



Lean Construction Ireland Webinar

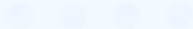
DECODING THE 'LEAN' IN PRODUCTION MANAGEMENT

February 23, 2022 - 14:00 GMT

Presented By

Dr. Bhargav Dave

CEO | VisiLean Oy





DR. BHARGAV DAVE



Over 2 decades of
experience of working in

**Digitalisation of
Construction in research
and industry.**

- **Graduated in Construction Technology** from CEPT in 2001.
- Designed a web based logistics system as part of the thesis. The seeds about digitalisation in construction were planted here.
- **Masters and PhD in Digitising Construction.**
- **Early interest in computing** (started programming at the age of 11)
- **Researcher at heart** and very passionate about changing the industry. Always open for new ideas.
- Photography, reading and traveling in spare time



University of
Salford
MANCHESTER



VISILEAN
construction simplified

PROBLEMS IN CONSTRUCTION



Significant wastes in construction



49%

of workers' time in non value adding activities (Horman and Kenley, 2005)

15%

to 20% worker time spent in direct value adding activities (Jongelling and Olofsson, 2007)

Product Process integration



Process and Product Visualisation and Integration - a critical problem in construction



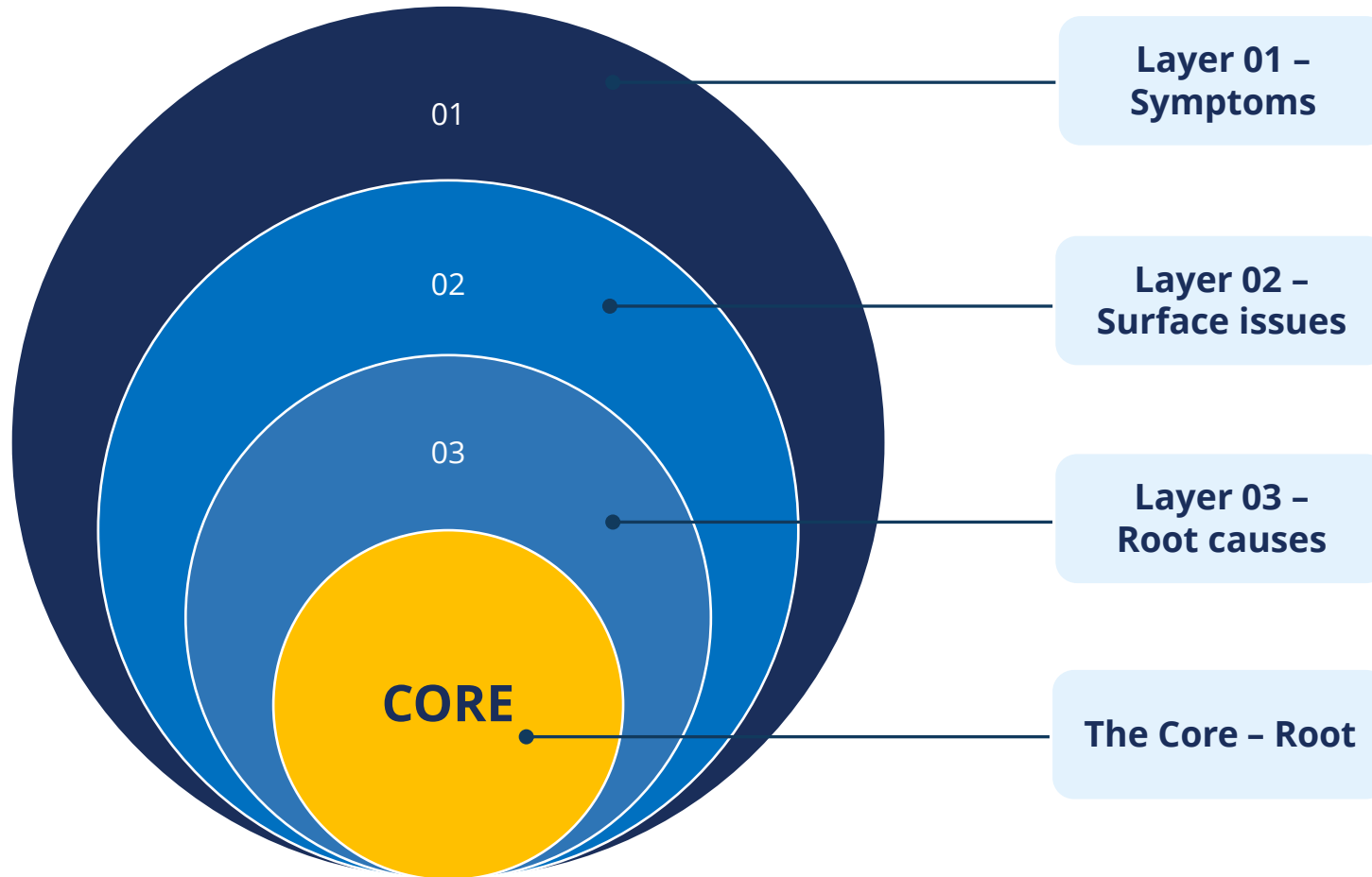
Largest problems in production management is that of insufficient visualisation of project information (Kymmell, 2008).

No common perception of value



Whose problem is it anyway? Who takes up the responsibility?

