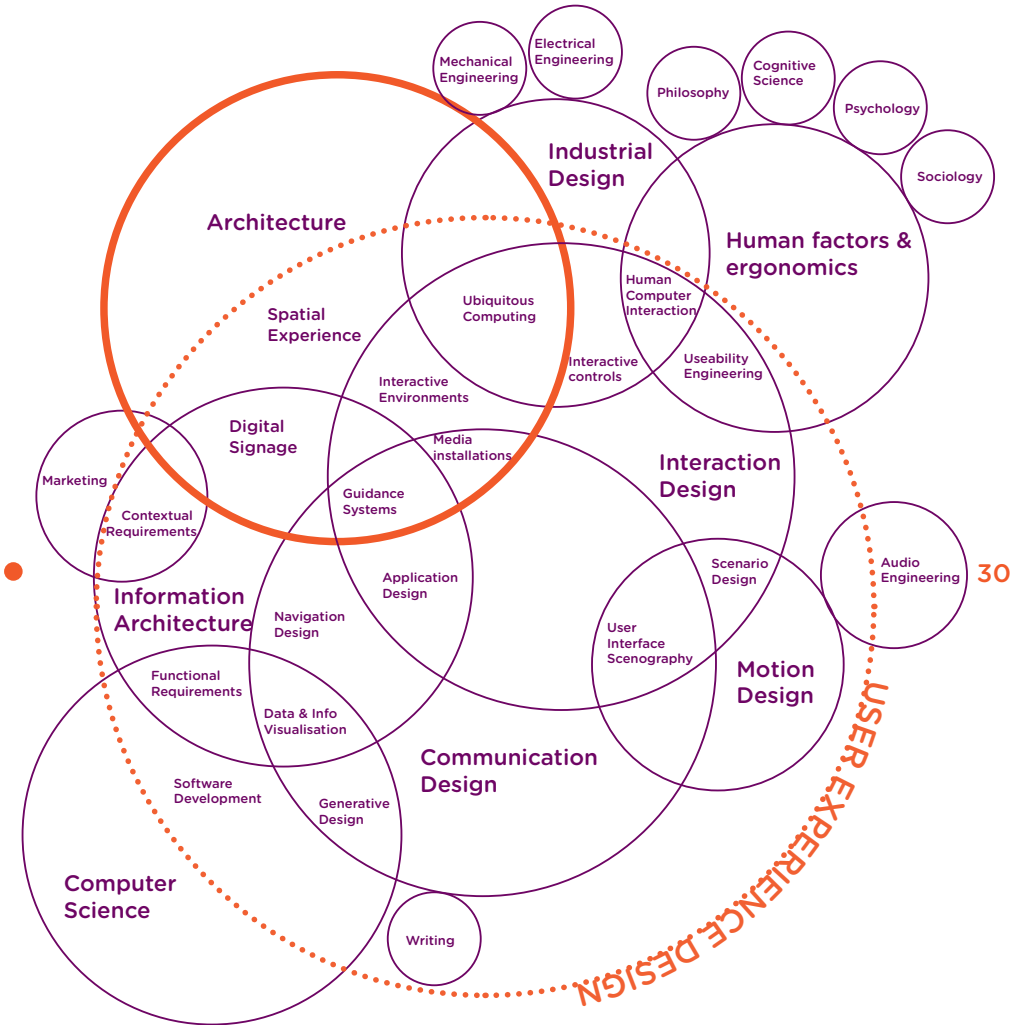
Design as the foundation

In every State and Territory of Australia, legislation limits use of the title 'architect' to those registered with relevant Registration Boards. Often, this is viewed as making a value judgement between *design* and *architecture*. But has a distinction between architect and non-architect inadvertently put in to tension the relationship of architecture to design?

Put simply, architecture is a design discipline whose aim is to apply design and design *thinking* to the environment we build around us. So what is design? And do architects need to take another look at design *thinking* in order to creatively adapt to social, economic and technological shifts in the sector, or their own business?

It's a mantra to many of us, but it's worth restating; good design is as much about how something works as how it looks. And despite the efforts of researchers, advocates, designers and educators across the country, still the myth prevails that design is a matter of taste; superficial and subjective.

To some, it's about the 'thing'; the object - not the learned method of invention, research, prototype, failure, and success. For example, developing the Dyson vacuum cleaner famously involved over 5,000 prototypes³⁵. In the search for better pathways to innovation, competitiveness and growth, it's only logical that what we produce and how we produce it are connected. This is where design as a way of *think-*



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“Big challenges demand new partners and new perspectives. Smart businesses are inviting their workers to co-design strategy. Citizens are co-producing policy. Companies ask customers to help design new products. How are architects involving their clients?”

.....

ing and doing makes ultimate sense. We see it today reflected in the *start up* movement - with a philosophy of ‘launch and learn’. Australia’s flirted with the idea of design thinking for a while. But for a long time, we didn’t really have a burning platform. We’d escaped the Global Financial Crisis, and enjoyed decades of unbroken economic growth. But events change quickly. In more recent years, Australians are facing some big challenges. Post-mining boom, new ideas are needed.

