

Standing Alone, Collaboratively

An insight into sector and societal changes that result from successfully addressing the skills gap in construction

Authored by Kathryn Lennon Johnson

An independent report to the construction sector and the wider policy community

July 2016





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BUILT ENVIRONMENT SKILLS IN SCHOOLS

Built Environment Skills in Schools was originally founded in summer 2015 by behaviour change specialist, Kathryn Lennon Johnson.

Built Environment Skills in Schools is the only digital marketing platform representing the entire construction sector, combined with gamification, 3D modelling, virtual reality, simulations, augmented reality, apps and social networks to reach young people in a 'language' they understand, and give them permission to question their built environment. Built Environment Skills in Schools doesn't duplicate any of the existing construction skills initiatives, many of which are excellent. Rather, it links these initiatives with content created by employers, educators, industry bodies and the young people themselves within a digital pathway to apprenticeships, academic study, work experience, mentors, careers information and skills. This connected, holistic approach provides a logical pathway that young people can navigate easily and clearly.

Operating as a not-for-profit company, Built Environment Skills in Schools was established to tackle the skills shortage in construction and deliver industry change by creating digital and technological collateral, enabling young people to experience the built environment in the context they understand. The business also contributes to academic study as part of doctorate research to evidence behaviour change in addressing the construction skills shortage.

Built Environment Skills in Schools is a UK-wide initiative, providing experiential construction learning to over 24,000 schools. Additionally, by working with higher/further education institutions and Job Centres, Built Environment Skills in Schools provides a direct link for the construction sector to 13 million young people.

The Built Environment Skills in Schools board consists of:

- founder Kathryn Lennon Johnson
- Paul Fenner, partner at Moore Stephens LLP
- Hugh Dyer, associate director at Wardell Armstrong
- Noel Street, partner at Stephen George & Partners LLP, and Chair of the WM CIC
- Bob Albon, director at Sandy Brown Associates

who together bring a diverse range of knowledge and experience (this report should not be taken as a reflection of the views of these other organisations)

To learn more about Built Environment Skills in Schools, please visit:

Web: www.beskillsinschools.co.uk

LinkedIn: Built Environment Skills in Schools

Twitter: @BESSprogramme

Facebook: BESSprogramme

YouTube: Built Environment Skills in Schools

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ABOUT THE AUTHOR



Kathryn Lennon Johnson is an Entrepreneur, Author, Business Speaker and Consultant with over 18 years of experience in behaviour change marketing and communications, having honed her skills in healthcare and social housing. As built environment is so intrinsically linked to health and socio-economic issues, she recognised the opportunity to address the skills shortage while connecting a disjointed sector with the intention of creating an environment that benefits all society.

She is a Founder of Built Environment Skills in Schools, Founder of Hackbuild Tech Disrupters, Co-creator of CommunityBIM, and MD of leading marketing and communications consultancy Tangerine Trees. Kathryn is also the author of *Selling for Entrepreneurs*, published by Pearson Prentice Hall in 2009. Her next book is due for publication in Winter 2016

In founding 'Built Environment Skills in Schools', Kathryn recognised the need to market the construction sector as a whole in order to create an appealing career choice for young people, and created a UK-wide digital platform to connect all the dots of skills and careers engagement in construction using experiential tools like gamification, simulations, virtual and augmented reality, apps and social media. This increases the effectiveness of employer outreach, provides metrics and evidence against progress, relieves pressure on schools, and puts students in control of their own careers journey allowing them to experience much more in the sector. The platform also uses advanced metrics to measure skills and careers behaviour change against targets

Kathryn is a committee member of the National Association of Women in Construction (Midlands), the Forum for the Built Environment Birmingham branch, and the Black Country Constructing Excellence Club. She is currently undertaking doctoral research into Behaviour Change within the context of construction skills and careers. In partnership with Channel 4, she is also producing a television series focusing on disability within construction, due for broadcast in 2017.

SECTOR PROFILE

Construction is a significant sector for the UK economy, with important targets and responsibilities.

Depending on the data source, construction employs between 2.1 – 3 million people (6.2% - 10% of all UK employees), and contributes between £103bn - £110bn in economic output, 6.5% -7% of the total. Approximately a quarter of construction output is public sector and three quarters private sector. Approximately 60% of construction output is new build, whilst 40% is refurbishment and maintenance. According to the Department for Business Innovation and Skills, the industry is made up as follows:

- Contracting, 2,030,000 jobs, 234,000 businesses

- Services, 580,000 jobs, 30,000 businesses

- Products, 310,000 jobs, 18,000 businesses

Construction is a very diverse industry that includes activities ranging from mining, quarrying and forestry to the construction of infrastructure and buildings, the manufacture and supply of products, as well as maintenance, operation and disposal. There are three main sectors, according to the Government Construction Strategy:

- Commercial and social (approximately 45%)

- Residential (approximately 40%)

- Infrastructure (approximately 15%)

85% of construction employment is concentrated in companies with fewer than 250 employees; SMEs account for 74% of turnover in the sector; and 1 in 5 of all UK SMEs are in construction-related fields

Governmental responsibility for construction is confusing, diluted and disparate. Construction comes within the remit of the Department of Business, Innovation and Skills. However, planning and building regulations fall under the Department for Communities and Local Government. The Government Construction Board reports to the Minister for the Cabinet Office and the Cabinet Office is also the home of the Efficiency and Reform Group which includes the Major Projects Authority.

The abolition of the role of Chief Construction Adviser in November 2015, and the taking over of responsibility for the Government Construction Strategy by Cabinet office minister Nick Boles has made the position even more confused. In addition, a Construction Leadership Council (CLC) was established in 2013 to oversee implementation of Construction 2025: industrial strategy for construction. This is an industry / government council jointly chaired by the Secretary of State for Business, Innovation and Skills and an industry representative.

The industry has established more than 16 national boards, councils, institutes and associations to lobby, develop, promote and regulate construction activities (see References for the complete list), not to mention at least ten other organisations who also have involvement in the governance of construction, as well as the regional iterations of those groups. Not exactly the vision of collaboration.

The CITB forecasts an annual average growth of 2.5% for construction over the next five years and the creation of 232,000 jobs. They estimate that more than 36,000 new workers a year will be needed to cover current demand. Construction 2025 sets four core targets for construction: 50% reduction in trade gap; 33% lower costs; 50% lower emissions; 50% faster delivery. The housebuilders within construction have been challenged to build at least a million new homes by 2020 (although the Lords’ economic affairs committee states that the target should be closer to 300,000 per year). Added to all that, many construction workers are retiring, and the rate of retirement looks set to increase as 22% of the workforce are over 50, and 15% are in their 60s.

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EXECUTIVE SUMMARY

“Nonetheless, there is deep concern that the [UK construction] industry as a whole is under-achieving. It has low profitability and invests too little in capital, research and development and training. Too many of the industry's clients are dissatisfied with its overall performance,”

Those words are taken from “Rethinking Construction” (aka the Egan Report), published in 1998. Almost twenty years, and not much has changed. Four years prior to the Egan Report, “Constructing the Team” aka the Latham Report, was published which also set out potential solutions to construction's challenges:

- “implementation [of the Latham Report] begins with clients. Clients are at the core of the process and their needs must be met by the industry.”

