GWF
GEOSPATIAL WORLD FORUM
CONFERENCE & TECH SHOW
Amsterdam / 27 April - 1 May 2026

I Am Speaking At

AEC Summit

Redefining Next-Gen Infrastructure through Data, Intelligence, and Resilience

30 April - 1 May 2026

Guillermo Corral Comeras
Urban Design Lead
MCORM Architecture & Urban Design
Spain

MCORM
ARCHITECTURE AND URBAN DESIGN

ZIGURAT
INSTITUTE OF TECHNOLOGY

360 SMART MINDS

KNOW URBANNET
NETWORK KNOWLEDGE

ARCHITECT (Ireland and Spain)
Urbanist, lecturer and consultant

Integrated Digital solutions: Transforming Buildings, Campuses, and Airport Infrastructure

Discussion Pointers:

- *Integrating building-level BIM and systems into campus and airport-wide digital platforms.*
- ***Enabling real-time monitoring, performance optimisation, and scenario planning for terminals and campuses (neighbourhoods and cities)***
- ***Using data and analytics to drive sustainability, carbon reduction, and energy optimisation in large-scale built environments.***
- *Leveraging digital intelligence to improve **comfort, safety, and user-centric design** for students, staff, and passengers.*
- *Connecting design and construction data with facilities management and operations across buildings and terminal assets.*
- *Ensuring **seamless data exchange** across building systems, airport specialized systems, and **diverse stakeholders.***

Integrated Digital solutions (applied and potential)**:** ***"Three examples from housing, regeneration and Smart City strategy initiatives"***

Kilkenny County Council
Comhairle Chontae Chill Chainnigh

CALAFELL 2030 | Objectius de Desenvolupament Sostenible

BARRYSPARKS (DUBLIN, IRELAND)

Strategic housing delivered at scale
within a mixed-use masterplan

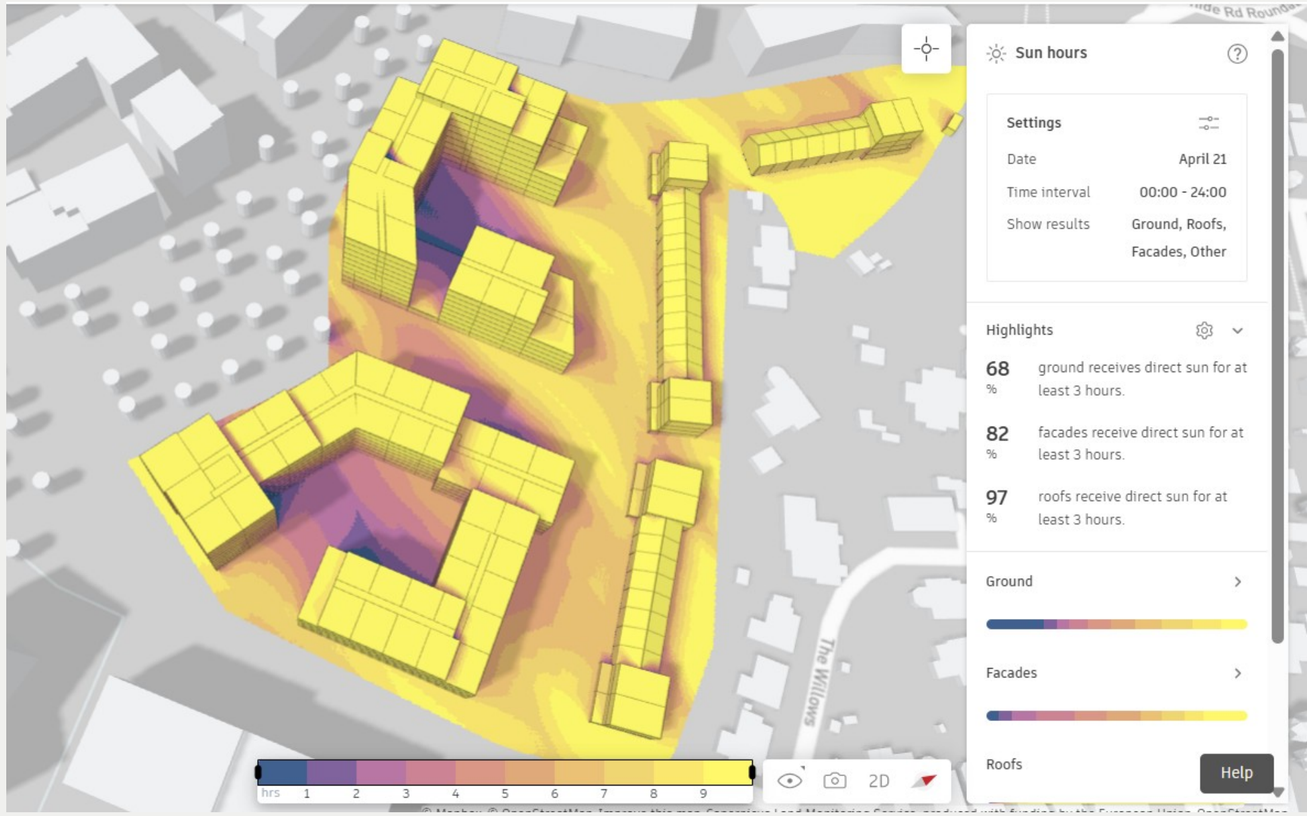
BARRYSPARKS (DUBLIN, IRELAND) - KEY INSIGHTS

