CONSTRUCTION TECHNOLOGIES
Sector Strategy
Definitions: For the purposes of this strategy, construction technologies include:

- New approaches to managing construction activities and assets, including with the support of digital technologies and other services across the infrastructure supply chain
- Off-site and prefabricated construction products and services
- Construction and building materials, products and services.

Transport, Defence and Construction Technologies is one of six priority sectors. Individual strategy documents have been developed to reflect the distinctiveness of each industry within this group.

Extensive consultation has underpinned development of this sector strategy. Over 100 businesses, industry, union and research organisations contributed their views and ideas.

- 32 people participated in 2 stakeholder forums
- 56 organisations participated in direct discussions with the department
- 29 written submissions were received from a variety of businesses and organisations.

This sector strategy responds to the major themes arising from consultation with these organisations, together with feedback from an expert advisory group composed of representatives drawn from industry, research, peak bodies, unions, and the community.

In addition, we would like to acknowledge the contribution of members of the Future Industries Ministerial Advisory Council who provided valuable advice and generously shared their knowledge and experience with Departmental staff charged with developing sector strategies:

- Mr David Bartlett, Chair, former Premier of Tasmania
- Mr Nixon Apple, Alternate Director, Australian Super
- Mr Jeff Connolly, Chairman and Chief Executive Officer of Siemens Group, Australia-Pacific Region
- Ms Gabrielle Coyne, former Chief Executive Officer, Penguin Random House Australia
- Professor Linda Kristjanson, Vice-Chancellor, Swinburne University of Technology
- Dr Leonie Walsh, Victorian Government Lead Scientist.
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We talk so much about our economic ‘transition’, but this transition won’t occur on its own. We have to take action ourselves. We need a real plan. And we need to invest.

That’s what our $200 million Future Industries Fund is all about.

The priorities of today will define our economic future, and we believe the Victorian Government needs to set those priorities.

With those priorities in mind, we can work with businesses to grow our traditional industries and invest in the sectors that will shape the next century.

Our Government has identified the priority sectors with potential for remarkable growth – the sectors in which Victoria is uniquely poised to lead the world:

- Medical technology and pharmaceuticals
- New energy technologies
- Transport, defence and construction technologies
- Food and fibre
- International education
- Professional services.

Collectively, these sectors have the potential to drive up to $70 billion in additional economic output by the year 2025, and create over 400,000 new jobs for Victorians.

The $200 million Future Industries Fund is turbocharging these priority sectors through job-creating grants to specialist firms and companies.

The $500 million Regional Jobs and Infrastructure Fund and the $508 million Premier’s Jobs and Investment Fund also lay the foundation for growth across our entire economy.

We have a few advantages under our belt: high-quality infrastructure, skilled workers, world-class liveability, well-connected cities, productive land and resources, all in close proximity to Asia.

The growth of our state is reflected in the growth of our construction industry. Accounting for almost 240,000 jobs – or 8.2 per cent of Victoria’s workforce – and contributing $21.6 billion annually to the economy, it’s vital to our state’s future. And as the sector continues to innovate, incorporating new construction methods, materials and technology, the Victorian Government must also look to the future.

Our priorities for assisting this sector, outlined in this strategy, are the next step. It’s all about securing the high-growth industries of the future, and the jobs that come with them.

The Hon. Daniel Andrews MP
Premier of Victoria
MINISTER’S FOREWORD

Victoria has an exceptional construction technologies sector. We have a strong presence of outstanding digital technology firms, we are the national leader in off-site construction technologies, and we have a array of vibrant firms designing and developing high-value construction materials and products.

The construction technologies sector is vital to the future prosperity of our $21.6 billion construction industry, as well as providing possibilities to capture new global opportunities.

Victoria is proud of the significant innovation and research infrastructure based in the state, including peak bodies and leading organisations such as the CSIRO, the Australian Research Council’s (ARC) Training Centre for Advanced Manufacturing of Prefabricated Housing, PrefabAus, data61, universities and research organisations. The intellectual grunt provides unique opportunities to our local businesses.

The Victorian outlook for investment and jobs in digital and off-site construction technologies as well as new construction materials and products is strong. We will work with industry to take advantage of growing market opportunities and changes in demography, lifestyles and consumption preferences to maximise growth in the sector and boost local jobs.

