

1st Digital Housing Series Event Programme

Opening Address	Chair: Mary Flynn, Dublin City Council
Built to Innovate – Enhancing MMC in homebuilding	Ross O’Colmain, Department Manager, Construction and Housing, Enterprise Ireland
Housing for All – A new housing plan for Ireland	Seán Armstrong, Senior Adviser-Building Standards, Department of Housing, Local Government and Heritage
Innovation, Technology and MMC “In Practice” – A contractor’s viewpoint	Declan Fitzpatrick, Construction/EHSQ Director, Clancy

Ross O’Colmain, Department Manager, Construction and Housing, Enterprise Ireland

This presentation focused on the new role that Enterprise Ireland was given to support industry to embrace modern methods of construction.

In Pathway Five of the Housing for All Plan – ‘Achieve Economic Sustainability’, there are two clear actions which impact Enterprise Ireland:

- **Expand Agency Mandate:** Expand the role of enterprise agencies to include funding and supports for innovation and productivity related projects in the domestic residential construction sector, with funding for research, innovation and productivity to be provided, commensurate with the scale of construction in the domestic economy and in compliance with State Aid rules.
- **Construction Technology Centre:** Ensure that the construction sector is supported to innovate, in terms of construction methodology and technology Enterprise Ireland through the establishment of the Construction Technology Centre by Enterprise Ireland with a priority focus on residential construction.

During consultation with 20+ companies responsible for 6,000 units per annum, labour was identified as the #1 constraint for growth. Additional constraints identified included:

- Planning process
- utility connections
- agreement cert process, fire certification, client demands (e.g., brick finish)
- lack of standard design,
- underdevelopment of BIM
- material price uncertainty
- capacity of suppliers.

The key challenges were how Irish residential contactors can respond with use of MMC + Digital + Lean.

Current supports available were outlined as below.

Introduction	Explorative	Mid-Size	Transformative
Innovation Voucher	Lean Plus	Business Innovation Initiative	Lean Transform
Digitalisation Voucher	Exploring Innovation	Agile R&D	RDI Grants
Lean Start	Key Manager	Innovation Partnership	Operational Excellence
€5-10k Grant	€20-50k Grant	€50-200k	€200k+

The *Housing for All* supports are open to companies who employ 10 or more full time people working in homebuilding and can demonstrate an ability to deliver on the objectives of the initiative. This includes, but is not limited to:

- Contractors
- Builder developers
- Sub-contractors
- Modern Method Construction manufacturing companies.

There are a number of existing offers for micro-enterprise available through the Local Enterprise Offices that can support domestically focused construction companies innovative and improve productivity.

The following is a summary of the particular supports available.

Lean Start:

- Projects up to €10k
- Funded at 50% rate,
- Introduction of lean, development of a lean roadmap

Digitalisation Voucher:

- Projects up to €9k
- Funded at 100% rate
- Focus on Internal Process Optimisation using digital
- Enhancing Customer Digital Experience
- Becoming a Data Driven Business.

Seán Armstrong, Senior Adviser-Building Standards, Department of Housing, Local Government and Heritage

Seán began by outlining the broad objectives of the Governments Housing for All Plan outlining that it had a vision of building 33,000 homes by 2030 amount to a total budget spend of €30bn. A breakdown was provided of the overall targets.

Tenure	2022	2023	2024	2025	2026	2027	2028	2029	2030
Social homes	9,000	9,100	9,300	10,000	10,200	10,200	10,200	10,200	10,200
Affordable & Cost Rental homes	4,100	5,500	6,400	6,400	6,100	6,300	6,400	6,300	6,300
Private Rental and Private Ownership homes	11,500	14,400	17,750	18,200	19,800	20,400	21,500	23,000	24,000
Total Homes	24,600	29,000	33,450	34,600	36,100	36,900	38,100	39,500	40,500

The presentation proceeded to focus on the reduction of residential costs.