Strategic housing delivered at scale within a mixed-use masterplan

- **Urban BIM–CIM integration across scales.** Linking the architectural project with wider urban systems (existing and proposed).

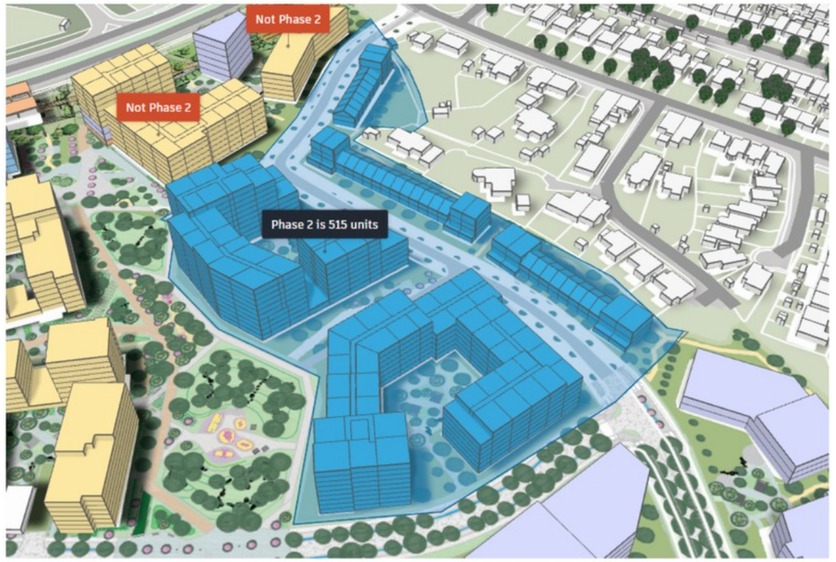
- **Early-stage BIM for data-driven design.** Using BIM from the outset to test layout, density, interfaces and infrastructure relationships.

- **Digital twin approach to neighbourhood performance.** Combining BIM and CIM/GIS to assess 15-minute neighbourhood indicators.



Barrysparks Masterplan conceitual 3D massing

View of Phase 2



Areas Phase 2

Area metrics

Analysis area: Selection (1)

Buildings

Site area		29,565 m²
BC	34 %	10,185 m²
GFA	207 %	61,102 m²
GIA	186 %	54,992 m²
NIA	167 %	49,493 m²
Number of living un...	-	515

468 apartments
47 houses and townhouses
Net Area = c.2.6 HA
Net Density = c.200 dw/HA