PEELING THE LAYERS



- Late delivery
- Cost and Time overruns
- Quality issues
- Productivity issues
- Communication problems
- Planning issues
- Value misalignment
- No explicit production planning method
- Value misalignment
- Supply chain fragmentation
- **TFV**
- **Misalignment of production approach**
- **No explicit production theory**

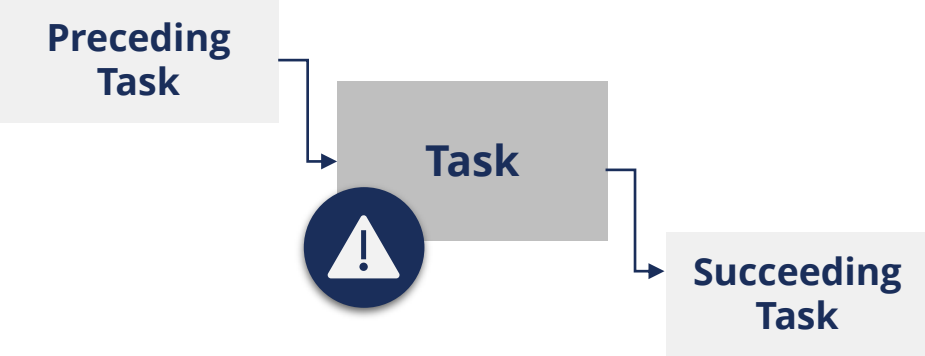
ROOT CAUSE #1

There is too much focus on (**individual**) productivity instead of (**holistic**) production management.

Productivity will improve if the production management system is efficient.

EXPECTATION VS REALITY

A task is started after the completion of the preceding task in the network (end-start relationship)



In site practice: A task should be started when the master schedule indicates that

