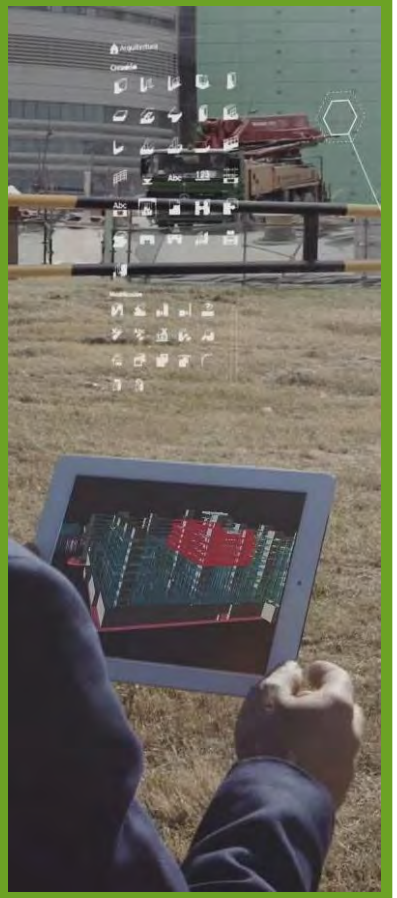

BUILT2SPEC

Tools for the 21st Century Construction Worksite

Boosting construction practices through a new set of technologies

www.built2spec-project.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 637221. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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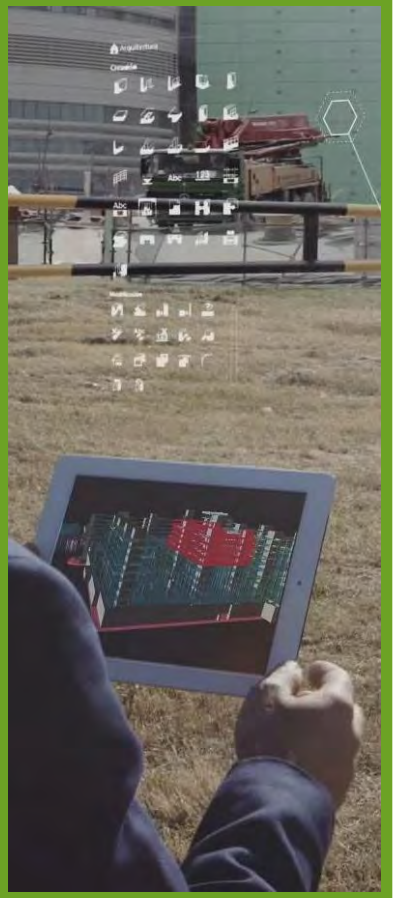

Objective

Reduce the energy performance gap between
a building's designed and as-built energy performance.

Self-Inspection, 3D Modelling,
Management and Quality-Check Tools
for the Construction Worksite

Portable and easy to use!

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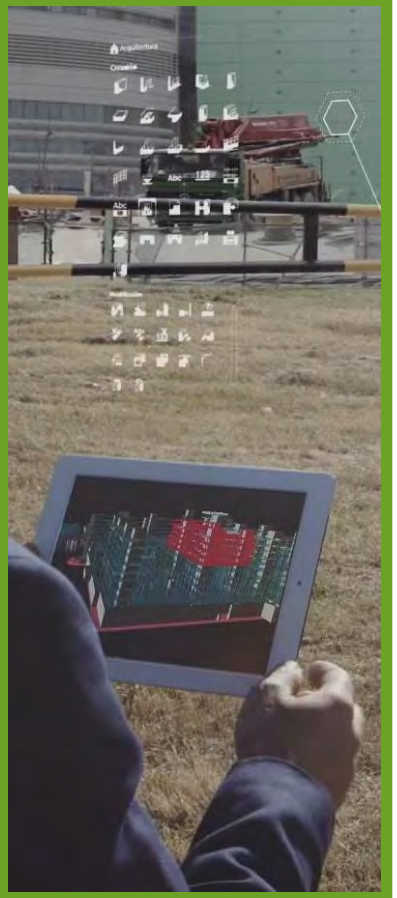
Tools for the 21st Century Construction Worksite