Barrysparks Masterplan Overall

Design view

Version: Untitled version
Last updated: 23 Apr 2026, 16:24

Site Layout Phase 2

Design view

Barrysparks View
Version: Barrysparks View
Last updated: 23 Apr 2026, 16:34

Analyse

Area metrics

Analysis area — Selection (1)

Buildings

Site area

BC	-	7,477 m
GFA	-	54,581 m
GIA	-	49,123 m
NIA	-	44,211 m
Number of living un...	-	46

Building 2

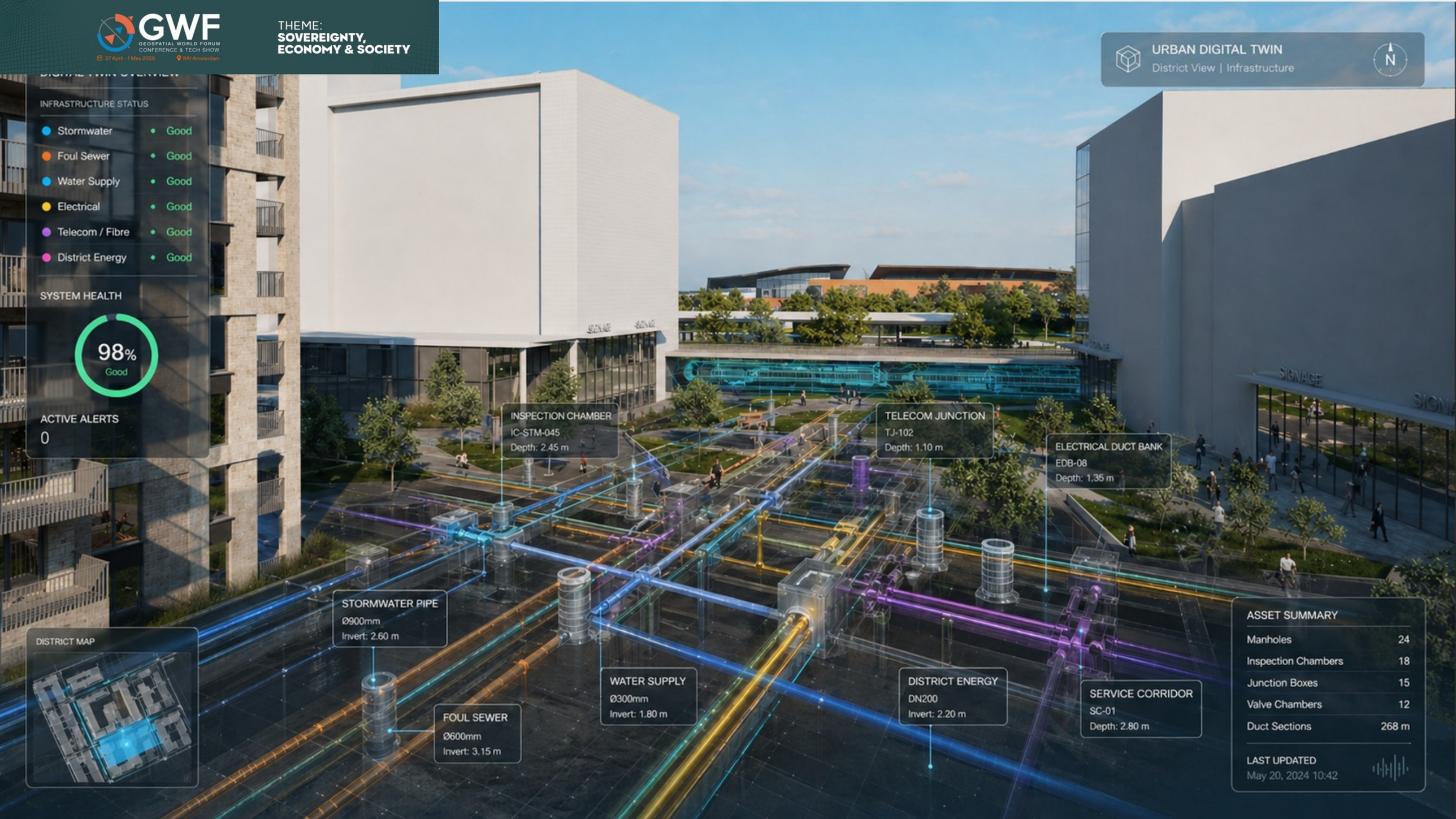
Mixed — 3m

Function

Floor plans

Floor plan 1 - 1

Floor plan 1 - 2


URBAN DIGITAL TWIN
District View | Infrastructure
N
INFRASTRUCTURE STATUS
Stormwater • Good
Foul Sewer • Good
Water Supply • Good
Electrical • Good
Telecom / Fibre • Good
District Energy • Good
SYSTEM HEALTH
98%
Good
ACTIVE ALERTS
