AMANAC CLUSTER

AMANAC WORKSHOP

BRUSSELS,BELGIUM | 03.07.2019

WHAT KIND OF BUILT ENVIRONMENT FOR FUTURE GENERATIONS?

Title: Long lasting built environment

Speaker: Domenico Asprone

Company/Institution: University of Neaples Federico II

endurcrete

DACOMAT

RESHEALIENCE
Ultra High Durability Concrete

The projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 760639 (EnDurCrete), 760824 (ReSHEALience) and 761072 (DACOMAT)

Long lasting built environment

Setting the scene: current criticalities in Facility Management

Large amounts of **scattered** information stored in **poorly structured decentralized** archives

Losses

time

money

resources

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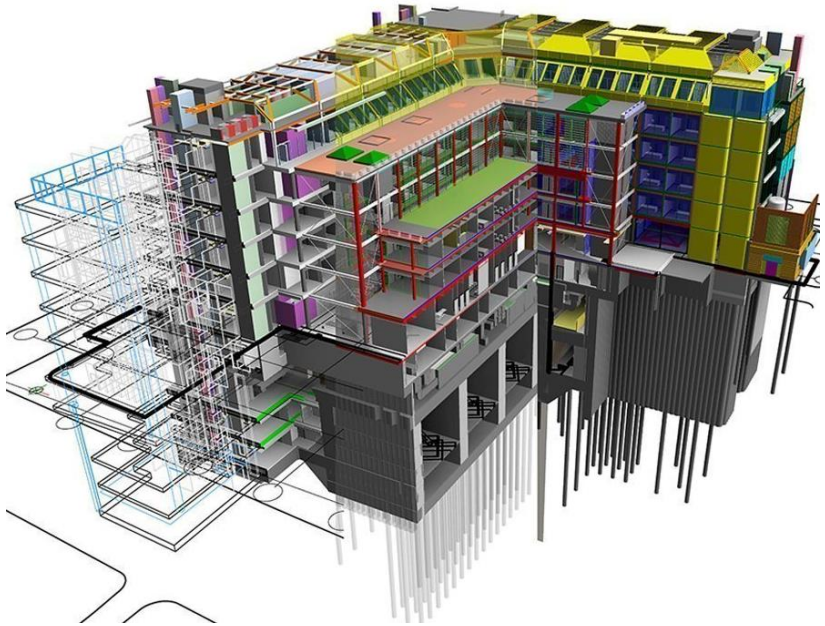
Setting the scene: BIM enables the digital twin of a building



Digital Twin

The **Digital Twin** of a building is a digital model (BIM model) connected with the real asset by means of sensors.

Efficiency

Centralized data

Simulation of damage, degradation, maintenance and management scenarios

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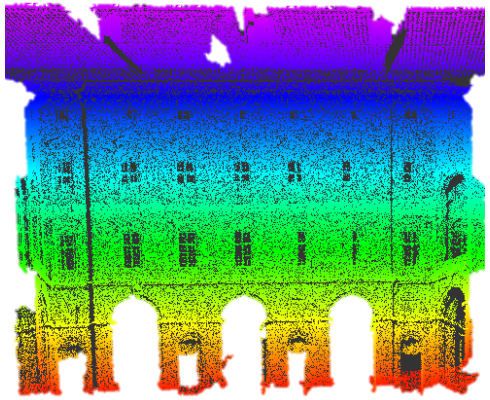
Building Information model

Building Information Modeling (BIM) supports surveys by means of drones and laser scanners. Scanned images can be transformed in an actual BIM model.



Scanned images

Bim model

Scan to FEM

A Finite Element Model (FEM) can be derived by the BIM model and used to perform structural analysis.

