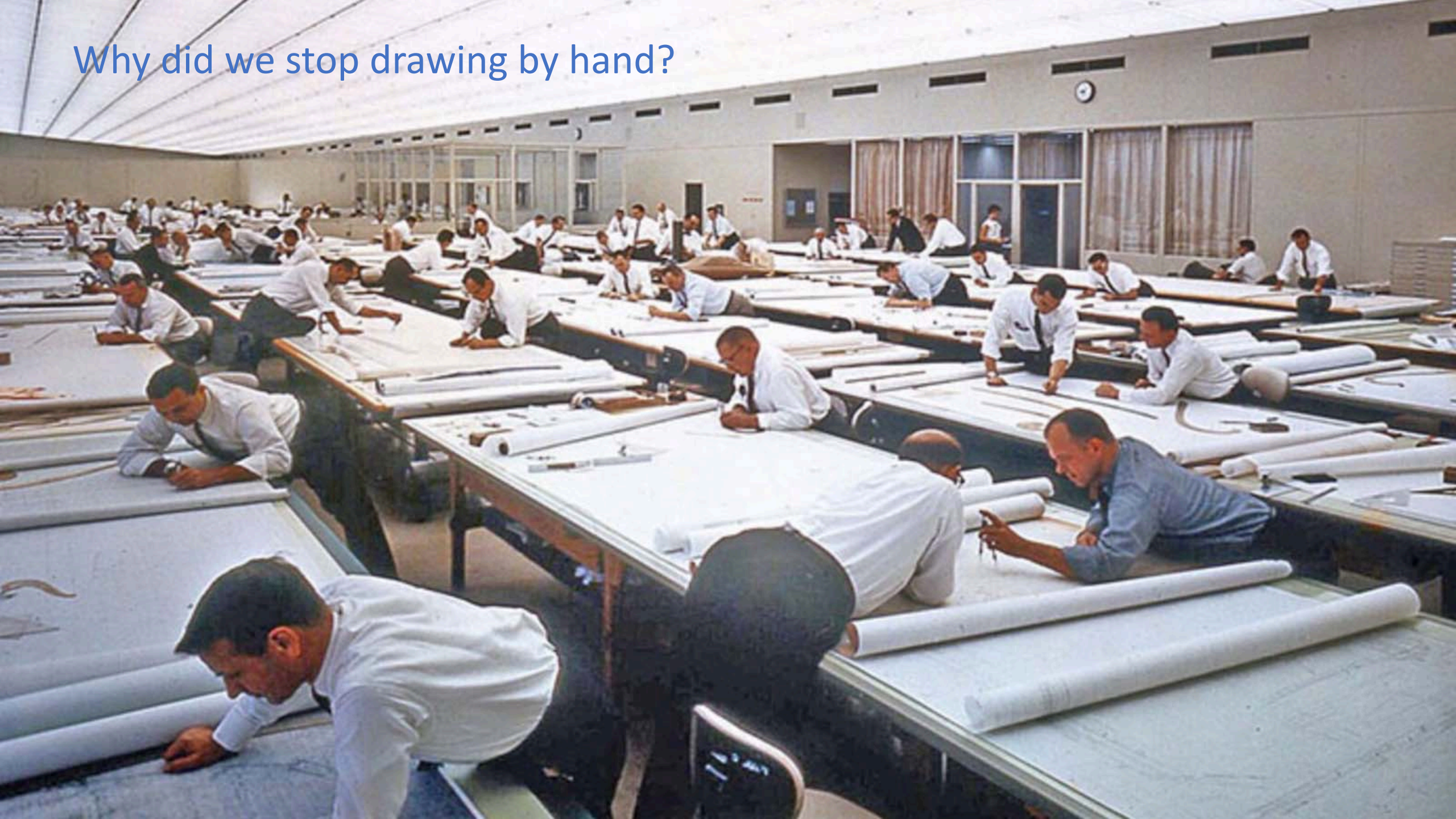




[**CLICK TO KNOW MORE**](#)

BIM, a New Approach for Operations

Why did we stop drawing by hand?





Why did we take the risk to innovate?