0
INSPECTION CHAMBER
IC-STM-045
Depth: 2.45 m
TELECOM JUNCTION
TJ-102
Depth: 1.10 m
ELECTRICAL DUCT BANK
EDB-08
Depth: 1.35 m
STORMWATER PIPE
Ø900mm
Invert: 2.60 m
FOUL SEWER
Ø600mm
Invert: 3.15 m
WATER SUPPLY
Ø300mm
Invert: 1.80 m
DISTRICT ENERGY
DN200
Invert: 2.20 m
SERVICE CORRIDOR
SC-01
Depth: 2.80 m
DISTRICT MAP
ASSET SUMMARY
Manholes 24
Inspection Chambers 18
Junction Boxes 15
Valve Chambers 12
Duct Sections 268 m
LAST UPDATED
May 20, 2024 10:42

JOHN STREET URBAN DESIGN STRATEGY, KILKENNY (IRELAND)

ERDF-funded Integrated Urban Strategy and prioritised project:

Old Carnegie Library repurposed as The Stories of Kilkenny

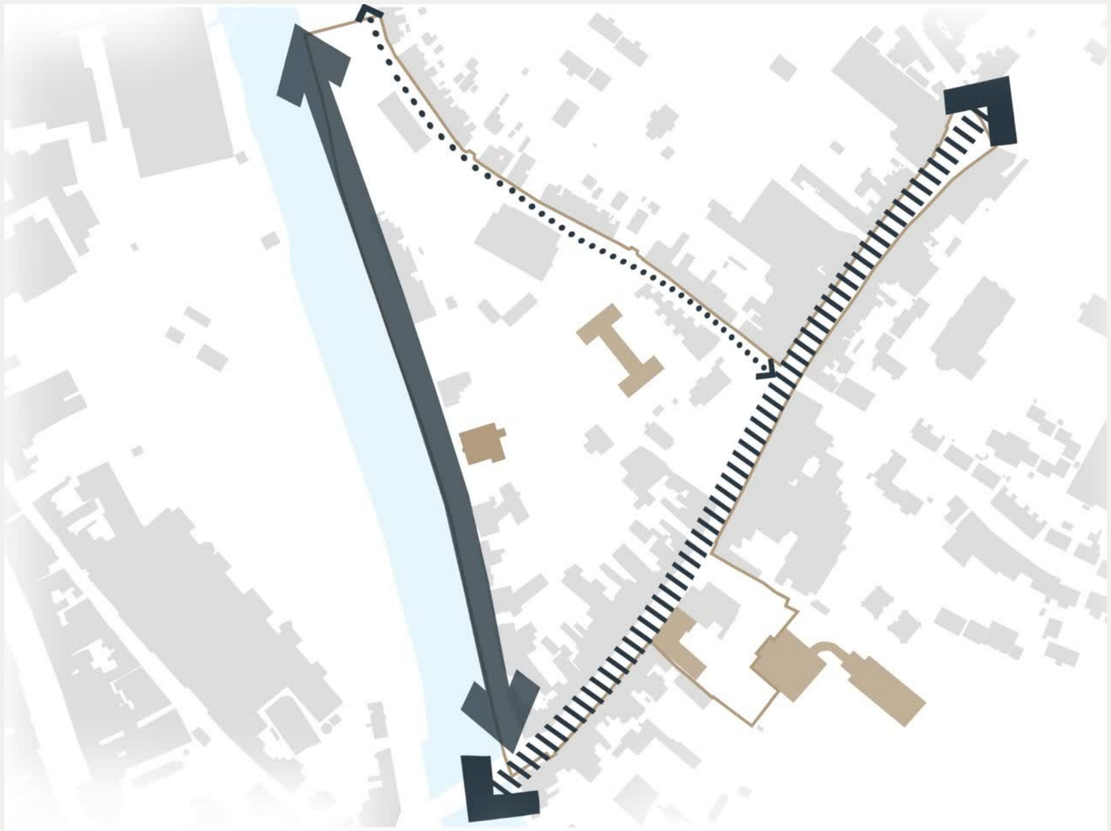
JOHN STREET URBAN DESIGN STRATEGY, KILKENNY (IRELAND)