The Construction Technologies sector strategy provides the framework to enable the sector to innovate, grow and capitalise on its capabilities, while leveraging Victoria’s high quality offerings in research, education, supply chain and project delivery.

Through this strategy we will strengthen collaboration, deepen alliances, build on innovation and grow opportunities to improve industry competitiveness through the adoption of digital and off-site technologies, and new products and materials.

This is fundamental for stimulating innovation, investment and trade, as well as the uptake of transformational construction technologies that can improve productivity and performance across all phases of the construction life cycle.

Importantly, the strategy will position Victoria as a leading centre as new national, regional and global market opportunities and challenges emerge, and create rewarding, high-value, secure jobs for Victorians.

As Minister for Industry, I am committed to the sector maximising its potential, and I look forward to working with the sector and broader construction industry to secure Victoria’s position as Australia’s leader in construction technologies.
“Victoria has the potential to lead one of the defining developments of the 21st Century, which will enable the country to capture not only the inherent value of our built environment assets, but also the data to create a digital and smart city economy that transforms the lives of Victorians.”

Aurecon
POSITIONING FOR GROWTH

It is our vision that Victoria become the national centre for the innovation and production of construction technologies. This will see Victoria as home to a vibrant cohort of new and established firms, supported by premier national research, development and testing infrastructure.

We will attract more ideas, expertise, capability, and capital to our construction technologies firms. We will help build the skills, networks, trade relationships, and innovation infrastructure needed for a strong sector.

By supporting the innovation and production of construction technologies, we aim to deliver:

- The creation of more skilled jobs in Victoria
- More small and medium-sized businesses (SMEs) on a strong growth trajectory
- Greater value to the economy from new goods and services
- Increased interstate and export trade and investments
- A greater share of the Australian market for construction technologies and materials
- Improved asset quality and lifecycle management outcomes.

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CAPTURING UNREALISED POTENTIAL

The construction industry is evolving

Like all industries, the construction industry is not static. As technologies, practices, and markets evolve, new opportunities emerge for those with the insight, imagination and resources to capitalise on new approaches.

Industry change is being driven by a range of factors, including:

• Efficiencies resulting from new production methods
• Demands for better environmental performance, including for existing building stock
• Expectations of higher safety levels
• Rapid advances in information technology applications
• Changing demographics bringing new consumer preferences
• The ongoing search for new ways to contain costs and minimise construction times.

New techniques can present new trade opportunities. However, sometimes they increase the competitive pressure on local firms through import competition.

With a clear policy agenda the construction technologies sector can accelerate the development and adoption of new technologies, expand the use of new and emerging capabilities, and capture new opportunities. Successfully achieving these goals will grow local industry and local jobs.

Building innovation through collaboration

Innovation drives competitiveness and productivity across the entire economy. The possibilities for innovation are strongest when there are close connections between firms, their suppliers, customers, end-users, and research organisations.

While the construction technologies sector does innovate, the project dominated basis of the construction industry can make innovation more difficult than in other sectors.

Construction teams often form and dissolve according to the needs of a single project, leading to limited continuity and ongoing relationships. This fundamentally differentiates the construction industry from other industries.

The structure of the industry, which has a small number of large firms and a long tail of small and microbusinesses in the supply chain, can also act as a barrier to collaboration and successful innovation.

The Victorian Government can influence growth and innovation in the sector, through policy and regulatory frameworks, procurement practices, and targeted support for trade and investment. By acting as a model client the Government can be a catalyst for positive change.
New possibilities in construction technologies

In this strategy, the Victorian Government will focus on three areas that have significant potential to build strong Victorian firms and capture economic benefits:

- **Digital technologies** provide new ways to plan, model and manage construction processes, infrastructure, buildings and assets. Construction technologies solutions and apps for the construction industry have significant growth potential, and we can nurture a cohort of new digital technology firms by supporting the development of connections with the construction industry, the broader IT sector, incubators and sources of capital. However, the largest scale impact is likely to be realised through effective implementation of BIM with the support of digital technology.

- **Victorian firms are national leaders in off-site construction technologies.** The construction industry is transforming and there is growing interest in off-site construction for specific elements of a project, such as in a manufacturing plant. Our goal is to support innovation in off-site construction to deliver real benefits to Victorian projects, and to generate a network of firms to grow into national and offshore markets.