Funded by the European Union's Horizon 2020 research and innovation programme

Coordinator: Nobatek

Start: January 2015

Duration: 4 years

20 European partners:
Universities, research institutions and technological centers, industrials and SMEs from France, Germany, Spain, Ireland, Netherlands, Italy, Switzerland and Great Britain

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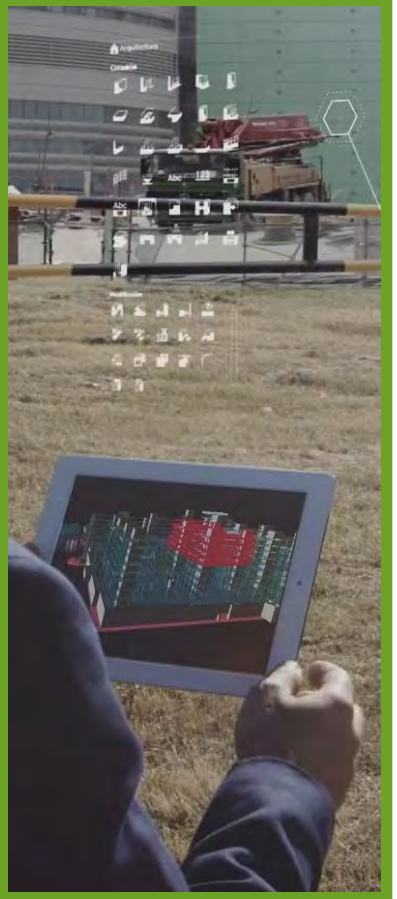
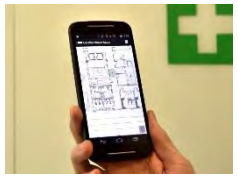


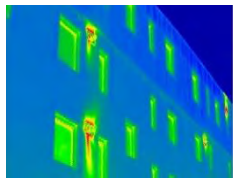
Tools & Topics

- Energy efficiency quality checks
- Indoor air quality tools
- 3D and imagery tools
- Smart building components
- Building Information Modelling
- Acoustic tools
- Airtightness test tools
- Thermal imaging tools







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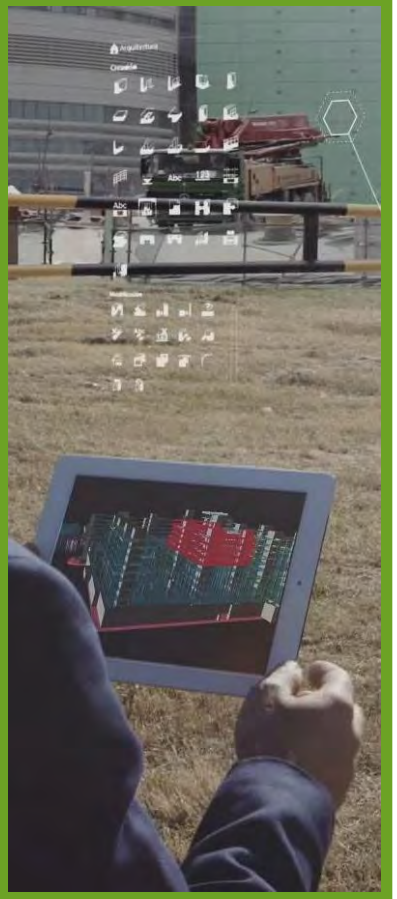

- Energy efficiency quality checks
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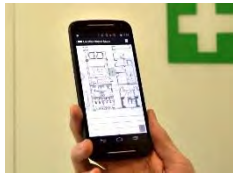
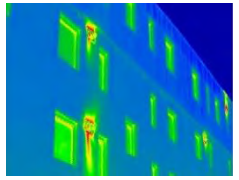
Virtual Construction Management Platform