Big challenges demand new partners and new perspectives. Smart businesses are inviting their workers to co-design strategy. Citizens are co-producing policy. Companies ask

customers to help design new products. The UK’s Sir George Cox says that ‘design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers³⁶.’ Innovative architecture does the same - bringing ideas to practical and attractive propositions by combining the skills of communities and building owners, with engineers and planners, builders and property development, trades and suppliers.

Architecture synthesizes the often conflicting drivers and objectives of those involved in the development value chain by using design as a means to negotiate roles and responsibilities around a project in order to assem-



*“There will always be ‘stararchitects’; but it seems the cult of the hero architect is on the way out. Our new role is still evolving. In addition to being ‘architects’ in the traditional sense, it will surely involve architects also being collaborators, strategic thinkers and facilitators”.*³⁸

— ANNABEL LAHZ, ARCHITECT —



ble something physical that resonates beyond function alone. Architecture combines design thinking with collaborative effort and technical capability. This integrative capacity is valuable. Listen to the conversations on a building site and you’ll wonder how anything ever gets built, as the builder and trades talk about how to construct something, the engineer about how big it should be, and the client about what it will cost.³⁷

Good architecture is about balancing these competing objectives. Our interest in the growth of integrative, collaboration skills is just one reason we’re a part of the *MADE by the Opera House* initiative (Multidisciplinary Australian Denmark Exchange) - a 10

year project designed to promote the integrative skills needed for collaboration between architects, designers and engineers. We’re interested in how these changing conditions impact on architecture. We’ve identified three domains in which change is happening rapidly, and four capabilities for change as a way of building our capacity to respond.

Design thinking is broadly understood to be where design and strategy meet. It’s the thinking and doing behind a product or thing. And if design is the engine, then architecture is one very important vehicle that it powers.

And while architecture doesn’t have a monopoly on design, Harvard, Stan-



ford and our own UTS are all busily deciphering how design professionals work to understand how new value is created - in new products and ways of working around barriers and blockages.

There's a hunch that design thinking can help businesses create value by creating things people want, instead of competing on lowest cost to shift more units people are just happy to put up with. *Cochlear*, *Telstra*, *NAB* and *Westpac* all use design thinking to develop services and products, and a really interesting new multi disciplinary design community is putting the end-user experience back in to focus through new fields of service design, interaction design, product and

web; adding to Australia's industrial design, architectural and product engineering capability.

Design thinking has brought back to life old techniques that are about understanding why people do what they do. Understanding how people behave is more likely to produce places and products people want but can't describe in advance. There are methods and techniques to do this. Designing with the user in mind - the *user experience* - combines field research and observation to understand people's behaviour with the use of 'personas' to give a human dimension to a design problem back in the studio.

.....

“Design thinking is an intensely human process, which is why it is so culturally dependent – it progresses to technical and financial viability only after considering the human aspect”

— CATHERINE LIVINGSTONE, CHAIR TELSTRA —

.....

The studio environment is where these design capabilities come together - where the really important work of generating intelligent and inspired ideas, happens. The design studio fosters a kind of open, inter-disciplinary collaboration that combines a soft form of team leadership with a democratic generating and testing of ideas against a problem. The studio works because it's an environment in which a problem, and the design of a solution, is shared. As former Telstra Chair, Catherine Livingstone AO puts it; “Design thinking is an intensely human process, which is why it is so culturally dependent – it progresses to technical and financial viability only after considering the human aspect”.³⁹

Architects need to apply some creative design thinking to the future of its own profession if it is to remain relevant in the context of enormous change. Research shows we must, and can, do better. Why? Barriers to growth and innovation include;

- a focus on design product as the only form of innovation
- a skills shortage in firms, necessary to innovation through the entire value chain
- overwhelming predominance of firms as SME's, with little revenue to dedicate to R&D
- lack of strategic planning around innovation and business development
- strong competitive environment preventing systemic collaboration



5

Domains of change

“A forward thinking practice could mobilise outsourcing to great effect by stripping down to a small number of core employees, with all other work, particularly technical, being outsourced to a network of trusted consultants – becoming far more nimble and light on its feet.”⁴⁰

— BUILDING THE FUTURE, RIBA —

● Architecture doesn't exist in a vacuum. It evolves in response to emerging trends and technologies in fields that influence design professionals, clients, owners and users, financiers, educators, builders and developers, and policymakers. Clients and their architects, builders, trades and local councils balance competing interests while working within cost and time constraints. Complying with building codes and licensing requirements, procurement systems, development consent and local consultation, progress payments and the demands of financing are all a necessary part of bringing architecture to life. But without reserving some space to focus on the future, we're more likely to be blindsided by change when it comes.

We want to better understand some of the emerging forces influencing the global economy and local culture today so that we can play our role in preparing the built environment sector for the change these forces may bring. CSIRO has identified six trends impacting the world today. So what are they?

