

# Sentiment

INFRASTRUCTURE AND BUILDINGS  
**CONSTRUCTION SURVEY**  
NEW ZEALAND  
**2ND HALF 2015**

**IN THIS ISSUE**

Where are the country's growth hot spots?  
Does Christchurch need to think bigger?  
How is the Super City performing?  
How will smart technology effect the way we do business?



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# THE REVIEW

Sentiment in New Zealand's buildings and infrastructure industry remains strong, particularly in Auckland where the sense of optimism reflects the region's strong economic and population growth. Investor confidence is evident across all markets in our latest six monthly survey.

The overall outlook for the infrastructure market is stable, with 37 percent of respondents expecting investment levels to rise over the next three years. The stability can be attributed to the strength of the Auckland market, where 54 percent of respondents expect their workload to increase. Hamilton is experiencing a spike in optimism, which has risen by 11 percentage points over the past six months, as around \$1 billion worth of roading infrastructure comes to market.

Positivity is evident across all sectors of the infrastructure market, but particularly with Land Development and Roads. While optimism in Wellington's infrastructure market continues to moderate, the outlook for the road and aviation sector remains positive. The steady decline continues in Christchurch, corresponding with the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) reporting the completion of more than 80 percent of all infrastructure work.

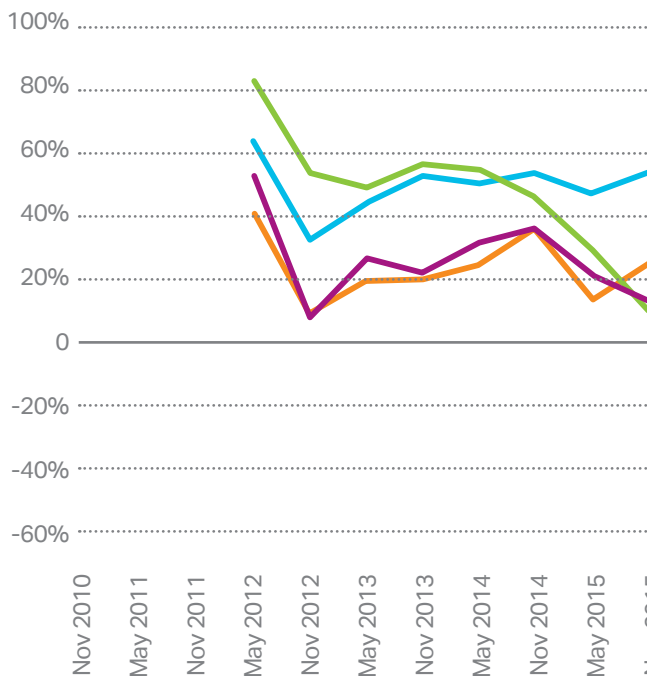
Generally, respondents are more upbeat about future projects in the buildings market, with the exception of Christchurch. While optimism in Auckland, Hamilton and Wellington continues to trend positively, the sharp drop in Christchurch stands out. Since our survey six months ago, optimism in Christchurch has moderated by 24 percentage points, despite this it still remains strong at 48 percent. While a number of significant rebuild projects are now underway, in some instances complete, a more visionary outlook for the rebuild is top of mind for many respondents who've been working relentlessly now for five years.

## Workload expectations trend

### INFRASTRUCTURE MARKET

8<sup>th</sup> industry survey

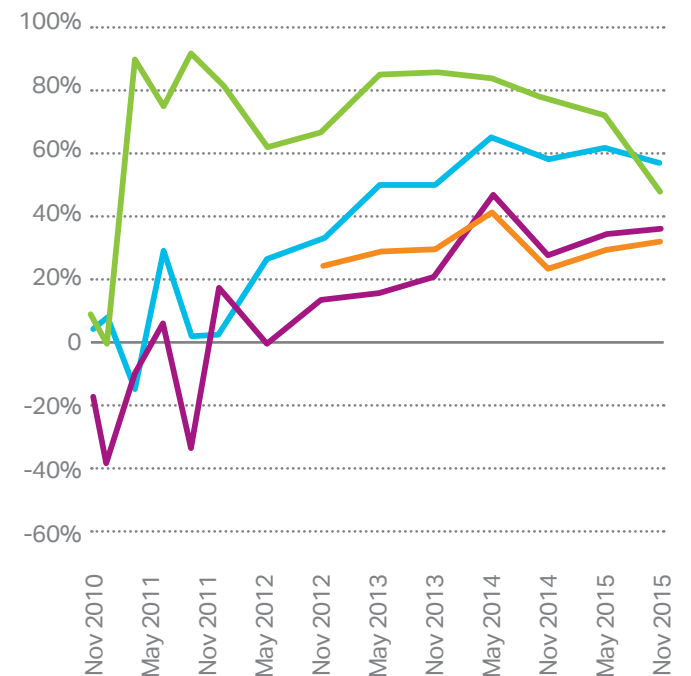
Auckland  
Hamilton  
Wellington  
Christchurch



### BUILDINGS MARKET

14<sup>th</sup> industry survey

Auckland  
Hamilton  
Wellington  
Christchurch

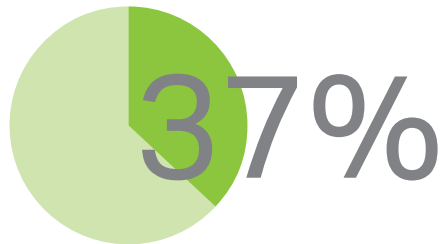


Note: Industry sentiment in the buildings market has been surveyed since 2010, while the infrastructure market and the Hamilton region have been tracked since 2012. This chart shows the trend in net workload expectations.

# KEY INDICATORS

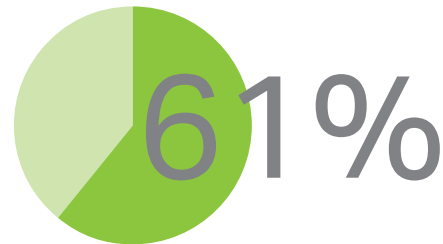
## WORKLOAD AND INVESTMENT EXPECTATIONS

**Infrastructure optimism stable**



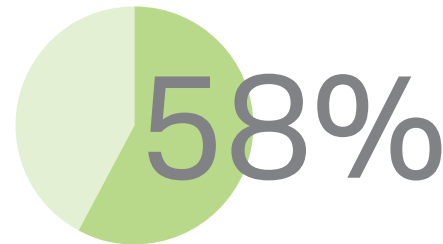
37 percent expect more infrastructure work across the country, compared to 36 percent previously.

**Auckland infrastructure on upward trend**



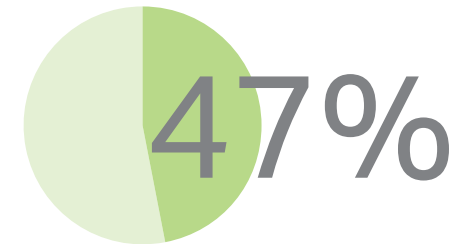
61 percent expect growth in Auckland infrastructure projects over the next 3 years, up from 55 percent in our May survey.

**Christchurch buildings market continues to moderate**



58 percent expect increased investment in the Christchurch buildings market over the next three years, down from 80 percent six months ago.

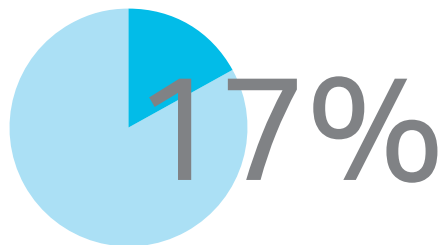
**Mixed-use development positive**



47 percent expect to see a further lift in Mixed-use development, up from 35 percent previously.

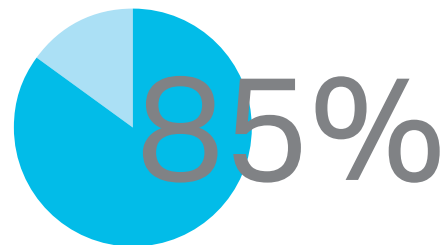
## INDUSTRY SPOTLIGHT

**Steep rise in identifying local business conditions as significant factor for industry**



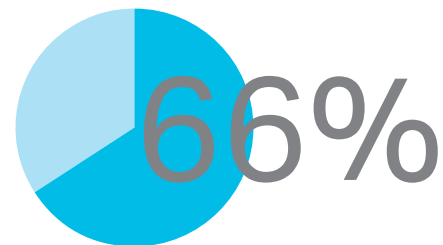
17 percent identified business confidence as a significant industry challenge, up 15 points from the results obtained six months ago.

**Majority consider whole-of-life costs in capital investment decisions**



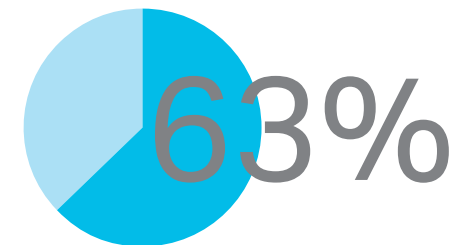
85 percent consider whole-of-life costs in capital investment decisions to either a moderate extent, some extent, or a great extent.

**Big data and technology seen as driver of change within the next 2-6 years**



37 percent expect big data and technology to be a driver of change in business over the next 2-4 years, while 29 percent expect it within 4-6 years.

**Further rise in Natural Disaster planning**



63 percent feel there is significant consideration of Natural Disasters for infrastructure investment planning, compared to 58 percent six months ago and 36 percent 12 months ago.

# INFRASTRUCTURE MARKET

## EXPENDITURE AND WORKLOAD EXPECTATIONS

Expectations across the investment arm of the infrastructure market remain relatively stable, a trend seen for the past 18-months. However, optimism amongst contractors and consultants working across the delivery market continues to soften, again a consistent trend.

As well as continued optimism in the investment market, with 41 percent of respondents expecting growth, there is a substantial easing of pessimism; just 18 percent of respondents expecting an overall reduction in spending, down from 26 percent in our survey six months ago. This general improvement in confidence could reflect the Government's positive approach to infrastructure investment, as laid out in its recently released *Thirty Year New Zealand Infrastructure Plan 2015*. In this report the Government provides direction to infrastructure investment over the long term, and significantly, aims to instill confidence in the private sector.

Optimism could also be attributed to improved certainty on strategic infrastructure projects, particularly in the Auckland region. Of note, enabling works for the City Rail Link are underway, while Light Rail and the Additional Waitematā Harbour Crossing are in initial phases. Aside from the infrastructure itself, the significance of these projects for the sector's investment arm is the potential development opportunities around transport hubs. While this is positive for the Auckland economy, the migration of capital and projects to the country's largest city could have a detrimental effect on the performance of other centres.

While positivity in the delivery market continues to ease, it remains strong with 63 percent of all respondents expecting growth. Pessimism remains stable and low at just 6 percent. This continued easing of optimism on the delivery side improves the alignment between those working in investment with those in delivery. Further consistency in the market will limit unwelcome knock on effects including lower quality, less innovation and increased whole-of-life costs.