- advancing methods to reduce residential construction costs
- state will play a more central role in leading and funding to ensure that levels of productivity and innovation materialise
- complimented by the work of the Construction sector Group (CSG)

Enterprise development agencies, including inter alia Enterprise Ireland, will support these initiatives, which will be coordinated through the Department of the Taoiseach.

The important work of the CSG seven actions was outlined, namely:

1	Construction research forum	CIF
2	Identify external funding sources	ACEI/RIAI
3	Guide the development of MMOC and off-site production sector	CIF
4	Construction Technology Innovation Centre	Enterprise Ireland
5	Establish digital network under Construction Skillnet	CIF
6	Digitise the planning application process	LGMA/Local Authorities
7	Establish and fund the Build Digital – CoE for BIM and Digital Adoption	DPER

An emphasis was placed on the need to recruit significant labour in order to meet the targets of the Housing for All Plan.

The perennial problem of construction costs was highlighted with reference to increase costs of materials and that year-on-year national annual inflation is now running at 8.3% (July 2020 to June 2021).

Five focal points were identified to help assist in addressing housing costs, namely:

1. The formation of a new Construction Technology Centre (CTC) by prioritising residential construction - supporting innovation, modern methods of construction, digital and manufacturing technology.
2. The CSG will have an increased focus on residential construction, including implementation of cost reducing innovations and productivity measures.
3. The role of enterprise agencies will be expanded to include the provision of funding and supports for innovation and productivity-related projects in the domestic residential construction sector.
4. The public sector will continue to provide exemplar projects to help with the capacity building process through public tenders for innovations, such as rapid

delivery housing and design and development of low-carbon buildings.

5. Work will be underpinned by the development of Key Performance Indicators for MMC and Cost of Construction, which will be reported on quarterly basis.

Seán highlighted the most recent publication by the CIF on [Modern Methods of Construction](#) (Chaired by Martin Searson, Quality Positive).

Seán also highlighted the Housing for All Table of Actions – Action 23.2 that will incorporate an analysis and value engineering exercise for each component of cost of construction (including cost of compliance) of house and apartment development, with a view to reducing cost (including cost of compliance) and increasing standardisation. It will be informed by conducting construction cost comparisons with comparable EU economies. It will also identify opportunities for cost reduction for consideration by relevant government departments and industry. The study will be a shared Construction Sector Group and Government initiative with agreed terms of reference, which the DHLGH will then facilitate.

The importance of sustainability and the Governments [Climate Action Plan 2021](#) was further highlighted. Points raised included:

1. All of the new homes built during the lifetime of this Plan will be built to Nearly Zero Energy Building (NZEB) standards.
2. Retrofit 500,000 homes by 2030 to a B2 level.
3. A minimum BER for private rental property will be introduced.
4. Roadmap for lifecycle analysis of embodied carbon of construction materials planned for CAP 2021.

The important role of Design and Build/Rapid Delivery programme since 2017 was outlined. 752 units have been completed using up to Q2 2021, with 1,350 in the pipeline either not started or on site.

The Housing Delivery and Co-ordination Office and DHLGH are currently working with the local government sector on replacement frameworks which will operate on a regional

basis and cater to a variety of development sizes and unit types, including apartments.

The final component of the presentation outlined the governance for Housing for All Plan. There will be oversight and direction at the highest level through the Cabinet Committee on Housing and the Secretary General Delivery Group.

Three dedicated Workstreams have also been established, led by the relevant Secretary Generals, on i) investment, ii) industry capability, and iii) public service delivery. These workstreams are tasked with drilling down into the priority actions, to identify any blockages, take appropriate action, and ensure a rigorous monitoring system is in place to ensure delivery. This sub-group will be comprised of Secretary Generals from relevant departments and will be overseen by the Department of the Taoiseach.

Declan Fitzpatrick, Construction/EHSQ Director, Clancy

This presentation began with a brief overview of the innovation and digital journey taking place in Clancy.

