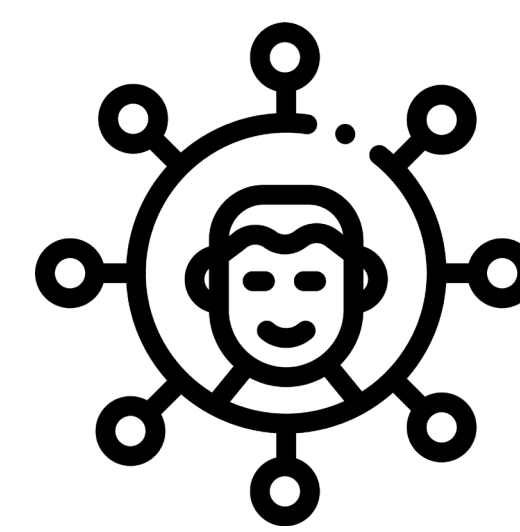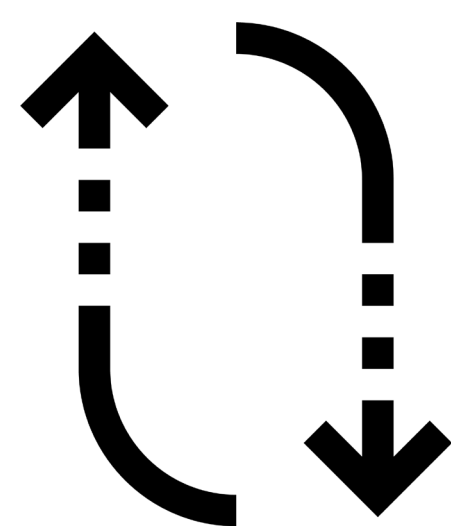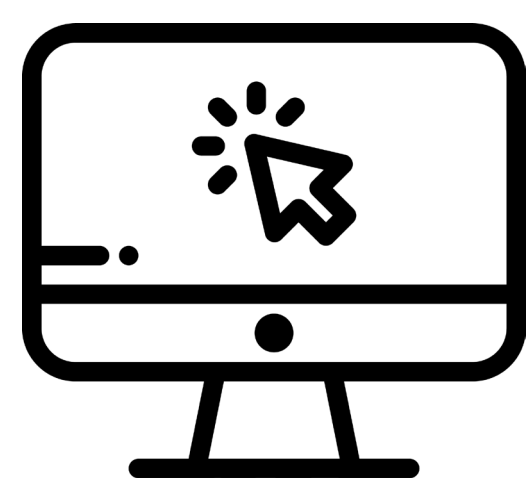# SPHERE
BIM DIGITAL TWIN PLATFORM

SPHERE is a 4-year Horizon 2020 project targeting the improvement and optimisation of buildings' energy design, construction, performance, and management, reducing construction costs and their environmental impact while increasing overall energy performance.

PLATFORM AS A SERVICE (PaaS)

An underlying ICT Systems of Systems infrastructure based on Platform as a Service (PaaS) service to allow large scale data, information and knowledge integration and synchronization.

VERTICAL INTEGRATED PROCESSES

During any phase of the building's lifecycle, different stakeholders will be able to interact with this BIM Digital Twin model, based on the building's information and a scalable set of different software tools.

BUILDING SPECS & REAL TIME DATA

Seamless and efficient updating based on IDDS framework, where any action can be analysed in a virtual environment prior to physical implementation and consequent expenses.

USER CENTERED DESIGN (UCD)

To accelerate market uptake & social acceptance in order to help promote standards and policy that paves the way for a more extended use of ICT-tools in Building design, construction and operations.

SPHERE will help boost buildings' energy performance throughout their lifecycle and reduce time, costs & the environmental impact of construction and renovation processes

25% Less CO2 and GHG emissions in buildings
25% Reduction in construction time
15% Less energy demand during the operational phase

A Building-centred Digital Twin Environment, involving not only the design and construction of the Building but including also the manufacturing and the operational phases.