*"The Government's willingness to fund large infrastructure projects is recognition of it driving a competitive economy. The Transportation sector is utilising resources in an integrated and collaborative fashion, a positive sign in the delivery of these centralised infrastructure programmes."*



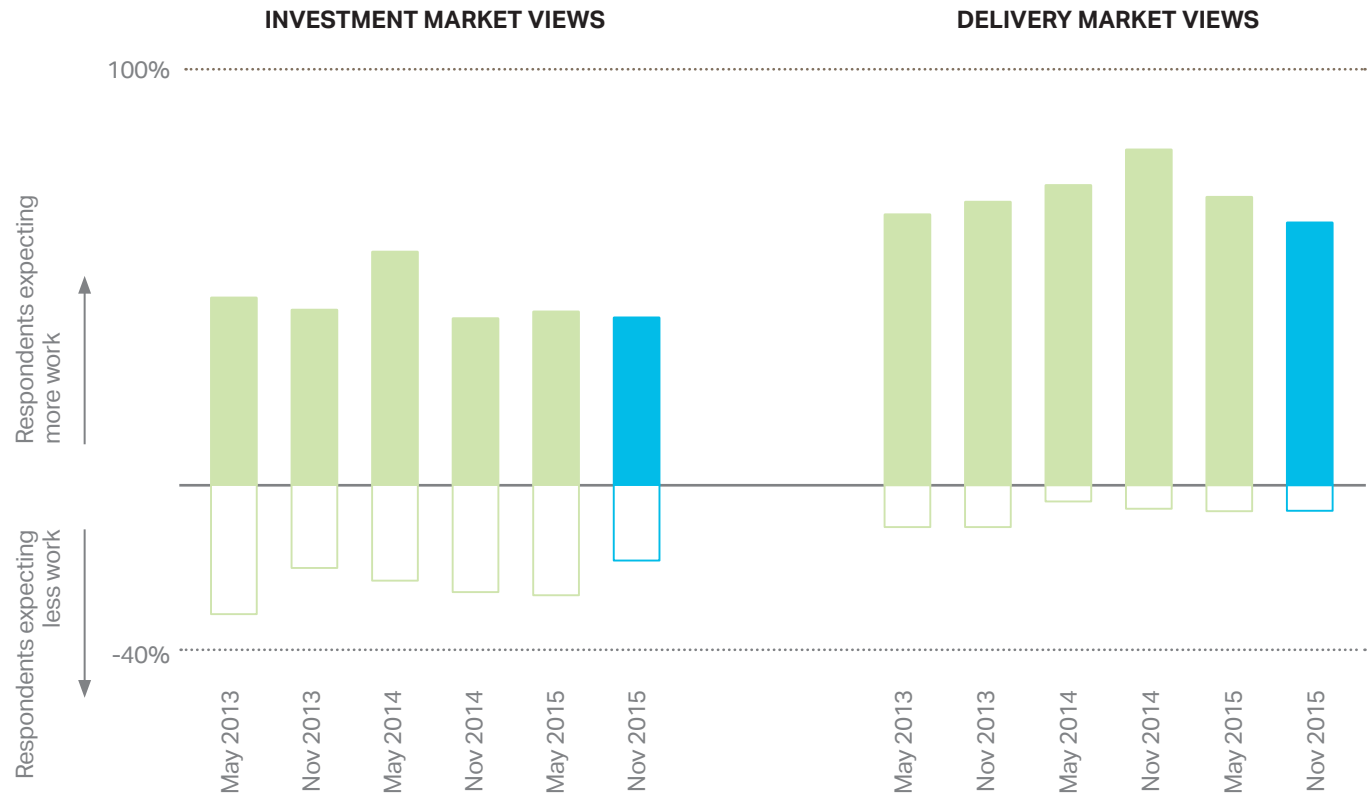
Mike O'Halloran  
Group Director – Transportation  
AECOM

*“The increasing volume of opportunities in the Auckland Energy market could be attributed to the effect of property and real estate development on industry cash flow. There’s a willingness to commit to pipeline projects that were previously stagnant at the planning stage. The same patterns are evident across Australia and South East Asia.”*



Anant Prakash  
Group Director – Energy  
AECOM

**Infrastructure outlook**



Note: These measures of improving or declining expectations represent the proportion of respondent views on market direction – not the actual anticipated change in workloads.



## WORKLOAD BY REGION AND SECTOR

Respondents from the central and upper North Island are expecting strong growth, particularly in Auckland. Optimism here has risen 6 percentage points; 61 percent of the market is currently anticipating growth. Significantly, indications are the focus is now substantially on Auckland, with twice as many respondents expecting increased investment in Auckland than anywhere else in the country.

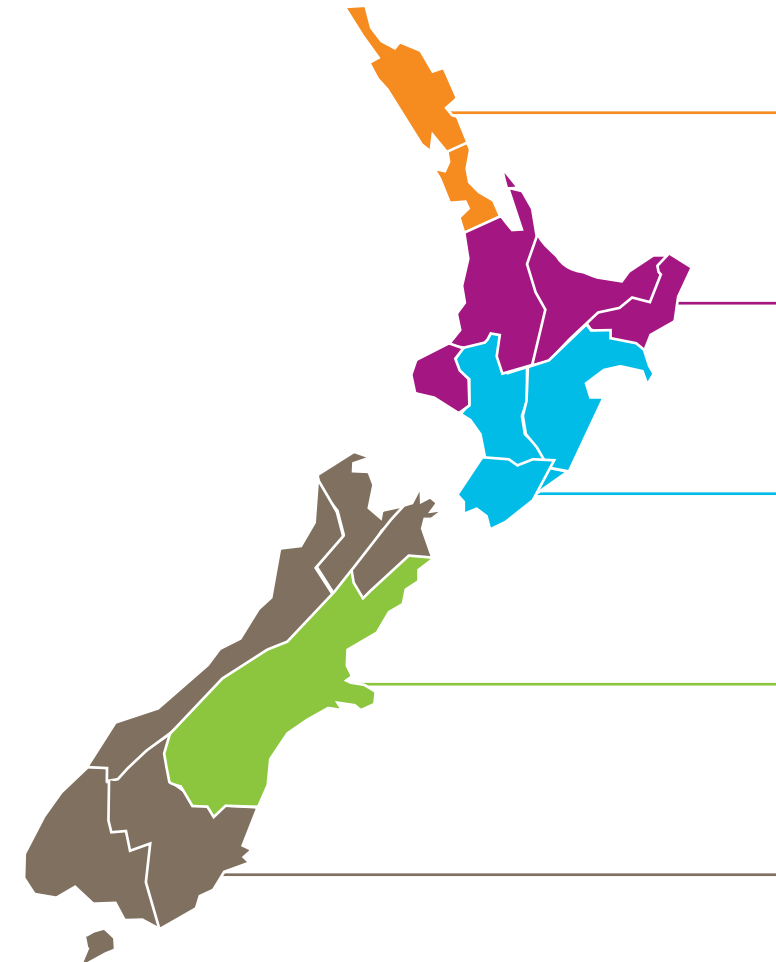
The outlook continues to soften substantially for Christchurch, down 10 percentage points to 29 percent of respondents expecting to see an increase in workload. This continued decline in optimism, down nearly 30 percentage points in a year, could reflect recognition that much of the rebuild infrastructure work is complete and that government spending is slowing.

Respondents indicate significant confidence in the outlook for road infrastructure in Waikato and Tauranga. The Tauranga Eastern Link is complete, the Huntly and Rangariri Sections of the Waikato Expressway are currently under construction and the Hamilton Bypass will follow during 2016. It is expected the Tamahere-Cambridge section will be opened prior to Christmas 2015. The prospect of an Inland Port in Hamilton is also a likely cause of optimism.

The Energy sector has seen an improved outlook for anticipated workflow over the next three years. Across the country, optimism has increased by 5 percentage points to 18 percent. However, when broken down into the regions, it is the leap in Auckland that stands out. Respondents indicate confidence in the sector has shifted substantially from 13 percent to 40 percent.

Meanwhile, growth expectations in Aviation have surged by 16 percentage points across the country. Of note, Christchurch has seen an increase in optimism from 8 percent to 30 percent and similarly Auckland, where those expecting further workflow has risen from 29 percent of respondents to 59 percent. Significant investment has been made or earmarked for the aviation infrastructure in both regions.

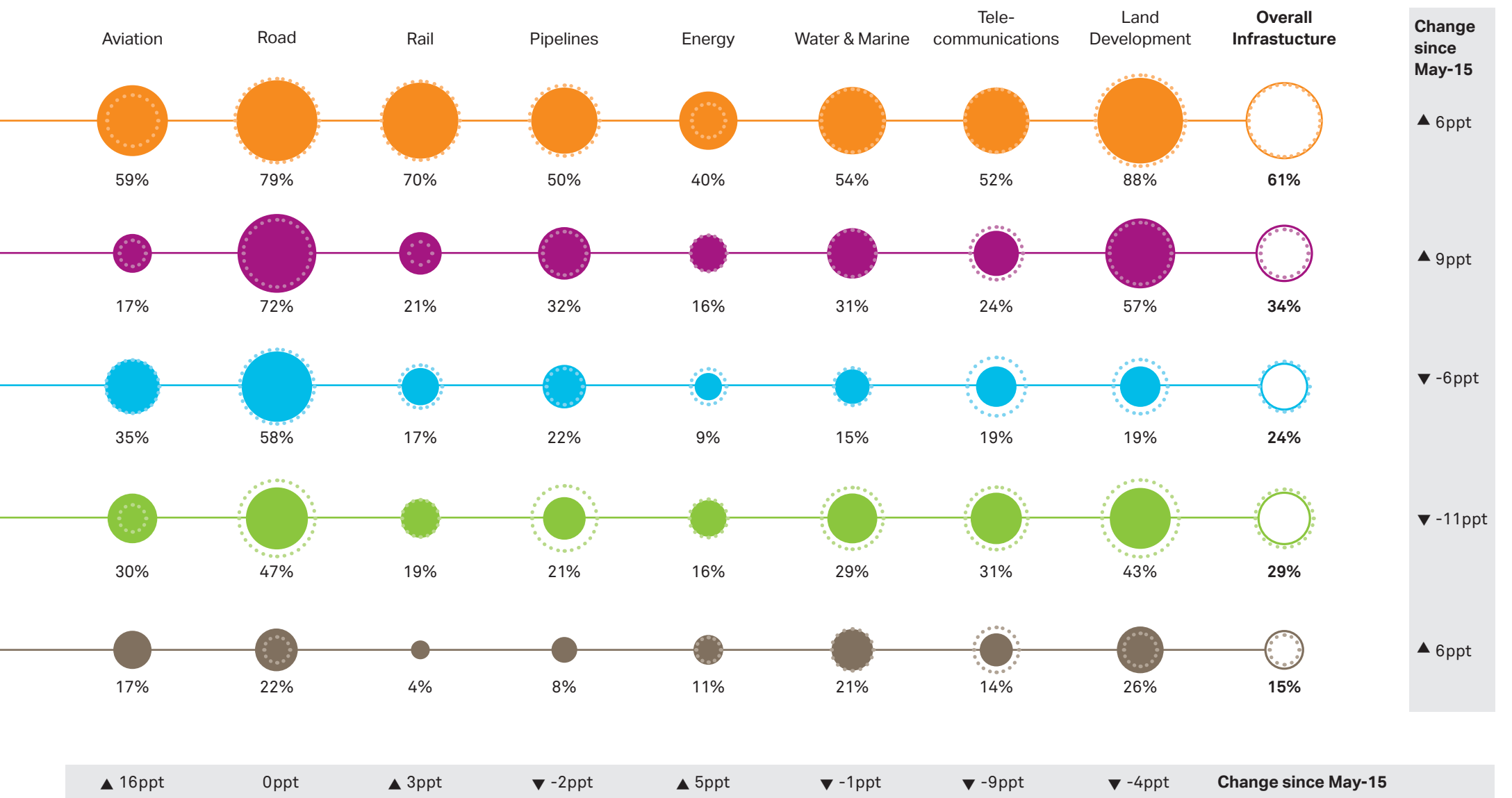
Land Development continues to remain strong in Auckland, with 88 percent of respondents expecting an increased level of investment over the next three years. This positive sentiment reflects a buoyant growth market in both the residential and commercial sectors. However, both Wellington and Christchurch have seen a decline in confidence. Optimism has eased 15 percentage points, to 19 percent, in Wellington and by 26 percentage points, to 43 percent, in Christchurch.



