

**3DEXPERIENCE®**

# Adopting Digital Collaboration for Lean Construction

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Adrian Wood  
Director, Strategy & Marketing

# Agenda

- ▶ Team Challenges
- ▶ The Impact to Construction
- ▶ Applying Lean Principles
- ▶ What is 3DLean
- ▶ Use Cases
- ▶ The Benefit and Value for Construction

# Our Company

## A purpose-driven company

Combining Art, Science & Technology  
for a more sustainable world



## 20,000 passionate people

From 133 countries  
188 sites  
One global R&D / 69 labs



## Long-term driven

Majority shareholder control  
Revenue: €4,5 billion\*  
Operating margin: 30,2%\*

\*Figures as of FY 2020 / Non-IFRS



## 12,260 partners

Software, Technology & Architecture  
Content & Online services  
Sales  
Consulting & System Integrators (C&SI)  
Education  
Research



## 290,000 customers

11 industries in 140 countries  
26 million users  
Game-changing  
3DEXPERIENCE platform



# Today's Team Challenges

DISCONNECTED



NO STRUCTURE



WRONG BEHAVIOR



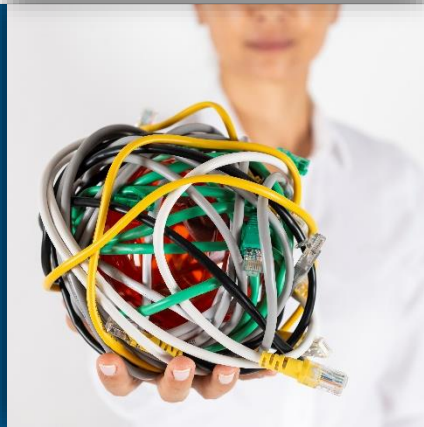
TOO MUCH DATA



TOP DOWN



COMPLEXITY



# The Impact to Construction

Globally, an average of 52% of rework was caused by poor project data and communication, costing \$280 Billion in 2019

80-85% of construction delays exist during on-site level operations, while only 10 – 15% exist at the planning phase.

35% of construction professionals working hours are spent on “non-optimal” activities

McKinsey  
& Company

KPMG

accenture

BCG BOSTON  
CONSULTING  
GROUP



# Applying Lean to Construction

## Lean 4 principles

CUSTOMER FIRST



PEOPLE IS THE  
MOST IMPORTANT  
VALUE



KAIZEN



GO STUDY THE  
SHOPEFLOOR



## 7 MUDAS

Muda = waste : everything that isn't necessary to meet customer need. A Lean approach involves their elimination.

Non Quality

Over production

Waiting

Transports

Inventories

Motions

Excess processing

## MURAS

Mura (variability) is not doing the job the same way for each part.

## MURIS

Muri (pains) represent all activities that imply huge efforts or constraints leading to hardest work or pains.

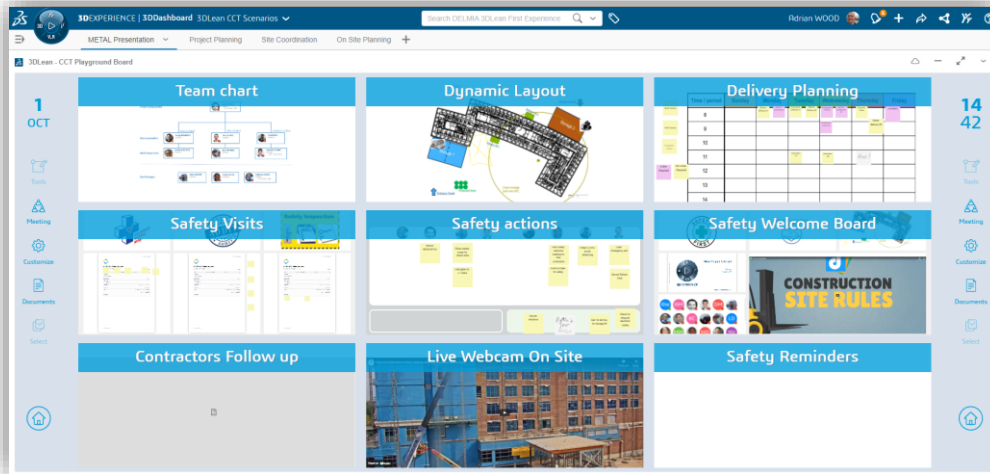


# 3DLean

## ► Guide Team Engagement and Improve Performance with Lean



Disconnected teams need a new way to **engage** effectively, **reveal** problems and **improve** efficiency