The seamless and efficient updating and synchronization of SPHERE's Digital Twin platform based on an **Integrated Design and Delivery Solutions (IDDS) framework.**

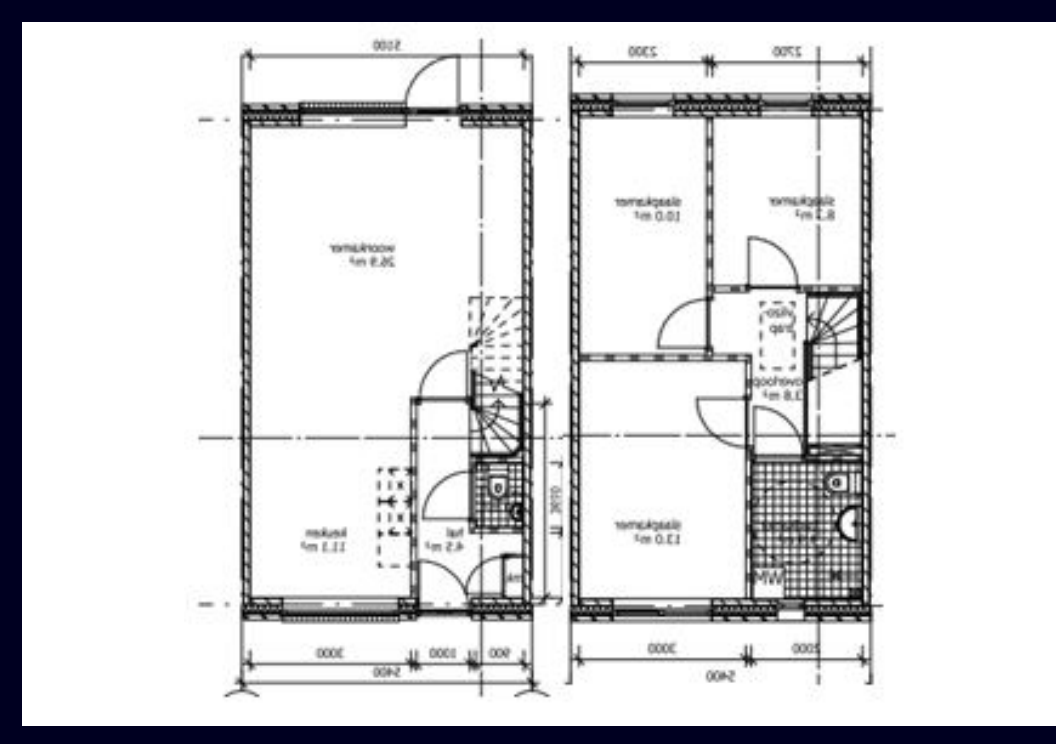|	
LAYER 1	AN INTEGRATED FRAMEWORK ENABLING NOVEL DESIGN, CONSTRUCTION AND OPERATION & MAINTENANCE METHODS
LAYER 2	SPHERE ICT PLATFORM AS A SERVICE FOR RESIDENTIAL BUILDINGS
LAYER 3	SPHERE INTEGRATED LIFE CYCLE DESIGN APPROACH IN DIGITAL TWINS
LAYER 4	SPHERE ICT BUILDING AND CONSTRUCTION APPS
LAYER 5	SPHERE ICT OPERATION AND MAINTENANCE APPS
LAYER 6	DEMONSTRATION

PILOTS

ITALY
PARTNERS: DE5

Multidwelling retrofitting
H&C and Renewables use case
Advanced use of BIM
BIMBots

NETHERLANDS
PARTNERS: TNO

NEANEX App
Block Chain App to sign
Smart Contracts
BIMBots
Cloud EIRs

AUSTRIA
PARTNERS: CREE BY RHOMBERG

Focus on extensive use of Sustainablity
Decision Support Tool Development
VRM IoT / NEANEX App
Cloud BEMS

FINLAND
PARTNERS: CAVERION, VTT

ERP and Building Automations
NEANEX App
VCMP Suite
BIMbots in the BIM Server

Visit our website and subscribe to our newsletter to stay up to date!

https://sphere-project.eu

@SphereProjectEU

linkedin.com/company/sphere-project

Coordinator: IDP

IDP · VTT · R2M SOLUTION · COMSA CORPORACIÓN · octopussy.co · eurecat Centre Tecnològic de Catalunya · comet Global Innovation Consulting · NUI Galway OÉ Gaillimh · vrm · EMPRESARIOS AGRUPADOS

TNO · BASF We create chemistry · neanex · ekodenge · Caverion · cree by Rhomberg · DE5 DE CINQUE · enerit · ASCORA