*Note: Bubbles on page 6 indicate the market optimism for growth over the next year. Dotted lines indicate the May 2015 results.*



Proportion of respondents expecting increased investment by region



# BUILDINGS MARKET

## EXPENDITURE AND WORKLOAD EXPECTATIONS

Optimism continues to trend upwards in the buildings investment space, while views have moderated within the delivery market.

65 percent of all respondents expect an increase in investment over the next three years, a rise of 6 percentage points. While optimism has increased, the number of respondents expecting less investment has decreased slightly. Positive growth expectations are strong amongst developers and Government bodies.

The rise in workload expectations on the investment side, is not matched by the delivery arm. While optimism for increased workload remains high at 59 percent, it has dropped 10 percentage points since our survey six months ago.

The overall outlook for the buildings sector remains positive, however confidence in Christchurch continues to moderate. 58 percent of respondents are expecting growth, down from 80 percent in May. Christchurch could be described as being in a transitional phase of the rebuild as central Government begins to put in place long-term arrangements for managing the rebuild.

Auckland's housing market continues to drive optimism, with the region's median house price above \$900,000. Despite attempts to cool the market, including lending restrictions and new requirements for foreign investors, the average value increases remain significant. The region is experiencing record migration combined with significant supply constraints.

*"The outlook in the buildings market remains positive with the majority on both the investment and delivery sides expecting increased levels of investment. The challenge for the market is to accommodate this growth to avoid supply chain pressures and the unwelcome knock on effects of price hikes and project delays."*



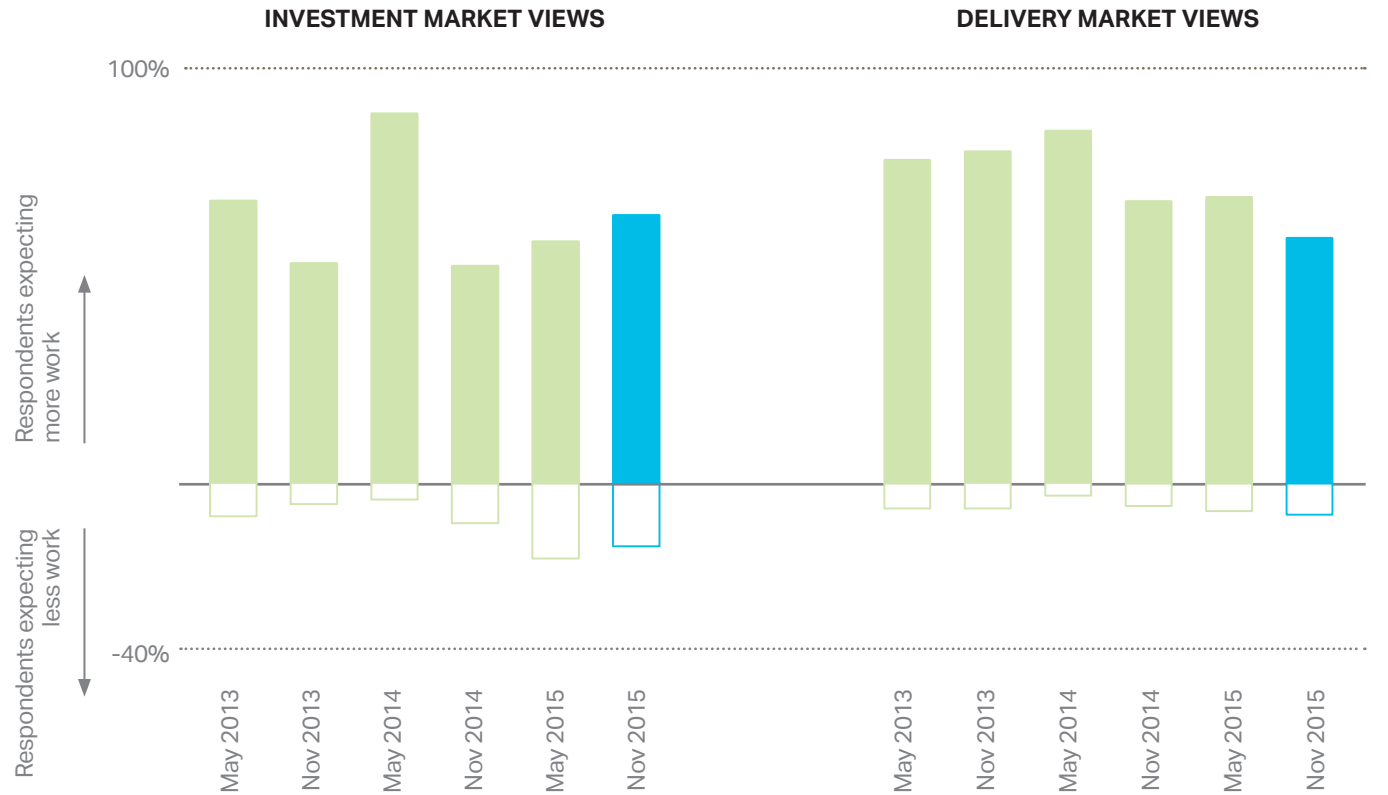
Craig Davidson  
Group Director – Buildings + Places  
AECOM

*“The migration of Auckland investors south is intensifying the rate of development in the Waikato and Bay of Plenty. The strong demand for high density housing and related infrastructure is positive for both regions as they brace for a swelling population and the positive economic impacts.”*



Chris Ballantyne  
Area Manager, Waikato & Bay of Plenty  
AECOM

**Buildings outlook**



Note: These measures of improving or declining expectations represent the proportion of respondent views on market direction – not the actual anticipated change in workloads.

## WORKLOAD BY REGION AND SECTOR

Sentiment remains relatively stable across all regions, with a strengthening overall outlook in Auckland, Hamilton, Wellington and Southland. The exception is in Christchurch where optimism has moderated substantially. While the outlook is still positive with 58 percent of all respondents expecting to see continued growth in the region's buildings market, optimism has eased from our survey six months ago, where more than three quarters of respondents had positive growth expectations.

The Education sector has moderated significantly, down 24 percentage points across the country. The forward workload and funding allocation in the primary and secondary Education sector remains strong, however the easing of optimism could reflect a reprioritisation of projects. Aging stock and work related to leaky buildings and seismic remediation are taking precedence in the pipeline and progressively impacting supply chain confidence.

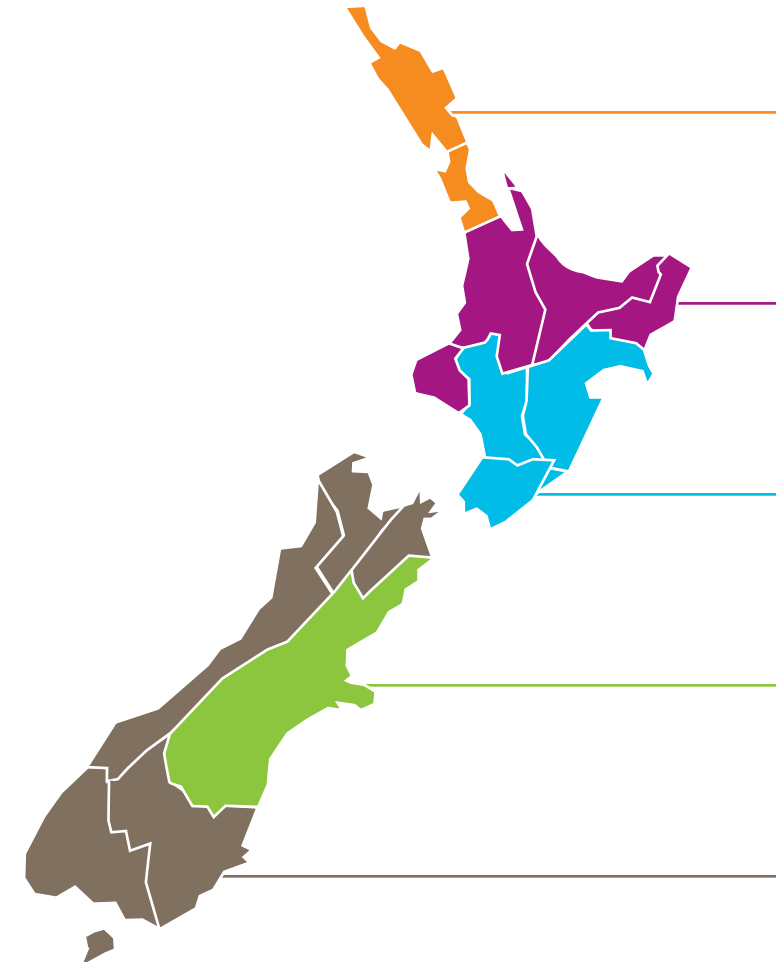
The outlook for the Residential market in Auckland remains high, increasing 2 percentage points to 92 percent. 8,700 building consents have been issued in Auckland over the past year, a ten year high for the region. However, the area experiencing the most optimism is in Mixed-use development, which has jumped from 47 percent to 78 percent of respondents expecting growth. Mixed-use continues to trend upwards across the country too.

Sentiment for residential buildings in Hamilton has increased 20 percentage points to 68 percent, perhaps reflecting the migration south away from Auckland's hot market. Meanwhile, optimism is flattening in Christchurch's residential market as the city continues to advance its residential rebuild work.