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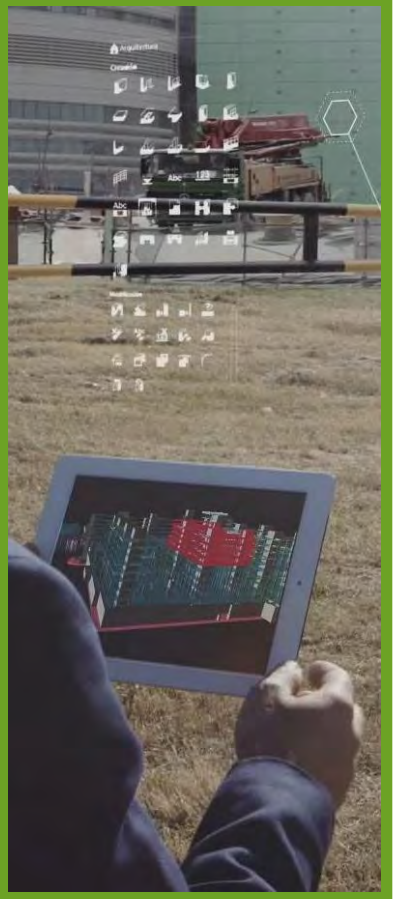


Tools & Topics

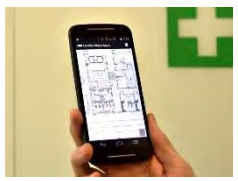
Energy efficiency quality checks

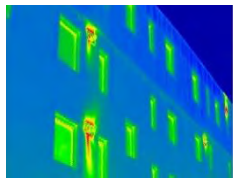
We compile and further develop the know-how of various experts within and outside the consortium.

The result will be an easily usable **expert tool to guarantee high quality construction work.**







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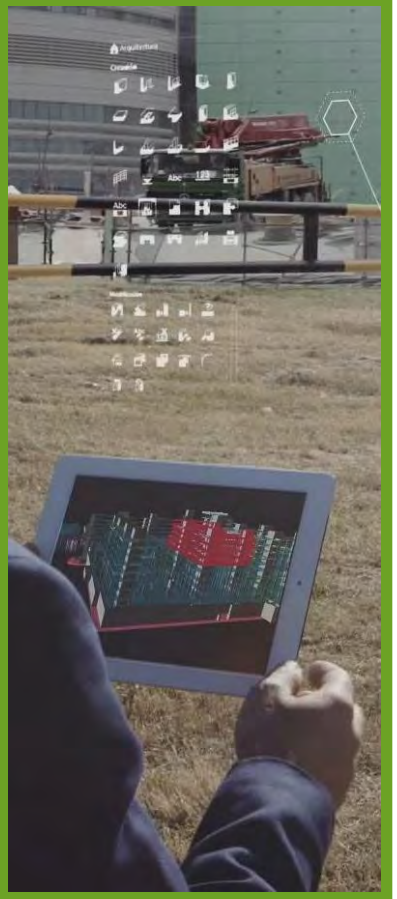


Tools & Topics

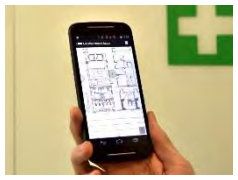
Indoor air quality tools - identify pollution and track its source!

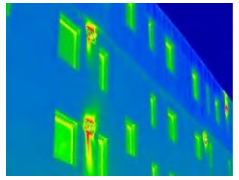
Measuring indoor air quality from the worksite to the exploitation of the building with a **portable and fast analyzer**!

Built2Spec will develop a portable version of BLUE analyzers, designed for field operation by a construction technician.







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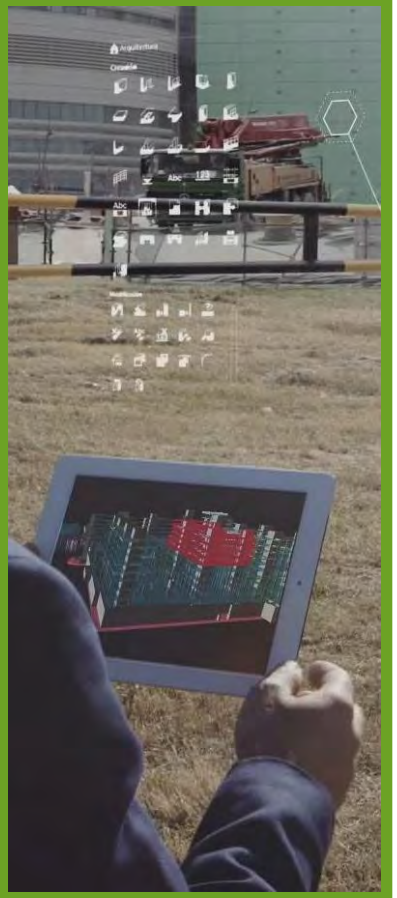


