Future Trends, Challenges and Opportunities in Construction Post-COVID-19

Session Questions and Answers

1. In the event of an employee been infected in the workplace, how can companies mitigate the potential risks and subsequent liability?

   Site protocols are in place around prevention in the first instance. This includes completing an online form before travelling to site, where each person provides an individual declaration on their health and previous travel.

   Those travelling from overseas are required to self-isolate for 14 days before attending site. When attending site, many sites now have temperature checks at the entrance to screen people. When on-site, if someone displays symptoms, they are referred to a COVID officer, HSE individual or first aid personnel, who will lead them to an isolation area where they can be more thoroughly checked by a site medic or nurse. Depending on the results, they are either escorted off-site for further medical treatment or isolation, or they return to work.

2. Do you think that COVID-19 has raised the awareness of the benefits of remote working for those who can?

   Yes, absolutely – it's been a game changer for the industry. There are at least 50,000 office-based construction professionals in Ireland, many of whom are working from home. It is an effective offering to personnel and can be seen as an employment benefit, and will also impact work practices of the future where we can expect to see more remote working of flex-location working. Ultimately, there is a huge opportunity for the digitalisation of construction

through increased investment in technology and a commitment to new ways of working. The CIF has produced this document to help construction companies address these new ways of working.

The knock-on impact in terms of new modalities of working from a distributed workforce of digital nomads to the redistribution of housing across regions to changes in commercial property (including headcount per sq.ft.) has huge implications for society, and as a result, the industry. Technology-enabled flexibility within the industry is the only way to respond to these changes.

3. A question for the panel. Is this an opportunity for Ireland Inc to make ourselves more competitive, with better ways of doing things, suppliers craft soaking up some of this impact? Ireland Inc is in competition with other countries for inward investments.

   Ireland should aim now to become the most productive and competitive construction industry in the world. Again, this will be achieved through technology uptake across the entire supply chain. Our frontier companies are leading the way, as some of the most productive and competitive in the world – as evidenced by our work and global reputation. The challenge is, and will remain to be, ensuring that we repatriate the IP and expertise produced by these companies into our SME sector, so they can in turn remain productive, and narrow that productivity gap in what is a very fragmented industry, with over 47,000 enterprises in operation.

   Every percentage point of productivity improvement means we can deliver the infrastructure that underpins the competitiveness of other industries and sectors in the economy. A 1% GDP investment in infrastructure leads to a .4% GDP uplift that year and 1.5% over four years. Each construction job supports two others and maintenance supports 3.5. Being more productive will improve

these multipliers, which in turn will make us more competitive. This ambition must be matched by an equally ambitious commitment from the Irish Government, to increase RDI support into construction research. Essentially, the Government, with access to cheap money and using the transformational EU funding available, should underpin the digital infrastructure that would allow small sub-contractors interact with the third-level research sector and our frontier economies.

In other words, the construction industry in Ireland is just the right size to become an innovation ecosystem that allows us to target global niches in areas such as data centre construction. We must aim to become a net exporter of construction-related IP within a generation. This commitment to innovation will increase exports and finally allow us to remove the damaging volatility that has hampered long-term and sustainable operations in our industry in the past.

4. What does the panel think the impact of the change the construction industry is going through will have on the profile of candidates sought by the industry?

Overall, it is unlikely to affect the profile per se, but it will drive compliance. Certain individuals are more complaint than others, and ultimately, those who are non-compliant can expect to be escorted from the workplace.

The increased use of technology in the industry will help us to attract the millennial generation. It is well known that the industry faces a gender crisis, and it is the single greatest challenge to our long-term sustainability – neither female or male millennials will join an industry that is not diverse and inclusive. Technology will help us challenge the tired stereotype of a

bricklayer on-site that is engrained in the minds of young people from early in their school-going days.

It is an increasingly competitive market for talent, as now more than ever, this industry is up against sectors such as technology and professional services.

The industry needs to grasp the nettles of investing in technology and direct employment, and the CIF is endeavouring to compliment the excellent work of corporate construction companies through a national awareness campaign aimed at schoolchildren, career guidance counsellors, and of course parents.

5. Are we seeing the adoption of manufacturing techniques to the construction sector, from design through material supply to lean delivery?

   Yes, manufacturing techniques will certainly be leveraged to a greater extent in the construction industry post-COVID. The key to this, however, will be a far greater level of pre-planning than has been seen to date – while it has become more prevalent, it will be required to a far greater level now to facilitate the adoption of these techniques. This will mean early appointment of full design teams and construction personnel to incorporate the implementation of these techniques into the design.

6. With potential delays with supply chain, are you seeing any requests for temporary solutions, for example if generators or UPS units had delays from the manufacturers, would rental units be considered?