I respectfully disagree. At the heart of everything to do with construction and built environment is People. Whether they're delivering the work, paying for it, or living with the outcomes of it. The information and views in this report is based on research collated at our Built Environment Skills in Schools events (in partnership with the Hot500), the Built Environment Skills in Schools platform, roundtables, outreach and engagement activity with schools and students, interviews, desk research and webinars.

A core theme in the responses contained within this report comes from young people struggling with a built environment they played no part in creating.

So much has been tried over the years – does the sector not want to get better? Is it actually better than the picture it presents? Is nothing short of wholesale change going to be enough? Well, there is no more 'do nothing' option. Whilst time has passed, a brutal recession has been and gone, and the UK has voted to leave the EU, the skills shortage in construction continues to be a constant. The change is now coming from outside the sector – from empowered citizens, informed communities, eager innovators, and connected young people who are expecting more than simply a pay cheque from their future careers. Although connection and engagement with the general public are vital, it seems that a lack of understanding of the pressures and mindsets of the audience we seek to reach has played a part in making this harder than it would at first seem to be.

A better built environment, collaboration and increased skills are all part of the same whole – change in one won't happen without the others, but the sum will be greater than the individual parts. The world has real problems being felt by real people, and in part these have been caused by a lack of connectivity and collaboration. Instead, the focus has been on short-term wealth and questionable ethics. The outputs, that is the results delivered to ordinary people living their lives, have been average at best

The world, the environment and humanity are facing some serious problems – disconnected communities, inequality, housing shortages, a dwindling supply of natural resources. Built environment doesn't necessarily cause these problems, but it has a clear role to play in addressing them. 'Collaborating' by remaining in silos, undercutting each other and simply talking the talk is not the same as action! A lot of the problems in construction could disappear if we talked to each other. Are you waiting for someone to collaborate for you? On the surface, it seems like another chore, another time pressure. But fundamentally, its more dissonant than that – collaboration is the polar opposite of the everyday characteristics of construction, i.e. competition and hierarchy

Change isn't just being triggered from inside the sector any more – the push is coming from everyone affected by construction. It has become obvious to everyone outside construction (if not yet those within it) that the needs of the sector and human needs are one and the same thing – of course we need jobs, and houses, and money flowing through the economy. At the same time, and with no less value, we increasingly need to preserve clean air and clean water and abundant food, while reducing landfill and health problems.

The importance of a holistic approach to addressing the skills gap is everyone's responsibility and concern.

The current generation in education, known as Generation Z, are more connected than any generation in history. Access to information isn't a problem, they have more access at the swipe of a thumb than they know what to do with. Unfortunately for construction, this means 'education' and 'awareness' simply aren't enough – its got to be engagement and relevance. Its got to be in their 'language'. Their deafening silence isn't a lack of knowledge, its their answer. A resounding 'no thanks'.

Lots of excellent skills and outreach work is already being done in and on behalf of construction, and Built Environment Skills in Schools doesn't exist to duplicate anything. Rather, we actively support and promote other skills initiatives by providing a digital mouthpiece, making them part of a logical, consistent story that makes sense to anyone, starting with permission to question the built environment.

I hope you find the content within this report to be insightful and valuable. Many sources have been referenced in this report, and I have striven to cite them all in the References section at the end. Please feel free to contact me if you would like to discuss any of the points raised.

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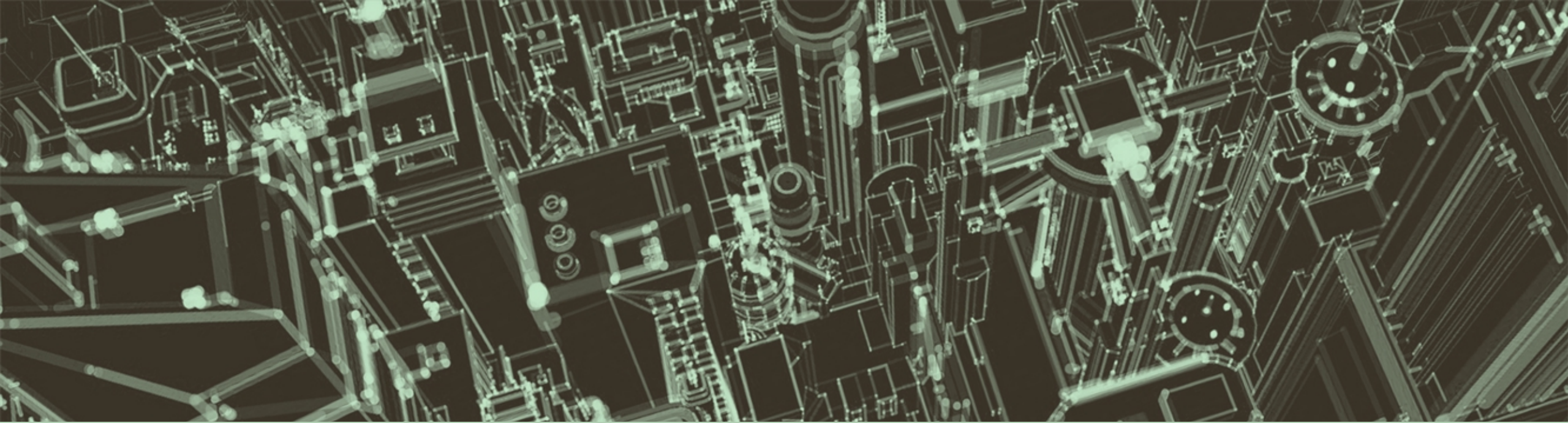
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Summary of Key Issues

Solving the skills shortage in construction



SUMMARY OF KEY ISSUES

Collaboration as a concept seems straightforward enough, and it is certainly the buzzword at every construction networking event, seminar, roundtable and press briefing. Yet it is diametrically opposite to the ingrained construction characteristics of competition and hierarchy. While so many talk about the need for collaboration, a few simple questions reveal that 'collaboration' has taken on a new definition of waiting for someone else to play their hand first.

Although skills, technology and collaboration may seem like separate themes, this research has demonstrated that the act of separating them actually makes them harder to achieve – progress against one area will naturally strengthen strides in another, and make the journey simpler and more enjoyable. Indeed, many points raised by contributors crossed over these arbitrary boundaries

The information and views herein is based on research collated at our Built Environment Skills in Schools events (in partnership with the Hot500), the Built Environment Skills in Schools platform, roundtables, outreach and engagement activity with schools and students, interviews, desk research and webinars. The author wishes to thank the dozens of students, teachers, parents, community groups and careers organisations have contributed to this report. Many identified needs were raised by more than one source, but citation has been given where appropriate

The content of this Key Issues section has been grouped together under the following headers for clarity, but each area naturally impacts on another:

- Education
- Technology and digital
- Construction sector
- The world

At the end of this section are also a handful of current construction skills and careers initiatives that are tackling areas of the skills gap – GoConstruct all year site visits; Construction Youth Trust; DEC Jamie Oliver; Skillsplanner. Organisations who have solutions, innovations, insights and ideas related to the issues raised in this section are encouraged to make a concerted effort to participate in this initiatives

Change is always challenging and achieving what we need as a sector will be tough. But we don't need to make things more difficult than they have to be. This report recognises that finance, time, resource, effort are all finite, but the old approach is not working for anyone: the sector or the audience. This is where collaboration plays such a vital role – no-one can or should take responsibility for solving this single-handedly – but together we can create a sector for the 21st century.