1. *More from less.* The earth has limited supplies of natural mineral, energy, water and food resources essential for human survival and maintaining lifestyles.
2. *Going, going...gone?* Many of the world's natural habitats, plant species and animal species are in decline or at risk of extinction.
3. *The silk highway.* Coming decades will see the world economy shift from

.....

“To avoid obsolescence, architects need to increase demand for their skills by embracing emerging technologies that both stimulate and satiate consumer desires. For savvy architects with a dash of fortitude, revolutionary opportunities for creating enhanced predictability, complexity, branding, feedback, and economies of scale glimmer on the horizon.”⁴¹

- DAVID CELANTO -

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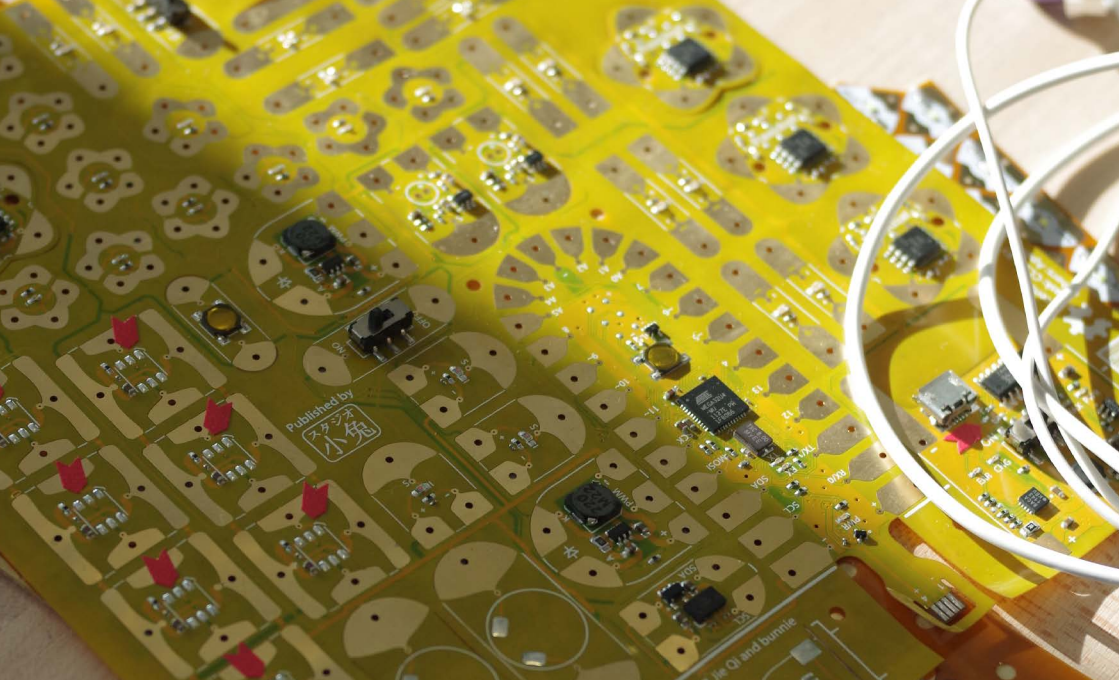
west to east and north to south.

4. *Forever young.* The ageing population is an asset. Australia and many other countries that make up the Organisation for Economic Cooperation and Development (OECD) have an ageing population.

5. *Virtually here.* This megatrend explores what might happen in a world of increased connectivity where individuals, communities, governments and businesses are immersed into the virtual world to a much greater extent than ever before.

6. *Great expectations.* This is a consumer, societal, demographic and cultural megatrend. It explores the rising demand demand for experiences over products and the rising importance of social relationships.⁴²

Understanding these megatrends is important as the pragmatic needs of the day, week or month can limit our field of view to the immediate. These trends are complex, and global in their origin and they are not unique to Australia or NSW. Megatrends can drive change in the economy which, in turn, impacts on an architect’s business model; their client base, and the decisions they make. The traditional concerns of architects - the scope of agreed services, professional fees or liabilities - can also be influenced by these trends. For example, thanks to the *Silk Highway*, NSW is experiencing high inflows of capital from asian markets. Architectural firms servicing this growing market can discover they need new ways of communicat-



ing with off shore clients, in managing invoicing, intellectual property, agreements and expectations.

There's trends, and then there's disruption - fast moving sources of change that surface quickly. Like Google's *SideWalk Labs* - claimed to manage the largest pool of capital in the world focused on urban innovation. This new initiative combines ideas, technologies and capital to concentrate funding on new products, technologies and solutions for a market that is rapidly urbanising in increasing density. What impact might come from *SideWalk Labs*? New mobility options, home automation or new housing forms? If so, architects practising in the low cost housing market could find the growth

in DIY homes like the 'Wilki house' and prefabricated homes increasing competition - further challenging the traditional business model behind bespoke design services. Those successfully managing this disruption are using design intelligence to combine mass customisation with modular construction.

For us, the domains on the following page represent a set of connected challenges facing us all. And just as the exact nature of the challenges are still being determined, any coherent response is still a work in progress. In many cases, these challenges have no one 'owner' but are shared by a number of players in the sector. So it's likely any solution will come from shared and sustained effort.