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LEAN THINKING

Fundamentally a different business logic



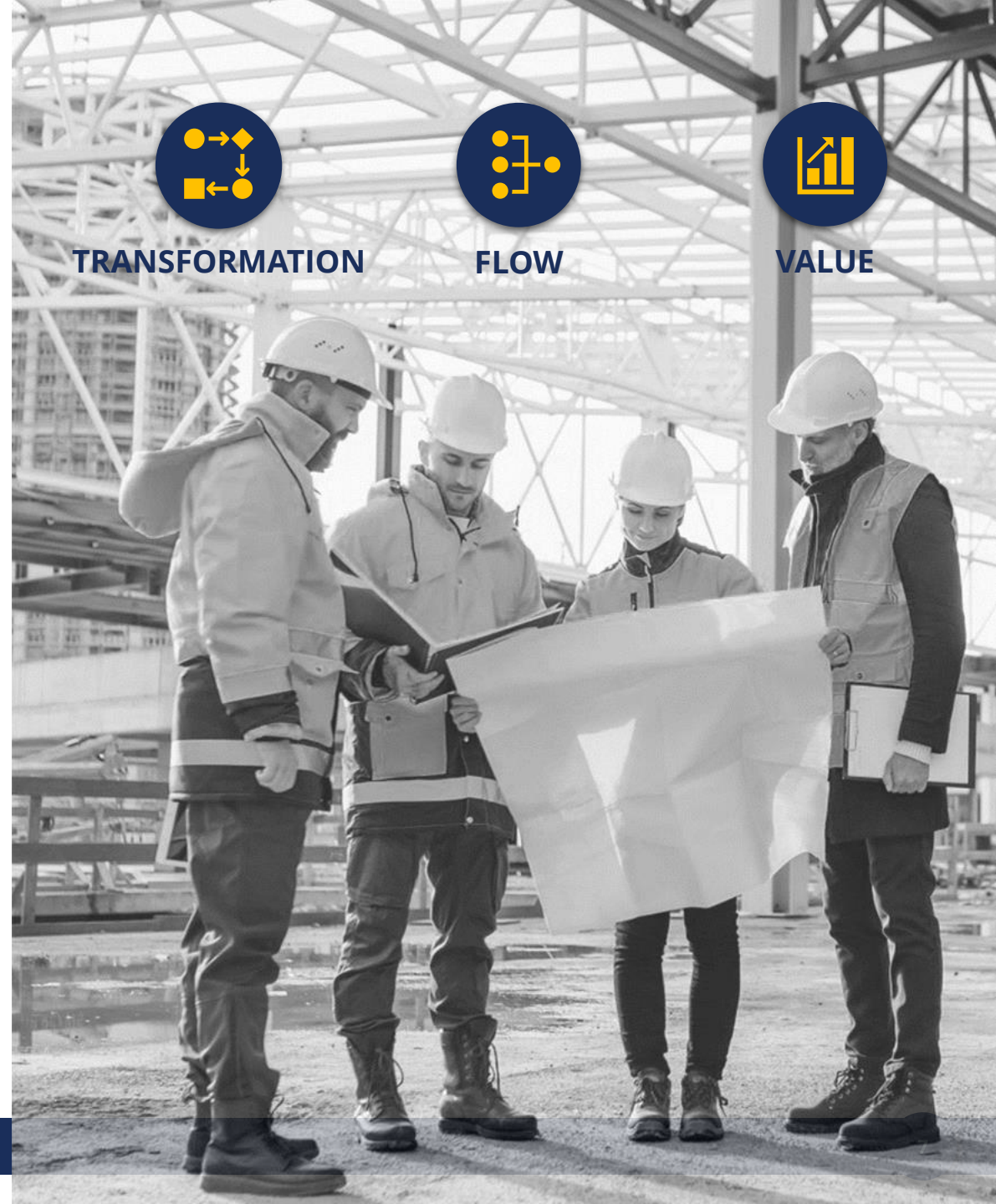
Identify the Value & the Value stream



Eliminate unnecessary actions



Create Flow- Linking value activity in a continuous sequence



TRANSFORMATION

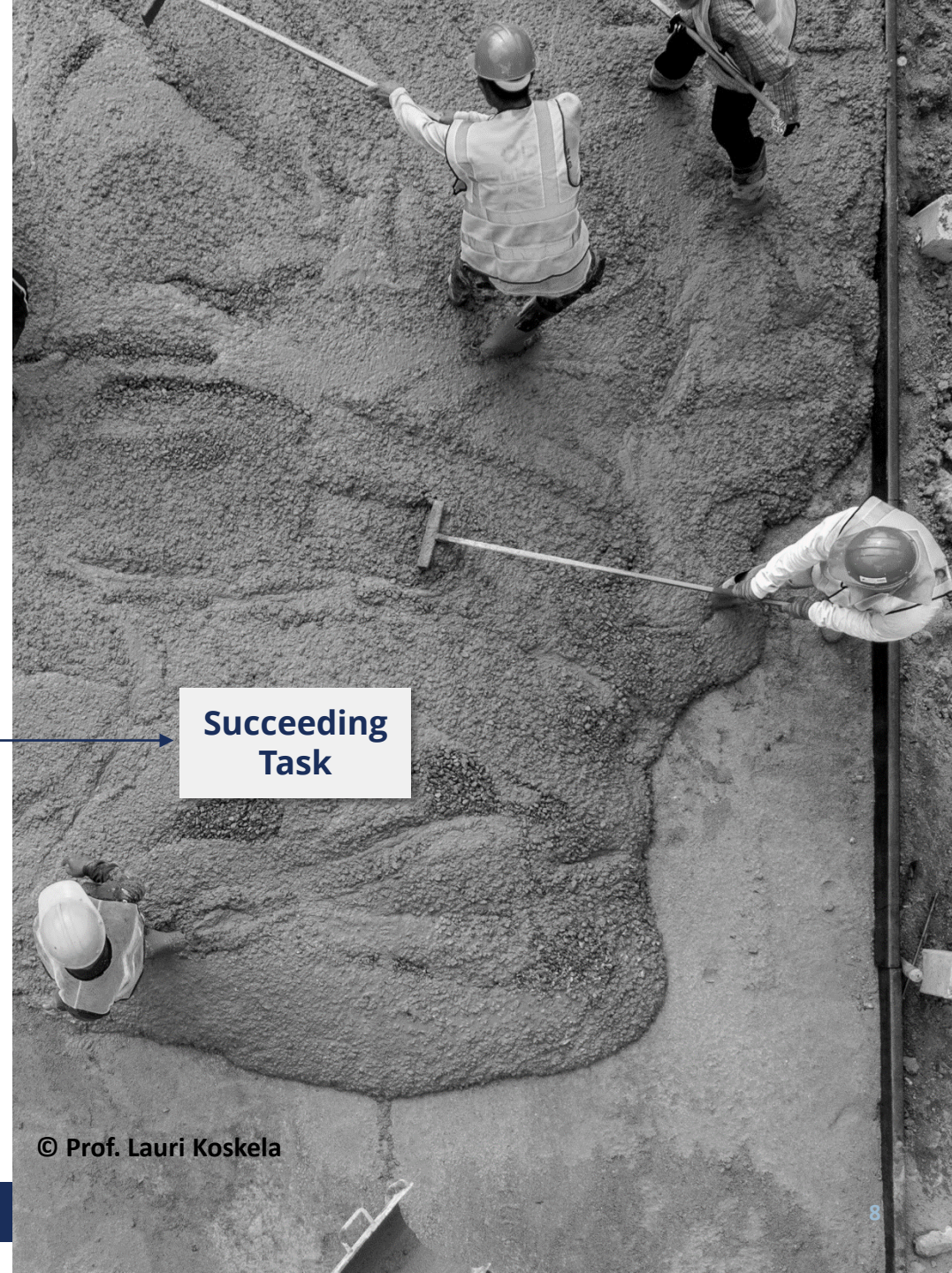
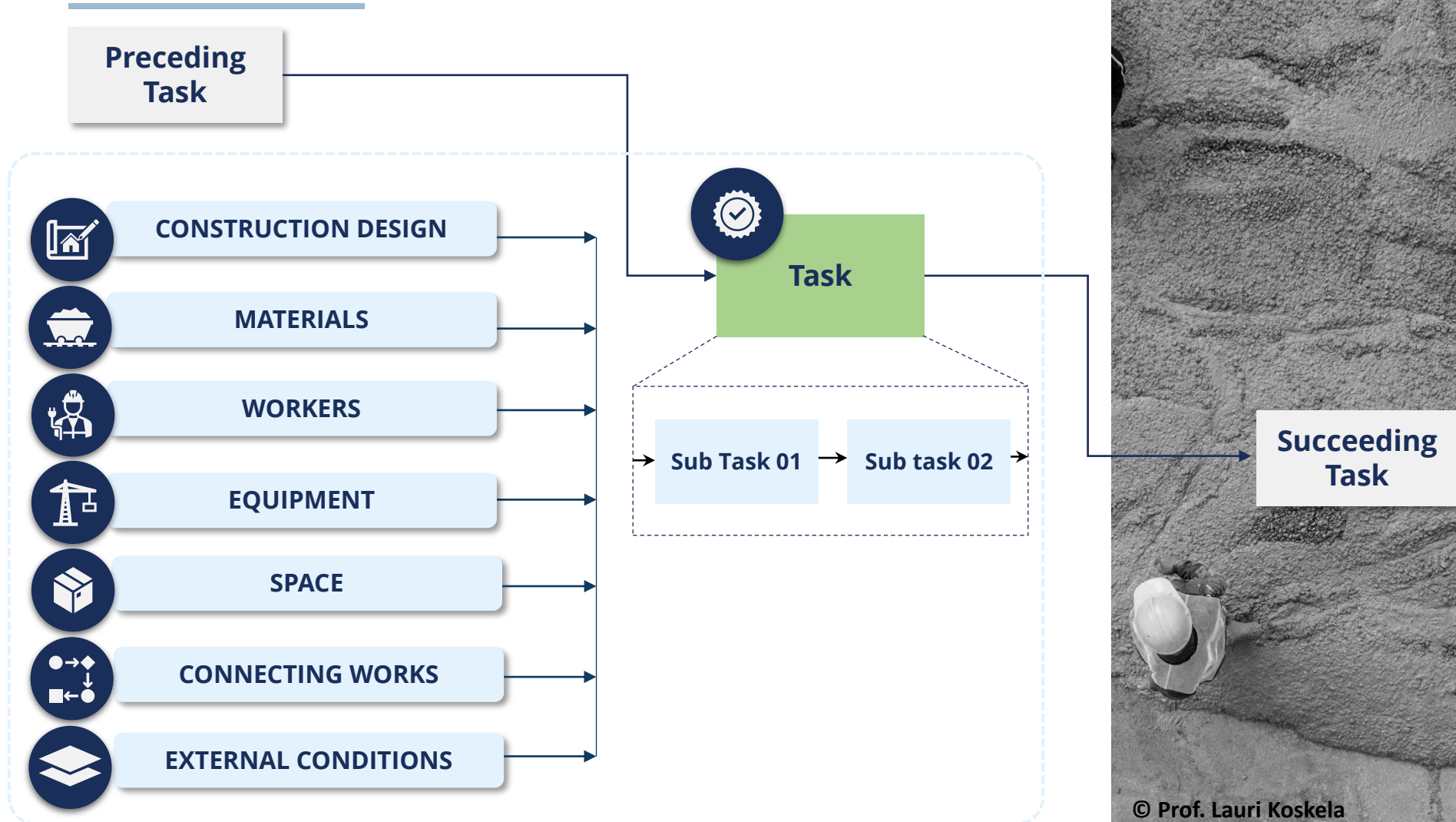