Education

EDUCATION

Schools

The CITB's review of the Young Apprentice Programme indicated that only 10% of construction employers had engaged with schools for career-related activities. Schools have stated their need for consistency of outreach.

Many schools are fighting their own battles, as public funding struggles, budgets, academies, population peak etc. The Institute for Fiscal Studies 2016 study forecasts a fall in spending of 7% per pupil in England by 2020 and highlights wide variations in local authority funding. The Local Government Association has calculated that 336,000 more places will be needed by 2024, on top of the 300,00 extra ones since 2010.

Whilst classroom-based learning is important, the need to help young people experience the construction sector remains vital. Only 28% of 14-19 year olds surveyed by the City & Guilds 'Great Expectations' report thought that work experience was important, whilst 78% of employers surveyed think it is essential. Yet 61% of businesses had not offered any unpaid work experience in the past 12 months. Schools have stated that they struggle to secure work experience places, and this makes them less inclined to respond to one-off requests from employers wishing to host assemblies.

35% of careers guides believe construction is an unattractive career choice. And maybe they're not completely wrong, simply going on the preconceptions they have of the sector, their experiences with their own built environment, and the struggle to develop relationships with employers. 75% of construction employers found young people lacked understanding of the construction sector, and 82% of teachers didn't feel that they had the appropriate knowledge to advise pupils on their careers (source: IFF 2015)

Higher/Further Education and Apprenticeships

The National Student Survey asks third year university students to mark the content and relevance of their courses. These survey results then contribute to the university league tables, a ranking that can be worth £millions to universities. Where students cannot see the relevance of parts of their course to their future employment they mark it down, and potentially risk affecting the standing of their university. Universities hear the criticism that is levelled at them for producing students who aren't 'work-ready', but they can't risk losing league table rankings, so low marked course content is removed unless YOU help make them relevant.

Only 7280 construction apprenticeships were completed in the UK in 2014, although the country reported one million 16-24 year-old NEETS (Not in Education, Employment or Training). Six per cent of first degree entrants aged under 21 who enrolled in 2013-14 did not continue their studies beyond their first year, according to data from the Higher Education Statistics Agency. This is an increase on the previous year's non-continuation rate of 5.7 per cent, and follows a series of falls from a recent high of 7.2 per cent for the 2009-10 intake.

The UK has the lowest proportion of female engineers in Europe and only 14% of entrants to engineering and technology first degree courses are women. From 2013 to 2014, favourability of the industry fell for both parents and young people (34.6% in 2014, down from 38.2% in 2013) (source: CITB)

Students

Although parents are naturally a huge source of influence on young people, they may not be any more aware of the positives of the sector - their entire experience of construction might be a superficial conversation as part of a consultation, if they're lucky. 27% of parents say they regularly speak to their child about careers. 39% of parents encourage their child to attend university over any other higher education route.

82% of Generation Z say their parents will help influence their career decisions. 47% of children have their parents as main source of careers advice (mothers more than fathers) – but at only 11% women employed within the construction sector, very few mothers can be relaying positive 1st or 2nd hand experiences.

Some 56 per cent of young people are concerned about their job prospects, feeling it is difficult to get the experience they need to get a job they want, according to a report by the Chartered Management Institute (CMI) and EY Foundation. These factors affect those from lower-socio economic groups, who are considerably more likely than their peers to lack confidence in getting a job locally (33 per cent compared to 25 per cent).

Almost two thirds (63 per cent) of young people have the ambition to lead a team, with a lack of awareness of local opportunities meaning that many look further afield for challenging roles, finds the study of 1,510 16 to 21-year-olds in the UK. Two in five (40 per cent) of 16-21-year olds aspire to become the boss of a company, 63 per cent would like to lead a team, and 37 per cent would like to start their own business.

The City & Guilds 'Great Expectations' report highlights that, between 2015 and 2022, the total number of available jobs will be 9.6m (increasing by 1.4m), but young people are not aware of the right jobs: 26% of respondents said they would consider working in professional, scientific and technical activities, but the proportion of people forecast to be working in this sector is just 9%

Generation Z have known uncertainty all their lives: parents losing their jobs, family homes sold from under their feet, war and social unrest across the globe. They know that nothing can be taken for granted, are keenly aware of the West's changing fortunes and eager to make their own way in the world

In the CIPD's 2015 paper "Developing the Next Generation", technology was perceived to be so significant within the lives of Generation Y and Z that researchers labelled new generations on the basis of their familiarity with digital devices. 'Digital natives' described a generation of tech-savvy individuals with a positive attitude to technology, accustomed to the speed of the Internet and to multi-tasking. The 'net generation' are goal and achievement oriented, with a preference for active learning and social activities. One study quote in their research defines Generation Y as intelligent, ambitious, questioning individuals accustomed to networking, multi-tasking, always connected and often more academically qualified than their managers, who are expected to be mentors and coaches (Honore and Paine Schofield 2012).

Research undertaken by the School of the Built Environment at Leeds Metropolitan University, entitled 'Careers In Construction: Children Have Their Say!' , demonstrated that while boys respond to the technical aspects of construction, girls respond more favourably to the managerial aspects of construction. However, Generation Z certainly don't consider gender in the same way as older generations.

J. Walter Thompson Intelligence 2015 research into Generation Z found that 82% of respondents said they didn't care about sexual orientation while 67% had a friend of a different sexual orientation. Gender roles seem less defined with Gen Z: 81% agreed that gender doesn't define a person as much as it used to. Race is also thought of differently, with 77% agreeing with the survey statement: "I view race differently than my parents' generation." They are realistic, however, as just 56% thought men and women were treated equally in the workplace, with 87% saying that racial discrimination still exists. Fifty-six percent of 13-to-20-year-olds said that they knew someone who went by gender neutral pronouns such as "they," "them," or "ze," compared to 43 percent of people aged 28 to 34 years old. Over a third of Gen Z respondents also strongly agreed that gender did not define a person as much as it used to. This figure dropped to 23 percent among millennials who were 28 and up.

28% of Generation Z respondents say balancing work and personal obligations is their top future career concern.

Technology and Digital

TECHNOLOGY AND DIGITAL

If the words strike fear into your heart, be reassured that this IS NOT about the technology itself. Rather, it's about the mindset – not being held to a traditional, fixed approach. Technology is inherently collaborative, providing instant connection, and requiring contributors and consumers of information.

To Communicate

Generation Z were born digital – they have never known another world, and everything in their life has reflected this. Despite their love of technology, 74% prefer to communicate face-to-face with colleagues, according to research carried out by recruitment giant, Robert Half. This is technology to augment life and simplify processes, not to create a virtual world

A significant factor for communication is the uptake in video, the language for communicating complexity natively. YouTube is the second largest search engine in the world, and the democratisation of the platform means that young people create the content, as well as consuming it.