A range of residential, commercial, industrial, healthcare and conservation project capability were outlined. In particular, a culture of innovation and sustainability have been instilled in the company in recent years “built on partnership”. The five core values of the business were emphasised.

- Safety
- Professionalism
- Team work and collaboration
- Commitment and loyalty
- Quality

The investment in digital tools by Clancy was evidenced by reference to a range of investment in:

- Procore
- Lean/Last Planner
- BIM Trimble Robotic Total Stations/GPS
- Machine controlled GPS
- Full Suite of BIM/CAD authoring tools
- Bluebeam
- HiltiOnTrack

- Virtual Reality
- Drones
- Smart Mobile Devices

A number of examples of the use of these innovative products were provided. A particular focus was given to lean methods and the change management programme that requires commitment from all the team.

The use of daily whiteboard meetings with Clancy site management and sub-contractor was emphasised as critically important.

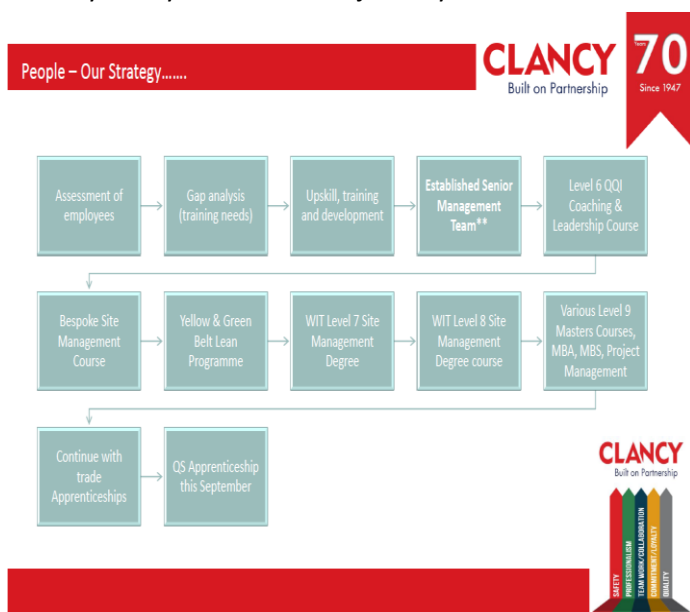
Clancy recognise the important of MMC. Key benefits include:

- Increased productivity
- Reduction in programme time on site
- Reduced labour on site
- Increased quality standards
- Reduction in waste
- More sustainable, less material used, less deliveries to site

A number of project examples were provided where MMC was successfully deployed by Clancy. The focus on people development was emphasised with a constant programme of assessment of Clancy employees.

The important collaboration with Waterford Institute of Technology was emphasised.

Clancy's 10-year innovation journey was outlined.



- 2012 - Innovation journey begins BIM strategy engagement with WIT
- 2013 - BIM Champion appointed and paperless QMS
- 2014 - D&B Projects designed and coordinated using BIM. Re-branded – Built on Partnership
- 2016 - Employee assessment - upskill, education & development programme. Lean audit, Introduction of BIM 360 Field (ipads) and Introduction of HiltiOnTrack
- 2017 - External consultants appointed. Senior Management Team established (Level 6 QQI). Established core values. Introduction of LPS techniques on Clancy projects based on learnings.
- 2018 - Rolled out LPS across several sites (self-taught). Major review of MMC available (Bandon Rd). Used precast concrete system to build a nursing home.
- 2019 – Bespoke Level 6 QQI Site Management course for SM's.
- 2020 - LGS on Bandon Rd and three large HSE Covid Projects. Introduction of Procore. SMT expansion.
- 2021- Timber frame on Gleann Fia housing project. LGS on 6 projects. Lean audit & roll out of Lean programme with CLS (Yellow belt).
- 2022 - ICF on Fox Meadows housing project. Engagement with Enterprise Ireland. Lean programme continues with CLS (Yellow & Green belt). Digitalisation audit.

Special thanks to

Event Chair, Mary Flynn, Dublin City Council

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