- **New construction materials and products** offer the potential to speed up construction processes while delivering environmental, cost, and quality benefits. Appropriate regulation settings and testing facilities will be critical to growth in this area. Regulation is necessary to ensure safety, but also needs to facilitate innovation. Similarly, timely and affordable access to accredited structural, fire, and acoustic testing facilities is vital to supporting innovation.

“A strong construction industry will provide the employment for individuals with diverse skillsets, and will provide an avenue for innovation through investment in research and development. This approach will ensure that the sector has access to the most suitable and optimal materials, and can develop efficient operating systems that facilitate global competitiveness for the future.”

Swinburne University of Technology

Victoria has the right expertise, capability and access

Victoria has rapidly developing companies and innovation institutions with growing expertise in construction technologies.

As construction methods evolve, there is an opening for Victoria to capture new economic benefits as the national construction technologies hub.

We can position Victoria as the supply base and intellectual leader to growing national, regional and global markets requiring high-value technologies, materials and products.

Victorian businesses are already capitalising on the opportunities that exist in the construction technologies sector. For example, Hickory has invested significantly in the development of prefabricated housing products. From a humble beginning, the company has continued to grow and innovate, and was recently awarded the Manufacturer of the Year Hall of Fame Award.
ACHIEVEMENTS TO DATE

The Andrews Labor Government is delivering on its election commitments with a clear focus on growing jobs and sharing opportunities across our society.

We have established three new Funds totalling over $1.2 billion to support job creation and economic development, with a particular focus on our priority sectors including construction technologies:

- $200 million Future Industries Fund
- $508 million Premier’s Jobs and Investment Fund
- $500 million Regional Jobs and Infrastructure Fund.

We opened the $5 million Future Industries Manufacturing Program in 2015 and the $20 million Future Industries Sector Growth Program has just opened. These programs are focused on helping businesses to partner with each other, and with educational institutions and the community, to invest in job-creating projects. We have also established LaunchVic, a $60 million initiative to foster the creation of startup enterprises.

To support our economy as it continues to transition, we recently released Towards Future Industries: Victoria’s Automotive Transition Plan. This $46.5 million plan will help businesses, workers and communities affected by the closure of automotive manufacturing operations to meet the challenges ahead and capture emerging opportunities. This includes $33 million for the Local Industry Fund for Transition (LIFT) and a further $5 million to establish the Automotive Supply Chain Transition Program.

We have also put in place changes to help local businesses get their fair share of work from government projects. For government procurement projects with a total value of $50 million or more, we now set local content level targets that must be met – meaning more work for local businesses and more local jobs.

The Major Project Skills Guarantee, which commenced on 1 January 2016, requires that apprentices make up 10 per cent of the workforce on major state projects. We are continuing to look for other opportunities to strengthen our local content policies and using government procurement to support the local economy.

To ensure Victoria is well placed to take advantage of advancements in the construction technologies sector, we are piloting the use of Building Information Modelling (BIM) across a range of Victorian Government construction projects. We have also invested in the new ARC Training Centre for Advanced Manufacturing of Prefabricated Housing at the University of Melbourne, along with the Commonwealth Government.

Our recent investments are helping create new technologies and jobs. With support, we are seeing Hickory invest $3 million to manufacture bathroom pods at its plant in Brooklyn. This will double the size of Hickory’s manufacturing operation and create more than 100 highly skilled jobs in an innovative growth manufacturing sector. Other companies, such as Reinforced Concrete Pipes Australia (Vic) are investing in plant and equipment to deploy innovative new generation dry cast technology, purpose designed for the sewerage and drainage market and create job opportunities at Kilmore.

With product and trade advancements, we are leading work with the Building Ministers Forum across the nation on best approach for high-risk building products and materials with life safety implications.

The Victorian Invitation Program is the most expansive inbound trade mission program in the state’s history. More than 590 qualified international buyers from 27 countries visited Victoria in 2015 as part of the program. We have also supported over 420 businesses, across a number of sectors, to visit 35 cities in 19 countries as part of our outbound trade mission program.

We are proud of these achievements but know there is much more to do, working in partnership with industry, educational institutions, unions, and the broader community.
CONSTRUCTION TECHNOLOGIES

Sector Strategy
Victoria has a strong construction industry, underpinned by a multifaceted construction technologies sector. There is still scope, however, to improve productivity, market share, and outcomes across the supply chain.