FLOW



VALUE

THE MISSING INFORMATION

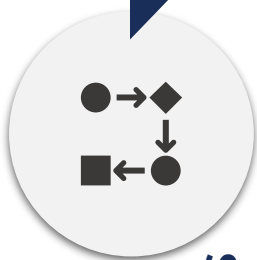


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LEAN PROJECT DELIVERY SYSTEM MODEL

Lean Production Control achieved



CORE PROCESSES



Make-ready Process

Making assignments ready to be performed.
Analysing Constraints



Real time updates and Visualisation

From the last planners
Information Synchronisation and Visualisation
of actual status



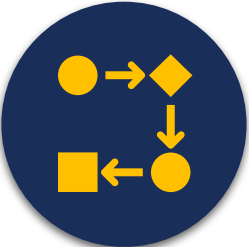
Continuous Improvement

Identification and action on root causes for
plan failures. Plan Do Check At





LEAN PRODUCTION MANAGEMENT



TRANSFORMATION

With a focus on generation of Flow



WASTE ELIMINATION

Of material, time and effort across the supply chain



COLLABORATION

Through involvement of downstream on a single integrated platform



VALUE

For the customer through fulfilment of their requirement



Getting Production realised efficiently



Identifying Non-value adding time



Supported by Visual Management



Driven by Continuous Improvement

Driven by the TFV Theory of Production

BE INFORMED WITH BIM

Information empowers pro-active Planning decisions



BIM based Visualisation



Providing critical review of modules status & potential constraints of future works at site installation