Trifecta Research provides some helpful Generation Z pointers for employers. Firstly, they want to be communicated with visually and with short, bite-sized content. This is a generation that knows how to search and find exactly what they want, so when expectations aren't met, don't expect them to hang around and give you a second chance. Their limited attention span means employers can never stop working for their hearts and minds and, since they don't like being sold to, you'll need to find ways to deliver relevant, engaging and immediately beneficial experiences. Grab their attention – very quickly; Make your front line content “snackable”; Visualization always helps; Remember your audience has an audience (making things shareable); It is also worth thinking about why people would want to share; Embed diversity; Speed up communications (physically and culturally)

On average, Generation Z uses their smartphones 15.4 hours per week—more than any other type of device. Generation Z consume 13.2 hours of TV content per week—significantly less than boomers and Gen X. However, trying to reach them through traditional advertising has got harder as there has been a 41 percent increase in the use of ad-blocking software in the past 12 months.

Construction has a digital skills gap (the attitude, not necessarily the tech) and we're not speaking their language. Commons Science and Technology Committee report suggests 12.6 million adults lack basic digital skills, while 5.8 million have never used the internet at all. The UK needs another 745,000 workers with digital skills by 2017. 90% of jobs require digital skills to some degree. Skills gap costs economy around £63bn a year in lost income

Average 5 screens per day; 92% online daily; 24% online almost constantly; mobile overtaken laptop. According to a 2015 report by Wildness Consulting, if left with only one device, zero out of 10 Generation Zs would choose to keep their televisions; 31% watch their favourite brands on YouTube; 30 % follow their favourite brands and view their posts on social media; nine out of 10 watch YouTube daily.

Digital and technology is becoming DIY – Minecraft; Raspberry Pi. The Raspberry Pi is a credit card-sized computer that plugs into your TV and a keyboard. It is a capable little computer which can be used in electronics projects, and for many of the things that your desktop PC does, like spreadsheets, word processing, browsing the internet, and playing games. It also plays high-definition video. In February 2016, the Raspberry Pi Foundation announced that they had sold eight million devices, making it the best-selling UK personal computer, ahead of the Amstrad PCW

Big Data and connectivity means there is nowhere to hide – information and data (accurate or not) is out there at the press of a button

To Educate

More and more often, information is free. According to online course operator Class Central, the number of people who signed up for at least one Massive Open Online Courses (MOOCs) surpassed

35 million in 2015, more than double the number just one year earlier, and the number of courses surged to approximately 4,200, nearly twice the number in 2014.

Many teachers now use Pinterest as a place to collect their lesson plans, projects, and inspirational materials, and Wikispaces is gaining popularity as the platform for teachers to share lessons, media, and other materials online with students, or let them collaborate to build their own educational wiki.

The "flipped" classroom - the idea of inverting traditional teaching methods by delivering instructions online outside of the classroom and using the time in school as the place to do homework - has gained in popularity in US schools, and is beginning to gain ground in the UK. The teacher's role becomes one of a guide, while students watch lectures at home at their own pace, communicating with classmates and teachers online.

While a tuning fork is a perfectly acceptable way to demonstrate how vibrations make sound, it's harder to show students what evolution is, how molecules behave in different situations, or exactly why mixing two particular chemicals is dangerous. One technological educational tool is the Molecular Workbench, which provides science teachers with simulations on topics like gas laws, fluid mechanics and chemical bonding.

Some platforms allow students to set up language lessons with a native speaker who lives in another country and attend the lessons via videoconferencing. Learning from a native speaker, learning through social interaction, and being exposed to another culture's perspective are all provide incredible educational advantages.

Channels and audience are thirsty for content – a static website and a blog post once a month won't cut it. Generation Z aren't looking for high production values, but they want your ideas, insights and conversations. And if you work collaboratively, they'll even produce your content for you.

To Explore

Digital exploration is no longer the echo chamber effect of a nice website and some good press coverage – people want to know you, talk to you, understand your vision, experience you insights.

The RICS Futures project states that it is clear the built and natural environment professions need to work much more closely with the technology sector to partner, collaborate and build new skills that bring together people, place and technology within the context of professional advisory services.

Using a smartphone and £10 worth of Google Cardboard 3D virtual reality goggles, anyone can virtually walk the streets of any city in the world using Google Earth. But again, this is not simply about consuming information. Students can create their own virtual reality video for others to explore. They can create videos to commentate on their experiences, and encourage others to do the same

To Empower

For citizens, the internet and mobile technology allows for better connectivity and transparency. From being able to exchange reviews and recommendations through social networks, or spread dissension among peers against an "unacceptable" business practice or product, the next generation of consumers hold more power than they used to.

This 'empowered consumer' is able to quickly tap into global commerce. No longer reliant on local markets, they are able to quickly compare services and products, draw up peer reviews, and find recommendations that are not limited to immediate friends and family.

The physical and digital are no longer completely separate. If a review found online is negative, a customer can choose not to sign up for a service, or avoid a physical and digital outlet altogether.

Review sites like TripAdvisor, Yelp or CheckATrade allow a consumer to decide where to spend their time and money, while the algorithms of a site like FakeSpot or Trustpilot provide reassurance about the authenticity of online reviews.

Construction Sector

SECTOR

Construction should be a source for good. Possibly the most powerful source. Sometimes, we forget what business we're in – buildings, places and spaces **for people**

Costs

Around 400,000 jobs were lost in the sector over the course between 2009 and 2014, during the recession and subsequent recovery. Scape Group's "Sustainability in the Supply Chain" report found 58% of contractors and suppliers cited shortages as negatively impacting the quality of their workmanship. The problem is worse in the public sector with 85% of managers seeing the quality of their built environment projects negatively affected by skills shortages. Lack of labour is also busting budgets with 80% of public sector respondents and just under 40% of contractors and consultants blaming skills shortages for cost rises.

According to the Office of National Statistics, 10% of the construction workforce are foreign born, and a post-Brexit UK might have to consider its options if movement of labour is restricted. Foreign investment, a modern version of the much-misaligned PFI, contributes to the disconnection of communities and a lack of cohesion in town planning

A McDonald's drive-through restaurant can be completed on-site in 24 hours due to off-site prefabrication techniques, but we're still light years away from rooftop gardens, rainwater harvesting and renewable energy becoming standard in multi-occupancy housing. And we all incur the cost of obesity, diabetes and other weight-related health conditions in our personal and commercial lives.

Collaboration

A CITB survey of 1500 employers from across the country revealed that 73% believe perceptions of a sexist culture are a major reason women are under-represented in the industry. Although the number of women is slowly increasing, construction remains one of the most male-dominated industries in the UK, with men making up 85.5% of the total workforce, including 98% of all manual workers.

A history of competition and hierarchy has created traits that are diametrically opposed to those of collaboration, and naturally the process of change is a difficult one.

Responsibility

Who can honestly say they haven't experienced or witnessed bullying, lack of professionalism, sexism, questionable ethics? These aren't 'perceptions', they're real problems. Research by Opportunity Now and PwC suggested the construction industry was among several industries who fared poorly regarding workplace bullying, with between 56-59% of respondents reporting harassment. According to the Incolink, one-third of all apprentices within the construction sector experience bullying. The type of bullying that is quite common with apprentices include: "intimidation, verbal abuse, harassment, name calling" and even "damage to a person's personal property."