MEETING THE CHALLENGE OF CHANGE IN ARCHITECTURE

WHAT

WHY

Engage Citizens

- Value of design to inform and engage through co-design methods
- Leverage social networks
- Catalyse social innovation
- Map consumer behaviour
- Design for the user experience

Problem / potential

Communities are seeking participation in development decisions

Discussion on design is often about appearance, not performance

Disconnect is growing between expert evidence vs public experience

Disconnect between emerging user needs and established development models

Develop new value chains

- Develop & apply new materials from advanced manufacturing processes
- Promote modular/ prefabricated (offsite) assembly
- Integrate energy capture & storage
- Explore application of biomaterials
- Apply 3D printing at scale
- Prototype human-robotic fabrication

Problem / potential

Regional economies are outpacing us in adopting new technologies; making mass production and mass customisation of housing assemblies fast and affordable (consider that China has successfully 3D printed a house)

Local manufacturing and development is lagging in development of new materials, products and technologies; through closer collaboration across the development supply chain

Product development in mobile and distributed technology is leapfrogging the traditional, centralised infrastructure that fuels our cities (consider the *NEST* thermostat, or *Uber*)

Invest in innovation

- Develop knowledge exchange platforms
- Foster feedback loops between practice, research and education spheres
- Accelerate new business model innovation
- Develop practice models that integrate with development, construction

Problem / potential

Fragmentation and profit margins across the industry constrains investment in research and development

Sector-wide deficiency in rigorous post-completion evaluation inhibits collective learning and improvement

Shifting economic conditions, for example the sharing economy, is creating new value sets based on trust

Architecture may be a creative practice but many of the business models used represent conservatively structured work environments

HOW

Foster a greater end-user focus for design communications to improve, include and inform (through data analysis, data visualisation, virtual reality and immersive environments, animation, simulation)

Document and share design technologies that inform, engage, educate and empower (eg: collaboration strategies, workshop design, models, prototypes) to move beyond design *appearance*, to design *performance*

Accelerate the uptake of digital platforms to share design process, practice and prototypes and that enables more seamless information exchange (eg: social and mainstream media, web)

Document and share techniques in field research and ethnography (eg: public engagement, user research and user experience; data collection, context mapping).

Promote methods and approaches that showcase multi-, inter-, and trans-disciplinary collaboration within, and across sectors; that combines research with design practice in real world, real time projects

Support the adoption and use of integrative technologies such as building/precinct information modelling, enterprise resource planning, agent-based modelling, tailored coding and the like

Research, document and share models that showcase changing roles, responsibilities, risks and rewards in the sector through a strengths-based approach that is constructive, and not resistant to change.

Engage with those at the frontier of technology development to explore potential impacts and benefits. View projects as laboratories to prototype and commercialise products, materials or technologies.

Promote practice-based research methods to document and share project-based innovation through dedicated R&D and/or embedded researchers in business

Encourage post-completion evaluation of projects to measure, validate or improve on preliminary conceptual hypothesis

Research, document and share emerging or non traditional business models or procurement. For example, equity-share based reward for early-stage or first-to-market products, assemblies or technologies

Partner to invest in spin off products and intermediate goods from design practice
Eg: bespoke software, plug ins or API's.

6

Capabilities for change

We've explored the domains of change. So what capabilities are needed to meet the challenge that change brings? We think design capacity is underpinned by four core capabilities; boundary spanning, integration, visual thinking and studio culture - capabilities that are at the heart of successful architecture that connects people with place.

Boundary spanning

Boundary spanning is what Sean Ansett calls the 'gatekeeper of innovation in partnerships'. Sean Ansett was GAP Clothing's partnership director for 6 years. His work was about managing GAP's supply chain to meet consumer demand. His challenge was to redesign his supply chain to suit the chang-

ing needs of GAP's customers. For Ansett, this meant working across unions, governments, suppliers, multinationals etc. Supply chains worked slowly. By the time change happened, consumers had moved on. So his challenge was to move more quickly across his stakeholders.

Ansett describes Boundary-spanners as 'tempered radicals operating on the fault lines' of their own organisation.⁴³ What's great about them is they have a tendency to interact with others like them - also interested in the overlaps between organizations; forming new partnerships.

The 'boundary spanner' exists both inside an organisation - and outside it.



Networks form around them, so they can connect up people who might not otherwise meet. They're translators - so they bridge and broker to create shared understanding. They influence, engage and educate so they bring stakeholders along. They're multi channel thinkers so they crunch verbal and non verbal data. They're emotionally intelligent so they have open minds, empathy and integrity. Boundary spanners are critical to design thinking because they exist in many places at once. They're divergent thinkers that are stimulated, not stifled by vast sets of information.

In architecture, we see boundary spanning as the means to connect up the needs and interests of a client or user,

with the requirements of authorities and building regulations, respect for neighbours and the environment, budget and program pressures with the desire to produce something of long term, unique value.