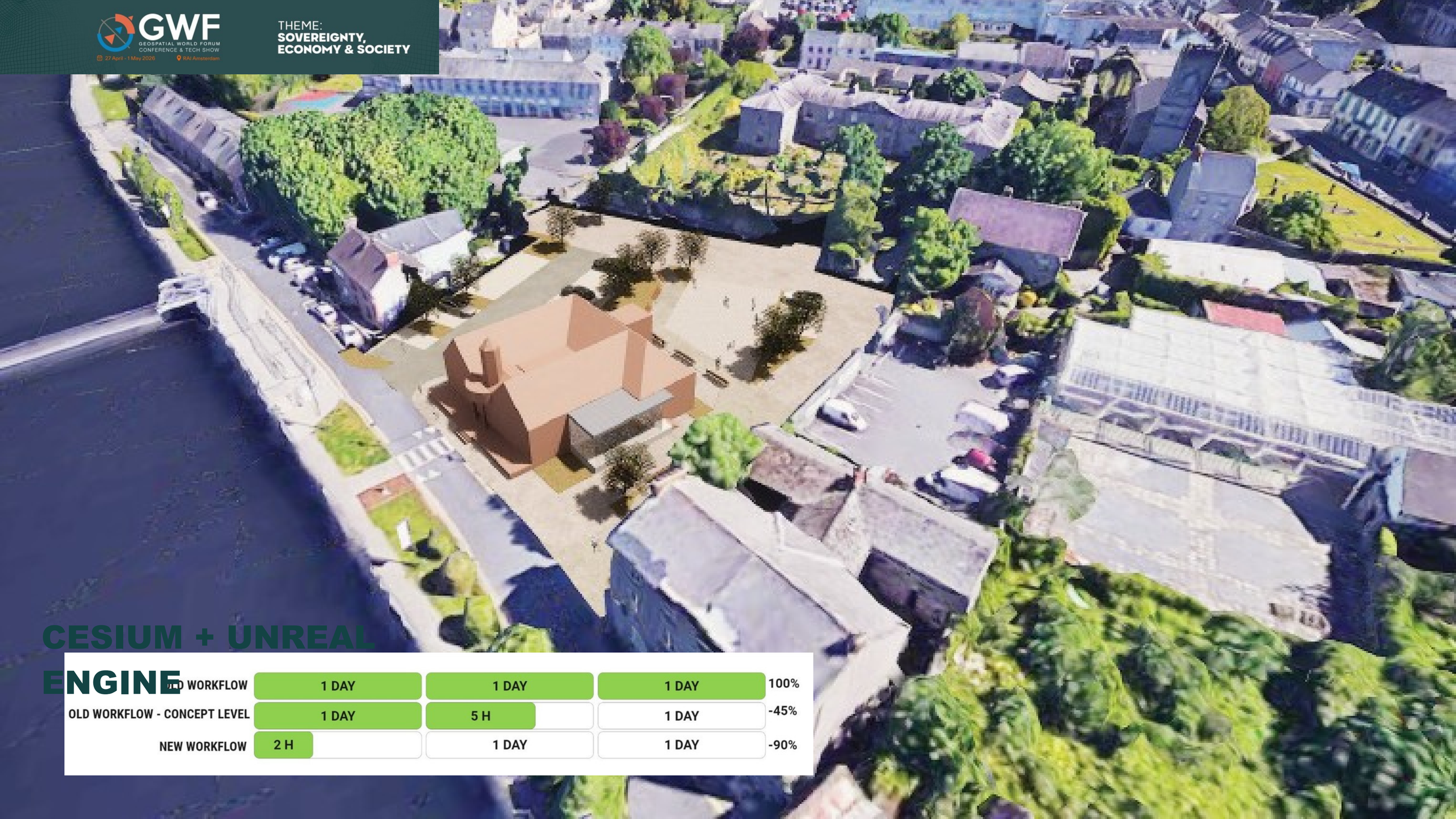
ERDF-funded Integrated Urban Strategy and prioritised project: Old Carnegie Library repurposed as "The Stories of Kilkenny"