Health and Safety Executive statistics state that "between 2011/12 and 2014/15 around 69,000 construction workers annually in the UK were suffering from an illness they believe was caused or made worse by their work. Around 40% of these cases were new conditions which started during the year, while the remainder were long-standing conditions. Of these 69,000 cases: 45,000 were cases of musculoskeletal disorders (MSD), of which just under a third were new conditions; 14,000 were cases of stress, depression or anxiety cases, of which around 60% were new conditions; 10,000 were cases of other illness (such as skin or respiratory conditions), of which around 40% were new conditions"

The World

THE WORLD

The world has changed – connectivity is instant; cohesion is fragmented. The environment is suffering as a consequence of human activity, and humans are suffering from the consequences of environments they may have played no part in creating

Environment

Constructing Excellence's '*Construction and Sustainable Development*' report states that energy from fossil fuels consumed in the construction and operation of buildings accounts for approximately half of the UK's emissions of carbon dioxide. Housing alone generates 27% of UK emissions, of which 73% is used for space and water heating. Around 10% of UK emissions are associated with the manufacture and transport of construction materials, and the construction process.

The UK government has committed to cut green house gas emissions by 80% by 2050 compared to 1990 levels, and to halve them by 2025. In 2009 buildings accounted for about 43% of all the UK's carbon emissions (ref DCLG). If the government commitment is to be met, our buildings must become considerably more efficient. This is made more complicated by the fact that around 80% of the UK building stock that will exist in 2025 has already been built, along with two thirds of the housing that will be occupied in 2050.

Not only does our building stock need to become more efficient, if the climate changes as projected, it will also need to become more resilient.

However, government policy, such as scrapping the Green Deal, dropping plans for zero-carbon homes, and reducing subsidies for renewables would seem to be contrary to these goals.

The UN report "Resilient People, Resilient Planet: A Future Worth Choosing", suggests that, as the global population grows from 7 billion to almost 9 billion by 2040, and the number of middle-class consumers increases by 3 billion over the next 20 years, the demand for resources will rise exponentially. By 2030, the world will need at least 50 per cent more food, 45 per cent more energy and 30 per cent more water — all at a time when environmental boundaries are throwing up new limits to supply.

Urbanisation

In 1900, only 13% of the population lived in urban areas. Over half of the planet's population now lives in cities. These densely occupied areas should be more sustainable than more dispersed rural settlements, but in fact they account for more than 75% of the consumption of non-renewable resources, and create around three quarters of global pollution.

By the second half of the century, more than 70% of us will live in cities, and at the same time global population will increase from 7 billion to around 9.5 billion. If we are to accommodate this growth whilst at the same time reducing overall consumption, our design and construction needs to become much smarter.

The Government Construction Strategy has set in motion two major initiatives:

- An intention to achieve savings of 15 to 20% by the end of the parliament.

- A requirement for fully-collaborative 3D BIM on all centrally-procured construction contracts by 2016.

(Some of these targets have been developed and extended by Construction 2025)

There is significant evidence to suggest that buildings do not perform as well in practice as was anticipated at the design stage. The difference between anticipated and actual performance is known as the performance gap.

Findings from the PROBE studies (Post Occupancy Review of Buildings and their Engineering) demonstrated that actual energy consumption in buildings will usually be twice as much as predicted. More recent findings from the Carbon Trust's Low Carbon Buildings Accelerator and the Low Carbon Buildings Programme have demonstrated that in-use energy consumption can be 5 times higher than compliance calculations.

Health & Wellbeing

As part of the Public Health health impact assessment, the Glasgow Centre for Population Health published "The Built Environment And Health: An Evidence Review". On average, people spend around 90% of their time indoors, with a high proportion of this within the home:

- Several housing factors are associated with mental and physical health impacts such as air quality, dampness, infestation, noise, lighting, housing tenure and design
- For children, dampness and poor air quality have been associated with heightened asthmatic symptoms
- Accidents are another key health risk for children and remain a major cause of death. Household design or overcrowding may be a contributory factor in some cases, illustrating that although accidents cannot be eradicated completely, their incidence can be reduced.
- For good health, people require well-designed homes that are insulated, dry, warm and spacious enough to meet home owner/tenant needs
- Similar factors to those relevant within the home can be attributed to other buildings where people have regular and prolonged contact (e.g. schools, hospitals and workplaces), although conditions within these places may be required to meet minimum standards.

The review also stated that "People who perceive their neighbourhoods to be hostile, dirty, poorly maintained and lacking in safe places to play are more likely to experience lower levels of mental wellbeing, and the negative impacts may be felt to a greater extent by women, older people and those who are unemployed:

- At an individual level, the built environment has been found to affect beliefs, behaviours and cultural influences; each impacting upon health
- Neighbourhoods with high levels of antisocial behaviour can increase social isolation and community fears
- Feeling unsafe within a neighbourhood is associated with a series of negative health outcomes and can prevent people (particularly women in low-income neighbourhoods) from using the built and natural environment to undertake exercise. A range of measures that enhance people's perceptions of safety, therefore, may encourage greater levels of walking and cycling as well as improving mental wellbeing

Physical characteristics of neighbourhoods identified as having a positive impact on health, wellbeing, physical activity and walkability are: choice and diversity; well-kept environments; affordable and efficient public transport; safe and sociable play areas; the presence of green space; well-lit and pedestrian-friendly footpaths; and street patterns that provide opportunities for informal contact among residents"

Empowerment

In Ipsos Mori's report, 'Activating Empowerment', MP Hazel Blears is quoted as saying "Local people often know what the solutions to problems in their area are – but too often we don't include them in the process. If we want the highest quality services that really meet people's needs then we need to find better ways of hearing what they have to say and put communities in control of the services that affect their lives"

As citizens become more aware and responsible in their health and lifestyle choices, they are inevitably becoming more demanding of their built environment. Healthcare has become more intrinsically linked to the design and development of neighbourhoods and communities through Public Health England's Health Impact Assessment, and NHS Health Scotland's Place Standard tools in partnership with Architecture and Design Scotland.

The UK Coalition Government, through the Department for Communities and Local Government, stated an aim to give people more control over the development of their local area, which includes:

- giving communities the power to set the priorities for local development through neighbourhood planning
- requiring local planning authorities to draw up clear, up-to-date Local Plans that conforms with the National Planning Policy Framework, meets local development needs and reflects local people's views of how they wish their area to develop
- giving councils the power to raise money to support local infrastructure through the community infrastructure levy
- also giving communities the right to receive and spend a proportion of community infrastructure levy funds on the local facilities they want

Campaigns and Initiatives

CAMPAIGNS AND INITIATIVES

If your organisation has got positive insights, ideas, experience and innovations that tackle some of the issues highlighted within this report, these are a handful of the initiatives you should strive to support.

GoConstruct Skills Matching Service

Are interested in supporting young people who are looking for their first construction experience?

The Skills Matching Service provides you with the tools to promote your construction opportunity to people interested in getting their first taste of the construction industry.

Help promote the construction industry to newcomers by registering company or educational establishment to advertise your opportunity.