Increased collaboration is required to change the practices and culture of both the construction industry and the organisations procuring construction projects. Collaboration will be vital to strengthening the industry and capturing new and evolving construction technologies, reinforcing Victoria’s position as a leader in successful innovation.

The Victorian Government can play an important role in stimulating economic growth, investment and jobs in the construction technologies sector. Government is a major procurer of construction work, supports the education and training system, facilitates trade opportunities, and plays an important regulatory role.

The Government can also promote innovation by acting as a model client that stimulates positive change. Together with industry, we will use existing levers such as procurement, skills development and trade initiatives to strengthen and grow the construction technologies sector.

These efforts are important for sustaining and growing jobs across the Victorian construction industry. Over 230,000 people, or 8 per cent, of Victoria’s workforce are in the industry.

The growth of new technologies in construction, such as off-site construction and digital technologies will impact on the composition of the industry’s workforce. Wider skills in areas such as engineering and design will be needed, while the demand for some lower skilled roles may eventually reduce or transition to other parts of the infrastructure and building supply chain.

Facilitating the development of the right skills is essential for the success of the construction industry, and for ensuring Victorians are better positioned to secure jobs into the future.
What we plan to do

1. **Drive a strategic outlook through a Construction Technologies Industry Forum**

We need a vehicle to harness Victoria’s collective intelligence in construction technologies. In cooperation with industry and research partners, we will establish a regular Construction Technologies Industry Forum. The Forum will enable companies and the innovation community to connect, identify needs and emerging trends, and benefit from advancements in construction technologies. It will stimulate the exchange of ideas and provide a regular mechanism for strategic partnerships to be developed within the industry.

We will also seek advice from the Forum on opportunities to drive continuous improvement and showcase innovative and leading edge construction technologies developed by Victorian companies and organisations.

2. **Link and support the sector to drive innovation, investment and jobs**

With stronger linkages, Victorian-based companies will be better placed to identify new opportunities for their construction products and technologies, rapidly prototype and test their innovations, and access required support across the construction supply chain.

This includes advice and services in relation to:

- Understanding the markets for construction technologies and innovative materials and building approaches, including emerging opportunities
- Assessing enterprise capabilities and identifying programs to improve them
- Assessing regulatory requirements and support for securing intellectual property for new materials, products and technologies
- Facilitating access to structural, fire, durability and acoustic testing facilities
- Facilitating access to prototyping facilities
- Providing advice on building capabilities through education, training and skills development
- Collaboration, networking, partnering, and knowledge sharing opportunities
- Connecting to potential sources of finance and investment
- Development of standards and promotion of good practice
- Building connections with the international industry and disseminating international best practice.

We will work with industry to strengthen Victoria’s standing as the natural home for innovative construction technologies companies. We will draw on existing resources and capabilities, and identify gaps that require attention in order to achieve significant step change.

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“All participants and actors in the construction sector need better information about what is possible in today’s construction industry including information about innovative approaches that are currently being applied and working in Victoria.”

Australian Institute of Refrigeration Air Conditioning and Heating
Support innovation and growth

Our priority is to enable the construction technologies sector to capitalise on a wide range of market opportunities by drawing on its current and emerging areas of innovation excellence.

We will reinforce our position as national leader in construction technologies, while encouraging Victorian businesses to enter global supply chains, growing the sector’s visibility among regional and global markets.

Further, we will pursue mutually beneficial alliances with governments in Australia and overseas to build synergies, leverage capability, and raise the sector’s profile.

What we plan to do

3. Leverage government procurement to promote innovation in construction technologies

Procurement policy can drive local economic activity, investment, job opportunities, while creating demand for innovative solutions to meet future needs. Procurement activities can also help create economies of scale and enable Victorian companies to compete and secure a share of domestic and international market growth in construction technologies.

Reforms to the way the Victorian Industry Participation Policy (VIPP) Strategic Project operates, introduced by the Andrews Labor Government, have enabled 14 projects with a total value of $6.3 billion. These are progressing under new thresholds introduced in July 2015, with the average local content set at 85 per cent, ensuring government procurement is driving local industry development, supporting local small and medium sized enterprises and creating jobs.

