Executive Summary

The Construction Industry Council (CIC) 2050 Group carried out a national survey to gain an insight into what inspires people who are currently working in construction. The aim of the survey was to see if people are satisfied working in the industry while exploring four key themes: **Attitudes to the Industry; Progress on Sustainability; Social Media; Innovation.** The results will direct future work of the CIC 2050 Group and will be shared with Industry leaders.

The survey was circulated in February and March 2014 and received over 700 responses. The results show that generally people are positive about working in the industry, with 80% agreeing that they make a positive difference through their job. However, there are a number of areas where improvements could be made. A summary of findings from the key themes is provided below:

**734 People responded to the survey**

- The youngest has worked for less than a year in the industry
- 62% has more than 10 years experience in the industry

**ATTITUDES:**

**Diversity** – men are more satisfied than women with the levels currently being achieved but the majority of people feel that more needs to be done.

**Joining the industry** – education for joining the industry does not equip new entrants with clear expectations of the reality of working in the industry.

**Value** – there is a drive to provide better value for money for the client.

**Collaboration** – there is a desire for more extensive collaboration especially in the construction process.
SUSTAINABILITY:

Awareness – there is evidence that people are aware of the importance of the sustainability agenda.

Progress – not enough is being done to improve environmental sustainability in the industry and further progress is needed around water and biodiversity.

Innovation – sustainability is seen as a source for delivering innovation.

Green Deal – it is not seen as having a significant impact.

Resilience – further development and progress is needed especially against flooding and adaptation to climate change.

Re-use / retrofit – of existing buildings is seen as an important contribution to sustainability.

SOCIAL MEDIA:

Usage – in the industry could be better and could help with some of the key challenges for the industry.

INNOVATION:

Materials, ICT and prefabrication – there is scope for further innovation.

BIM – is seen as an important tool for further innovation but not the only domain.

Procurement and contract – more innovation is required.
INTRODUCTION

The Construction Industry Council (CIC) 2050 Group conducted a major national survey of construction industry professionals to gain an on-the-ground perspective of what inspires people working in construction today. This report summarises its findings.

The survey was distributed online in February and March 2014. The response rate was excellent, with 734 respondents. There was good representation by gender with 21% female and 43% male compared to the average percentage within the industry (36% did not state their gender). The respondents were also from across the industry including the main professions but also from others including sales/marketing, facilities management and academics (see Fig. 1a, 1b).

The survey was structured around four main themes:

1. Attitudes to the Industry
2. Progress on Sustainability
3. Social Media
4. Innovation

Fig. 1a Gender

Did not say 36%
Female 21%
Male 43%

Fig. 1b Profession

Architects; Engineering; Architectural Technologist 17%
Consultant 10%
Surveying 13%
Misc 14%
Construction & Project Management 9%
Did not say 37%
1. ATTITUDES TO WORKING IN CONSTRUCTION

The overall response was overwhelmingly positive to working in construction with 83% saying they were proud to work in construction (4% are not, 9% are unsure. 3% did not answer this question). There is a general feeling that the construction industry has an important role and makes a positive difference with 80% believing that their job makes a positive difference.

Although respondents are positive about the industry and feel that they make a difference, only 74% would recommend working in the industry (10% would not and 11% are unsure) and 55% believe theirs is an inspiring job. Interesting over a third (34%) feel that there are aspects of their job that make them consider leaving the construction industry. Overall this was a high percentage especially as it relates to the industry and not just their current job. It should be noted that this figure may be high in other industries; it is not known how this compares with different industries.

When analysing how different professions responded on attitudes to the industry, there is a common feeling of being proud to work in construction; most said they feel they make a positive difference through their job. In terms of who would recommend joining the industry, 74% responded positively, however there are different views between the professions with 14% of Architects, Architectural Technologist and Engineers and 15% of Construction and Project Managers stating that they would not recommend the industry; whereas Consultants (9%) and Surveyors (10%) are more positive about recommending the industry.