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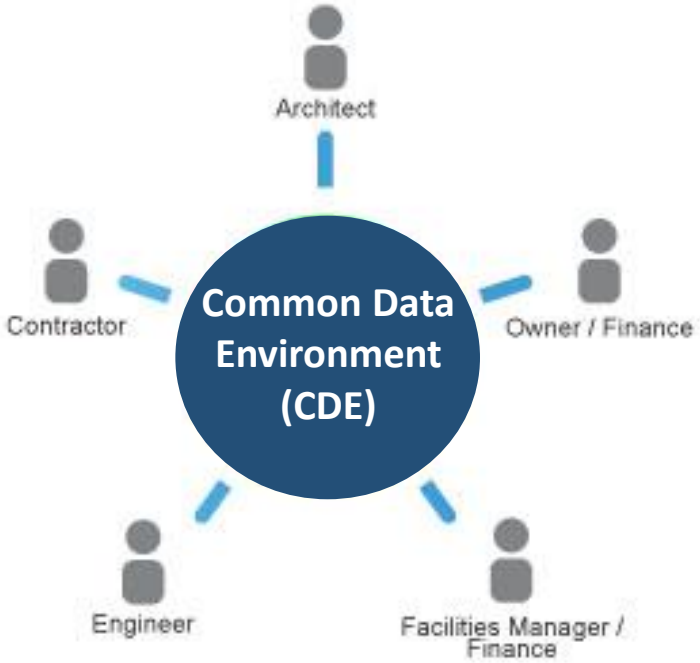
Building Information modeling

BIM models are enriched with information produced following collaborative **workflows** that enable **coherent** and **consistent data** to be produced.



Collaborative platforms

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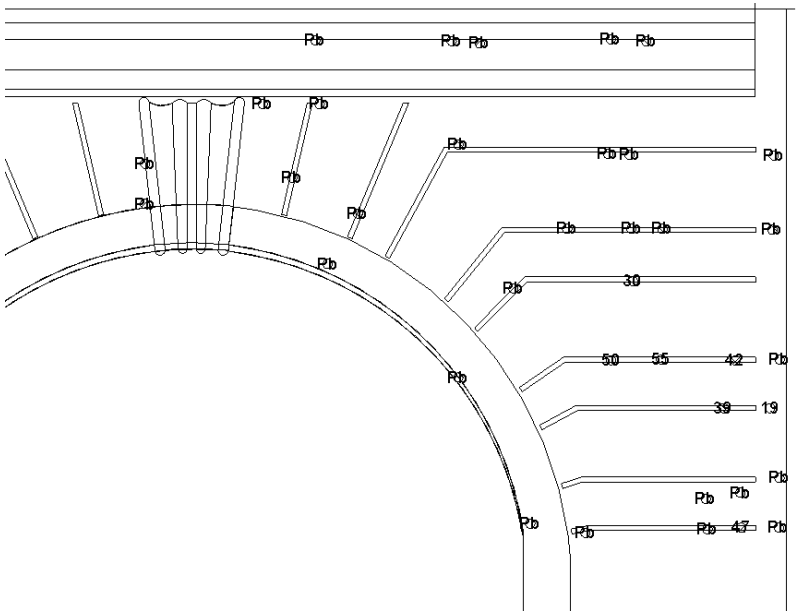
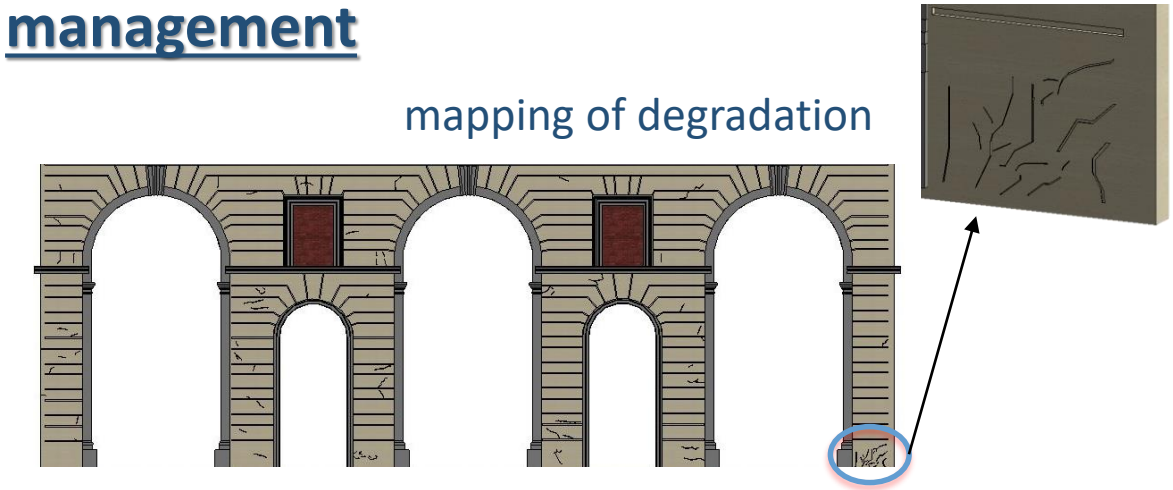
Building Information management