*"The increased popularity of Mixed-use development would seem to indicate that the property development sector is now responding to the increased demand for commercial and retail space as well as the residential boom. The trend towards density is positive, but further developing public confidence in urban intensification will be greatly assisted by the development of small scale, high quality and aesthetically pleasing designs."*

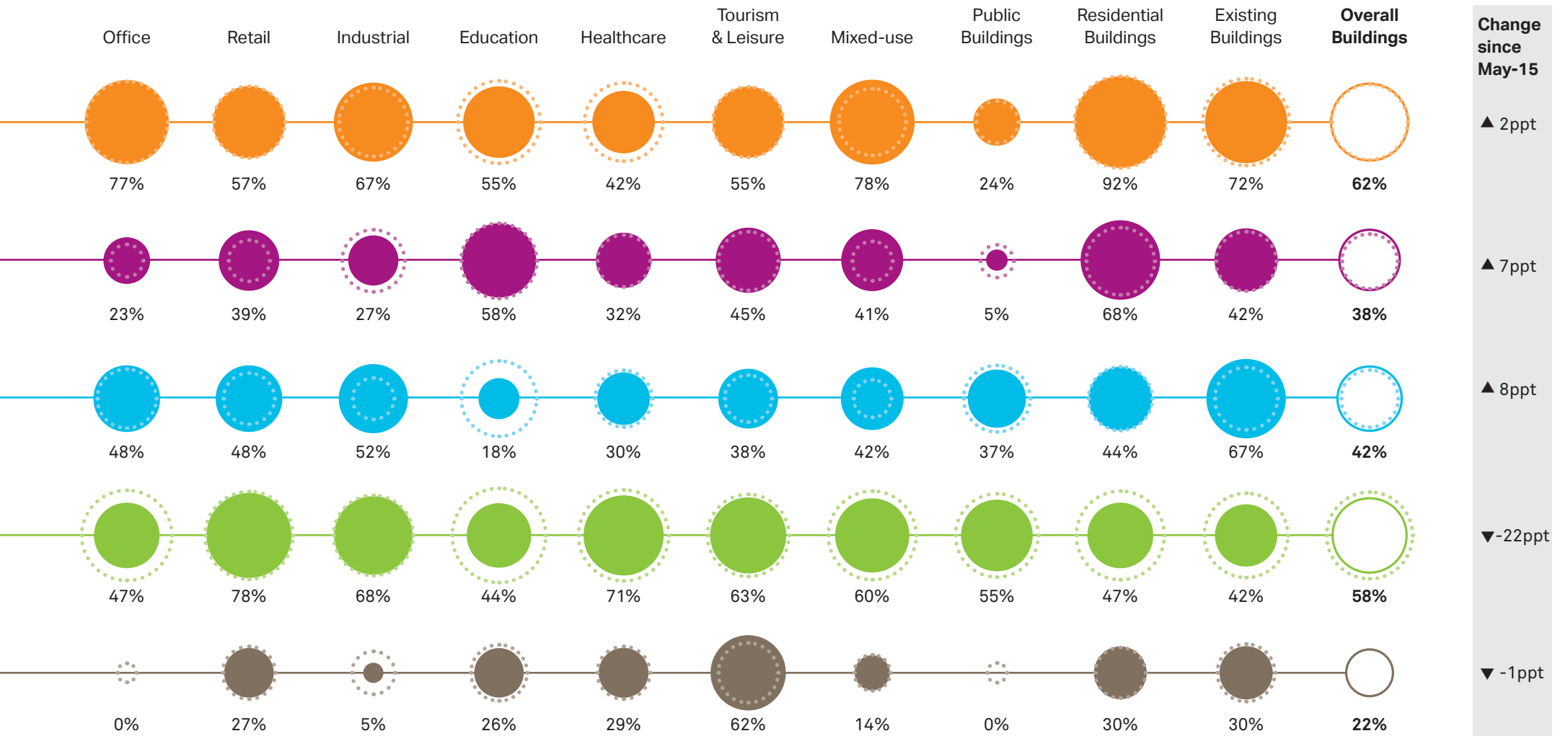


Trevor Hipkins  
Practice Area Lead –  
Quantity Surveying  
AECOM



Note: Bubbles on page 10 indicate the market optimism for growth over the next year. Dotted lines indicate the May 2015 results.

Proportion of respondents expecting increased investment by region



▼ -2ppt   ▲ 8ppt   ▲ 5ppt   ▼ -24ppt   ▼ -8ppt   ▲ 9ppt   ▲ 12ppt   ▼ -7ppt   ▼ -2ppt   ▼ -3ppt   **Change since May-15**

# INDUSTRY SPOTLIGHT

## NATIONWIDE INDUSTRY CHALLENGES

Among the broader set of challenges facing the construction industry over the next three years, Skills and Materials Shortages remain the biggest perceived risk. Alongside the various regional challenges, 40 percent of all respondents see addressing the supply chain shortage of skilled labour and risk of material shortages as a top industry priority. Retention and quality of employees were cited as areas of focus.

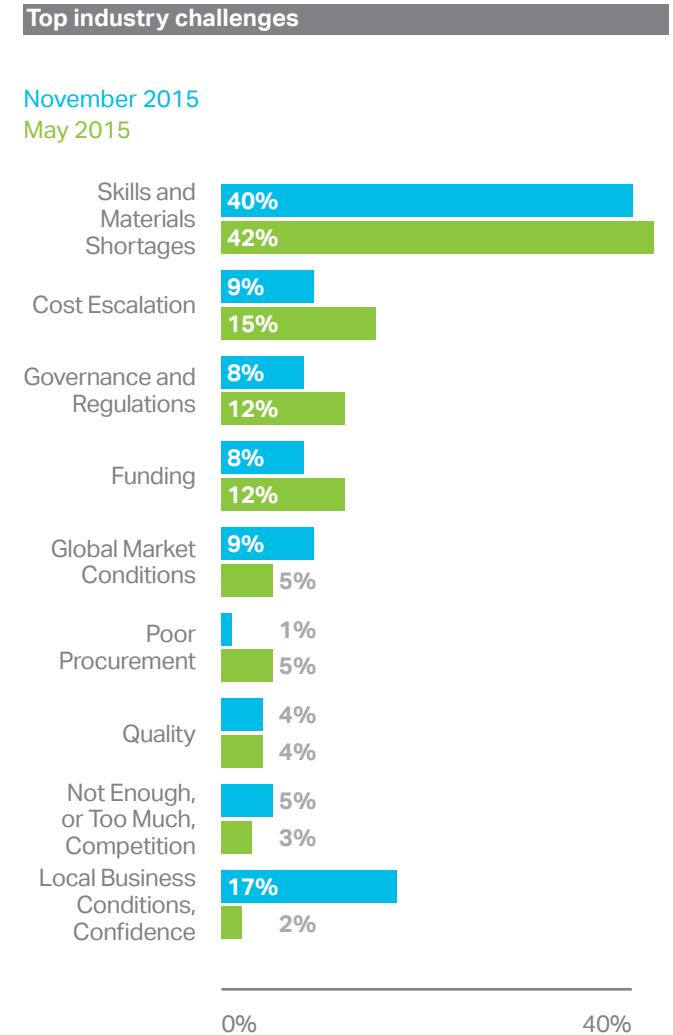
Business confidence has emerged as a key challenge. 17 percent of all respondents see the local market conditions as an area of concern; an increase of 15 percentage points from our survey six months ago. Several respondents see inflationary pressures having a detrimental effect on construction. In Christchurch, one respondent noted, *“construction affordability still remains a major challenge [and] innovation is required in controlling these costs.”*

The perception of cost escalation as an issue has moderated significantly. Less than 10 percent of all respondents rate it as a top concern. It is possible the broader business environment, including cost escalation, is top of mind. Of note however, one respondent suggested that *“collaboration of information [could help] to drive cost savings.”*

*“Business confidence is key in a market facing downward pressures like the slowing Chinese economy. As an industry, the strength of our relationships is important as we face these challenges. Deep and sustainable alliances and connections provide the foundation to accelerate development and provide more complete solutions in these environments. Gaining a competitive advantage will give business a healthy thrust.”*



Mark Drury  
Executive General Manager –  
Strategy & Growth  
AECOM



## FOCUS ON AUCKLAND

It has been five years since the amalgamation of Auckland's seven councils into one. Asked to rate the Super City's performance over a number of key areas, respondents ranked provisions of public services highest with almost 90 percent rating it as 'average', 'well' or 'excellent'. The city's protection and enhancement of the natural environment is also seen to be of a high quality.

Respondents were positive about Infrastructure development progress in the city, with more than 70 percent rating the city's performance as 'average' or above. For one respondent, the momentum is significant given the fiscal climate: *"In the face of unrealistic public and political expectations of how infrastructure is to be paid for, the council is progressing well."*

While a strong performance is recognised in some areas, one third of respondents rate the Council's overall performance as below average. Consenting, City Planning, Financial Management and Leadership were identified as areas for improvement. A number of respondents commented that they perceived there to be a lack of flow through of cost-efficiencies after the amalgamation. The length and cost of the consenting process were also seen to be delaying progress: *"Council consenting and approval processes continue to hamstring development and add a significant cost burden to projects."*

Despite some challenges, Auckland continues to rate highly on international livability indexes, in line with the Council's vision to be the world's most livable city. One respondent suggested a shift of perception; *"It is important to acknowledge and retain Auckland's character and unique competitive advantages. Being a livable city doesn't necessarily mean transforming Auckland into a replica of other successful cities."*