Overall when analysing the results to understand if the same people are negative about any of the questions relating to the attitudes to working in construction only 3% were negative for all of the questions and a further 5% had only one positive indicator. On balance, this suggests that attitudes are positive for the majority who work in the industry. Consultants and surveyors tend to be more positive but this is not statistically significant.

In terms of preparation to join the industry, 53% had completed relevant course or studied a relevant subject prior to joining the industry. Interestingly Architecture, Architectural Technologist and Engineering (82%) are more likely to have completed a course prior to joining the industry compared with Consultants or Surveyors (60%).

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People state the following reasons for why they like working in the industry:

- Working and collaborating with great people
- Educating, mentoring and inspiring the younger generation
- Being able to see designs built and realised
- Reshaping the built environment
- Improving the quality of people’s lives through enhancing living and working environment
- Encouraging environmental protection and sustainability

Due to rounding, totals may be slightly less than or greater than 100%.
The results show that the majority (53%) of respondents did not have clear expectations of what it would be like to work in the industry before joining, even though they had studied a relevant course. The expectation of the industry also varied significantly across the professions as 38% of Construction and Project Managers feel that they had clear expectations, in contrast to 27% of Consultants, 23% of Architects, Architectural Technologist and Engineers and 20% of Surveyors. This suggests differences between professions in how well their education and training reflects the experience of work in the industry. Moreover, it points to a need for all training relevant to the industry to improve how the expectations of students can better match the reality of working life in construction.

Diversity

With regard to views on diversity at senior levels, in terms of age, gender or race, only 33% are inspired by the achievements of their organisation, compared to 21% who are not (12% who are unsure; 33% did not answer this question). A gender difference is apparent in opinions on diversity, with two thirds of male respondents feeling inspired by the achievements of their organisation to enable diversity at a senior level but only just under half of the female respondents giving a similar opinion.

Interestingly in regard to achievements on diversity, those longer in the industry are somewhat less inspired (41%) than those with experience of 10 years or less (36%).

A strongly significant finding is the difference in gender depending on years in the industry. Of those with more than 10 years in the industry, only 25% are women. This compares to a more equal balance for those in the industry for 10 years or less (43% women). A number of possible explanations could be suggested. The recruitment of women to the industry appears to be successful, with the proportion of women and men approaching a balance in the early years. However, it appears that women are much more likely than men to leave within 10 years, which implies ongoing issues in ensuring gender diversity. It can be suggested that the culture within the industry is hostile to women especially those with more experience, and there is some evidence of this in the comments given:

“I am a woman, and I have been severely bullied over the course of career. Sometimes, it doesn’t seem worth the hassle”

“I constantly have to prove I can do the job as good as, if not better than, the men I work with”
Other comments refer to the “macho and testosterone driven” confrontational nature of the industry.

Another reason may relate to family-friendly practices or the lack thereof. The difference in proportion between women and men is significant at the 10 year threshold but not at the 5 year threshold: of those with up to 5 years’ experience, 43% are women, and of those with 5 to 10 years’ experience, 44% are women. This would suggest that the 10 year threshold is important. For people joining the industry straight from school or university, ten years of experience puts them in their late twenties and early thirties. This can be a period in which family responsibilities become an issue. It is possible that the long-hour culture mentioned in the response to the questions on leaving the industry, as part of a ‘family unfriendly’ culture, affects more women than men and this is raised in the respondents’ comments:

“The industry is not as accommodating of women in the workplace as other industries, for example, in maternity pay and flexible working hours. I know a number of people who have left the profession because of this.”

Another possible significance of a 10 year threshold is as a period in which people expect to have been promoted. After 10 years, unequal promotion opportunities may prompt women to leave:

“Lack of further opportunities to become a Senior Manager- the ceiling is not glass, it’s solid and the industry is steeped in tradition and completely un-diverse”

This explanation may shed light on the difference between women’s and men’s views on achievements on diversity. There is little difference by profession in years in industry. However, there are noticeable gender differences by profession and this is close to statistical significance. Of the Consultants, 42% are female; of the Architects and Engineers, 33% are female; of the Surveyors, 27% are female; and of the Construction and Project Managers, only 23% are female. This suggests that although in some places the industry is becoming more
representative of the gender balance; in others the workplace is still heavily male-dominated. From the broad split of professions in this survey, it is the on site roles which has changed least in terms of gender diversity.