If you're an employer:

- you can select from different types of construction experience that you want to promote, such as visits to your construction sites

- you can also act as a 'construction ambassador' to support other experience opportunities, such as helping with mock interviews at a school

<https://www.goconstruct.org/>

Class of Your Own's "Design Engineer Construct" Restaurant Challenge

Design a Restaurant Challenge with Jamie's Italian

Our 2016 design challenge is here and we're VERY excited!

Together with our friends at Jamie's Italian, we are inviting budding design, engineering and construction professionals to create a restaurant for Jamie's Italian.

This is a unique opportunity, open to all UK secondary schools. Working as a team, your students will use their creativity and ingenuity to identify an interesting local building in your area. It may be old, it may be new but it will certainly be one that they are inspired to re-imagine into a beautiful and functional working restaurant.

We'll be with you and your students every step of the way... with support from architecture, engineering and construction professionals.

<http://designengineerconstruct.com/>

Construction Youth Trust #ExperienceConstruction

We believe that gaining experience of the construction industry first hand can help young people make important decisions about their future. The #ExperienceConstruction campaign aims to encourage young people, parents and teachers, and the industry to consider work experience placements in construction to support the next generation to better understand the opportunities and careers available to them.

Today's workforce has the opportunity to pass on their valuable knowledge and experience. In a post-Brexit Britain it's vital that the industry plans for the future and secures the talent and skills needed - join our campaign to help young people #ExperienceConstruction.

<http://www.constructionyouth.org.uk/>

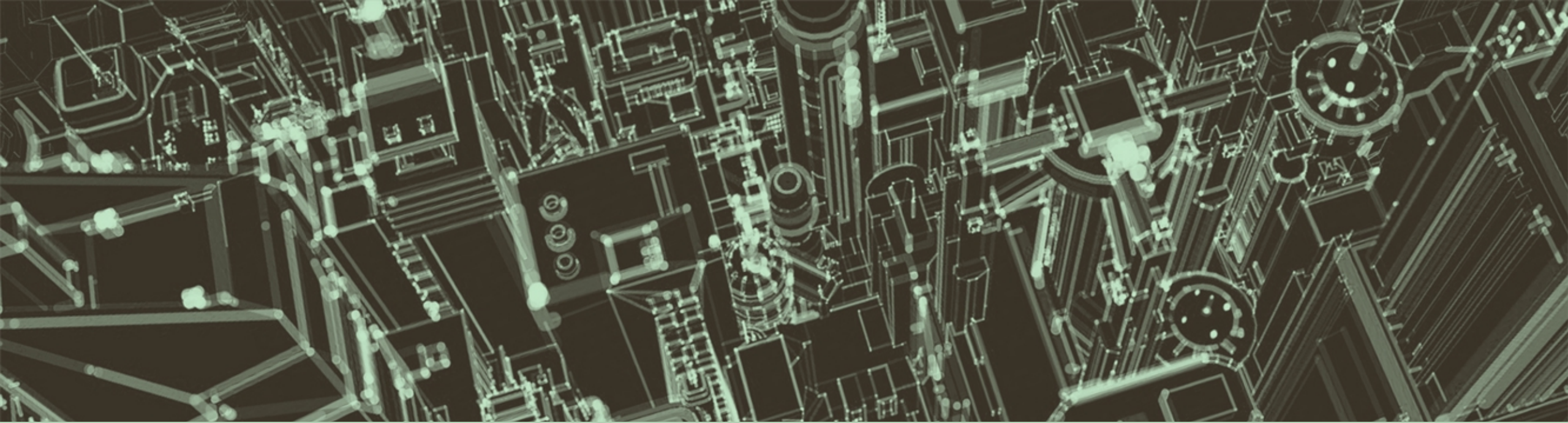
Skillsplanner

A £1.3m EthosVO initiative, funded by Innovate UK and partners, SkillsPlanner will be a live, user-friendly, open data platform that will allow employers, skills providers and other stakeholders to share past, present and future skills data. SkillsPlanner will integrate and interpret this information to allow stakeholders to plan for and meet current and future employment requirements.

London and the South-East need an estimated 180,000 new skilled entrants to deliver construction projects by 2019.

Stage 1, a two-year research and development project, is focused on the London construction industry, and was officially launched in February 2016. The partners leading the R&D project are the Association of Colleges, Camden Council, EthosVO, GoodPeople, London Borough of Islington, Seme4, Tideway, the University of Plymouth and Westminster City Council.

<http://www.skillsplanner.net/>



Issues Identified

By Students, Communities and Educational Institutions



ISSUES IDENTIFIED BY STUDENTS, COMMUNITIES AND EDUCATIONAL INSTITUTIONS

The information and views herein is based on research collated at our Built Environment Skills in Schools events (in partnership with the Hot500), the Built Environment Skills in Schools platform, roundtables, outreach and engagement activity with schools and students, interviews, desk research and webinars. The author wishes to thank the dozens of students, teachers, parents, community groups and careers organisations have contributed to this report. Many identified needs were raised by more than one source

Personal and holistic individual needs

- Peer support in the form of sharing similar challenges, concerns and issues with other people in the same position creates a sense of reassurance that what you are experiencing is normal, and often results in an increase in both personal and career confidence. Many students identified that young people entering the world of construction could share more about their career experiences. Videos and blogs were considered to be the most appropriate channels
- The cross-fertilisation of ideas and experiences can help to identify effective solutions that may not have been uncovered by communities and neighbourhoods seeking to address their own built environment concerns. Organisations like the Impact Hub were considered to be powerful facilitators of these conversations, as they are independent and well-connected, and many respondents believed construction companies should do more to be involved
- It was discussed in several forums that, while larger, national employers naturally promote the £multi-million significant projects they have worked on, accessibility to local opportunities and regional projects would give young people and their families greater possibility to discuss the built environment and meet with sector employees. Promotion of these projects was also considered to be of benefit to education, who could develop lesson plans around them
- Although Generation Z are well-known for their love of digital technology and communication, it was parents and teachers who expressed the strongest interest in accessing general, lay-person information about construction online. Even expanding on the simple information about the construction sector that is available on Wikipedia would be beneficial, many felt.
- Studies have shown that 60% of Generation Z want their job to impact the world, and our research produced very similar findings. In reference to construction, young people were particularly interested in ways that their job could positively impact homelessness and the need for flexible community spaces for young people
- Many young people were aware of pre-conceptions of a lack of diversity in construction, mainly gained through word-of-mouth amongst peers, but it was parents who stated their concerns directly regarding construction's track record in disability, gender, BME, and LGBT representation. Their beliefs came from personal experience and building sites they had observed, and the view that "If construction was doing more, I'd see it on the news"
- Unsurprisingly, young people expressed a strong preference towards information, communication and engagement that was available instantly and constantly. They did not expect to visit the websites of every construction organisation; rather they felt that chunks of information would be available to them through the channels and forums they already use

Evidence for progress in current initiatives is needed

- Teachers and educators expressed concern about the lack of perceived evidence for progress in existing outreach. One stated that, "Every time I get an email from a skills organisation or an employer, there's a different focus. Nothing seems very joined up, and it's hard for me to know what to pick that will be best for the kids"