1. Efficiency:

- a. Faster iteration
- b. Easier replication
- c. Smarter integration

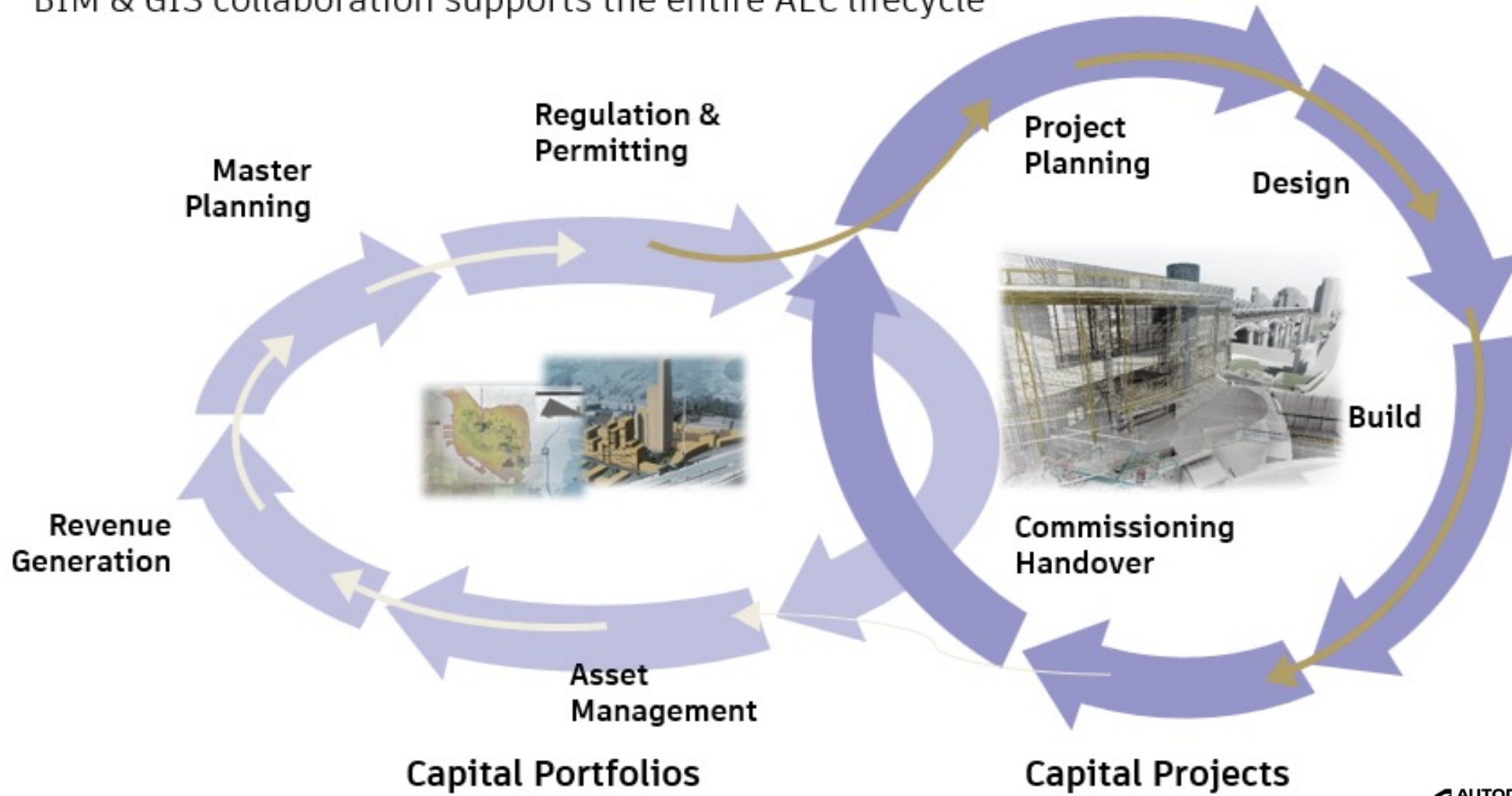
Outweighs initial risk
and investment

2. Survivor bias – you only see those who took the calculated risk.

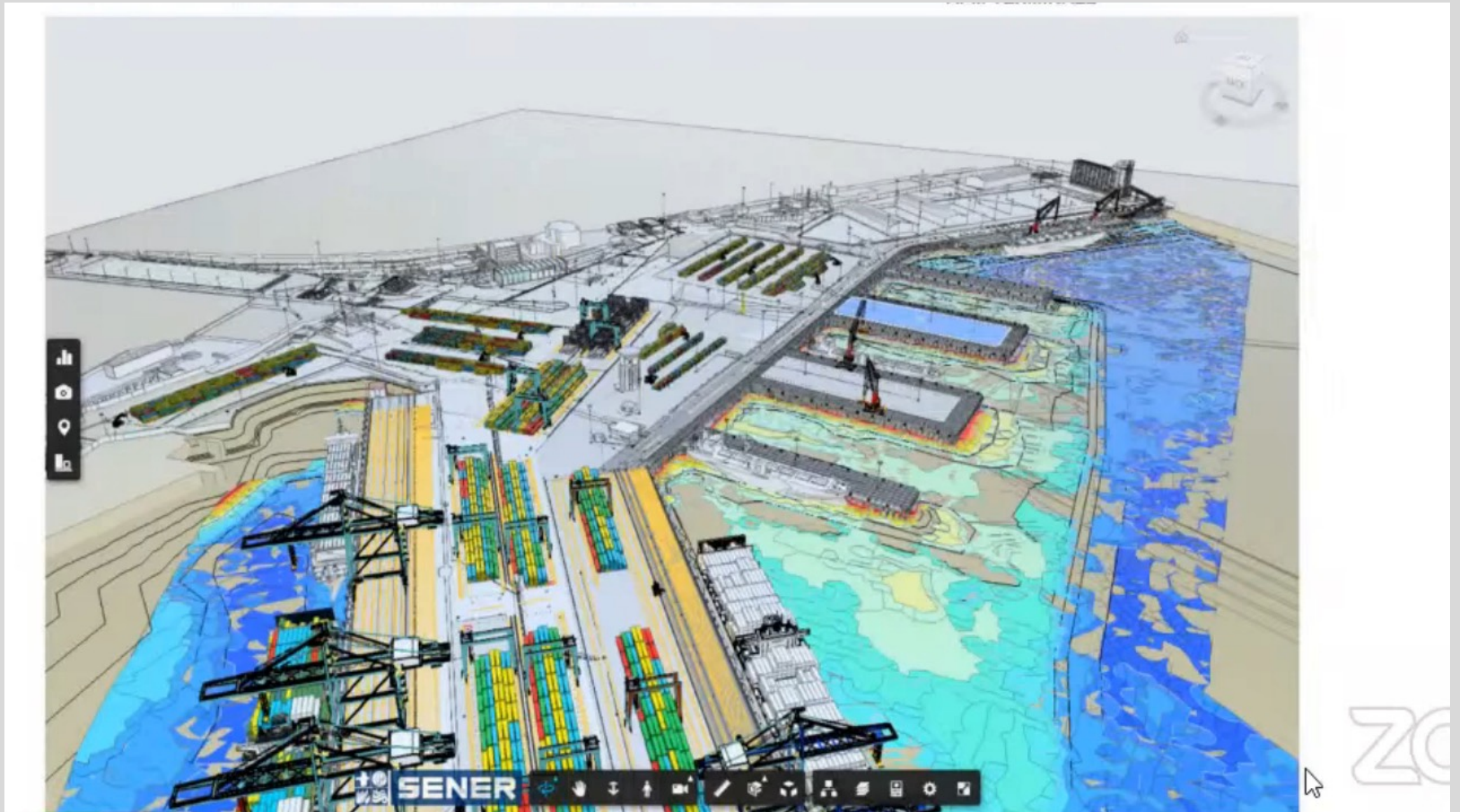
History repeats itself

BIM & GIS

BIM & GIS collaboration supports the entire AEC lifecycle



Case study: Digital Twin, North Terminal of Callao Port, Perú – Sener/Autodesk



Case study: Digital Twin, North Terminal of Callao Port, Perú – Sener/Autodesk

The screenshot displays the BIMonSITE Dashboard for the project "APM Terminal Callao". The interface is divided into several sections:

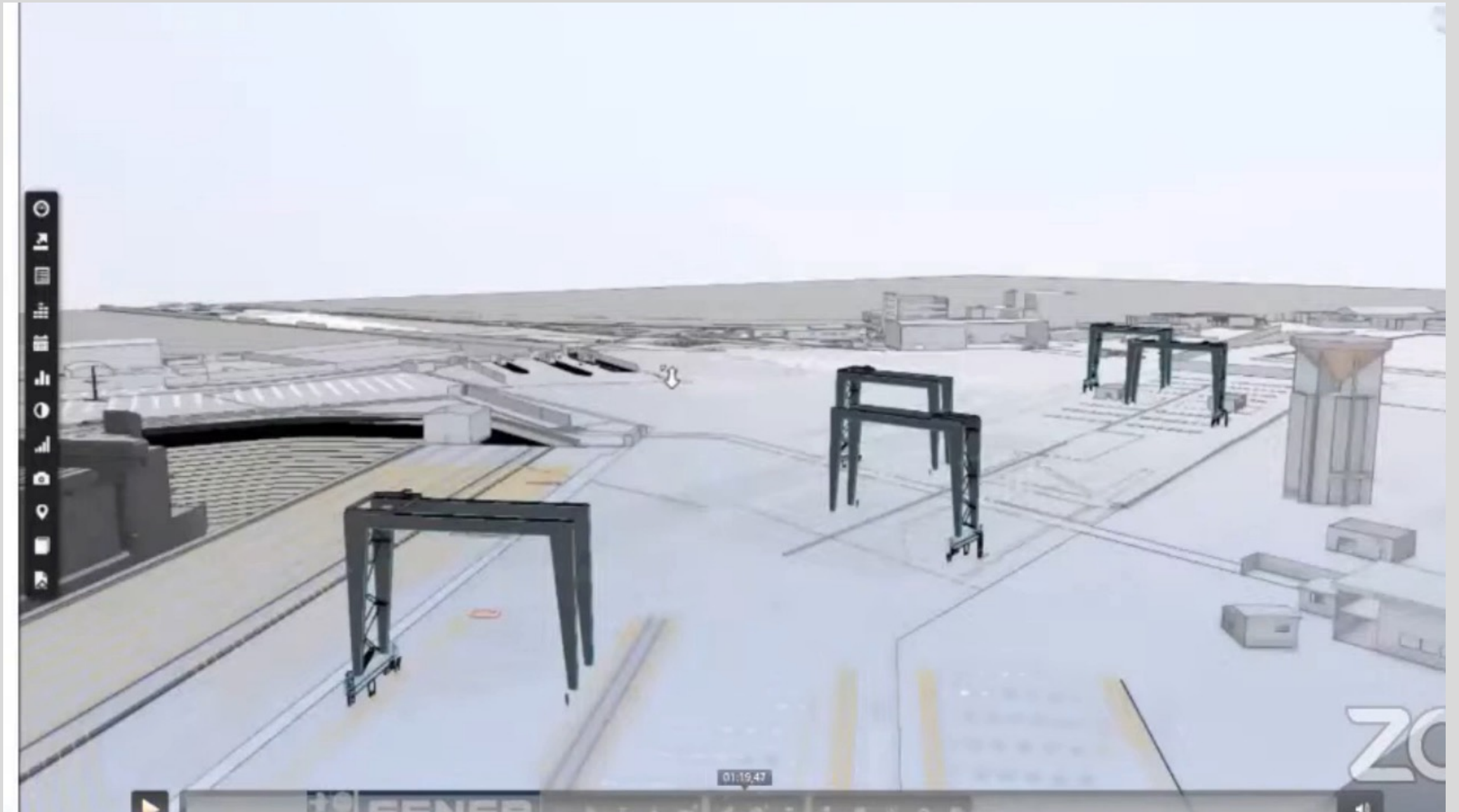
- Project Tree (Left):** A hierarchical list of project elements. The selected item is "VT 328000_12.12.20 PM by Sener Version". Other items include "01 BIM STORAGE", "02 MODOLO DC", "03 MODOLO OLD", "04 REVIEW", "05 EXPORT", and "06 INTAKE STATION".
- Model List (Right):** A list of models loaded in the viewer, including "APM Callao Building.rvt (1/21)", "000 Callao Plant Development.rvt", "001 Callao Transportation.rvt", "APM Callao foto 01.rvt (14/7)", "000 Callao Concept.rvt (2/19)", "000 Callao Model Construction.rvt", "000 Callao Performance.rvt (1/17)", "000 Callao Performance.rvt (1/17)", "000 Callao Performance.rvt (1/17)", "000 Callao Performance.rvt (1/17)", "000 Callao Performance.rvt (1/17)", and "000 Callao Performance.rvt (1/17)".
- 3D View (Center):** A perspective view of the terminal building model, showing a long, narrow structure with a complex roof structure and multiple levels. The model is rendered in a dark color against a light background.
- Navigation Tools (Bottom):** A set of icons for navigating the 3D model, including a home icon, a camera icon, a pan icon, a zoom icon, a rotate icon, a delete icon, a refresh icon, a share icon, and a settings icon.