### Auckland Super City scorecard

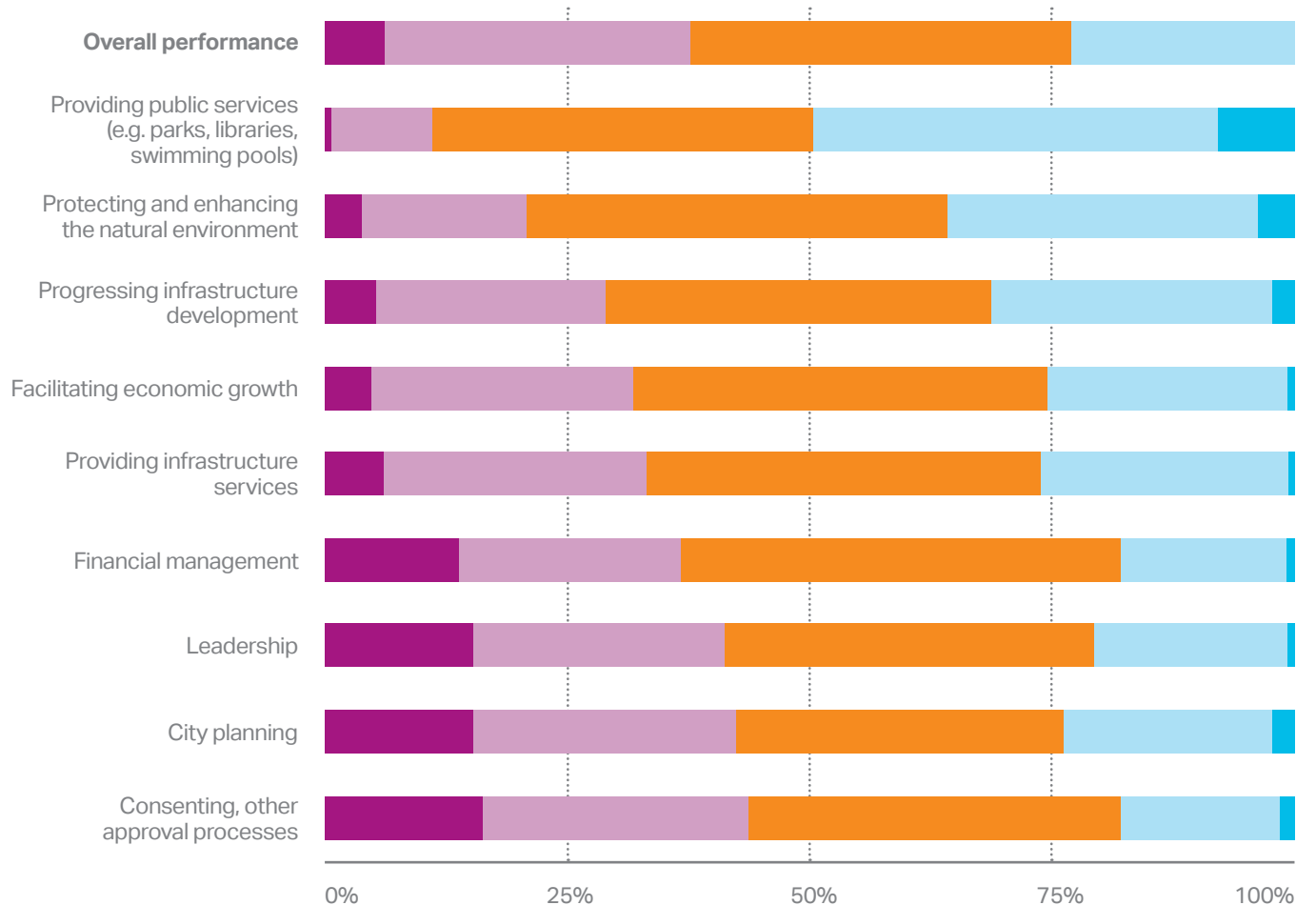
Excellent

Well

Average

Below average

Poorly





### Auckland housing

Moves to reduce pressure on Auckland's hot housing market have come into force. Figures from the Real Estate Institute of New Zealand indicate the market might be plateauing but short supply and low interest rates are continuing to fuel an already inflated environment. The ratio of median house price to median income is now nine times, high by any global standard.

The Government has introduced a capital gains tax on non-owner occupied houses bought and sold within two years and it now requires foreign buyers to have a New Zealand bank account to get an IRD number. Investors are also constrained with higher Loan-to-Value Ratios (LVR) on mortgage lending, effective as of 1 November.

Locally the Council's fast-tracked consenting process has enabled a significant pipeline of work, but there is room for improvement with better supporting mechanisms needed to keep track of what is actually being delivered. The Housing Accord set up by Council and central Government is reported to have issued Code of Compliance for 102 houses; off the pace of its intention to enable 39,000 homes to be built within three years.

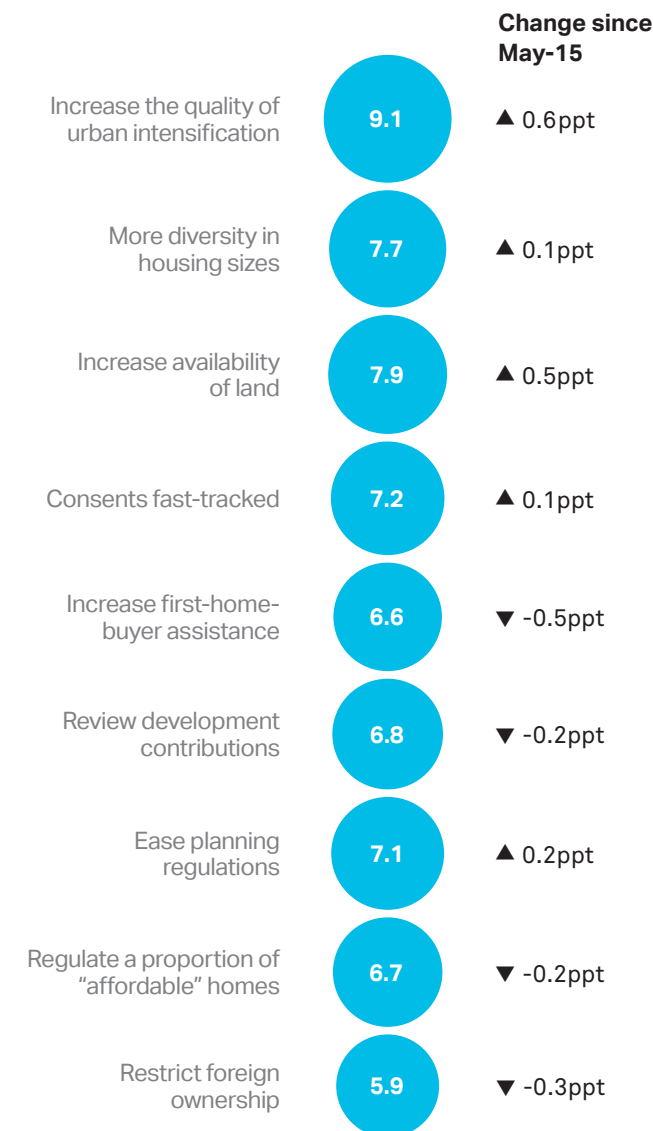
Respondents saw the disruptive measures as a positive. One person noted the *"approval process, with its increased focus on quality, will help gain public confidence in, and approval of, higher density housing solutions,"* while another saw the policy shifts as significant *"in getting the attention of developers and prospective buyers to available land and in stimulating home purchases."* Room for improvement was identified: *"[While it has] helped on the supply side, [it hasn't done] enough to offset demand increase driven by population growth."* One respondent pointed out that fast-tracking the process doesn't reduce the number of steps needed to be taken: *"Most of the Special Housing Areas are granted on the basis that while there is no capacity constraints for the bulk capacity*

*of infrastructure, the developers still need to fund and implement a significant amount of local infrastructure to enable development at remote greenfield locations. The funding of these infrastructure requirements is often not budgeted for and the lead-time that is required is often not programmed into the development plan."*

Urban intensification and the quality of housing were considered the key factors to addressing the shortage of housing in Auckland. Many respondents pointed out that public buy-in will be critical to increasing density. Quality of housing was mooted as a way to address the perceived *"not in my back yard"* culture: *"Getting acceptance of apartment living and building up rather than out. Part of doing this will be to ensure that the quality of urban intensification is high – that it is both of sound design and attractive aesthetically, ideally with communal open spaces."* While often portrayed as a significant public issue, respondents considered foreign ownership the least of their concerns in addressing the shortfall in supply.

The potential for the market to slow was questioned by one respondent who suggested a more global perspective would change expectations locally: *"[We] must stop comparing internally. New Zealand is comparable in quality of life to Sydney and San Francisco and with currency devaluing house prices will continue to rise due to offshore investment."*

### Key factors to help meet Auckland's housing challenge



**Auckland infrastructure funds**

Ensuring Auckland continues to respond to its increasing infrastructure needs remains a top priority. The city is experiencing significant population growth, which is placing demands on existing infrastructure, particularly roads and public transport. Respondents were asked to consider how industry, Government and the community can collaborate in finding ways to fund infrastructure.

Auckland is cementing its position as the centre of the county’s population and economic riches. The Government’s *Thirty Year New Zealand Infrastructure Plan 2015* signals that infrastructure is viewed as the foundation of a strong economy. While centrally funded infrastructure is critical to development, some respondents were keen to see a shift in the balance of power.

There has been no change in the preferred funding options for Auckland identified by respondents. Private sector / Investment was the top choice with an overwhelming majority wanting to see a broader application of this (78 percent). User pays and Special purpose infrastructure fund tax were also popular choices.

Targeted taxation, such as value capture in areas benefiting from the public purse, was identified by one respondent as a potential source of funding given the pipeline of investment in Auckland: *“Capital gains / betterment tax [should be instated] on all property re-zoned to enable development and all property which receives value uplift from infrastructure.”* For one, the effective use of Public Private Partnerships is key, while another suggested industry needs greater influence in order to help achieve better infrastructure and building balance for economic efficiency.

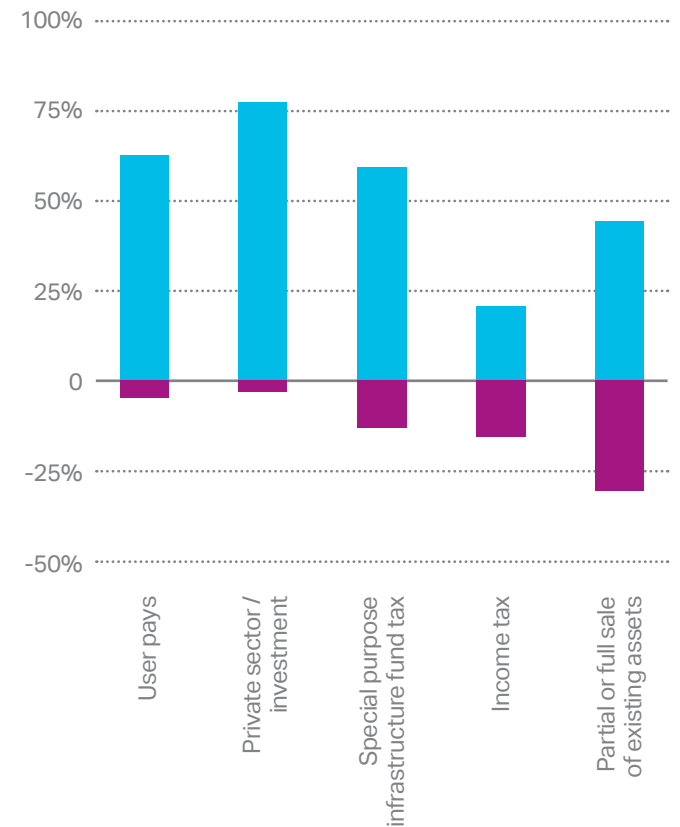
*“Auckland is now host to a wealth of human and social capital, but that doesn’t come without challenges. The greater coordination evident between central and local Government will be essential to support the strong economic impact now being delivered in Auckland.”*



John Bridgman  
Managing Director  
AECOM New Zealand

**Funding Auckland’s infrastructure**

Respondents wanting more of this funding  
Respondents wanting less of this funding



## CANTERBURY UPDATE

### A focus on delivery

Five years into the rebuild programme of works and Christchurch is experiencing a change of gear. A shift in the ownership of the city's decision making functions is underway with the development of the *Transition Recovery Plan*. The intention is for a progressive transition of power away from central Government and back locally over a period of five years.

While our survey indicates sentiment has moderated somewhat for the region, it is coming off a high base and is in line with a more long-term outlook. There is a slowing of residential construction as the rebuild moves into the commercial phase. In the last quarter we have seen the Bus Interchange completed as well as the Justice and Emergencies Service precinct now under construction. Vodafone, Kathmandu and the Wynyard Group have signed up as major tenants of the Christchurch Innovation Precinct and their buildings are under construction. However, extensions to deadlines for projects such as the Convention Centre and the Metroport Facility are seen to be causing frustration within the industry.