- According to IFF research, the most popular way to recruit young people to construction is by word of mouth (45%), but these word-of-mouth conversations (both face-to-face and digital) were felt to be unstructured. Young people and teachers felt that conversations with employers focused on one or two perceived benefits of construction careers and qualifications, without much supporting evidence, and that employers didn't appear to talk to or learn from each other
- Although educators were aware of the need for careers advice to 'educate' and 'raise awareness', community groups felt that construction would have more success with recruitment if it created 'soundbites' of information

More mentoring needed

- Mentoring as a support tool, is an essential element of support for young people, and is often cited as the one intervention that can truly transform a career path.
- Of all the young people we spoke to, only 8 had considered a career in construction prior to their conversations with us. Young people appeared to be self-selecting away from construction for reasons related to self-identity, perceived lack of relevance, sexism, or peer pressure, meaning that subsequent careers messaging passed them by. They felt that a local mentor could make their built environment relevant to them, and give them permission to ask questions they feared would be considered 'stupid' by others
- Many young people, but a surprising number of work-age respondents, look to social media role models for guidance. Whether this is focused on How To's, motivation, career development or entertainment, these role models were considered to be excellent sources of mentoring. Most common among young people were peer-appointed spokespeople on YouTube, while older respondents looked to TED Talks or industry experts
- Teachers, parents and community groups all agreed that having a construction contact, “simply as source of information”, would be hugely valuable to them in their lives as citizens and as influencers to young people. They believed that this mentor role could be as simple as being available to answer questions
- Young people felt that they were much better informed about US companies than local businesses near to them. While some of these were inevitably tech giants like Apple, Google and Facebook, a number were food, hospitality, clothing and wildlife businesses with strong social media presences
- Work experience remained a challenge for educators and parents, and it was felt that cross discipline work experience/ apprenticeship opportunities where young people could spend time learning from several different sources would give everyone more confidence in construction careers

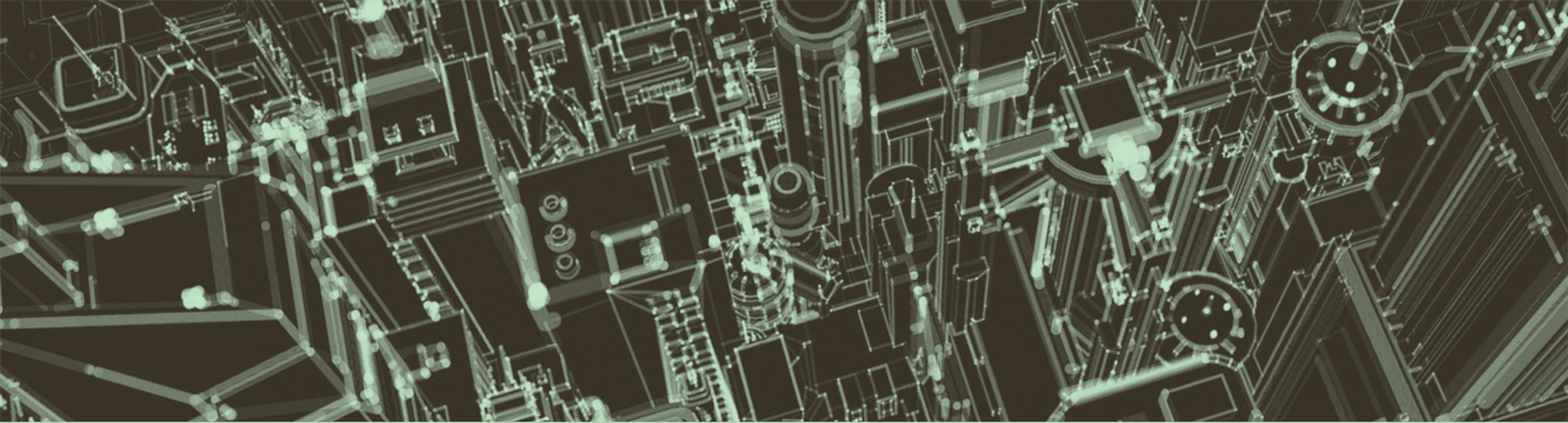
Need for businesses to increase their use of mobile technologies to engage and communicate

- The increased use of mobile technology is changing the way business is been promoted and communicated, and will change the way that young people access information and promote themselves.
- Young people who had accessed online content relating to construction (either from employers, trade bodies or skills initiatives) felt it had not been written/developed with them in mind. Though most spent upwards of an hour watching YouTube videos on many topics and from many contributors every day, very few agreed that they would spend the same amount of time reading a website

- When we asked young people to identify what platform or channel they felt was missing in their careers information, many agreed that there was no requirement for new websites or channels. They believed that their information should come to them through channels they are already familiar with. Though fewer Generation Z's use Facebook regularly (compared to the older Millennial generation), young people were happy to view content here if a peer recommended it
- Educators and young people felt that they could recreate existing content to make it more relevant and engaging. It is common for information to be 'repackaged' in this way, written by young people for young people
- As digital natives, it was unsurprising that young people expressed discomfort with how infrequently construction careers and qualification information is updated. Newness carried significant currency in our findings, and constantly updated, relevant content from many sources was considered to be more valuable than static information

Need for sector to be part of community conversations

- Teachers and parents stated that the consistency of outreach from construction employers was poor; 'a postcode lottery'. As few parents had children in more than two schools, they were less certain of the reasons for this, but educators felt it was due to a focus on schools with high numbers of children eligible for free school meals.
- All respondents believed there was opportunity for construction to engage them in more productive ways. In addition to support and information for parents and teachers, and mentoring for young people, community groups felt there were many occasions when representatives from construction would be invaluable, including informal planning discussions, neighbourhood redevelopment, ward meetings, town centre partnership forums, and empty building regeneration
- Though young people expected access to information and content at all times, educators, parents and community groups were more understanding of office hours. However, many felt that communication wouldn't have to be mutually exclusive, and face-to-face engagement could easily be replicated digitally
- All respondents were aware of built environment problems and concerns in their own neighbourhood, mostly related to education facilities, empty buildings or safety and security issues. Although it was acknowledged that these problems were not necessarily the responsibility of any particular construction employer, it was agreed that support, advice, guidance and insight from the construction sector would help to address the problems and improve understanding of the industry
- Young people were keen to encourage construction to be part of their conversations, not just at school. It was felt that whilst careers education within school is important, the employers that stood out were the ones that became part of young peoples' understanding of their world



Key Recommendations

Action Points for Change



KEY RECOMMENDATIONS

As stated throughout this report, collaboration remains the overarching key to achieving fundamental change in construction. Solving the skills shortage in the short- and long-term appears to rely on construction organisations working more closely together, not simply in a contractual sense, but as unified source of information, inspiration and innovation.