Our commitment to use 100 per cent local steel in all 50 level crossing projects is stimulating local construction businesses with the construction of 10 level crossings commencing in 2015, and a further eight under tender. These projects will create an expected 4,500 new direct jobs in the manufacturing and construction industries.

We will also demonstrate and promote innovation through government and private sector procured construction projects. In addition to actions outlined in this strategy for specific technologies, this will include refreshing the web presence of the Department of Economic Development, Jobs, Trade and Resources to ensure easy access to cases of successful adoption and commercialisation of technologies. This will build the market profile of Victorian-based companies and potentially stimulate investment opportunities.
4. **Target grants to stimulate innovation in new construction technologies**

Through the Future Industries Fund’s Sector Growth Program, we will support research, development and innovation related to construction technologies, processes, materials, and management.

Funding will focus on areas where evidence from Victoria’s infrastructure investments suggests that innovation can deliver measurable improvements, or where there is prospect of industry-wide transformation. Supporting material will be released by the Department, informed by advice from major Victorian public sector procurement and asset management agencies.

We will also develop and publish case studies to illustrate how this funding has enabled projects to integrate technology, establish supply chain partnerships, add value to construction projects and asset management outcomes, and create new job opportunities across the infrastructure and asset supply chain.

5. **Foster and promote Victoria as a destination for skills development and excellence in construction technologies**

A responsive and quality skills sector with strong links to industry is vital for boosting competitiveness and job outcomes. Advancements in construction technologies provide new opportunities for young people undertaking apprenticeships or tertiary studies, for workers in the construction industry, and potentially displaced workers from other industries.

Drawing on existing expertise throughout the academic, research and skills sectors, we will map the capabilities and skills in construction technologies and seek to raise them through education and training. This also includes working closely with the Victorian Skills Commissioner.

Recognising Victoria is already home to the ARC Training Centre for Advanced Manufacturing of Prefabricated Housing, and has significant capability in other construction technologies, we will promote Victoria as a national leader for construction technology quality training.

6. **Facilitate national and international investment and trade opportunities**

Melbourne has an international reputation as being one of the world’s most liveable cities. Our built environment showcases the strength of our industry and community. We will leverage Melbourne’s liveability to engage with key stakeholders in emerging markets.

We will use the international network of Victorian Government Business Offices (VGBOs) to identify potential markets and partners for Victorian companies offering construction technology products and services, and to promote Victoria as a source of investment-ready opportunities.

We will use the VGBO networks to promote Victoria as an entry point to the national market for construction materials and technology companies.

We will also host inbound missions and support targeted outbound missions and trade development.

In partnership with Austrade, we will provide tailored assistance to established exporters, reducing market entry barriers and capturing first-mover advantages in key markets.

“Advances in construction processes, materials and enabling technologies can now be harnessed to transform the way buildings are conceived, designed, initiated, delivered and maintained. And in today’s increasingly interconnected world construction has become a truly global industry. Prefabrication, off-site construction, Building Information Modelling (BIM), Design for Manufacture and Assembly (DfMA) and Lean Construction are all part of this transformation – challenging Australia’s construction industry to harness skills developed in other industries and embrace new thinking, processes, supply chain management and collaborative models.”

PrefabAus
Advance the use of Building Information Modelling (BIM)

There has been significant focus nationally and globally on the adoption and advancement of Building Information Modelling (BIM) technologies, processes and policies. BIM presents a contemporary approach for achieving breakthrough productivity improvements and long term gains.

While there is no universal definition of BIM, it is accepted that BIM provides for high levels of collaboration, detailed information sharing and storage, and transparency in construction projects and asset management.

BIM is facilitated through digital modelling and data association. It generates efficiencies by helping to overcome difficulties experienced through traditional management processes:

- At the conception and planning stage, BIM enables designers, owners and users to work together to test plans and designs using digital applications before infrastructure or assets are built, refurbished or retrofitted
- During construction, BIM enables engineers, contractors and suppliers to effectively integrate complex components, to reduce construction conflicts, rework and rebuilding costs, and overall accuracy of capital and operational costs
- In operation, BIM can provide facilities managers with real-time information about an asset, such as maintenance, environmental performance and compliance aspects.