Information of each Component

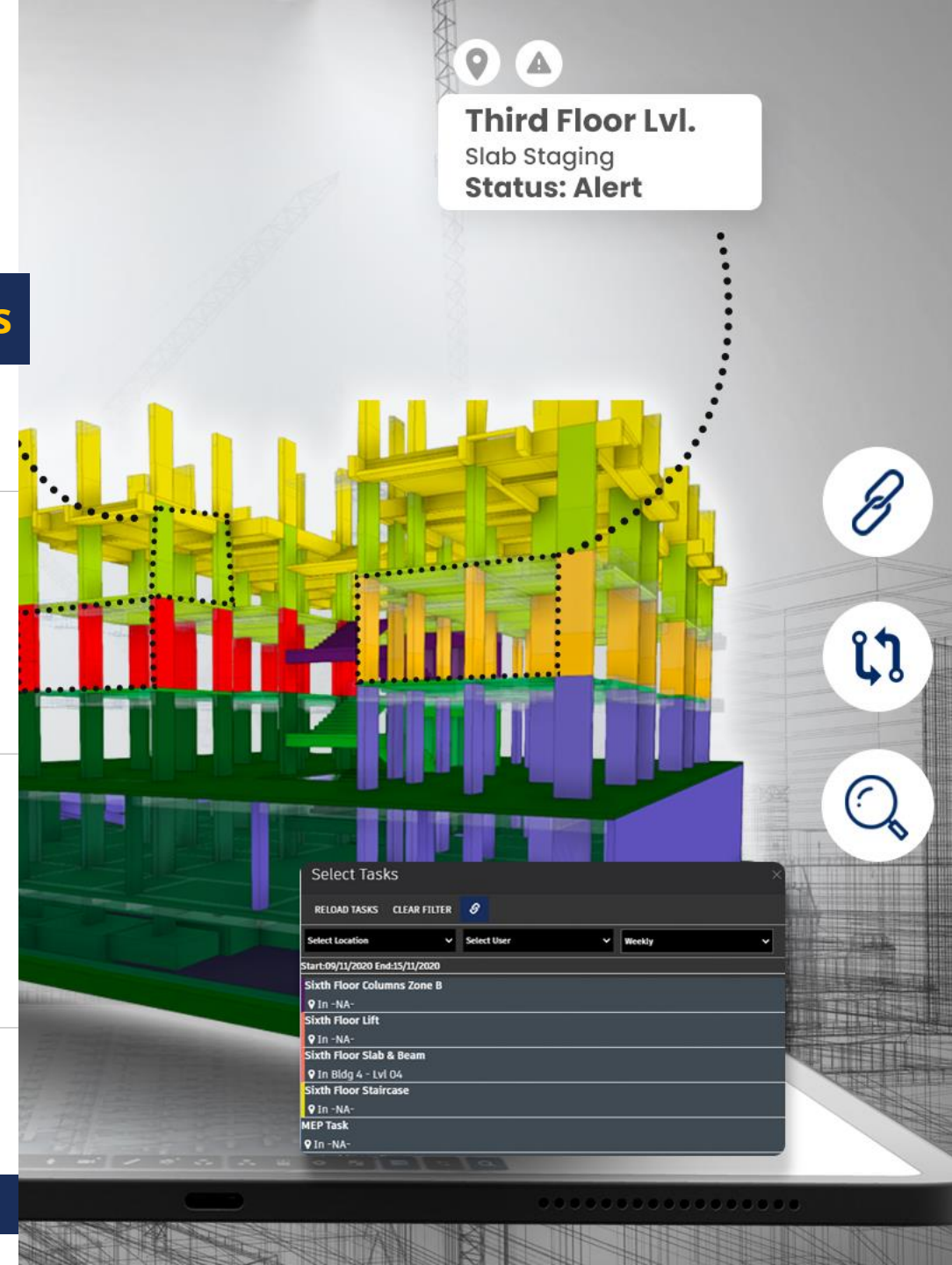


From Design to Specifications, the details of each component are available from model

Location-based Information



Enable efficient space planning through live & accurate area condition



Third Floor Lvl.
Slab Staging
Status: Alert

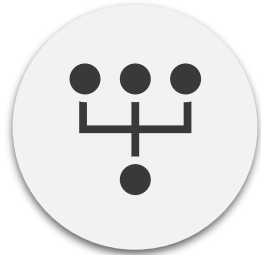


Select Tasks	
RELOAD TASKS	CLEAR FILTER
Select Location	Select User
Start: 09/11/2020	End: 15/11/2020
Sixth Floor Columns Zone B	
In -NA-	
Sixth Floor Lift	
In -NA-	
Sixth Floor Slab & Beam	
In Bldg 4 - Lvl 04	
Sixth Floor Staircase	
In -NA-	
MEP Task	
In -NA-	