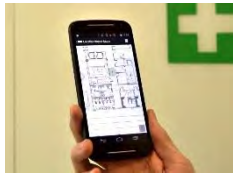
Tools & Topics

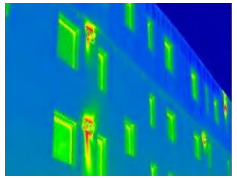
3D and imagery tools

Built2Spec combines **passive and active 3D capture methods** which can be used to 3D reconstruct a large variety of scenes!







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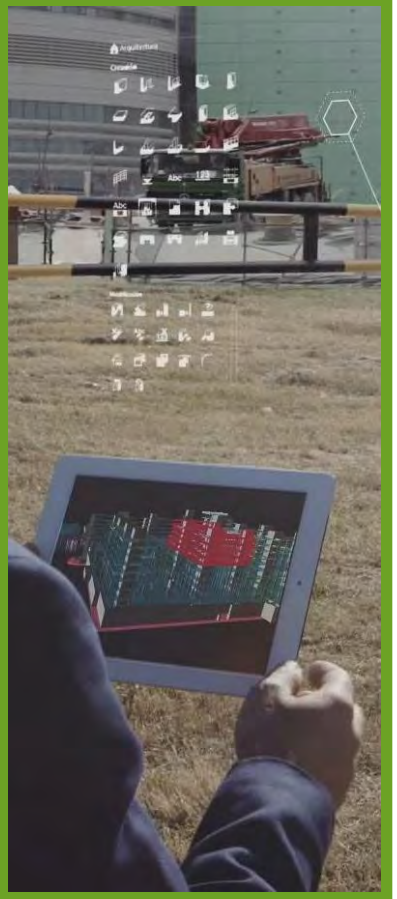


Tools & Topics

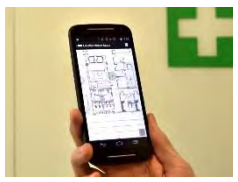
Smart building components

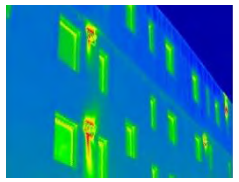
A novel use of **embedded sensors in precast elements!**

Continuously monitor both the thermal and structural performance of the building.







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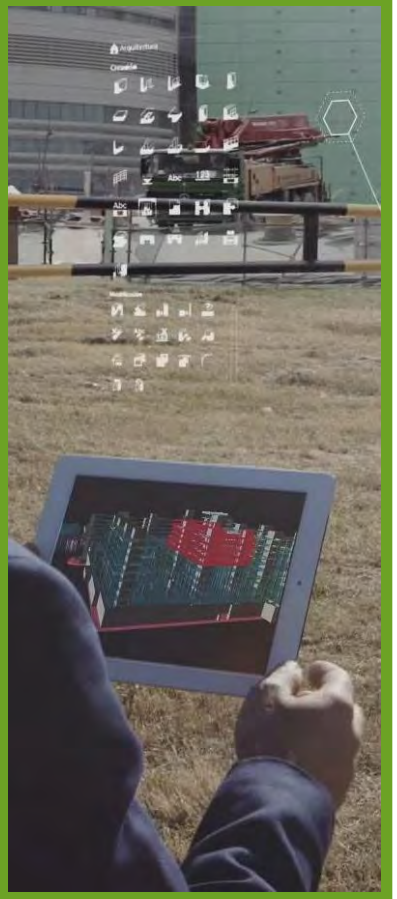


Tools & Topics

Building Information Modelling (BIM)

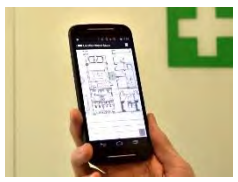
Stretching the potential of BIM to the construction site and beyond!

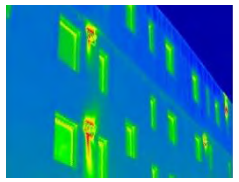
In Built2Spec we use the information in BIM to **check whether the as-built situation complies with the design**.