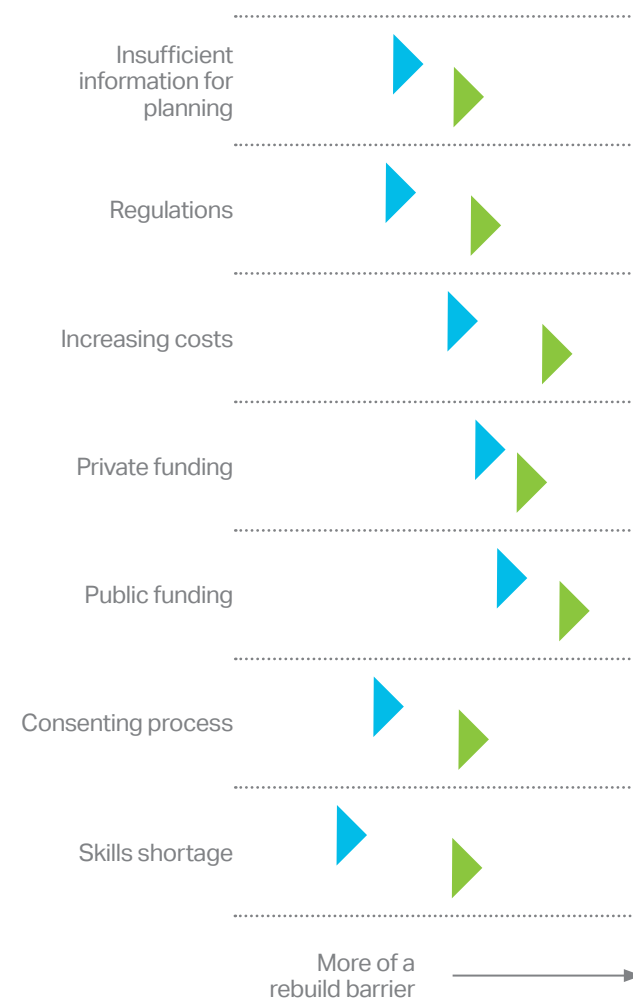
Overall, there is a more positive perception of factors contributing to the rebuild slowing down. The most significant change is a decrease in the number of people seeing Skills shortages, the Consenting process and Increasing costs as significant barriers. Still, the three largest barriers were related to cost, indicating that sources of funding remains an ongoing challenge for the region.

The volume of earthquake related consents appears to be moderating. Figures from Statistics New Zealand show a spike in consents six months ago, which has since eased back to levels obtained in 2013. The spike may reflect the significant and concerted effort to push through a large number of consents that were backlogged in the system. With much of the residential rebuild work underway, demand is softer, but while the consenting process is past its peak there is still much work to be done in the city.

### Top factors slowing the pace of the rebuild

November 2015

May 2015



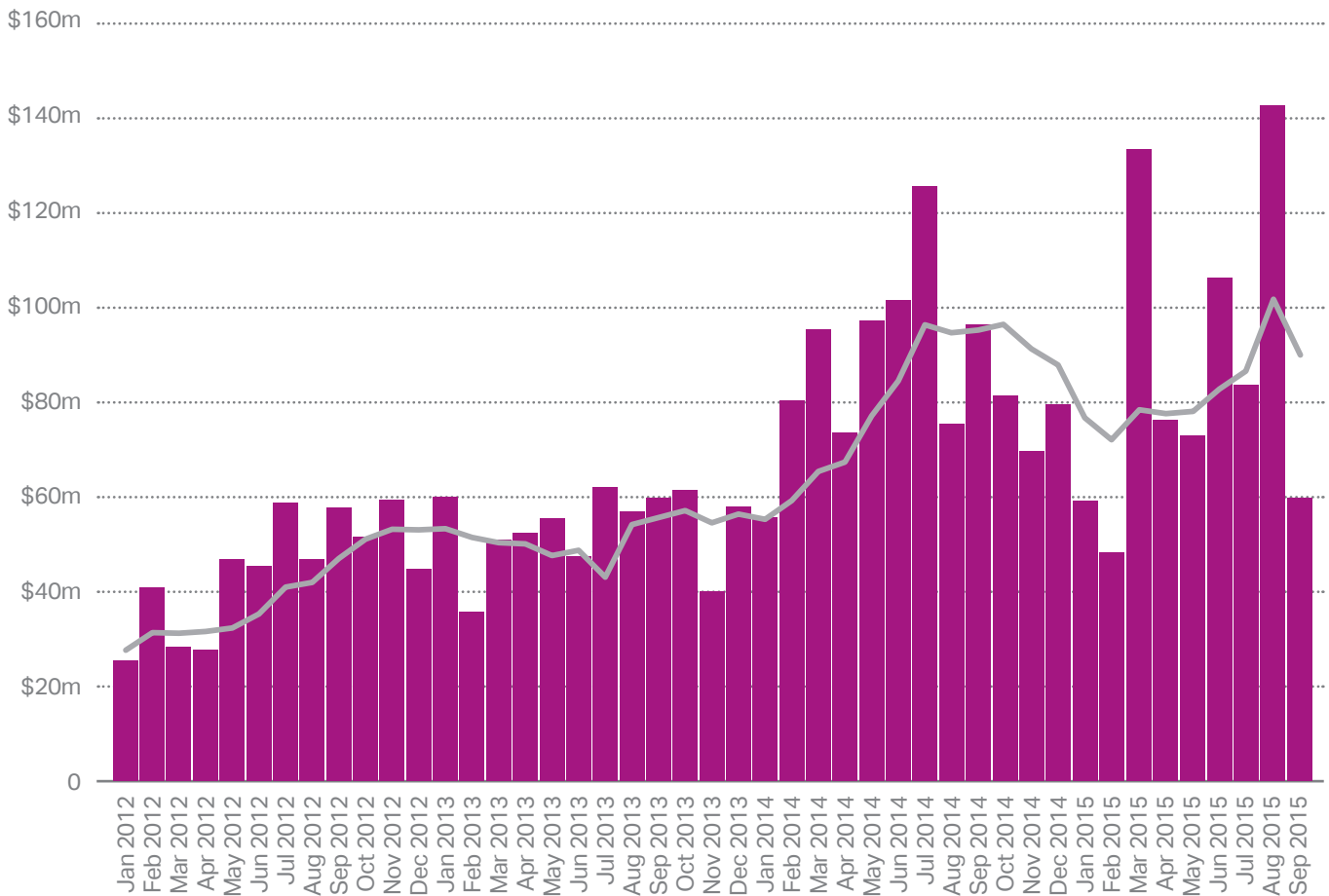
*“A fresh perspective is necessary at this phase in the rebuild. As an industry we need to remain dynamic; creating new opportunities and actively working to integrate community with our built environment in a truly world-class way.”*



Matthew Heal  
 Director – Construction Services,  
 New Zealand  
 AECOM

**Earthquake-related consents**

6 month moving average  
 Monthly earthquake-related consents



Source: Statistics New Zealand

**Rebuild competition and cost**

As previously noted, concerns around cost escalation in Christchurch are moderating. The number of respondents expecting price hikes in Labour has dropped 25 percentage points, to 69 percent, and importantly more than 70 percent of those anticipating increases expect them to be less than 5 percent. A similar pattern can be seen in cost expectations for Plant and Materials, where the overall number of respondents expecting increases has fallen by 15 percentage points and nearly 80 percent of those expecting rises are anticipating them to be relatively small.

Inflationary pressures had been troubling for the market, with significant year-on-year compounding increases. Continuing in this pattern could affect the feasibility and commercial viability of projects. However, the key concern for industry is still around money, despite the fact it is considered less of a concern overall. A successful rebuild may require innovative approaches to sourcing further capital.

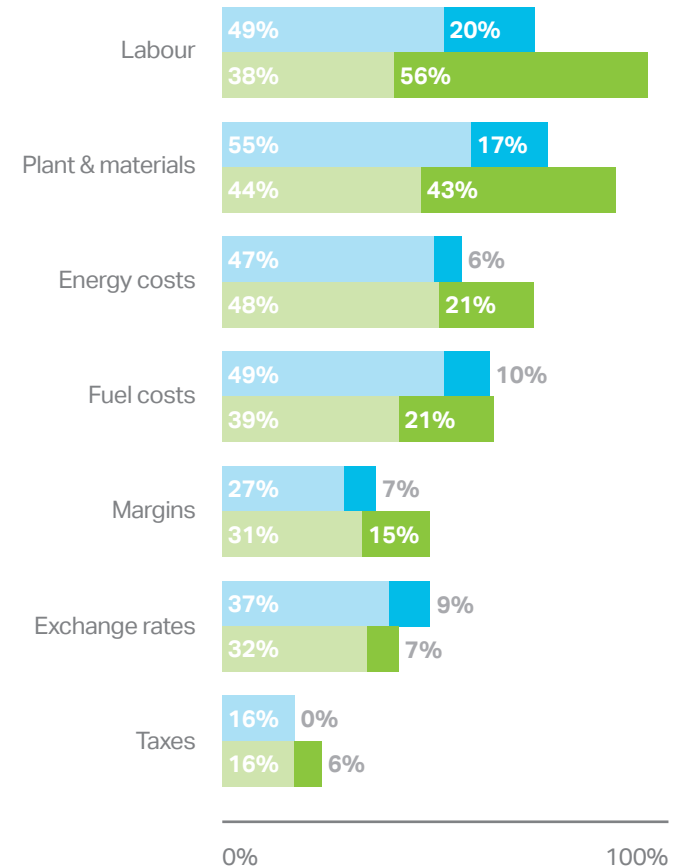
*“Quality and momentum of future development in the central city is essential to the economic, social and cultural prosperity of the region. But in many ways, the value of a development is the way it is used; its ‘likeability’. The big challenge lies in how we encourage residents to return to the CBD, a shift necessary to create long-term vibrancy for Christchurch.”*



Shaun Hubbard  
Area Manager, South Island  
AECOM

**Canterbury rebuild cost pressures outlook**

November 2015: Increase by up to 5%  
 November 2015: Increase > 5%  
 May 2015: Increase by up to 5%  
 May 2015: Increase > 5%



Note: Figures indicate the proportion of respondents expecting cost increases over the next three years.

**Rebuild challenges and lessons**

While previous surveys have highlighted the need for a focus on delivery, the discussion has moved to a sense of ‘rebuild fatigue’. It is understandable people feel tired given the effort that has been undertaken to transform Christchurch over the past five years. Since our survey six months ago, progress is substantial; many anchor projects are underway and SCIRT has made significant progress reporting 81 percent of all work now complete.

While respondents acknowledge a sense of fatigue, there is a call for the “critical mass” to continue to build on the momentum: “[It is] essential to get projects moving with tenant commitment to ensure there is investor confidence in the rebuild commercial market.” For one respondent, the now substantial available pool of skills and materials would be at threat if timeliness is not maintained: “There is a need for haste in ensuring that the industry does not decide to relocate to other areas due to lack of facilities, but this needs to be tempered with ensuring a layout that is designed for the future.”

However, views around the need to maintain pace are divided, with many suggesting that ‘rushing’ will compromise quality as the city is restored. The perception among some respondents is that the rebuild is bigger and more long-term than ever suspected; “Stop kidding ourselves that it will all be sorted in five years – the rebuild has a generational timeline.” For one respondent, the focus on quality will ensure savings in the long run: “It is difficult to predict how ground conditions will alter following an earthquake event like this. It is better to err on the side of being overly conservative, for example, in foundation types and other structural elements in a rebuild. Even if it is at a higher cost initially, this will lessen the problems down the line. Resist the impulse to build as quickly as possible. Better to get it right the first time.”