3DLean is an advanced yet simple digital environment that allows teams to:

- Leverage Lean methods
- Collaborate in-person and virtually
- Leverage 3D data & complex information
- Problem solve effectively
- Work more autonomously

↑ 85% team involvement • ↑ 92% positive impact • ↑ 100% issues identified • ↓ 7% time savings • ↑ 1-2% productivity improvements

# ENGAGE

A top-down view of several diverse people's hands stacked together in a circle on a wooden floor. The hands are of various skin tones, including dark brown, light brown, and fair. Some hands are wearing accessories like a black sports watch, a silver ring, a black wristband, and several beaded bracelets. The background is a light-colored wooden floor.

*Build better team relationships  
despite physical or  
organizational barriers*



# REVEAL

*Help teams visualize **3D content and**  
data with a digital Lean framework*

# IMPROVE

*Make 'Lean thinking' a  
standard part of construction,  
teams and culture*



# **Safety Briefings**

**Safety information is often discussed in person but shared by email separately and relies upon individuals to follow up independently**

7  
OCT

Tools



Meeting



Customize



Documents



Select



## Team chart



## Dynamic Layout



## Delivery Planning

Time / period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8						
9						
10						
11						
12						
13						
14						
15						

## Safety Visits



## Safety Inspection



## Safety actions



## Safety Welcome Board



## Contractors Follow up



## Live Webcam On Site



## Safety Reminders



**3DLean provides a digital environment for  
information sharing**

**Different information formats can be shared  
(video, documents, etc.)**

**Teams can share feedback and questions in a  
common location**



# **Daily Site Meetings**

**Information and updates change constantly  
meaning paper-based tracking is difficult to  
maintain and often out of date**