The requirements of the construction sector, the human and environmental needs of the planet, and the sustainable, ethical companies that young people want to work for are a holistic whole, and we offer the following recommendations for progress:

1) Create a Real Framework for Collaboration

- One of the most powerful opportunities identified was the creation of industry wide cross-discipline work experience, where young people and apprentices could spend time with a number of different organisations. In the same vein as early career progress within law, accounting and healthcare, teaching young people more broadly about the built environment, and then giving them an opportunity to experience individual sectors and disciplines creates a better understanding of skills and a more collaborative attitude
- In line with the excellent work delivered by Class of Your Own's Design Engineer Construct qualifications, create a cross-discipline, cross-employer, cross-subject digital toolkit for parents and community groups to support and advise them, and for them to feel more confident in influencing young people. This could take the form of Wiki pages that the whole industry contribute to, sharing resources and insight
- All Boards/Bodies/Councils/Depts representing construction should take an active role in supporting their members to understand other disciplines and specialisms across the whole sector, and encouraging them to think more holistically. Whilst a level of understanding is a natural result of working within the supply chain, greater knowledge and awareness may serve to reduce some of the characteristics that naturally inhibit collaboration
- A cross-discipline forum to connect all disconnected specialisms, acting as sector-wide marketing and communications vehicle to tailor messaging to the mindset, language and aspirations of the target audience, and to carry out independent client satisfaction

2) Produce, circulate and be guided by Evidence and Metrics for Progress and Change

- Robust measurement is vital to ensure that progress is being made within skills and outreach initiatives, and the sector should look to collectively identify and measure against metrics. Where progress is not being made as expected, these metrics serve as a guide to adapt and update initiatives, rather than persisting with ineffective outreach
- Much technology already exists to support and inform the education sector, i.e. Vivo Class, COGs, MOOCs, and rather than duplicate these, the sector would be well served to simply support them. These technologies have metrics and analytics built into their design, so evidence against progress becomes quicker and more accessible
- There are undoubtedly real barriers to change within construction, often from external sources such as government or finance. Whilst these barriers are inevitably frustrating, the sector mustn't descend into naval gazing, but identify and document ways to influence and affect change. Some of these changes may result in the passing of time, but by collaborating and working as a united force, construction also has the potential to become a powerful force for change. Sharing these messages of influence and change digitally allow others to lend their support and resources

3) Make much more of Ethics and Values

- Many organisations set high standards for themselves and their business, and they naturally share and promote those standards in the text of their website, or in the bid submissions they write.

However, the wider community have no knowledge or understanding of these standards, and we believe that evidencing how you live these values will encourage young people to align with your vision. Digital channels provide an instant and simple mouthpiece for sharing these messages

- Construction has a poor reputation when it comes to bullying and sexism. Whilst these are obviously sensitive subjects, we believe it is vital for everyone in construction to consciously call out poor behaviour when you witness it. Setting this high standard encourages others to strive for better, and gives permission to challenge unacceptable attitudes

4) Make better use of the live canvas

- The Go Construct Skills Matching Service encourages organisations to open up their sites to visitors as often as safety and security permit, but we also believe that the existing built environment canvas provides powerful opportunities to discuss trends, fashions and technologies in construction. We would encourage organisations to use their own premises or offices as a starting point, and hosting educational talks for parents, teachers and community groups. Additionally, this could be delivered in the form of walking tours within local areas, highlighting points of interest, new and upcoming developments, and allowing organisations to collaborate on the tour content.
- Wherever possible, organisations of all disciplines should collaborate to provide outreach on derelict/empty buildings. Community groups felt that they were often in the dark about the provenance, ownerships, restrictions and opportunities for taking back control of empty buildings. Naturally, this would need to support the work of the local authority, but many are so stretched, they would be grateful for the support. By providing these platforms digitally, collaboration becomes less resource-intensive

5) Don't be afraid of critique, comment, criticism of built environment

- Whilst this report recognises that current construction employers are not responsible for the built environment mistakes of their predecessors, there is no denying that there are real problems in communities and neighbourhoods, caused by poor design, planning and construction. Though it is uncomfortable to hear these criticisms, our research suggests that employers who listen to citizens are regarded much more favourably than their competitors. This need not simply be a listening exercise either, as being part of momentum to tackle these problems using your own skills and initiatives places construction squarely into the conversations of parents, teachers and communities
- For those organisations wishing to go a step further, the 'Critical Friends' model utilised by healthcare encourages employers to develop community boards of individuals with a committed interest in the success of the employer, but a focus on the community. This model is often adopted on specific client projects, but we would encourage employers to take this approach within their own organisations
- We believe that consultation and resident engagement are underutilised opportunities for valuable and simple awareness raising and outreach. Rather than considering them as an inevitable frustration, we would encourage employers to exploit the digital opportunities that this level of engagement provides

“In the Task Force's experience, the construction industry tends not to think about the customer (either the client or the consumer) but more about the next employer in the contractual chain. Companies do little systematic research on what the end-user actually wants, nor do they seek to raise customers' aspirations and educate them to become more discerning. The industry has no objective process for auditing client satisfaction comparable with the 'JD Power survey' of cars or the 'Which' report. We think clients, both public sector and private sector; should be much more demanding of construction” - Rethinking Construction, Egan et al, 1998

6) Be proud of what you do

- Much good work is being done in construction, and much more is undoubtedly to come. We believe that all construction organisations should commit to active participation in relevant industry skills initiatives, as a minimum level of corporate social responsibility and outreach. Whilst time, resources and finance will always be finite, most of these industry initiatives require only a nominal commitment. No one else can or should sing your song for you!

A Current Example

The RICS Futures programme has highlighted six actions that they believe should guide the plans and strategic direction of organisations and professional bodies across the land and built environment sector:

- Winning the war for talent - Support employers in attracting and retaining a more diverse talent pool to run the businesses of the future.
- Having ethics at the heart of what we do - Promote education and standards that foster ethical behaviour within our sector.
- Embracing technology and data - Develop strategic alliances with companies and organisations at the forefront of technological innovation, and advise professionals on how to integrate into and benefit from these new ways of working.
- Creating successful and sustainable cities - Improve city management by using professional advice to help leverage finance for development and incorporate all aspects of sustainability into land use planning and procurement practices.
- Take advantage of new opportunities - Create a more dynamic profession that can respond to changes in the market and the wider society it operates in.
- Developing stronger leadership - Build a credible voice with government for the land and built environment sector.

I would like to extend my special thanks to:

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Moore Stephens LLP

Sandy Brown Associates

The Hot500

Joel Blake OBE

And a huge vote of thanks to the 600+ young people we've worked with directly in schools, colleges and universities, who want their future careers to impact on the world, and who will hold the built environment to account! You all inspire us, every day

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Construction Regulation and Governance

Boards, Councils, Institutes and Associations to regulate construction

- Building Services Research and Information Association (BSRIA)
- Build UK
- Chartered Institute of Building (CIOB)
- Chartered Institution of Building Services Engineers (CIBSE)
- Constructing Excellence (CE)
- Construction Industry Research and Information Association (CIRIA)
- Construction Industry Training Board (CITB)
- Construction Products Association (CPA)
- Construction Project Information Committee (CPIC)
- Institution of Civil Engineers (ICE)
- Institution of Structural Engineers (Istructe)
- National Building Specification (NBS)
- Royal Institute of British Architects (RIBA)
- Royal Institution of Chartered Surveyors (RICS)
- Royal Town Planning Institute (RTPI)
- UK Contractors Group (UKCG)

Organisations involved in construction governance

- British Waterways Board
- Civil Aviation Authority
- Design Council CABE
- English Nature
- Environment Agency
- Health and Safety Executive
- Historic England
- Highways England
- Local authorities
- Port of London Authority

Built Environment Skills in Schools

www.beskillsinschools.co.uk