Integration

This is the ability to see many things at once; even when they compete, and - importantly - to synthesise complex and competing data into something better.

An essential part of the integrator's capability is holding back judgement while the fuzzy is coming in to focus. Integration is the ability to deal with ambiguity and opposing alternatives without selecting one over the other,

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“In architecture, we see boundary spanning as the means to connect up the needs and interests of a client or user, with the requirements of authorities and building regulations, respect for neighbours and the environment, budget and program pressures with the desire to produce something of long term, unique value”.

.....

● but making a synthesis of the options that’s superior.

Integration isn’t about simplistic reduction. Integrators want to know that the full range of factors are in front of them. They want to know they’re asking the right question so they can be sure they have the right entry point, the right partners and the right tools to reach for. Especially when the problem is a complicated one.

Like, how do you start solving a problem like kids asthma at school? Easy – improve access to inhalers and medical training for teachers. Only it’s a bit more complex than this. Research shows an increase in incidence of asthma in kids where playgrounds

are on busy roads, thanks to vehicle emissions. So where does the problem lie? With the child, the school yard, or the road? Should governments tackle it through health, education or transport? When the question is complex, you need to invest in a complete question if you have any hope of a complete solution.

The integrator starts by actively seeking the problem before seeking to solve the problem. This is why a project brief and early design exploration in architecture is important - it’s a way of testing the boundaries and finding those special opportunities beyond minimum standards alone.



Visual thinking

Visual thinking is about thinking with your hands – converting concepts into ‘things’.

It’s the ability to think visually that ultimately distinguishes design thinking from conventional analysis or scientific enquiry. The ability to use an intuitive grasp of human factors makes it possible for some to make that leap from problem seeking to problem solving.

The tools of visual thinking include drawing and model making which help rapidly prototype ideas for better, more complete decision making. The idea behind rapid prototyping is that it can quickly test and develop an idea. It can reveal glitches before it goes

up the board room, in to production or out to the client. An architect or industrial designer will do this lightning fast as they continually overlay butter paper and redraw the object. Some architects insist this should continue through construction since architecture’s ultimate test is the experience of standing in it, on it, or across the street from it.

Røde microphones brought manufacturing back onshore to Silverwater, NSW not to save money, but to better connect product design with prototyping on the factory floor⁴⁴. University of Technology, Sydney’s ‘Bike Tank’ initiative invited the public, and professionals to share ideas for urban renewal by making quick, cheap models

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“Sketching or making gives everyone a direct chance to solve the puzzle. It’s hard to collaborate if an idea remains in someone’s head. In really simple terms, thinking visually – sketching and making models – is a first premise for collaborating”.

.....

of their solutions to encourage people to think with their hands.⁴⁵

IDEO’s Tim Brown describes visual thinking as ‘seeing’ your way through a problem. Brooklyn’s Makeshift Society describes it as ‘making with your mind, thinking with your hands’. Sketching or making gives everyone a direct chance to solve the puzzle. It’s hard to collaborate if an idea remains in someone’s head. In really simple terms, thinking visually – sketching and making models – is a first premise for collaborating.

This is why the Board has worked with the Visual Arts and Design Educators Association on resources like ‘Transforming the local’ for teachers to pro-

mote the skills needed to think with our hands; and in collaboration with Object: the Australian Centre for Design on *Building Connections* to build capacity in spatial awareness, artmaking and cultural capital.

Studio culture

Finally, for business and government especially – there’s often a really important piece of infrastructure missing which makes design thinking really hard. That’s the physical space where this collaboration can happen.

Because design thinking needs collaboration, you need a place where collaboration can happen. Because design thinking has a practical focus, you need a place to make stuff. Because

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“What happens in the studio environment is an integral part of design-based innovation. And just as design thinking is being brought in to business and service delivery, so are some of the elements of the studio. The physical environment for collaboration is intrinsic to collaboration.”

.....



design thinking is visual, you need a place to hang, stick and post things. This isn't how much of Australia's corporate world is configured.

That's why contemporary architecture is dissolving individual workstations into open break out spaces, group spaces and lock-away labs that teams can use to deep dive over the course of a few days or weeks, not just a 30 minute meeting. What happens in the studio environment is an integral part of design-based innovation. And just as design thinking is being brought in to business and service delivery, so are some of the elements of the studio. The physical environment for collaboration is intrinsic to collaboration.

If capabilities underpin collaboration, then the studio is where that collaboration often happens. Studios are where the *task* takes the focus around the table; with drawing occurring rapidly as options and alternatives are explored. It's where experts mix with generalists, and disciplines share insights. It's where many disciplines share individual expertise for a common purpose. In it's best form, it's where the client or owner is a part of the design process.

We think these capabilities fuel successful architecture, and make more integrated decisions possible. They balance the value of specialist design expertise, with the ability to listen for the nuance of a client's needs.

.....