The dashboard is titled "BIMonSITE Dashboard" and features the SENER logo in the top left corner. The browser address bar shows "apmterminalcallao.azurewebsites.net".

Case study: Digital Twin, North Terminal of Callao Port, Perú – Sener/Autodesk



Case study: Digital Twin, North Terminal of Callao Port, Perú – Sener/Autodesk



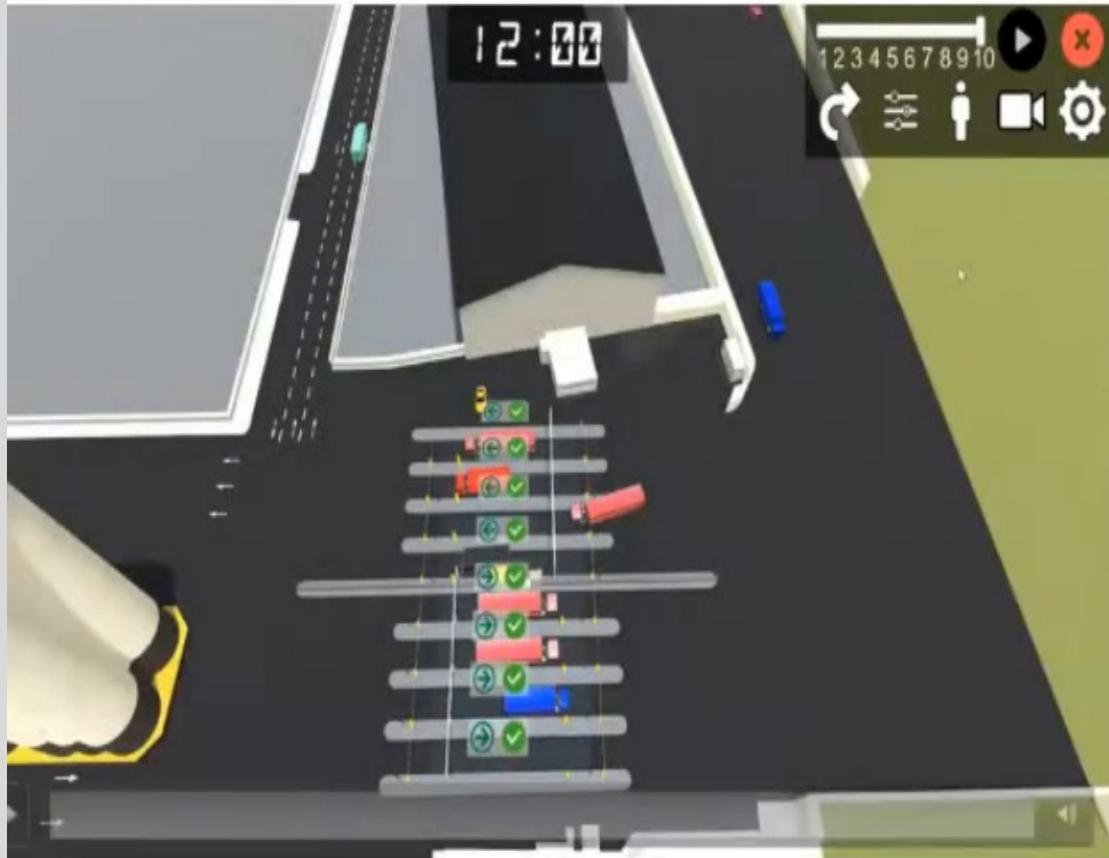
Case study: Digital Twin, North Terminal of Callao Port, Perú – Sener/Autodesk