The delivery of BIM can sound complex. But in reality it is simple. BIM is about being smarter, working more closely together, and using data early and often. This means that during infrastructure planning, construction, maintenance and refurbishment we are more productive, saving time and money compared to traditional construction approaches. BIM is the future of construction technologies and we want to lead the way.

The use of BIM is already providing a useful framework in areas such as health services, transport and other complex infrastructure developments. At a project level, BIM is being used to facilitate coordination of the design and construction phases of the new Victorian Comprehensive Cancer Centre to provide a robust system for the lifecycle management of the facilities.

This is a significant step forward. The usual practice involves the limited use of BIM at the project design phase, if applied at all, with very little real time data collected about the actual asset being constructed on the ground. This can impact on the efficiency of the construction process, the effective management of a facility, and ultimately the overall performance of the constructed asset.

"The delivery of the Level 2 BIM programme has enabled us to help secure 20 per cent savings on CAPEX as recorded by Cabinet Office case studies against the 09-10 benchmarks."

UK Government
While some companies are successfully operating and advancing the use of BIM, there is significant scope to expand its application along the construction and asset supply chain. This will require impediments to be addressed and opportunities to be captured.

The Government recognises the investment and job opportunities that capability in BIM can provide for Victoria’s construction industry. This includes opportunities to compete on interstate and overseas projects, particularly as more countries seek BIM capability as part of construction project and asset management specifications. Notable examples include the USA, UK, New Zealand, China, Hong Kong, Korea, Singapore, France, Spain and several Nordic countries.

As a major client of construction projects, the Government has an interest in the adoption of BIM. In the 2015-16 State Budget, the Government committed to pilot the use of BIM to help inform its use across government construction projects in Victoria. Through the pilot, the Government is gaining an understanding of the opportunities and challenges associated with BIM. The pilot will provide a methodology for assessing the effectiveness and outcomes of BIM application. We will consider the findings of the pilot in mid-2016 and will develop a reliable and achievable way forward for the application of BIM on Victorian Government projects.

What we plan to do

7. **Develop a plan with industry to provide for the greater uptake of BIM**

We will position Victoria as a leading user of BIM to strengthen construction outcomes, improve asset management, stimulate innovation, and build competitiveness in domestic and overseas markets.

We will establish an expert group comprising industry representatives, public and private sector procurers, and key research organisations. Drawing on the BIM pilot, the group will develop a plan by late 2016 that sets out the objectives of utilising BIM and its phased mobilisation on Victorian Government projects, for government consideration. The plan will establish a sensible but ambitious timetable for the greater uptake of BIM. It will also position Victorian industry to embed BIM in construction and asset management processes, and to realise benefits beyond government projects.

The plan will also give specific attention to any potential impediments for progressing BIM, including in relation to the availability of comprehensive BIM protocols and standards, issues associated with legal and insurance matters and adoption costs for SMEs.

Drawing on the plan, we will release a statement that clearly identifies the Government’s own utilisation of BIM in early 2017.

8. **Build expert skills in BIM**

BIM requires particular knowledge, skills and expertise. In Victoria, capability in BIM tools and processes varies across companies, education institutions and other organisations involved with the construction industry and asset management. There is a need to strengthen proficiency among tradespeople, professionals, managers and others involved in the design, construction, and operation of facilities.

We will establish Victoria as the location of choice for BIM training and skills development. This will be founded on a collaborative approach to BIM education and training involving industry, the education sector and professional associations.

We will work with both the construction sector supply chain, and the education and training sector to build the supply of learning modules and tailored training opportunities in BIM. We will seek to provide for ongoing learning and development through a collaborative web-based BIM learning hub.

“The use of Building Information Modelling is escalating rapidly. This has the potential to radically change the cycle of design through construction and ownership. The lines between traditionally discrete components will become blurred and the benefits of fully integrated delivery are beginning to be witnessed.”

AECOM Australia Pty Ltd
Digital technologies have reshaped markets and processes across all sectors of the economy, offering new opportunities and possibilities.

In Victoria we are well placed to take advantage of this phenomenon. Victoria is home to significant global IT firms specialising in construction, has strong incubator and mentoring resources, and has an established IT research base.

Successful firms have a broader horizon than market opportunities in Victoria, with a vision to operate on a national basis. Many will also be looking to participate in global markets, and depend on deeper industry, research, and international alliances.