Making design thinking work involves four essential capabilities, including;

- 1. the ability to span – inside and outside a problem, a business or an environment*
 - 2. the ability to crunch complex, competing alternatives in order to produce something better*
 - 3. the ability to generate an idea, solution or way to move around a problem, barrier or blockage; and finally,*
 - 4. a curated studio culture in an environment where it all comes together.*
-

● Balancing both is the secret to crafting spaces and places that perform beyond function alone but surprise, delight, engage, stimulate and invite community to form in and around them.

But are these capabilities sufficiently developed in our architects today? Has architectural process become so formulaic that a mindfulness of these underlying capabilities is being lost?

Do architects share an understanding of these capabilities with their clients? Do we need more public forums to showcase how these capabilities can be applied in practice?

Fostering these skills in the next generation of architects, as well as aspiring designers, software engineers or scientists, teachers, doctors or, decision makers is important if we want to improve the way we deal with shocks and disruption in the future, and use new tools to shape a better built environment for all of us.



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7

Fields of growth

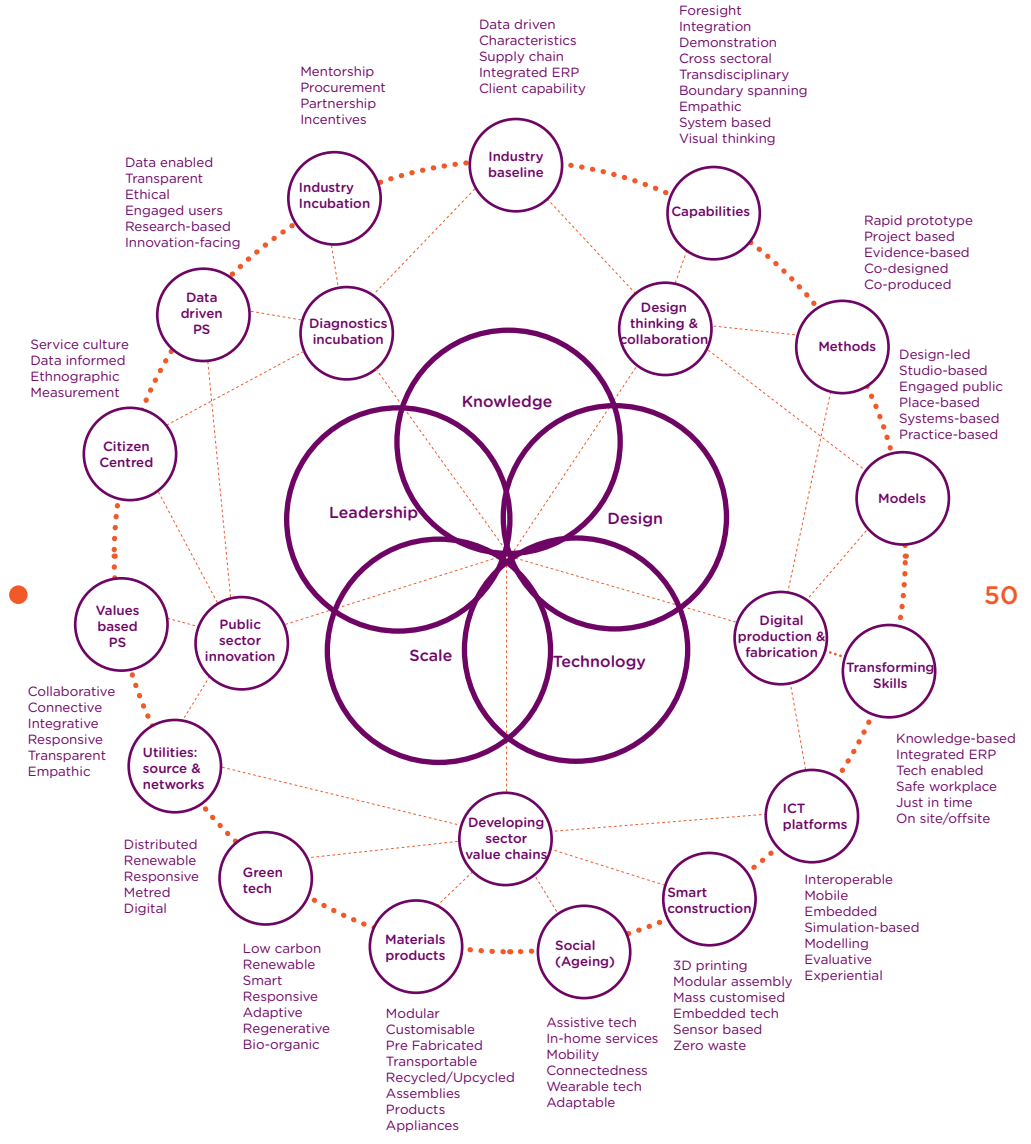
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Just as the domains of change are not limited to defined sectors of the economy, we think future fields of growth are likely to be found by looking beyond today's individual tasks, jobs or disciplines. We also know that most innovative strategies or solutions rely on us standing back from a problem, and see past a symptom in order to identify the cause. We can all think of examples where progress is being made. The diagram opposite is our attempt to show how individual exemplars can be classified, categorised or traced back to a particular lens, a field or driver. We also think it's important to view these drivers together to understand the various wicked problems facing us. For example, without public sector innovation, how do we change the fi-

nancing or procurement model needed to price in the R&D for low carbon precincts? As digital fabrication and robotics are more widely adopted in design and construction, what implications are there for skills development? Some of the fields in which we see potential for growth and innovation include;

- robotic and automated advanced construction assemblies
- new forms of urban data capture, management and visualisation
- health and sustainability of human environments
- new forms of energy capture & storage

Any strategy to grow Australia's built environment sector needs to have this holistic view of industry drivers.