   Yes, we are seeing delays and yes, temporary solutions are required. We have yet to see the full impact on equipment deliveries, and in particular,

equipment that requires on-site assembly, where those undertaking the assembly may be required to travel from overseas and self-isolate. We can expect to see equipment vendors entering into agreement with local firms who will be trained in the assembly of certain equipment, to execute those tasks locally in-country.

7. How are contractors and design teams dealing with the two-week self-isolation required when returning to Ireland from European projects?

   Cycle patterns are being extended to six and two or eight and two, and overlapping crews are being arranged to cover the two-week, off-site isolation.

8. How will Brexit influence the sourcing of prefab products for mainland EU projects?

   That has yet to be determined, but we may experience further delays to the delivery of goods and equipment, and we cannot rule out the risk of tariffs being applied to UK goods, or goods passing through the UK in transit to Ireland.

9. Post COVID-19, off-site works intensifies, distance of off-site(s) might increase from the site, deeper coordinated designs, more productivity analysis, new tools for monitoring and control…etc. What's the impact on construction efficiency, CAPEX and schedule pre-COVID and post-COVID?

   This hasn't been determined as of yet. For projects underway, this is likely to be more significant. While there will certainly be less numbers on-

site, we are also seeing some activities that are becoming more efficient due to less density at the work faces. However, for projects in design, there is an opportunity now to design them for post-COVID assembly and construction, taking into account the planning and preparation considerations that we detailed during the webinar.

10. How does the panel see training of apprentices and junior engineers taking place in the industry?

Certainly, we cannot allow COVID be a barrier to apprentices or to the quality of on-the-job training provided to apprentices. We can expect to see a greater level of communication, as we recognise the challenges around training while socially distancing. A greater use of technology in the training of apprentices is anticipated and we can foresee a greater use of PPE to enable apprentices partake in close-quarter, on-the-job training. The key point must be that employers don't see COVID as being too great an effort to train apprentices. That would be a very short-sighted approach.

From a governmental perspective, we must address the difficulty SMEs are facing in terms of hiring apprentices. A recent survey that the CIF carried out with DCU found that whilst pre-2008, most companies were hiring apprentices, they have not been in a financial position to do so in recent times, in addition to losing the apprentice for months during the cycle. New modes of apprenticeship and traineeship need to be designed for existing crafts and trades. The 'Expert Group on Future Skills Needs' in the construction industry needs to be tasked with examining new apprenticeships in new areas such as BIM etc.

Finally, a more sophisticated and time-based online system to address future labour and skills demands based on input from industry should be established. Large companies operating in Ireland and internationally could input their skills demand forecast based on the pipeline of work, feeding into the system to allow it to reallocate resources most efficiently.

11. Collaboration will be key, but sub-contractor resistance due to costs will be inevitable? How do we get them on board?

    Adapt or die – it will be as simple as that. Those who are most adaptable and flexible in the new environment will be the most successful. If we can all embrace the changes, become good at them and drive improved efficiency, then there are medium to long-term savings to be achieved that will make the short-term investment worthwhile.

    In the background, the Government must invest in an infrastructure that supports sub-contractor involvement and hence collaboration. The trade-off is a profit share of the efficiencies generated.

12. Have you considered heavy-lift tower cranes as opposed to mobile cranes for lifting and placing these off-site constructed modular units?

    I am sure they will be considered in certain instances. However, it is not necessarily large-scale modular units that are being proposed. Bear in mind large-scale, multi-serviced units require input by multiple disciplines off-site, so this may not alleviate difficulties around social distancing. What we foresee are multiple assembly units and modules assembled on-site rather than bringing a series of large-scale, multi-serviced units to site. However, this will vary on a project-by-project basis.

13. Very interesting indeed - I agree that modular and MMC should be part of the solution. How is life cycle versus traditional methods of construction viewed by developers and purchasers? Can we assure similar life cycle lengths of elements and the overall asset?

    Where an asset is assembled or constructed should not impact its life expectancy. We are not necessarily talking about the use of alternative materials – we are talking about where elements of the overall build are fabricated and assembled, and how they are then assembled on the actual site.

14. Do you believe the changes we are making due to COVID-19 are indeed long term? Or will we revert from the *new normal* to a form of *old normal* within the next two years when a vaccine is tried and tested?

    If a vaccine is found and if social distancing guidelines are no longer required, then, yes, site activities could return largely to how they were before. However, the key message we are delivering is that COVID is forcing the industry to focus on improved efficiencies through technologies that exist already, but are not being implemented as an overall solution, i.e. they are still being used largely in isolation from one another. This is a golden opportunity to join the dots and respond to the needs of clients to a greater extent.

    The construction industry has for a long time been criticised that it has not innovated to the same degree that other industries have. This is a unique opportunity to put that right. If we achieve that, then construction post-COVID will have changed forever, and for the better.