LEAN-BIM INTEGRATION



Integration of Core organisational pillars



Processes



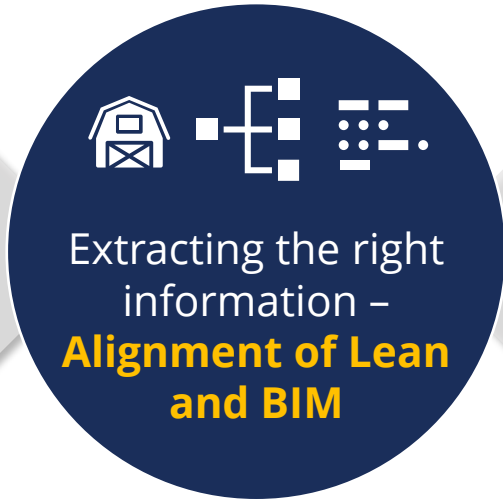
Value



Technology



Lean
Processes
focusing on
Value



Extracting the right
information -
**Alignment of Lean
and BIM**



Flow and
Waste
minimisation
through BIM

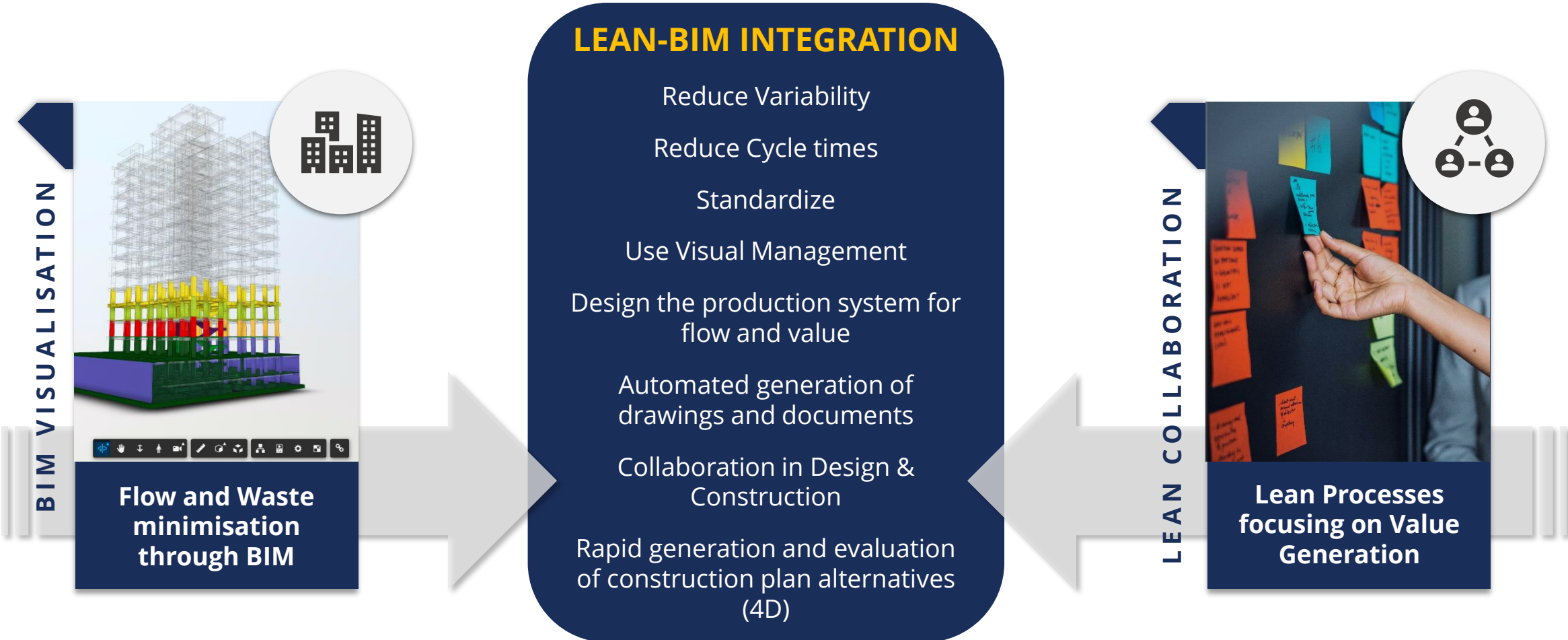


Evidenced from years of industry research





PRODUCT-PROCESS INTEGRATION



 (Sacks et al, 2013) 

LEAN – BIM SYSTEM



Production Management

- The Last Planner Workflow
- Constraints Analysis
- Information Synchronisation and Visualisation
- Task based workflow



BIM

- Visualisation of the production status in spatial terms in real-time
- Abilities to conduct virtual “as if” scenarios
- Creating a common understanding of production

ALIGNING TECH WITH LEAN PROCESSES

It is essential to achieve the right alignment of **People, Processes and Technology**



Assessment

of the scenario and the cultural setting of people and their behaviour



Alignment

of the solution accurately with the assessed scenario to achieve desired results



Implementation

of the new Production System, to transition towards Lean maturity



MACE DATA CENTRE PROJECT

Dublin, Ireland

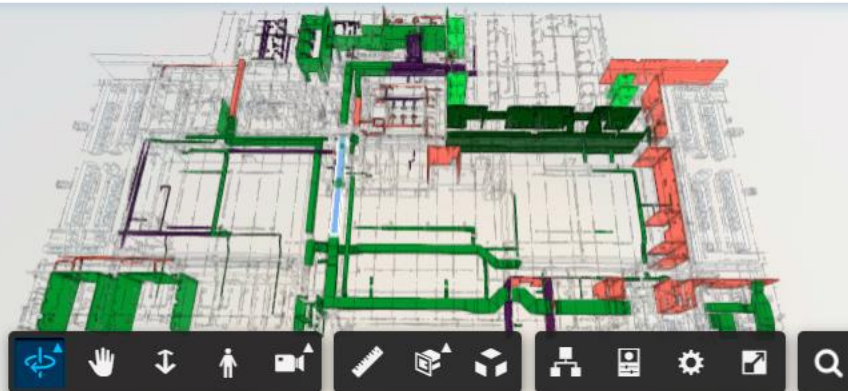


4254-Walls-Admin_V1.nwc, 6000-Ducts-Admin_V1.nwc, 6200-Sprinkler Pipes-Admin_V1.nwc

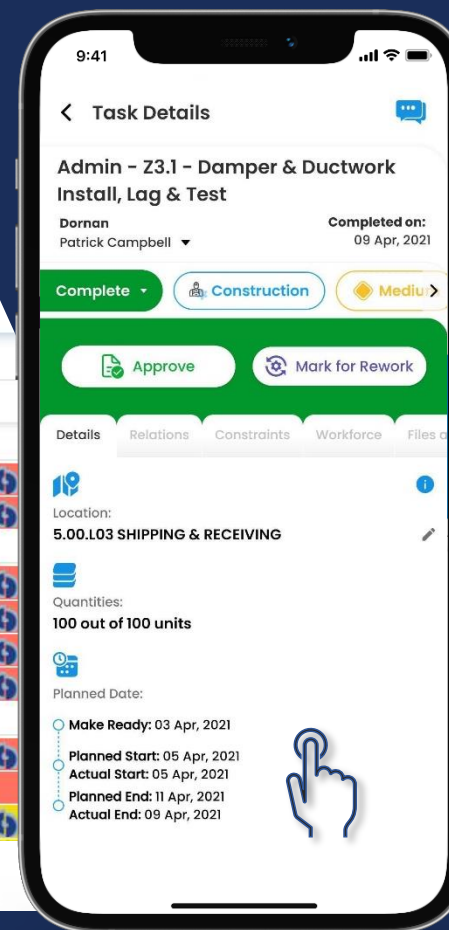
Linked Tasks (1)

Admin - Z3.1 - Damper & Ductwork Install, Lag & Test

- Patrick Campbell
- 5.00.L03 SHIPPING & RECEIVING
- Complete



Lean-BIM integrated Production Management



Execution W 19 Weekly W 20 Lookahead W 21-23 **Phase W 16-23** 19/04/2021 - 13/06/2021