Not just **after the project** is delivered but also **during the construction process**!







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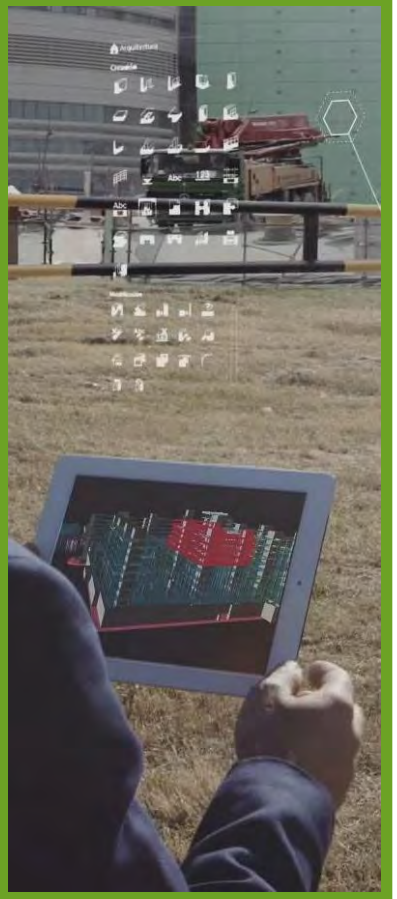


Tools & Topics

Acoustic tools

Minimize costs, make this technology more portable and automate its use!

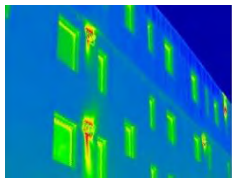
The aim is to develop a novel lightweight sound source for acoustic testing

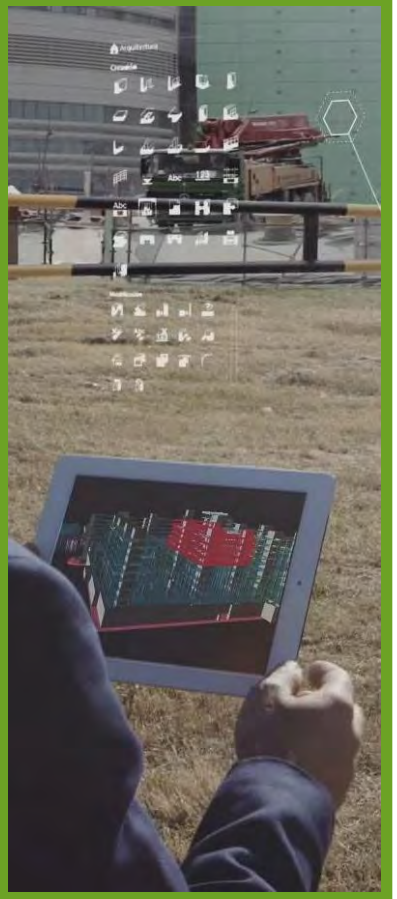
- with a more diffuse field than standard loudspeakers
- ensuring easy portability and regulation compliance









BUILT2SPEC
Tools for the 21st Century Construction Worksite

Tools & Topics

Airtightness test tools

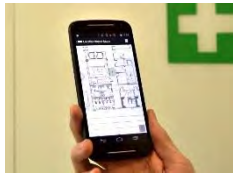
Quick checks (<1min) by generating and analysing a **low pressure pulse** from an autonomous unit that **doesn't penetrate the building envelope**.

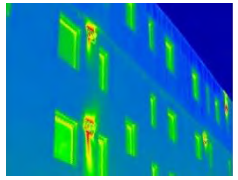
A portable and easy to use solution.