2. PROGRESS ON SUSTAINABILITY

Overall there is concern that there is insufficient effort across the industry on sustainability. The survey wanted to understand if there are particular areas where improvements have been made or if there are areas to focus on. Overall water and biodiversity were highlighted as the areas which need greatest improvement as 72% feel that not enough is being done. There was a slight improvement for reducing carbon and materials and waste as 68% and 65% respectively are of the opinion that not enough is being done. Generally this demonstrates that the respondents feel that more should be done on sustainability.

The breakdown by profession shows a similar pattern, although fewer Surveyors than other professions think that issues are not being addressed. Interestingly, gender differences appear in this set of responses. This is most evident in materials and waste with 71% of women feeling that not enough was being done compared to 62% of male respondents. Overall women feel that not enough was being done compared to men.

Although there is no significant difference between years spent in the industry and opinions on materials and waste, there was a difference when it came to biodiversity (77% of those with 10 years experience or less versus 67% of those in the industry for more than 10 years feel that not enough is being done on biodiversity and water). The majority of people with less than 10 years experience in the industry (72%) feel that not enough is being done on climate change mitigation and reducing carbon. When this is compared with those with more than 10 years’ experience in the industry there is less agreement that not enough was being done on climate change mitigation and reducing carbon (64%). The differences suggest that people newer to the industry are somewhat more demanding when it comes to sustainability. Despite the difference by years in the industry, the majority of both groups believe that more should be done and this should help to drive further change in the coming years.
3. SOCIAL MEDIA

More than half of respondents (60%) feel that social media is not being used appropriately by the industry. This was more pronounced for the male respondents (64% disagreed) compared to the female (51%). Nevertheless, over half of the respondents indicated that social media could help to tackle some of the challenges of the industry, such as improving the image of construction (67% agreed). Again, there are significantly more women of this opinion than men (73% compared to 64%), although there is some variation by profession with 72% of Architects, Architectural Technologist and Engineers agreeing that social media could be helpful to the industry, down to 61% of Surveyors. The statistics show a polarised view of social media, and this is evident from the comments. Some respondents have a negative view of social media in general:

“Social media is largely trivialising. I’m not sure that it helps with an issue like this.”

Others had experience and concerns about specific issues:

“I don’t think it is relevant or to be encouraged in a work environment. It is highly unregulated, unmanageable and a potentially serious risk to reputation... Being bombarded with information, most of which is not relevant to you personally, is one of the main pitfalls and drawbacks of modern communications systems. No-one even gets email training, let alone social media training, so it is ripe for misuse and abuse.”

In stark contrast were those who saw great potential for use of social media, for recruitment, reputation and collaboration within the industry:

“Target younger people who are looking for work and clearly explain opportunities

“Interactive forum; video blogs; Facebook style platforms for construction workers at all levels; better apps for common sustainability issues”
“The public are fascinated by construction. We need more videos and photos ‘behind the hoarding’. There could be YouTube videos of projects showing how things are done, and why things are done in certain ways. Photos of sites, images, progress, project Facebook pages where ‘boots on the ground’ can upload their photos. Sites could have videos on the internet showing what the project will achieve, how it will be done etc. It is great for stakeholder involvement, manages their expectations and gets them excited about how the project will benefit them.”

Notwithstanding the understandable concerns of some respondents, the enormous scope of rapidly developing social media and its potential to facilitate collaboration, innovation and promotion of the industry, makes this an important area for further development.

4. INNOVATION

Responses to the question: ‘Where do you see the most impressive innovations taking place’ could be grouped into five themes, as shown in Fig. 2. The response format was open for respondents to list or describe any topic they chose.