- **BIM, CIM and immersive visualisation for participation and heritage interpretation.** Supporting public and stakeholder engagement while communicating the Stories of Kilkenny the cultural value of the project.

- **Advanced BIM maturity for lifecycle management.** Moving beyond design coordination Level 2) to support long-term operation (Level 3)

- **Shared digital environment for compliance and impact monitoring.** Using a common data environment with digital twin potential to monitor THRIVE / ERDF implementation.





CESIUM + UNREAL ENGINE

D WORKFLOW	1 DAY	1 DAY	1 DAY	100%
OLD WORKFLOW - CONCEPT LEVEL	1 DAY	5 H	1 DAY	-45%
NEW WORKFLOW	2 H	1 DAY	1 DAY	-90%

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THEME:
SOVEREIGNTY, ECONOMY & SOCIETY

Requirements (not yet certified)

U.S. GREEN BUILDING COUNCIL LEED CERTIFIED USGBC

CODE FOR A SUSTAINABLE BUILT ENVIRONMENT BREEAM BRE GLOBAL

CONNECTIVITY
Public: Wi-Fi
Building Network
IoT Enabled

SMART HERITAGE BUILDING
- Integrated Climate Monitoring
- Adaptive Lighting
- Energy Optimisation

BUILDING SENSORS
Temp: 22°C
Humidity: 45%
Air Quality: Good

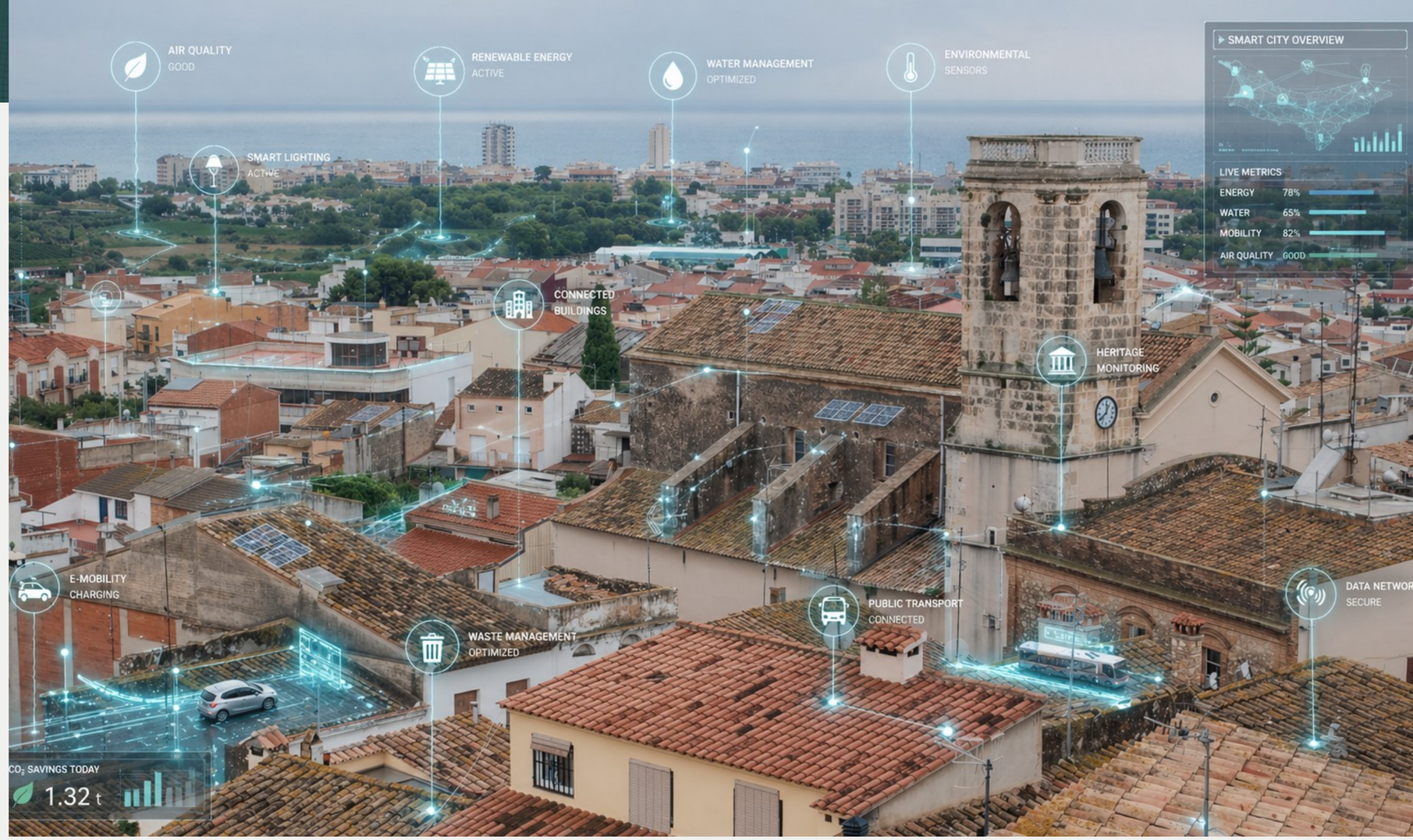
LOCAL WEATHER
23°C Sunny
Feels like 23°C
Wind 12 km/h
Humidity 61%

The Stories of Kilkenny

PEOPLE FLOW
Real-time Data

ENERGY USAGE
Optimised
22% Efficiency

KILKENNY
A Smarter City
of Ireland



CALAFELL SMART CITY STRATEGY & PROJECTS

Technical consultancy services to build a smart city strategy and address relevant funding calls

CALAFELL SMART CITY STRATEGY & PROJECTS

Strategic housing delivered at scale within a mixed-use masterplan

- **Smart platform for user-focused service delivery.** Using an integrated platform to improve how urban services are accessed, coordinated and experienced.

- **Smart water management through connected data**, enabling more sustainable and efficient management of local water infrastructure.

- **Data-driven energy retrofit of public buildings.** Using data to prioritise interventions, improve operational performance and generate additional electricity for a local “prosuming” community.

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THEME: SOVEREIGNTY, ECONOMY & SOCIETY

Source:

Local Digital Twins for Smart Sustainable Communities

01

Work Strand 1

Interconnecting existing Local Digital Twins for cross-border data exchange, shared services and interoperability.

02

Work Strand 2

Creation of new Local Digital Twins based on shared challenges across cities and communities.

03

Work Strand 3

Adding new and advanced AI services and innovative open-source components to the EU LDT Toolbox.