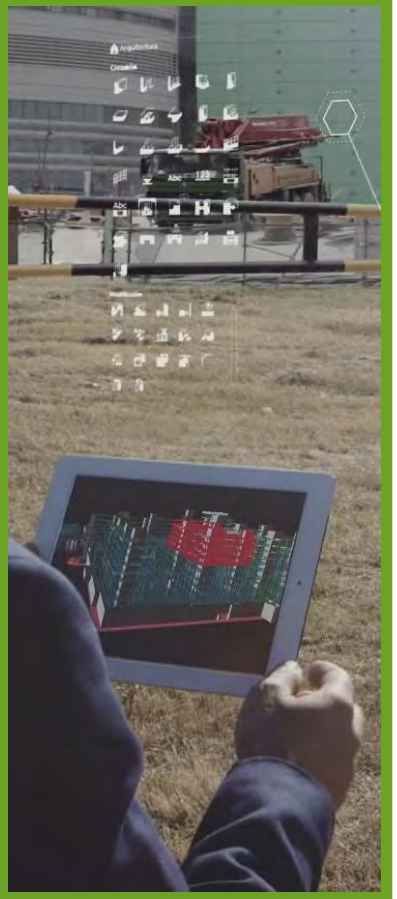
Construction workers can undertake airtightness assessments themselves!









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Tools & Topics

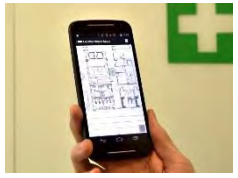
Thermal imaging tools

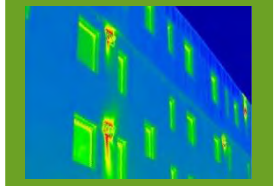
Methods to allow **quantified assessment of thermal properties of buildings** thanks to TIR devices.

These methods rely on Augmented Reality to acquire data directly in the model and indirect as well as direct thermal modeling to analyze it.







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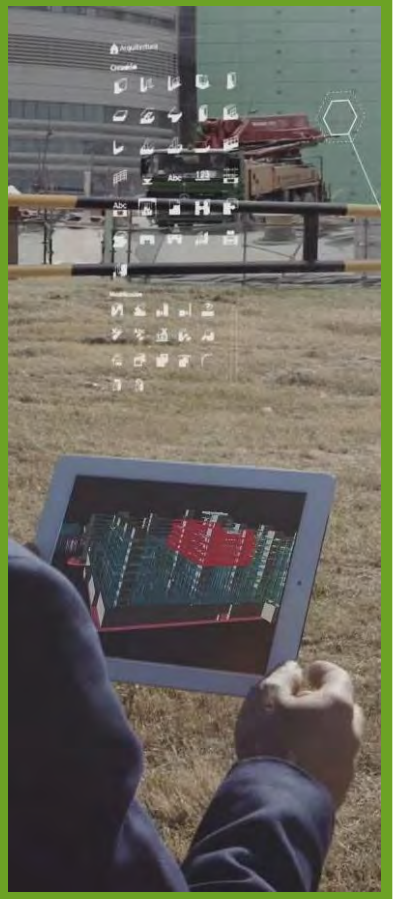


Tools & Topics

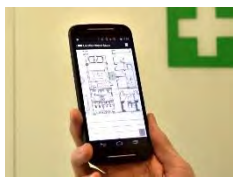
Virtual Construction Management Platform (VCMP)

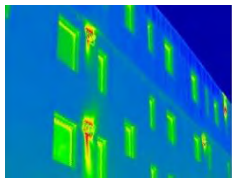
- connected to all tools

- BIM-enabled
- Installation guidelines
- 3D models
- Training information
- Cloud-based
- Information on regulatory frameworks
- Workflow / status
- Product data sheets







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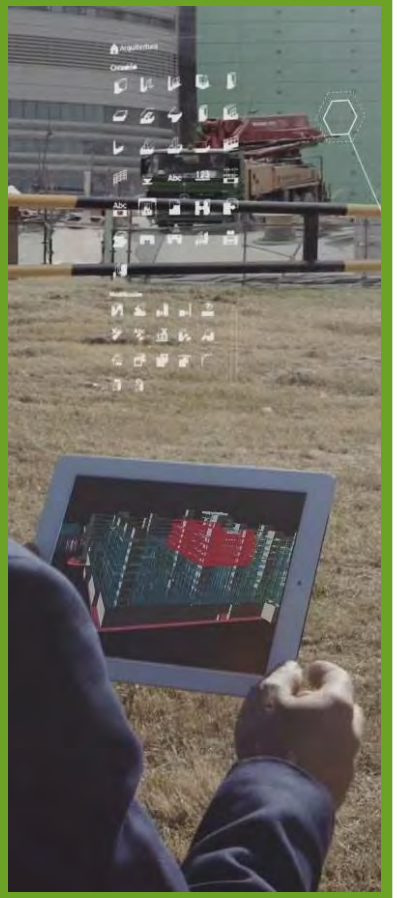

What is the project concept?