Perhaps unsurprisingly, with ongoing developments in ICT (information and communications technology) and in BIM (building information modelling), the majority of responses refer to Design and Technology as being where innovation is happening. A sizeable minority see innovation coming from sustainability. This is encouraging for further developments in this domain. A number of respondents perceive innovation as taking place in working processes and practices – many of these responses refer to collaboration. About 11% of responses point to the part of the industry or geographic location.
where they believed innovative progress is being achieved. Although some see large scale projects such as Crossrail as a site of innovation, others believe that SMEs and small projects have the flexibility to be innovative. Several respondents see innovation happening in other parts of the world, including the Middle East, and a few believe that innovation will only come from outside of the industry.

**Fig. 3 What further innovation is needed?**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Employment conditions</td>
<td>6%</td>
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<tr>
<td>Policy, legislation</td>
<td>12%</td>
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<tr>
<td>Design and technology</td>
<td>27%</td>
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<td>Sustainability</td>
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<td>Processes</td>
<td>24%</td>
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<td>Culture</td>
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**Design and Technology**

The most common topic within the Design and Technology theme is that of BIM, showing awareness across the industry. Many of the answers are neutral or positive with regard to BIM although some suggest that there is the need for improvements.

A few respondents raise the point that BIM is not a panacea and that innovations beyond BIM are needed, for example,

“Removal of panacea thinking by decision makers i.e. BIM to a holistic and intelligence/knowledge based industry”

The high level of references to BIM as an area for further innovation, combined with the extent of responses suggesting innovation in areas beyond BIM, support the view that BIM is seen as important across the industry but that improvements in many other domains are also needed.
Many respondents consider that innovation is needed in ICT, including in broadband provision, 3D printing, software functionality and interoperability of software. Several note the need for better data management, and such issues are also relevant for the development of BIM. A further important subtheme is that of materials, with respondents anticipating improvements in material science and in construction techniques, for example:

“Development of materials or hybrid materials to provide good properties from a sustainable source”

Offsite manufacture and prefabrication techniques are cited in a number of responses, showing that the concept is gaining traction in the industry:

“Materials and reduction in site labour through increased mechanisation and prefabrication”

Sustainability

A positive indication in the survey is the number of respondents who see sustainable construction as a source of innovation. Many mention energy efficiency, alternative energy sources and managing carbon emissions. A number of responses link energy efficiency with development of materials:

“Dealing with energy conservation; use of sustainable materials”

Waste management is also widely cited, for example:

“Reducing waste at a very general level to improve the efficiency of construction”

However, there are relatively few mentions of ecology and biodiversity, suggesting that there is less awareness of the importance of these dimensions of sustainable construction.

It is striking that there are only two mentions of the Green Deal (both negative). As the primary policy instrument for increasing energy efficiency in homes, this suggests that the scheme has yet to have impact within the industry.
Of note are the number of answers in which flooding is mentioned, as well as water management, but this is probably related to the flood events that occurred at the time of the survey, for example:

“Better management of rivers; major improvements to older drainage systems; more consideration of drainage schemes of new build. We need to learn from the recent experiences of major flooding and ensure it does not happen again.”

These responses link to those mentioning resilience and adaptation to climate change:

“Flood risk management and climate change adaptation is vital in the coming years. We need to develop and adapt more, as clearly there has not been enough done in recent years”

One further subtheme is that of refurbishment, with several respondents noting the need to enhance existing building stock and that refurbishment in place of new build aids the sustainability agenda:

Overall, the respondents show good awareness of the broader agenda of sustainable construction, beyond carbon and energy efficiency which has been the primary focus of much government policy. Even more reassuringly, there is evidence of understanding that the industry needs to begin to address issues of adaptation to climate change, as well as continuing to increase activities aimed at mitigation.

**Processes and Working Practices**

In considering where innovation is needed, the most commonly cited subtheme, alongside BIM, is that of collaboration. The need for collaboration includes but goes beyond dependence on BIM:

“The contractor consultant and principle actually working in collaboration, with all listening and valuing each other”

“More initial collaboration between architect, client and structural engineer”
In addition, some responses speak of the need to develop and to share knowledge, between companies as well as within:

Many respondents note the need for enhanced education and training: on BIM; of sub-contractors, apprentices and young people; and in management skills more generally.