Leading local firms, such as Aconex, have driven global industry competitiveness through the effective use of digital technologies in construction. This has led to further investment and job opportunities, positioning Melbourne as a global centre of excellence for construction technologies.

There are a number of opportunities for digital technologies in the sector, including utilisation in:

- Project management
- Facilities management and maintenance programming
- Energy and water monitoring and management
- Planning and design aids and tools
- Modelling of environmental impact.

Many digital applications complement BIM technologies, such as Design for Manufacturing Assembly (DfMA), 3D video and immersion capability, virtual engineering, and lean construction.

We are developing a plan for the digital economy that will promote the growth of a skilled digital workforce and stimulate the creation and effective adoption of digital technologies across all sectors of the Victorian economy.
What we plan to do

9. **Attract capability and promote Victoria as the national hub for digital innovation for the construction industry**
   
   In partnership with successful firms, we will build and strengthen networks and incubators to support emerging Victorian digital technology firms with construction industry products. This will include access to relevant government support programs, including the $60 million Start-up Initiative offered through LaunchVic.

   We will also sponsor an annual flagship conference in Melbourne for digital technology companies and start-ups that produce apps, software, and digital solutions for the construction industry. The event will include hackathons and other dynamic methods that engage and promote talented IT developers with capability to work across the construction and asset supply chain.

   We will also attract and support other key industry events promoting digital innovation to the construction industry, with a view to unlocking the potential benefits this can offer.

“Digital technologies provide great opportunities for the construction industry. Innovative digital solutions can improve design, delivery and operation of the built environment resulting in sustainable outcomes, new jobs and greater efficiency.”

RMIT University
Strengthen market competitiveness in off-site construction

As the national leader in off-site construction, Victoria is well placed to become a globally relevant centre for these technologies.

We are already host to a number of leading organisations in the sector including:

- The headquarters for Australia’s most dynamic off-site construction firms and the national industry association, PrefabAus
- The Australian Research Centre’s Training Centre for Advanced Manufacturing of Prefabricated Housing at the University of Melbourne
- The headquarters of the Innovative Manufacturing Cooperative Research Centre
- Strong engineering and materials science capabilities at the universities of Melbourne, Monash, Deakin, RMIT, Swinburne, and the CSIRO; together with process engineering capabilities in the AutoCRC
- The legacy of manufacturing productivity network programs for frame and truss development.

The feasibility of off-site construction is driven by capturing economies of scale in production facilities that are large enough to offset transport and on-site placement costs. Building confidence for firms to invest in off-site production facilities will be key to this process.

There is also opportunity to facilitate the transfer of surplus process engineering skills from the automotive sector for redeployment in the off-site construction sector.

“Leading figures in the Australian industry have recognised the productivity and efficiency gains that advanced manufacturing techniques can offer. In particular, enabling technologies such as composite lightweight materials and systems, automated off-site manufacturing, mass customisation and complex systems thinking are essential components of prefabricated housing.”

ARC Centre for Advanced Manufacturing of Prefabricated Housing, University of Melbourne
What we plan to do

10. **Transform government specifications, where appropriate, to stimulate local off-site construction opportunities and grow market share**

    Government procurement agencies will work with industry to identify off-site construction opportunities in health, education, housing, transport, and other major developments. We will review technical specifications, and where feasible, create common specifications across projects making it easier for Victorian businesses to tender for work. Through our procurement processes, we will stimulate investment in off-site construction technologies and benefit from scale production and potential mass customisation. These initiatives will be delivered consistent with the Victorian Industry Participation Policy, which seeks to grow Victoria’s economy and create new jobs.

    We will also promote Victoria as a national and regional distribution platform for off-site construction capability, and related intellectual property.

    We will draw on existing expertise to enable access to advice across a range of areas relevant to off-site construction, including market development and access, regulatory and compliance frameworks, networking and partnering opportunities, and improving links to finance and investment.

11. **Attract investment and encourage demonstration projects**

    We will illustrate innovation in off-site construction to build market share, attract investment and stimulate job opportunities in Victoria through trade events, forums and conferences.

    We will also seek advice from the Construction Technologies Industry Forum on opportunities to encourage demonstration projects to showcase off-site construction technologies with the potential to deliver benefits to consumers, investors, procurement organisations, and construction companies.