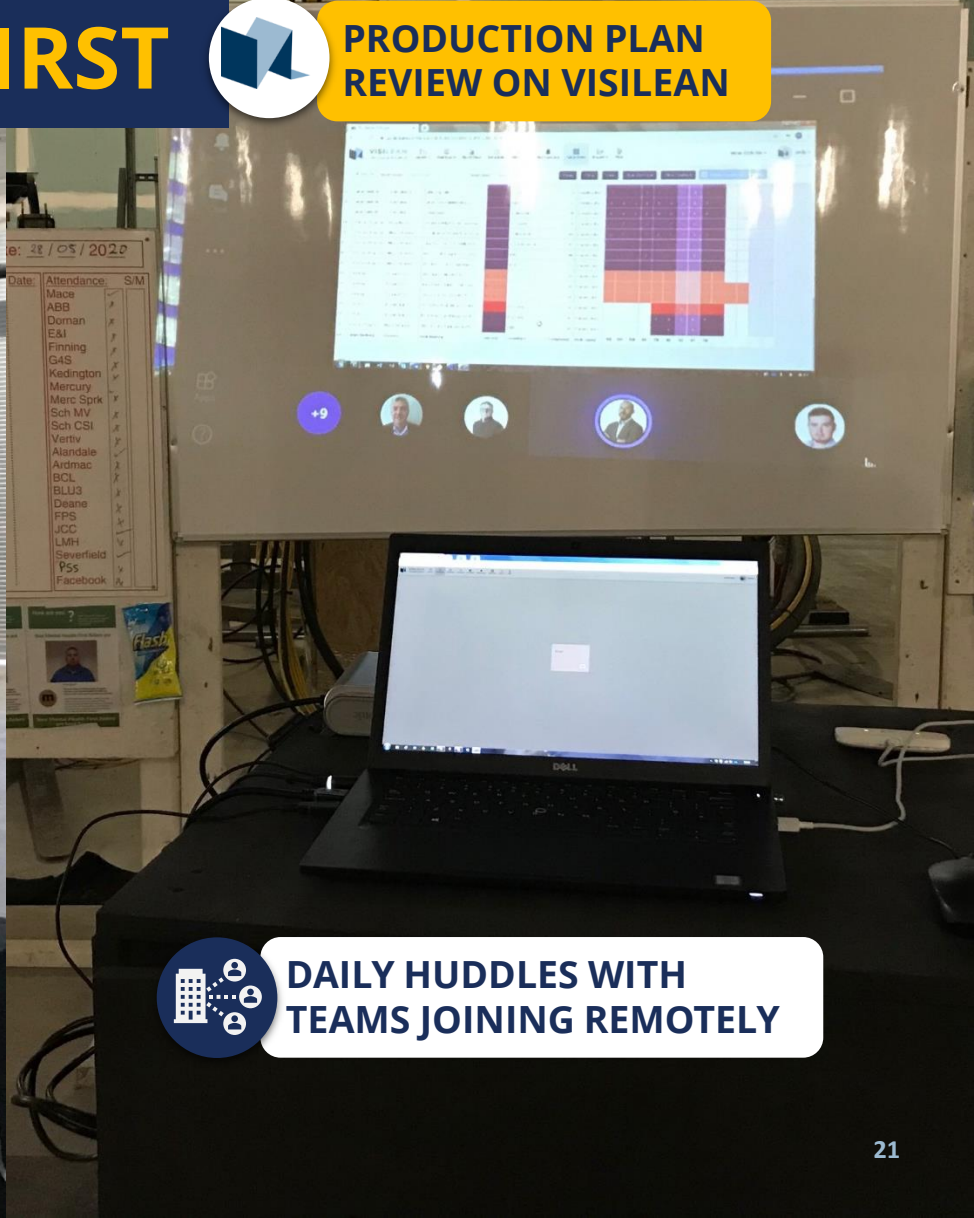
Grouping:	April			May		
	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21
Admin Block		Ardmac Site Mgmt Task 1 Guardhouse Resources	Ardmac Site Mgmt Task 2	6000- GH Pipe Install Task 1 Guardhouse Resources Task 3 Ardmac Site Mgmt Task 3	Guardhouse Resources Task 4 6000- GH Pipe Install Task 2 Ardmac Site Mgmt Task 4	Guardhouse Resources Task 5 Ardmac Site Mgmt Task 5
Zone 6		Zone 6 Resources Task 1	6000- Admin Z.6 Duct & Insulation Zone 6 Resources Task 2 6000- Z.6 Pipework Install	6000- Admin Z.6 Duct & Insulation Zone 6 Resources Task 3	6000- Admin Z.6 Duct & Insulation Zone 6 Dornan Resources Zone 6 Resources Task 4	7000 - Admin Zone 6 - Container Zone 6 Resources Task 5 6000- Admin Z.6 Duct & Insulation Zone 6 Dornan Resources
	Admin - Z6.2 - Micro Kitchen T&J and Paint Task 3 Admin - Z6.2 - Damper & Ductwork Admin - Z6.2 - Wall Fitout Task 1	Admin - Z6.2 - Damper & Ductwork Admin - Z6.2 - VRF Install Task 1	Admin - Z6.2 - Containment Install Corcorans - VRF Pipe and containment Tape and Joint and Paint walls Task 1	Admin - Z6.2 - VRF Install	6000-Admin - Z6.2 - W1 6000- Pipework & Insulation Install 7000 - Z6.2 Fire Alarm Fit Out	7000 - Z6.2 Containment Install