A noticeable theme is the desire for improved value for money for clients, with respondents citing a need for a focus on quality, on efficiency, on faster delivery and on improved costs, for example:

“Going well beyond reacting to pressure (e.g. BIM because it’s being demanded) and starting to really harness technology and creativity to drive forward towards significant value for clients, users and society.”

“Value for money through procurement and true partnerships”

The last quotation above referenced ‘true partnerships’, and this subtheme is evident in comments on collaboration and particularly in comments on procurement and contracts. Respondents feel that existing framework curtails opportunities for improvement:

“Total reform of procurement and contracts”

“National Forms of Contract MUST reflect difficulties of payment terms further down the Supply Chain. Public Sector contracts are trying to address this in
different forms, but Majors seem to think when suppliers fail, we'll just go out and get another. Reality then kicks in too late.”

Some comments within this subtheme also refer to ‘blame culture’ and ‘inertia’ which are discussed under Culture below. A need for further innovations in health and safety are noted by a number of respondents. It is reassuring to see that relatively few respondents cite this need, suggesting that health and safety issues are becoming increasingly business-as-usual in the industry. A small number of responses consider the need for more innovation in recruitment, to attract particularly young people into the industry.

Culture

A number of responses refer to a ‘traditional’ culture as stifling innovation, for example,  

“Old-school attitudes between client and contractor”

“Government needs to put pressure on those who control the infrastructure assets to step away from the old, conservative and not very successful construction and maintenance methods and actively push them to try more innovative solutions …This will require the removal of red tape and the lifting of the mantle of fear that surrounds the individual responsible for an asset who dare not try anything different”

In particular, some answers mention a ‘blame culture’ and a ‘silo’ mentality, suggesting that in places the industry is still fragmented along professional and company lines:

“We need to find ways of working that release the creativity and enthusiasm of younger people across the architectural field - too often at present these are stifled by a personality- cult-approach to authority inherent in 'signature' firms”

“Better integration of sub contractors - changing the default position of litigation/working to the contract and late payment for subcontractor fees”.

In the last quotation, the respondent clearly notes the relationship between contract forms and industry culture preventing change and innovation. The need for diversity in the industry is mentioned by several respondents, and this links to answers on how respondents see the achievements of their companies in this area. A focus on the short-term is felt by some to limit the possibilities of change
and a number suggest a better focus on long-term goals as a means to encourage innovation. Several answers note the need for better management and better leadership, for example:

“Better leadership, increased professionalism in project, programme and portfolio management”

A need for better communication is noted by several respondents, and a few answers also suggest a need for improved trust and transparency.

Policy, Legislation and Standards

The subtheme of legislation arises in a number of answers, with respondents wanting improvements in legal requirements on energy efficiency. Weaknesses in both policy and legislation are mentioned:

“Mandatory legislation needs to genuinely catch up with the industry instead of playing political lip service”

“Serious change in the UK energy strategy – whether it be a push for more turbines or a complete acceptance in nuclear power”

Conditions of Employment

Several respondents note the need to allow flexible working, working from home, remote working and virtual meetings, in some cases linking these to making the industry more diverse:

“More collaboration, flexible working, more women in senior roles”

“Flexible working arrangements are needed including working from home. This will allow a better work life balance.”

Poor pay, at levels from apprentice to qualified engineer, is mentioned by some as an area for improvement and a small number also cite issues on recognition, advancement and career paths.
Reasons to Consider Leaving the Construction Industry

Respondents were asked if there are any particular things about their job that make them consider leaving the construction industry. A wide range of answers are given. The top ten reasons are shown in Figure 4.

The predominant factor is pay, with many respondents expressing the view that their pay is less than in other industries and is not commensurate with the long hours, responsibilities and qualifications required by their role. Further analysis was carried out to understand if it is certain professions commenting on the pay and their experience within the industry. Out of the respondents the largest majority is engineers (21 out of 71). Also generally it is those who are early in their careers that are unhappy with their pay. This may be in comparison to other industries that would require similar skill sets but provide high pay for people in the early stages of their career.