Many respondents chose to comment on the opportunity facing Christchurch in our latest survey. A variety of suggestions were made addressing the ‘window of time’ the city had available to be ambitious about its future:

*“The opportunity to build a high performing 21st century city is being squandered. There is a lack of vision for the longer-term economic growth of Canterbury.”*

*“New Zealand has one chance to build a 21st century city, and we are currently building a 20th century city.”*

*“The rebuild of Christchurch is a hinge point in New Zealand’s status among nations. It is vital for New Zealand’s international identity and reputation, as well as for our tourism industry. What is done with the rebuild will either establish our place as a successful independent country, comparable with Sweden, Denmark, or Singapore, or leave us uncertain of whom we are, for another 100 years.”*

*“You need to build the vision to attract investment.”*

*“The opportunity is to create the most vibrant livable city in Australasia, if not the world.”*

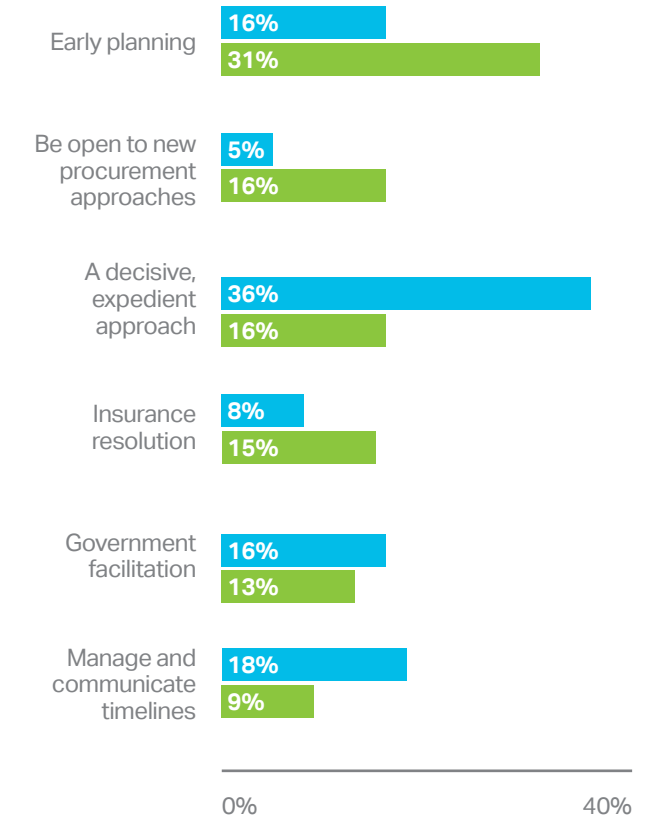
*“One chance to make huge change. Think Paris / Baron Von Hussmann’s rebuild in the 19th century.”*

Christchurch has integrated low impact / green design into the rebuild, while balancing it with cost. The recently unveiled plans for the South Frame highlight the embedding of sustainability principals. Still, some respondents felt more could have been achieved with this opportunity: “The lack of green building leadership from Government will be the biggest missed opportunity of the entire rebuild.”

**Towards a successful rebuild**

November 2015

May 2015





## PROCUREMENT

The industry continues to aspire to procurement practices that place weight on both value and whole-of-life costs and are supportive of a bespoke approach to each project. In our latest survey there was strong consensus that procurement continues to trend towards a price driven model, limiting the innovation and value added aspects of a project.

Selecting the right approach for each project and client is deemed important, and as one respondent noted, requires significant skill: *“All various procurement types and processes have best value, depending upon risks and costs, however choosing the right process for the particular job is the hardest part and needs great judgment.”*

However, the general consensus is that Design and Construct, Partnership / Alliance and Construction Management are the procurement processes that provide the best value for money. This is in line with previous surveys, although notably, the popularity of Construction Management has significantly increased. Public Private Partnerships (PPPs) were ranked as providing the least value. One respondent offered insight into industry sentiment: *“If the construction industry knew they had a stream of PPPs to bid then there would be more players; currently PPPs are binary – bid one and lose, and you have wasted huge amounts of money. This is a big burden on the construction industry.”*

Most contracts are awarded through formal tender practices, but despite that, the majority of respondents see Negotiated Contracts as providing the best value. For one respondent, *“the cost of tendering is too high as too much information is sought.”* For another, *“tendering is a way of getting the cheapest price, but probably the worst value”.* An alternative to the price dominant procurement process was noted: *“Clients are focused on selecting the lowest price tender. This needs to shift to highest value. Challenging projects are delivered well via collaborative working, where all parties are incentivised towards a successful outcome.”*

An unwelcome by-product of an environment favouring lowest price tendering is acknowledged as an increased, or under-estimated, whole-of-life cost. For one respondent, *“all decisions we make in capital investment consider the life cycle cost of the asset and how far we can extend the supplier warranties – why isn’t this principle extended to project procurement too?”* Another respondent commented on the perceived value in certainty around whole-of-life cost estimates: *“This is a very important consideration and is poorly understood across sectors. The value-add of this approach is still not reflected in the marketplace and therefore provides an excuse to conduct a business-as-usual (BAU) approach. It is critical for the long term well-being of our cities to adopt the whole-of-life cost of an asset as the new BAU. Without this shift, New Zealand will become less competitive globally.”* One respondent suggested a shift in approach: *“When clients are budgeting they could start with a lean capital budget with a fund for*

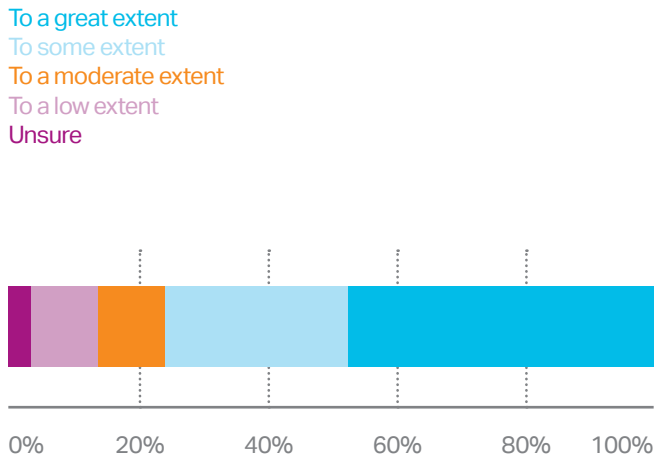
*enhancements that add value to the whole-of-life cost. That way, value can be discussed and reviewed with the design and cost teams on the way through.”*

The perception of an ‘unbalanced’ approach to risk remains, with a project’s risk allocation being seen to be passed on from the client to the consultant or contractor. However, a number of respondents noted more of an appetite for sharing the responsibility over the past year, with risk being assigned to the party best positioned to manage it. For one, the shift is a result of *“greater transparency in partnerships and identification of defined outcomes for delivery, including specifying risk-sharing. Open dialogue throughout design and construction and delivery phases are also essential for good outcomes.”* Another commented on the improvement, noting *“there has been a recognition at senior Government level of the pitfalls and challenges [of risk allocation] and momentum is building toward greater use of best value approaches and better communication.”*



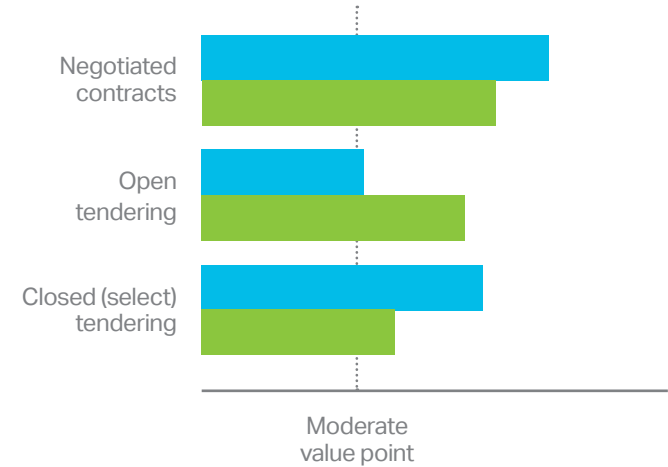
*“The industry aspires to procurement processes that encompass whole-of-life costs, but the challenge is to turn the commentary into an industry-wide step change. Low or discounted rates and prices offer little incentive for a service provider or constructor to reduce whole-of-life costs – costs that often far outweigh any construction cost or design fee. The concept of whole-of-life value extends beyond cost to include all outcomes returned by an asset over its life. Applying a dollar value to these outcomes shifts the dial further.”*

**Consideration of whole-of-life costs in capital investment decisions**



**Procurement methods by value for money rating**

November 2015  
May 2015



Geoff Milsom  
Group Director –  
Water & Urban Development  
AECOM

## BIG DATA AND SMART TECHNOLOGY

Big data and smart technology is a hot topic in the industry. So, how will any advances effect the way we do business and what will our business partners and clients expect of us?

Findings from our latest survey indicate the majority of the industry considers their organisation has a significant level of understanding around big data and smart technology and the way that it can be utilised for potential business efficiencies. Equally, most respondents believe there will be substantial change to the way business is done within the next 2-4 years (38 percent), followed closely by those who think a slightly longer timeframe of 4-6 years is more realistic (28 percent).

Overwhelmingly, respondents consider changes in the use of big data and smart technology have huge potential for business, but will require careful management and application. Technology can make significant improvements in the way that we are currently managing

our infrastructure assets, and through its use maintenance costs can be reduced, but at what price? It is the smart use of smart technology that is of most significance according to one respondent: *"If properly deployed, smart technology will lead to more efficient and effective utilisation of 'bricks and mortar' infrastructure. However, the complexity will increase with more inter-relationships between parts of infrastructure, which will drive effort into different skill sets than what [companies] are used to delivering."*

The overwhelming majority of respondents have considered the use of smart technology in projects over the past 12 months. Cost savings and the ability to do things that were not previously possible are highlighted as significant advantages. One respondent has seen an *"increase in the utilisation levels for energy infrastructure [alongside] new business opportunities emerging."* Another commented on the potential *"to use data ID technology for tracking and tracing of building materials. [This would] enable meeting of export requirements and improve product assurance."*

Respondents have strongly opposing views on the effect of changes as a result of big data and smart technology on the industry. One respondent said, *"it's happening now. It will continue at an ever-increasing pace for the foreseeable future. The entry of the internet into the area referred to as machine-to-machine, is a big step, and the impact is not at all clear. However, the development will not be monotonic and predictable. There are likely to be many surprises along the way. The recently past experiences of the big music industry, big printing and journalism are, I feel, a faithful guide to what will happen in parts of big infrastructure."*

In contrast, another respondent noted, *"the whole thing is just hype that doesn't really influence how we fundamentally do business. Business responds incrementally to technology as it always has, email replaced fax etc. None of it is rocket science and none of it will overtake the industry so quickly as to make a fundamental change."*