Tracking location of investigations

mapping of degradation



BIM models support structural engineering in the operation phase (Facility Management) as they enable mapping of degradation and tracking location of site investigations.

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BIM for structural health monitoring

accelerometers

drones

anemometers

strain gauges

Digital Twin

IOT

Data collection

Storing processes

Asset Common Data Environment (CDE)

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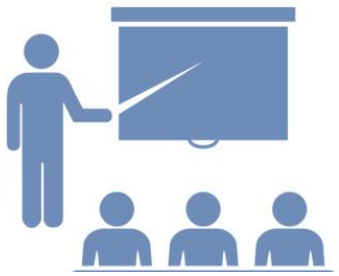
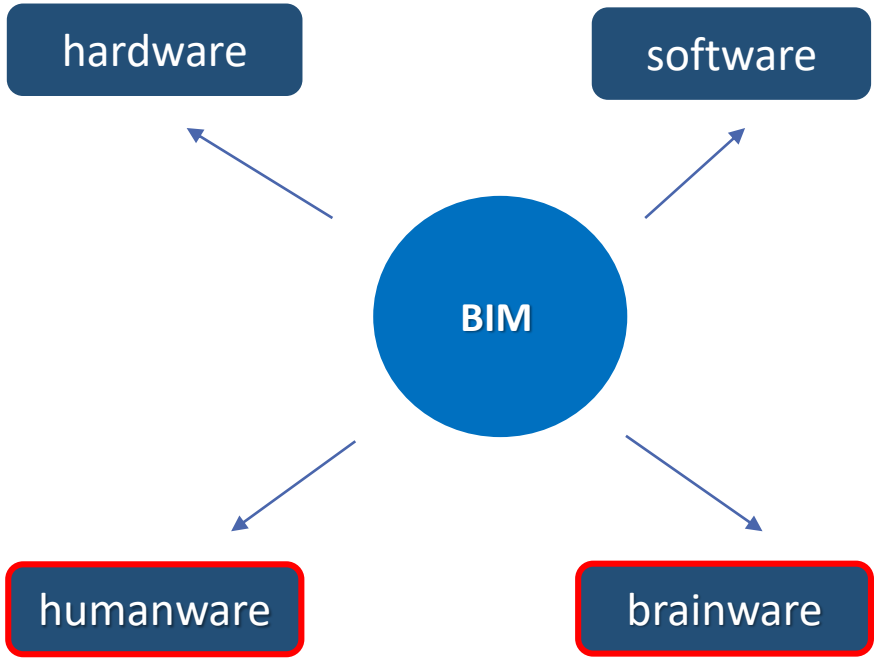
BIM in Education



The ***University of Neaples Federico II*** is at the forefront of training in BIM methodologies and technologies. The BIM approach is explained in **specific courses** included in both **Master's Degree** courses and a **university master** course. **Training** is provided to **public administrations** too.



There is great effort in the improvement of **brainware** and **humanware** components

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