Issues of gender diversity and inflexible working arrangements in the industry pose problems for family responsibilities, and are the second most common theme, as discussed above. Job security is frequently mentioned in relation to short contracts and the close relationship between the industry and the state of the economy is also an important factor. Long hours and travelling away from home are mentioned by many respondents. An issue for many is the lack of recognition or respect for their profession and the industry, sometimes by others within the industry:

“Lack of respect for qualified tradespeople”
“As an architectural technologist, I can sometimes be made to feel like a second class citizen in my own industry, not by everyone, but by certain individuals and organisations”

Some of the issues of lack of professional respect are perceptions from outside the industry, perceptions of the public or those portrayed in the media:

“Lack of recognition and protected status for professional titles”

“Unprofessional reputation due to the black market - if anyone can pick up a hammer and call themselves a builder, and undertake building projects without fear of any real controls, then it is very difficult for good professionals to succeed. I am talking about domestic work and small commercial projects but it is here where the reputation of builders is founded and actually represents the bulk of the real industry”

The issue of the industry as ‘traditional’ and slow to change was raised. A confrontational culture, often associated with contracts and competition, is a concern for a number of respondents. Perhaps allied to this point, several respondents also mention the focus on maximising profit as a factor that may drive them from the industry. The difficulty of the job, including working conditions, demanding clients, tight deadlines leading to stress, is an issue raised by several respondents with a number also citing bureaucracy and poor management.

Conclusion

The aim of the survey was to identify what inspires people to work in the industry. To understand how they started in the industry and what currently inspires them. It sought to obtain views on key themes and understand what the future innovations might be.

When asked about working in the construction industry, there is an equally positive response between the genders with a similar percentage recommending the industry however when asked about diversity, there is a significant difference between women and men with women noting that it is a challenge raising a family while working in the industry. There is also a significant drop in the number of women respondents with over 10 years’ experience in the industry although it is not clear whether this is due to women leaving the industry after a number of years or more women entering the sector in the last decade. The conclusion from this is that there is a lot of positivity among workers in the construction industry including women, however the adoption of flexible working practices to better accommodate women with children would ensure it continues to appeal to both genders up the
career ladder. Additionally, pay is strongly identified as a reason for people of both genders to leave the industry therefore more should be done to ensure that benefits in the industry weigh more evenly with jobs with similar skill sets such as banking and management consultancy, to prevent a skills drain.

The two key areas of innovation that respondents highlight as the most important in the future are in sustainability and technology particularly with reference to BIM. The integration of BIM with working practices including better compatibility with mobile technology and improved integration between the disciplines within the industry are key themes. Therefore the conclusion from this is that the industry should be investing more in getting technology streamlined with existing job roles in order for BIM to be better adopted within construction.

With regard to sustainability, energy and waste are both identified as areas where innovation is required in the future. This is unsurprising because the industry as a whole is a big contributor to both. Therefore further investment in the reduction of both embodied and operational energy in construction and waste management is required in order to continue to make improvements.

The two groups where there are notable differences in opinion are in gender and number of years of experience.

When looking at length of time in the industry, the two topics where there is a significant difference in opinion are sustainability and social media, with those with less than 10 years’ experience demanding more from sustainable practices within the industry and also a stronger opinion on the role of social media. The conclusion from this is that panels of younger employees, such as a junior advisory board, can be utilised within companies to boost image across social media and also drive cutting edge sustainable practices and technology to complement more traditional senior management decisions.

Overall the results of the survey demonstrate that people are proud to work in the industry because of the difference that they feel their job makes. There are a number of areas that need improvement but the current challenges including technology and sustainability present great opportunities for innovation.
CIC 2050 Group

The 2050 Group comprises dynamic industry young professionals, who represent a wide range of disciplines across the built environment. The group was established in 2010 to feed into the Innovation and Growth Team review led by the Construction Industry Council and Paul Morrell, Chief Construction Advisor to the Government at the time.

For further information visit:
http://cic.org.uk/networks-and-committees/2050group.php

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