## TOOLS

E-NOTES

TEAM

STICKERS



Create

Note

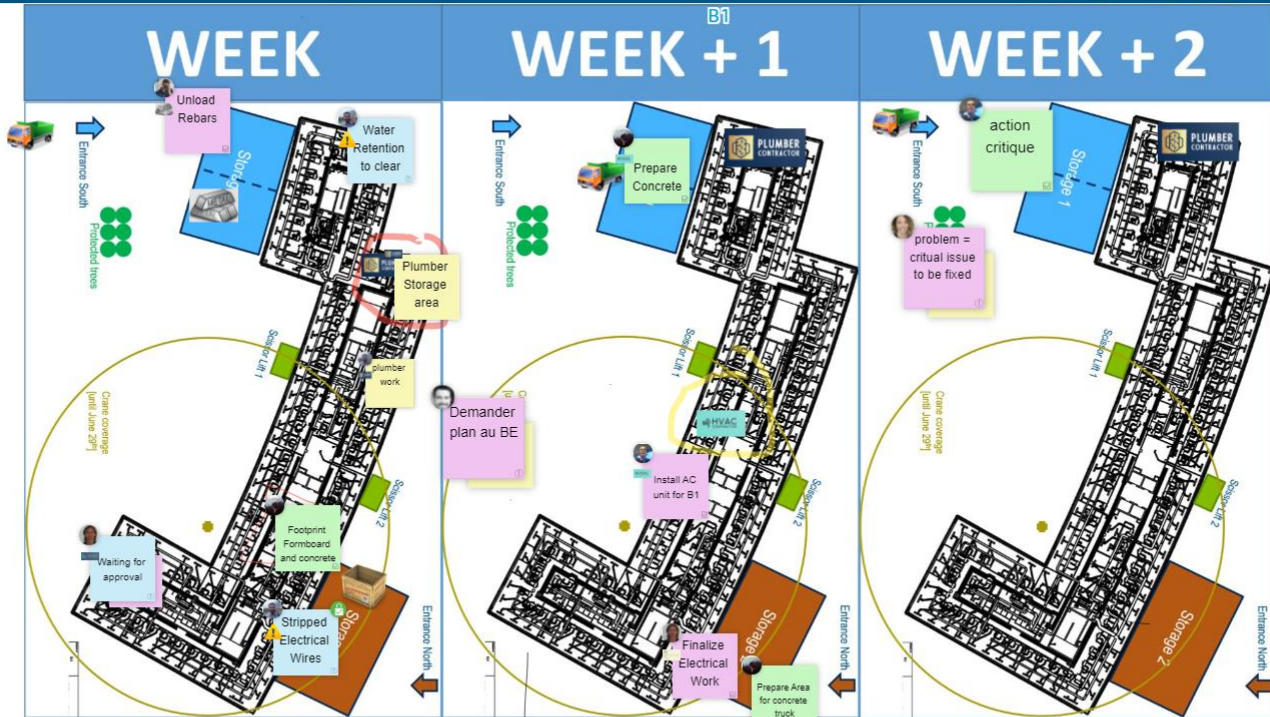
Action

Problem

WEEK

WEEK + 1

WEEK + 2

15  
59



**3DLean provides a digital method of  
maintaining information**

**Updates are dynamic allowing the team to  
stay on target for daily operations**

# **Project Coordination**

**Teams lack a digital methodology and structure for discussions which can lead to missed opportunities for improvement**



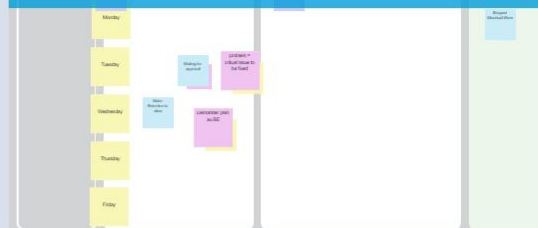
## On site Team



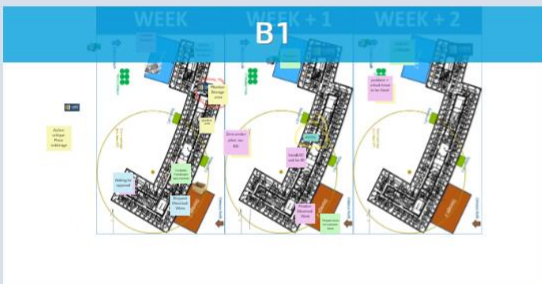
## Repartition



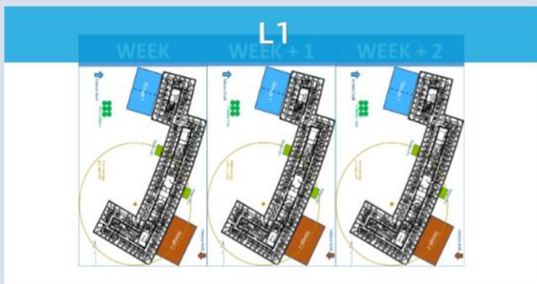
## Problem Log



B1



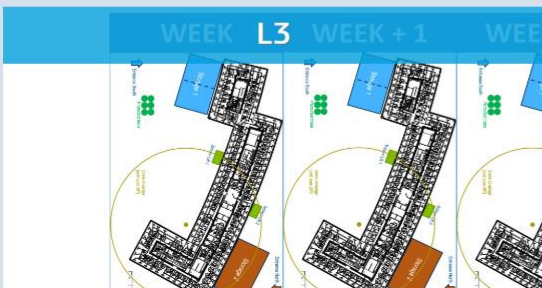
L1



L2



L3



L4



15  
55



7  
OCT







**3DLean can visualize project design models  
and information to enable collaboration**

**Lean analysis tools enable more effective  
problem solving**

**Teams and external suppliers collaborate  
effectively to coordinate activities and supplies**

# The Benefit for Construction Teams



# Value for Construction



**100%**  
Issues  
Identified



**>3%**  
Productivity  
Increase



**~7%**  
Time  
Savings



**~2%**  
Lower  
Contractor  
Fees



**~5%**  
Project Fees  
Reduction



**>80%**  
Team  
Engagement



**~5%**  
Project  
Time  
Reduction

# Takeaway Thoughts

Lean is **great**  
for Construction

**3DLean** helps **apply**  
lean and drive  
**adoption**

Lean tools  
need to be **simple**

**3DLean** is **intuitive**  
and accessible  
to **everyone**

Lean is part of  
a **digital strategy**

**3DLean** bridges the  
gap between **Design**  
& **Execution**

# **Thank You**

## **Contact**

[adrian.wood@3ds.com](mailto:adrian.wood@3ds.com)

[DELMIA.events@3ds.com](mailto:DELMIA.events@3ds.com)

## **Lean Construction Institute Congress**

(see you at Booth #426)