Level 1	Level 2	Level 3	Level 4
Assemble excellent science **technologies** and **techniques**	Create **new knowledge** for inspection, check processes and determine how to **automate it**	Integrate levels 1 & 2 into an **IDDS framework** and provide them as **resource** at the worksite	Create **synergies** and **new functionalities** through this integration

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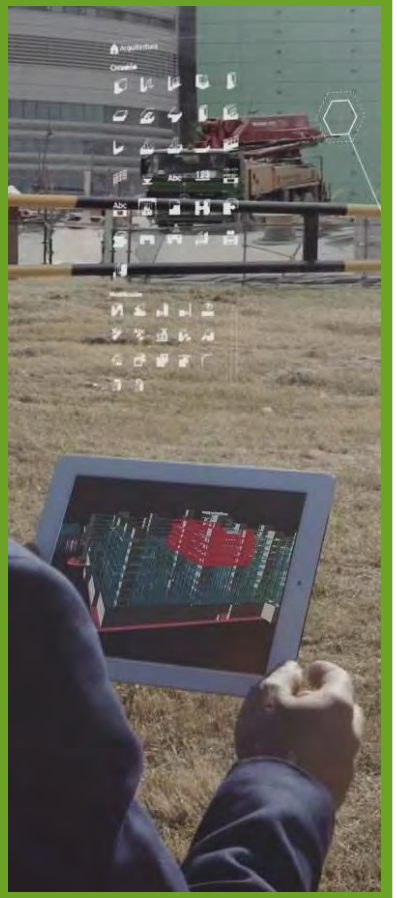
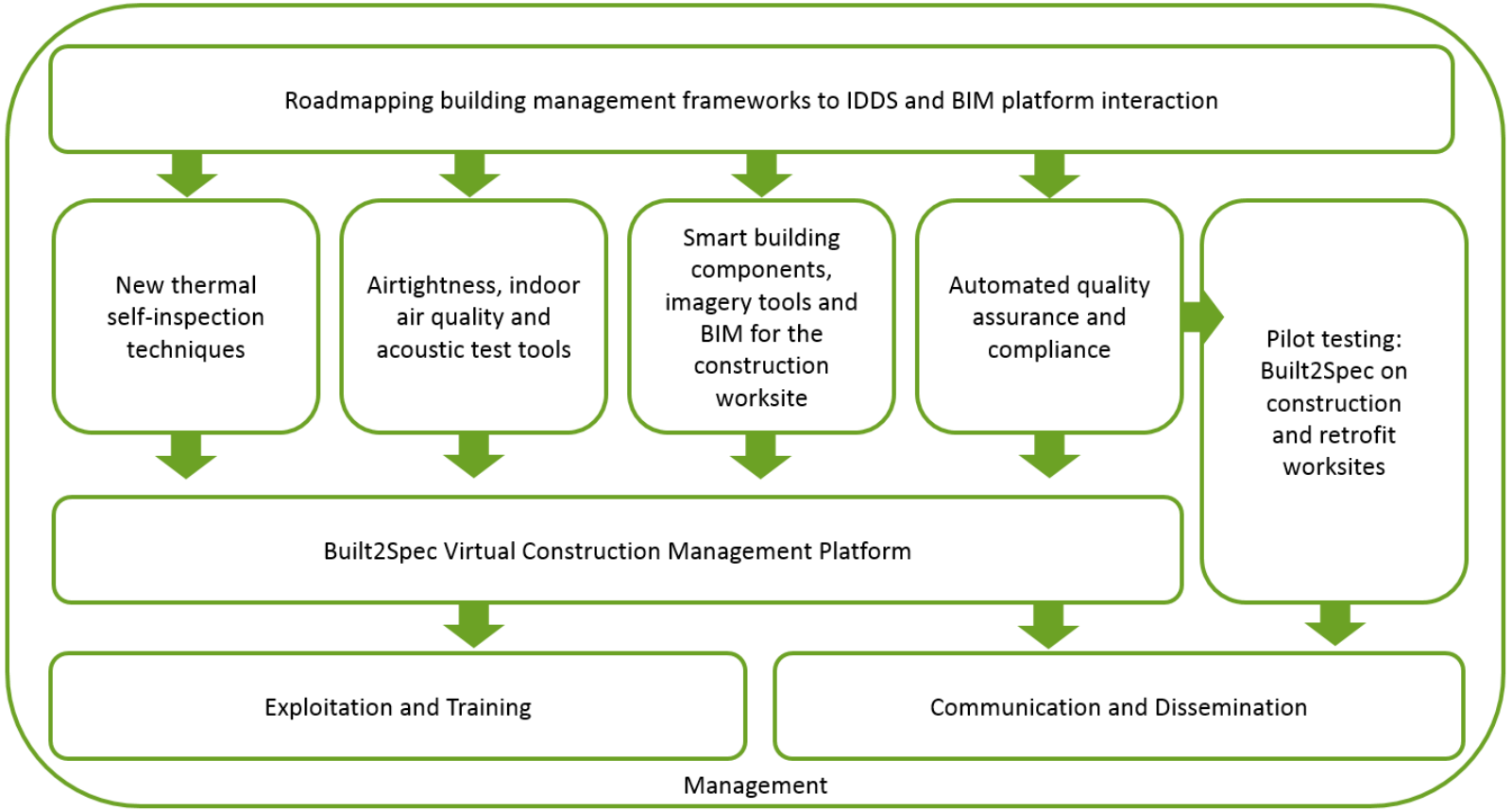
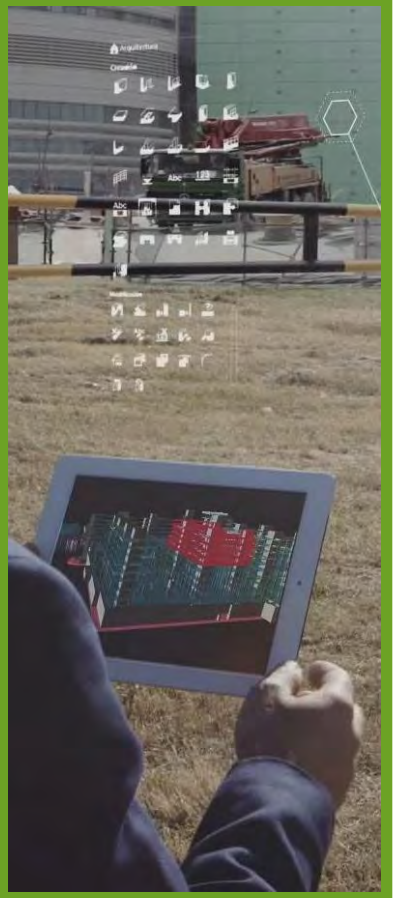


Project structure





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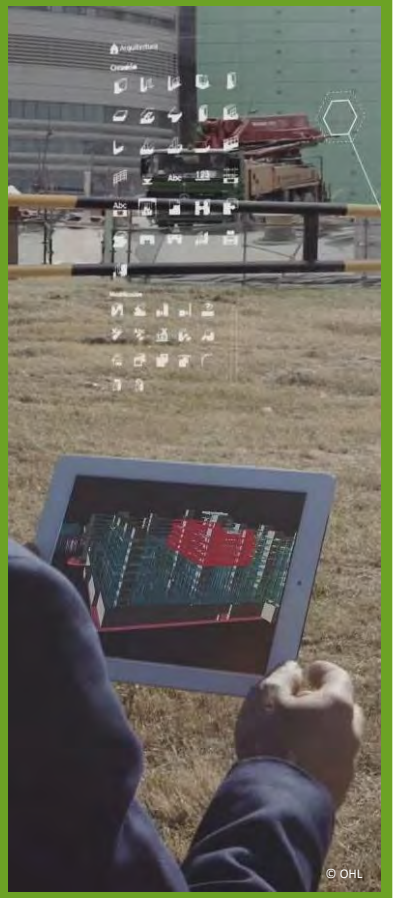

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