8

What's our role?

The NSW Architects Registration Board is a statutory authority responsible for registering architects, approving architectural education, conducting enquiries into the conduct of architects, investigating misuse of the title Architect and promoting a better understanding of architectural matters in the community. We think what we do makes a contribution to the quality of the built environment in NSW. We think standards matter. We think quality matters. And we think consumers matter. We think architecture is cross cutting in its intersection with government and public policy; as illustrated by the portfolios of government responsible for the fields in which architects practice, including;

- Minister for Finance, Services and Property: *procurement and public works*
- Minister for Innovation and Better Regulation; *architectural regulation*
- Minister for Planning: *design quality in medium density development (SEPP65); and new precincts*
- Minister for Trade and Investment: *architecture as a part of creative industries, and industry development*
- Minister for Environment: *Adapting or preserving our built heritage, and integrating renewable energy technologies in to buildings and infrastructure.*



The Board was founded in 1921 with the first Act regulating architecture in Australia. Since this time the Board has undergone renewal and reform. Our current focus is the result of a renewed Architects Act, passed by the NSW Parliament in 2003. The Act put the consumer at the centre.

The Act tasks the Board with the following functions;

- (a) the registration of architects,
- (b) the investigation of complaints against architects,
- (c) the taking of disciplinary action against architects,
- (d) the investigation of matters referred to it by the Minister for advice and report in relation to the practice of architecture (including codes of professional conduct),
- (e) co-operation with neighbouring

jurisdictions to further a common and harmonious approach to the administration of legislation relating to architects,

- (f) the accreditation of courses of study in architecture,*
- (g) the maintenance and operation of the Architects Fund,*
- (h) the promotion of community discussion about architectural issues,*
- (i) the provision of general advice to consumers of architectural services with respect to the ethics and standards of professional competence that are generally expected of architects,*
- (j) the provision of advice to the Minister with respect to any other matter in connection with the administration of this Act,*
- (k) such other functions as are conferred or imposed on the Board by or under this Act or any other Act.*



49

Consumer enquiries related to:



Design	14%	Complaints received*	13
Documentation	28%	Complaints dismissed	6
Project Delivery	13%	Complaints upheld	1
Practice Management	45%	Complaints avoided	39

*remainder ongoing

The Board develops initiatives and resources to give consumers of architectural services the information they need to make informed choices. Better choices lead to better results and a better built environment for everyone.

How do we do this?

We protect Consumers

Architects maintain professional indemnity insurance and each year must undertake professional education appropriate to the services they provide. Registration ensures architect's are accountable for their conduct by making them subject to disciplinary action for unsatisfactory professional conduct or professional misconduct. Architects who breach the Act may incur penalties including reprimand, fines of up to \$11,000 for an individual, and \$22,000 for an architectural firm, as well as possible suspension or cancellation of registration.



1,515,667

Impressions on
Twitter in 2015



SYDNEY ARCHITECTURE FESTIVAL



The Board also investigates breaches of the Act by those who represent themselves or others as an architect or architect firm when they are not registered. To protect consumers, registration differentiates those who are entitled to use the title architect from those who are not. Designers may offer design and drafting services but aren't required to meet the standards of professional service set out in the Architects Act. They are not subject to the disciplinary actions for breaching the Act; nor do they necessarily possess the level of qualification, education and experience required of architects.

We register Architects

Architects are skilled and experienced professionals. In order to be registered with the NSW Architects Registration Board, a person must have the prescribed university qualification in architecture, or other qualifications that the Board deems equivalent. The Board accredits approved courses in architecture. In addition, applicants must have documented practical experience, and pass the Architectural Practice Exam. In NSW, corporations or firms offering architectural services must be registered with Board, and must nominate at least one architect to supervise the provision of those services.



● *We inform the public*

The Board's functions include a role to promote discussion of architectural issues in the community. And because architecture doesn't exist in a vacuum, it's no surprise the Board doesn't either. We partner with local councils, state agencies, professional organizations and not for profit groups, local communities and businesses to explore the built environment by hosting events, talks and festivals; preparing advice and publications intended to equip people with the information they need to make the best choices. Over the last ten years, the Board has also worked with architects and educators to develop a range of teaching aids and resources that engage the next generation, and develop the skills

needed to shape the world around them. These resources include;

Spacewise: Designed for the year 7-8 technology syllabus, students use graphics and model-making technologies to study their local neighbourhood and consider how it meets the needs of the community.