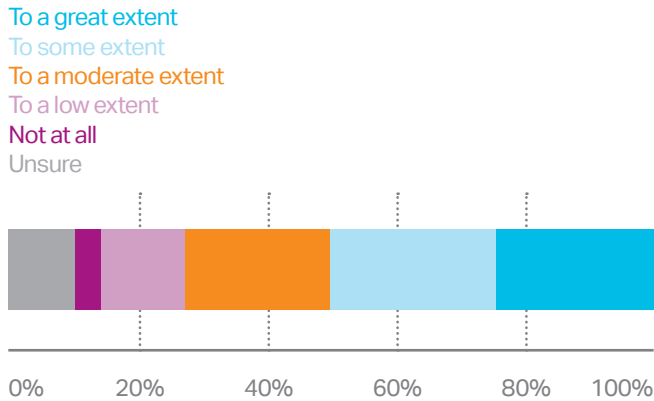
*“Disruptive technologies are being adopted ubiquitously across industry. Advancements in driverless vehicle technology, for example, are leading to predictions the technology could be adopted in just a few years. As we embrace this safer and more reliable form of transport, cars with drivers will be ushered off the state highway network, enabling platoons of vehicles to rapidly provide greater mobility to all citizens. The result will be a significant shift in infrastructure requirements in our cities. The challenge for industry as we adopt these developments is the planning approach; masterplanning will provide necessary guidance around intent, usability and efficiency.”*



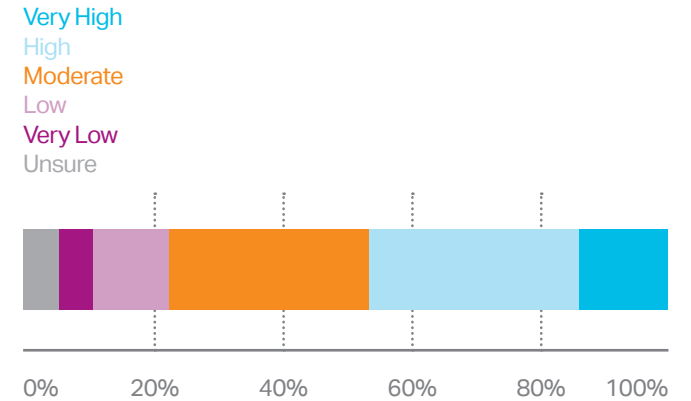
Craig Burrell  
 Director Infrastructure Advisory  
 AECOM

**Big data and smart technology**

**Considered as drivers for change**



**Level of understanding for business efficiencies**



## RESILIENCE AND SUSTAINABILITY

The industry has maintained its positive shift towards more consideration on issues of resilience and sustainability in project investments. The emerging focus on sustainable infrastructure design and general business practice could be a catalyst for an industry step-change going forward.

Priority is given to planning for Natural Disasters and Technical Failure, with more than half of all respondents giving these issues a significant level of consideration. However, there is also a growing proportion of respondents who report not considering, at any level, the potential effect of Climate Change. Since our survey six months ago, the percentage of respondents reporting no consideration of this issue has increased, taking the total number of respondents who report paying little or no attention to Climate Change to half.

Some respondents indicated it is the immediacy of both natural disasters and technical failure that sees them repeatedly prioritised. As one noted, the *“experience with the Christchurch earthquake has led to a lot of businesses considering disasters and technical failure as part of their planning.”* However, others suggested more insidious stresses such as Climate Change should be seen as one of the main priorities for improving resilience of critical infrastructure, but that action requires an approach with strong direction. Several respondents commented on the criticality of leadership, noting that it is a ‘tough

conversation’ but one that must be led from central Government. Leadership is highlighted at a local level too: *“The recent backtracking of Christchurch Council on the coastal hazard zone is evidence that communities are not ready for the debate and Council is not ready to show leadership just yet.”*

Aggregation of resources is highlighted as one of the significant barriers to the industry strengthening its commitment to resilience and sustainability. Cost, as always, features prominently. For one respondent, *“the push to get things done, added to short-term financial pressures, means lowest capital cost will win.”* Another noted, *“the decision making process will always be subverted by the appeal of the lowest up-front costs.”* But efficient and collaborative use of resources is seen as delivering a better outcome: *“We can deliver so much more value given the time to apply smart thinking and wider scope up front, [ultimately] delivering better value for the given budget.”*

Respondents also indicated a perceived lack of action as a barrier. One noted: *“Even though some managers have had resilience incorporated into their responsibilities, there is little commitment and much lip-service.”* However, while barriers are perceived as significant, there is recognition of a tidal change. ‘Global pressure’, ‘user demand’ and ‘fashion’ were cited as being among the significant factors that will continue to motivate the industry to adapt.

*“The appointment of Chief Resilience Officers in the Christchurch and Wellington City Councils indicates an awareness of the need for improved resilience from a cross-sectorial perspective. As an industry we must continue to look further than immediate shocks, such as earthquakes, to consider the more insidious effects of Climate Change.”*



Ian Martin  
Area Manager, Wellington  
AECOM

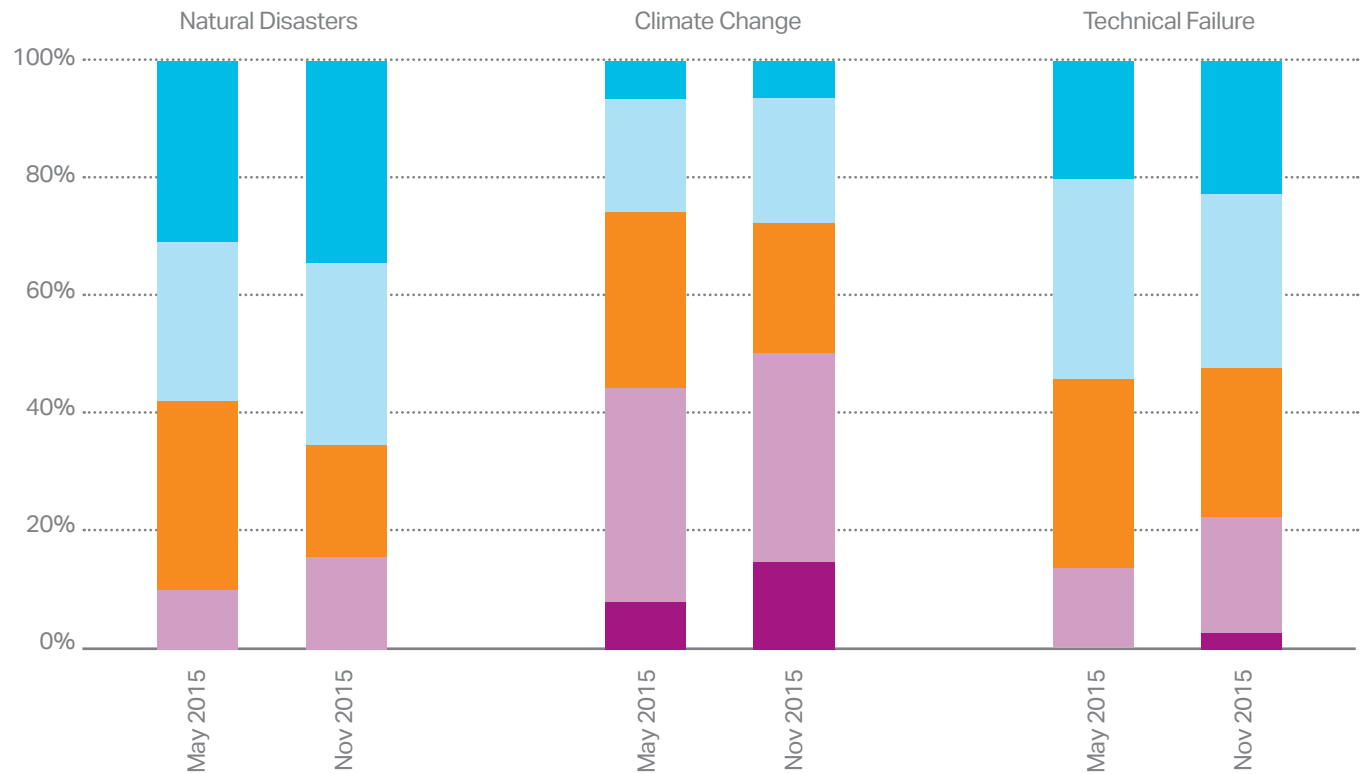
*“An emerging challenge for building resilient and sustainable communities is re-thinking the role of local government and the way it engages with communities. Piece-meal planning results in poor co-ordination between land use, transport infrastructure and positive urban outcomes. The role of local Government in this is key – not in the traditional ‘hands on’ sense, but – as many cities are showing around the world – in a supportive role that sees truly community-led projects flourish.”*



James Hughes  
Principal Consultant  
AECOM

Consideration of resilience in buildings and infrastructure investment planning

- To a great extent
- To some extent
- To a moderate extent
- To a low extent
- Not at all



# SURVEY SAMPLE – A BROAD VIEW

Survey respondents are invited to participate based on their role in the industry. Leading thinkers and decision makers are selected from the buildings and infrastructure markets.

## Profile of respondents

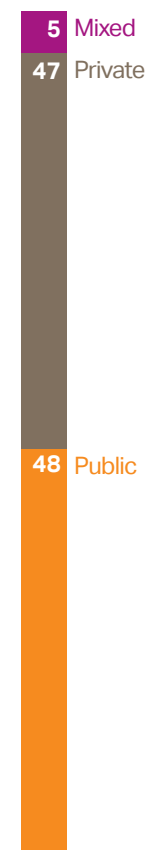
Respondents by location %



Respondents by industry role %

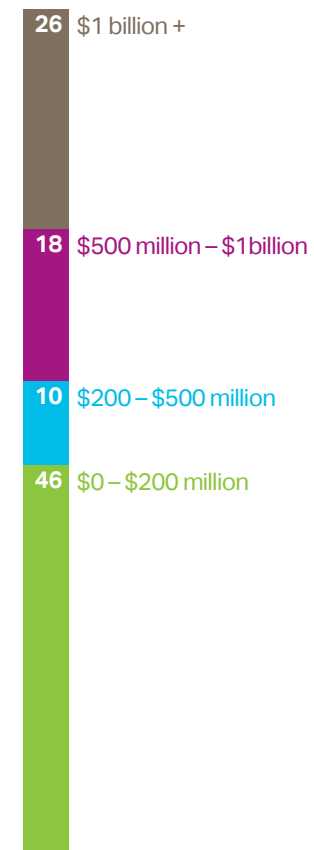


Public vs private respondents %

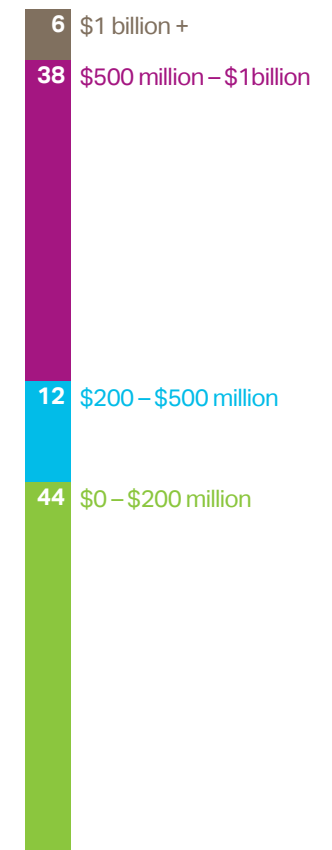


## Market values

Investment market respondents by turnover %



Delivery market respondents by revenue %



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