    “Governments play a vital role in supporting technology demonstration on projects where initial developer/builder conservatism, uncertainty and risk-cost aversion is present…. governments around the world can take a proactive role in driving market place change.”

    Wood Products Victoria Ltd
Streamline compliance pathways for new construction materials and products

A range of factors drive innovation in construction materials and products, including the invention of new materials, resource constraints, productivity pressures, changing performance standards, and consumer preferences.

There is also a growing demand to retrofit and upgrade existing building stock with construction materials and products that meet improved environmental performance standards. This has been an important area for jobs growth over recent years.

Victorian companies and research organisations have successfully converted ideas into new construction products and materials. This can lead to new job opportunities in the manufacturing and distribution of these products, or ways of working on construction projects.

Performance based standards can give integrity to new products and the industry. However, there are challenges which can limit the adoption of new construction materials and products, including:

- A regulatory system that can be difficult to navigate
- The need for stronger connections between the materials and product developers and the construction industry
- Concern that building materials, both imported and domestically produced, may not conform to requirements under the National Construction Code.

Regulatory and compliance settings must be fair and cost-effective to promote innovation and enable the use of new materials and products.
What we plan to do

12. Advocate for a national certification system for high-risk building products, starting with cladding
   We will continue to take the lead in advocating for a mandatory national certification scheme for high-risk building products, and for materials with life safety implications, starting with cladding.
   The Victorian Government through the Minister for Planning has supported the adoption of a national mandatory certification scheme in a submission to the Senate Economics References Committee on Economics Inquiry into non-conforming building products.
   The Building Minister’s Forum, the body of Commonwealth, State and Territory Ministers that oversees the implementation of nationally consistent building and plumbing regulations, is also exploring strategies to minimise risks associated with non-conforming building products, to consumers, businesses, and the community.

13. Secure priority access to structural, fire and acoustic testing
   Industry has identified the importance of access to testing facilities with NATA certification as critical to construction material and product innovation.
   We will work to ensure that structural, fire, durability, and acoustic testing facilities are available to Victorian firms in a cost effective, high performing and timely manner.

14. Provide clear information on building standards and the regulation of building work
   The Victorian Building Authority will assist industry in understanding requirements and obligations by providing information and guidance on building standards and the regulation of building work. This will complement material provided nationally on the National Construction Code.
Growing the sector into the future

The Victorian Government will deliver this strategy in partnership with industry and other key stakeholders. In delivering the strategy we aim to achieve lasting positive change for our construction technologies sector, and for Victoria more widely.

Successful implementation of this strategy will see the Victorian construction technologies sector:

• With a strong international reputation and increased capacity to attract more ideas, expertise and capital to Victoria, reflected in an increasing number of national and international participants at key industry events
• Attracting more investment in the construction sector, reflected in increasing new investment in construction technologies and growth in market opportunities
• Improving delivery and operational performance of government procured assets, including post-completion efficiencies
• Experiencing strong and sustained growth, measured by increases in the rolling average annual sector growth rate
• With a greater number of SMEs on a significant growth trajectory, reflected in an increase in the number of sustainable businesses operating nationally and accessing global markets
• Supporting the creation of new skilled jobs in metropolitan and regional areas, reflected by an increase in jobs in the sector.
## Victorian Government Programs

There are a range of programs which will support and complement delivery of the Construction Technologies sector strategy.

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Description</th>
<th>Website</th>
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<tbody>
<tr>
<td>Premier’s Jobs and Investment Fund</td>
<td>The $508 million Premier’s Jobs and Investment Fund will drive economic growth and create high-skill, high-wage jobs in Victoria.</td>
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<tr>
<td>LaunchVic</td>
<td>The Victorian Government, through its $60 million Start-up Initiative, has established LaunchVic to enable entrepreneurs to develop, incubate and grow early-stage innovative businesses.</td>
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<tr>
<td>Victorian Industry Participation Policy</td>
<td>Each year, the Victorian public sector spends more than $10 billion on procurement activities from goods and services to construction. The Victorian Industry Participation Policy requires government agencies to consider competitive local suppliers when awarding government contracts. For government procurement projects valued at $50 million or more, minimum local content requirements are set that must be satisfied.</td>
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## Contacts

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