Transforming the local: Designed for the NSW high school curriculum, this resource was developed in conjunction with the Visual Arts Design Educators Association and is intended for students to investigate works of contemporary architects through text, images, clips and videos.

Building the future: Designed for the NSW Design and Technology curriculum (and the NSW Sci/Tech syllabus), students explore and map their local environment by understanding their neighbourhood through walking and mapping; create a building or area of significance that illustrates the change they would like to see.

Working with your architect

The Board developed this consumer guide 'Working with your architect' to introduce those thinking of engaging an architect to what the architectural design process generally involves.

We promote architecture

In order to promote a discussion of architectural issues in the community, the Board commissions research; develops teaching materials for school students in partnership with appropriate organisations; and provides support for relevant exhibitions, talks and events. We are a presenting partner in the Sydney Architecture Festival. We're active on social media, and we are a major sponsor of the graduating students' exhibitions from each architecture school in NSW.

To find out more, follow us and share your thoughts at:

Facebook

Twitter

LinkedIn





Meet the Board

President, Richard Thorp AM

Richard Thorp is a distinguished Australian architect. He was Project Architect for the New Parliament House in Canberra as Director of Mitchell/Giurgola & Thorp, and was Managing Director of Francis-Jones Morehen Thorp Architects until 2009. He has served on the NSW Planning Commission and is currently President of the Architects Accreditation Council Australia.

Deputy President, Peter Poulet

Peter Poulet is the NSW Government Architect, providing independent advice to Government on the built environment through design review and project advice. He serves on the Sydney Opera House Trust Conservation Council, the Sydney Olympic Park Design Review Panel, and the Sydney Opera House Eminent Architects Panel.

Joe Agius

Joe Agius is a director of Cox Architecture and the immediate past NSW Chapter President of the Australian Institute of Architects. His work includes major university research institutions, and civic

infrastructure for the Sydney and Beijing Olympic Games. He has been editorial chair of the *Architecture Bulletin*, is an occasional juror at Sydney's architecture schools and currently sits on the Dean's advisory board for both UTS and Canberra University.

Nigel Bell

Nigel is principal of ECOdesign Architects + Consultants. He has been a registered architect for over 30 years, with experience in heritage and housing. He is a noted champion of sustainability and community engagement. Nigel is also an elected NSW Chapter Councillor of the AIA.

Milly Brigden

Milly Brigden is a Property Investment Specialist and Licenced Real Estate Agent with expertise in identifying and assessing new opportunities for investment Australia-wide. She is the Co-Founder and Licensee-in-Charge at Property Investor Solutions; providing investment-grade property opportunities to industry business partners.

Matthew Curll

Matthew is a director of Hall & Wilcox legal practice. He specialises in advising building industry professionals in the management of risk through non-standard contracts where a more complex allocation of risk is involved, and brings experience in disciplinary matters.

Sam Elmir

Sam Elmir has over 14 years experience in construction and development across the commercial and residential spectrum. With an enthusiasm for urban growth, Sam finds delight in being able to incorporate modern design whilst still maintaining the integrity and characteristics of the surrounding built and natural environments.

Catherine Lassen

Catherine Lassen is an architect and lecturer with international experience in architectural design, exhibitions and teaching. Her work has been awarded, published and exhibited in Australia and abroad. She has taught architecture studios at the University of Sydney and UNSW Masters Studio and is a

visiting scholar to the University of Virginia.

Peter Salhani

Peter Salhani writes about architecture and design for journals and magazines including Mezzanine, AR, Habitus, WISH and architectureau.com. He is a member of the NSW Architects Registration Board, representing the consumer interest.

Peter Sarlos

Peter Sarlos is an architect, lawyer, adjudicator and mediator with 45 years' experience across residential, industrial and commercial projects. His interests include the forensic assessment of professional and trade services in architecture and the building industry,

Sue Weatherley

Sue has comprehensive experience in senior level planning, management, and the direction of broad based directorates in medium to large local governments in NSW and Queensland. Sue is currently Group Manager Outcomes and Development at Parramatta City Council.

9

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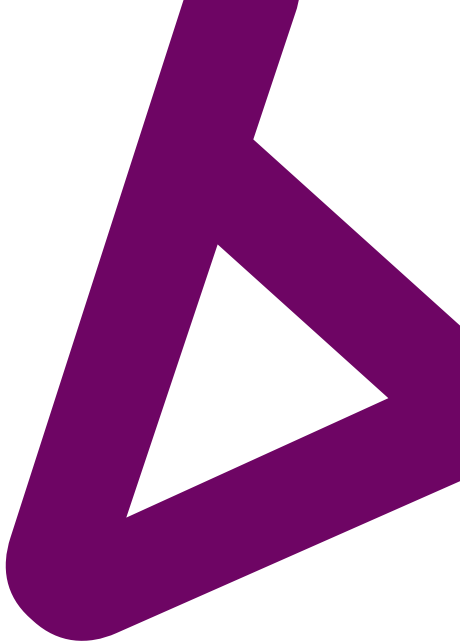
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