LIVE 4D VISUALISATION – REAL-TIME COLLABORATION

REMOTE COLLABORATION – SAFETY FIRST

PRODUCTION PLAN REVIEW ON VISILEAN

TEAMS PARTICIPATING THROUGH THE VISILEAN APP WITH SAFE DISTANCING



Date: 28 / 05 / 2020

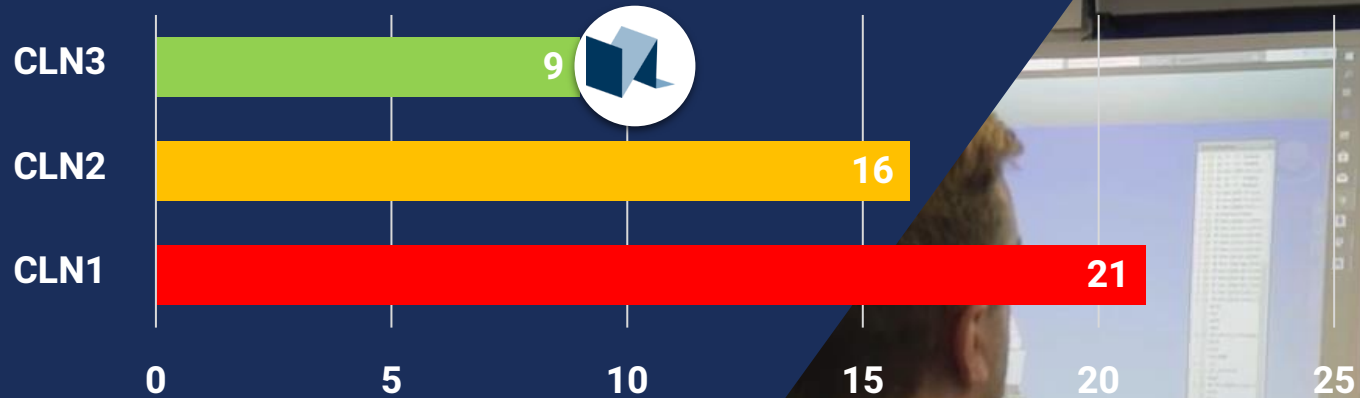
Attendance:	SIM
Mace	
ABB	
Doman	
E&I	
Finning	
G4S	
Kedington	
Mercury	
Merc Sprk	
Sch MV	
Sch CSI	
Vertiv	
Alandale	
Ardmac	
BCL	
BLU3	
Deane	
FPS	
JCC	
LMH	
Severfield	
PSS	
Facebook	

DAILY HUDDLES WITH TEAMS JOINING REMOTELY



INSTALLATION TIME REDUCED FROM 21 WEEKS TO 9 WEEKS WITH VISILEAN

Installation time for Data Hall fit out sequence time in weeks



ACHIEVEMENTS



- 60% reduction in DEFECTS,
- 43% improvement in PROGRAM EFFICIENCY,
- 45% reduction in LABOUR SPEND.



VisiLean has improved the quality of the project coordination. It is a valuable platform for ensuring activities are planned safely and executed to the highest quality.



KEVIN MCHUGH

Associate Director | Mace Dublin, Ireland

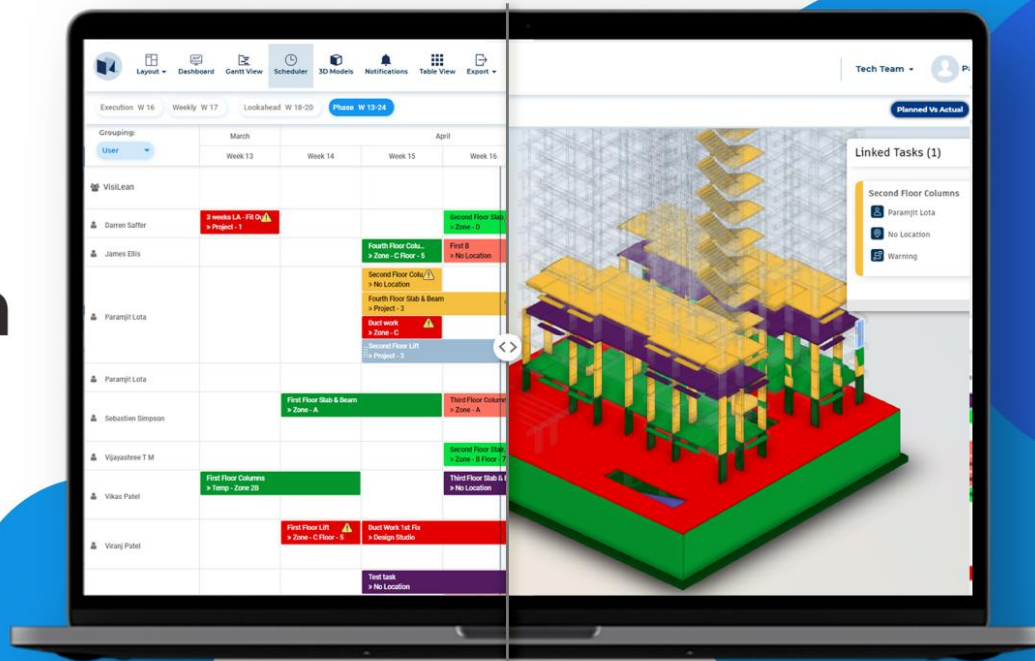


Teams joining in for Daily Huddle

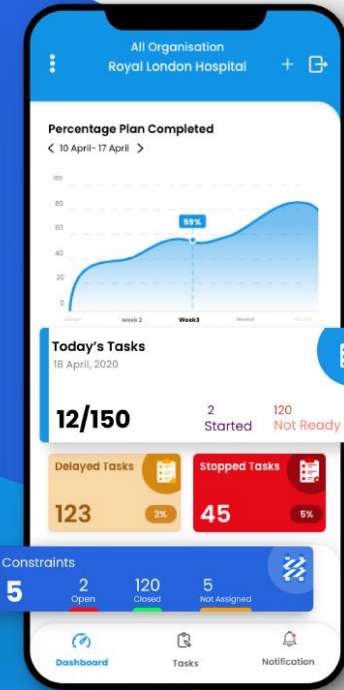
THANK YOU



Plan



Do



For more info mail us : info@visilean.com