The screenshot displays the BIMonSITE Dashboard for the North Terminal of Callao Port, Perú. The interface is divided into several key sections:

- File Tree (Left Panel):** A hierarchical tree structure under the heading "Defensa Mitel" listing various project files and folders, such as "01.2 Especificaciones", "02. Documentación APMI", "03. Fase Eiza", "03. Levantamientos - Ciénega", "04. Dashboard", "01.1 Arquitectura de edificación", "01.2 Publicación", "04.3 Integración", and "05. Modelo compartido".
- Central 3D View:** A 3D model of the terminal structure, showing a long pier extending into the water with several rectangular buildings or structures along its length. The model is rendered in a light brown/grey color.
- Navigation and Control Tools:** A vertical toolbar on the left side of the 3D view and a horizontal toolbar at the bottom of the 3D view, both containing icons for navigation (pan, zoom, rotate) and other functions.
- Browser and Navigation:** The top of the screen shows a web browser window with the URL "apmterminalscallao.azurewebsites.net" and several tabs for "BIM 360 Document Management", "KPI Samples", "Autodesk BIM 360 Field", and "My Drive - Google Drive".

ZC

All gates open (in/out)



Half the gates closed (in/out)





MODEL EXPORT DATE

15/11/2023

LIFECYCLE CO2

ACT vs FORECAST

2,568

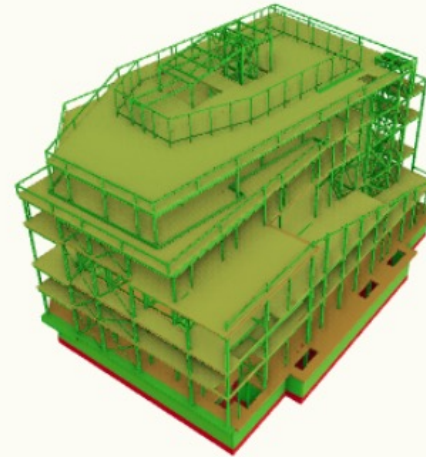
Target: 2700

CO2 BY LEVEL

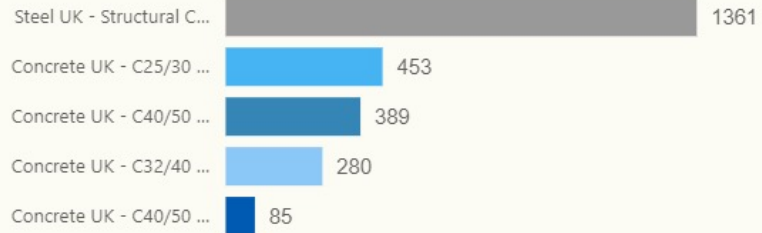
- B1**
455.86
- 02**
219.86
- 04**
198.07
- 03**
191.27
- 00**
175.96
- 01**
170.92
- 05**
132.82
- RF**
3.82

EMBODIED CARBON HEATMAP

MIN MAX



MATERIAL CO2



Category	Material	Volume	tCO2e
Walls	Concrete UK - C40/50 - 25% GGBS	207.73	84.52
Structural Framing	Steel UK - Structural Closed Sections	45.04	910.80
Structural Foundations	Concrete UK - C25/30 - 25% GGBS	1,458.28	453.30
Structural Columns	Concrete UK - C32/40 - 25% GGBS	24.22	8.75
Structural Columns	Steel UK - Structural Closed Sections	22.26	450.23
Floors	Concrete UK - C32/40 - 25% GGBS	749.28	270.78
Floors	Concrete UK - C40/50 - Precast 150mm Hollowcore	892.39	389.37
Total		3,399.20	2,567.75

LCA PHASES



TOTAL GLOBAL PROJECT

2,568
tCO2e

EQUIVALENT CARS USED

558
tCO2e

TOTAL MATERIAL

8,167,942
kg

Key Points

1. Implementation of a **new technology** is never easy, but it eventually **breaks through**
2. **BIM** is not just a technology of the **future**, it is here **today**
3. Mostly used for **design coordination**,
4. But also instrumental to manage **operations**

Don't fall behind !

Thank you