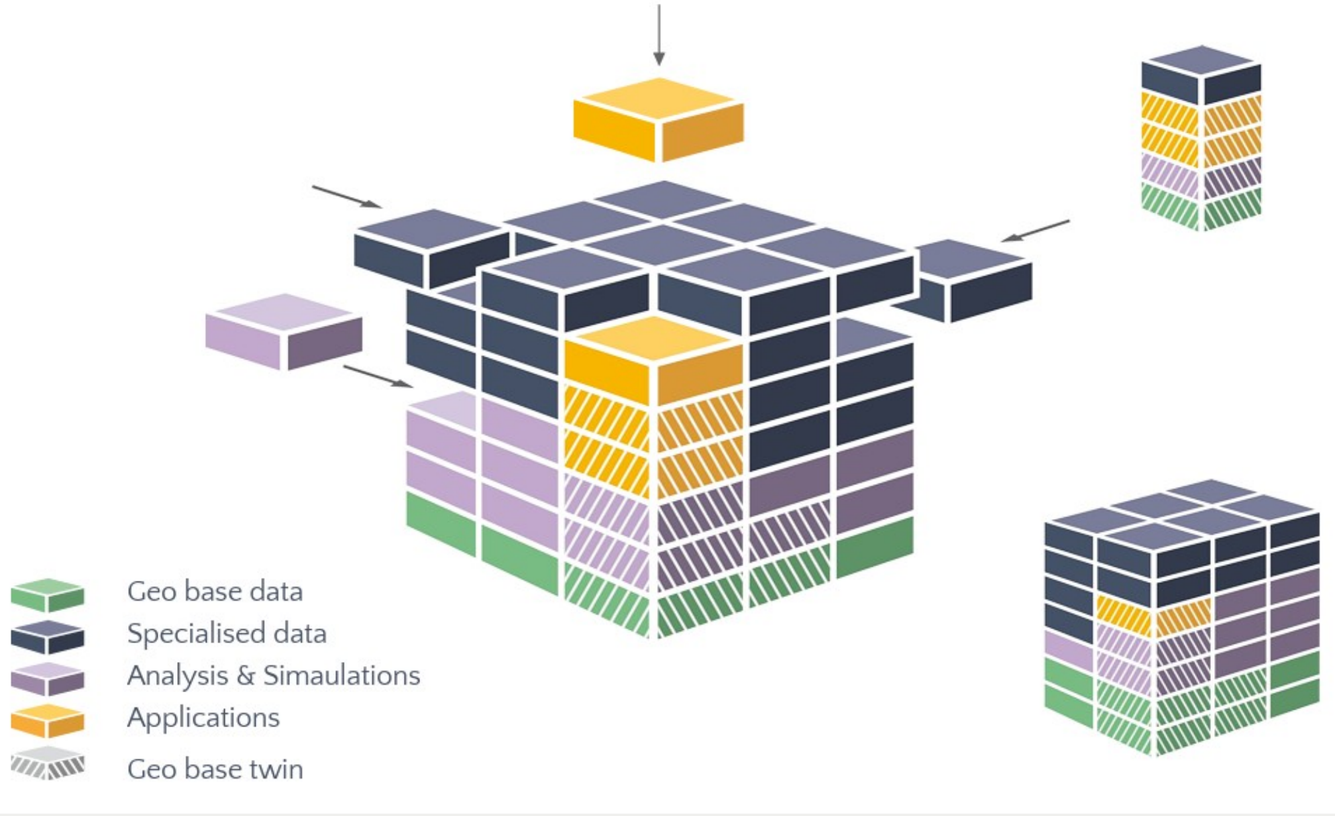
EU-FUNDED PROJECT

Local Digital Twins for Smart and Sustainable Communities

LDT4SSC supports cities, regions and public authorities across Europe in developing, connecting and advancing Local Digital Twins — enabling AI-supported decision making for a greener, more inclusive future.

View Open Call 3 | Helpdesk & FAQ

€17M	3	€1M	18 mo
TOTAL FUNDING	OPEN CALLS	MAX PER CONSORTIUM	MAX DURATION



CONCLUSIONS

What was done / will be done? What was not? Why?

- **Digital solutions enhanced project value and assisted on decision-making,** particularly at evidence-based architectural design and stakeholder management.

- **Promising integrated digital solutions remained potential due to owing to client's scope** (both public or private) and **lack of infrastructure available information** in an interoperable BIM/CIM environment

- Supportive **funding opportunities** enable the **creation of a favourable context for integrated digital solutions** and more coordinated urban governance.

Source: Geo Week News

The SAAL, Participatory architecture for housing delivery (Portugal 1974-1977)
Photo by Alexandre Alves Costa

CONCLUSIONS

We could do this analogically, why not with digital support?