

BuildON
Infopacks

BuildON Smart Transformer Toolbox

Accelerating the next generation of smart and
energy-efficient buildings in Europe

SEPTEMBER 2026



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BuildON in action: from data to smarter buildings

BuildON has developed and validated a comprehensive ecosystem of digital tools designed to accelerate the smart transformation of buildings across Europe. The project has demonstrated how data-driven technologies can improve building energy performance while supporting both occupants and facility managers.



SMART TRANSFORMER TOOLBOX (STT):

An integrated suite of AI-powered analytics, digital building logbooks, digital twins and decision support applications. It helps end users to assess, monitor, optimise and improve performance throughout the building lifecycle.

STT VALUE CHAIN

The BuildON's smart transformer toolbox (STT) has been deployed and tested in six pilot buildings across five European countries, representing different climates, building typologies and operational requirements.





Qualitative assessment

The first phase of the BuildON impact assessment confirmed the operational readiness, interoperability and maturity of the STT across all pilot sites. The assessment demonstrated that the toolbox components are successfully deployed and integrated, providing a solid foundation for the final quantitative evaluation of energy, comfort and flexibility impacts.

From assessment to transformation: how BuildON uses the smart readiness indicator

One of the main indicators used to evaluate BuildON's impact is the smart readiness indicator (SRI).



SMART READINESS INDICATOR:

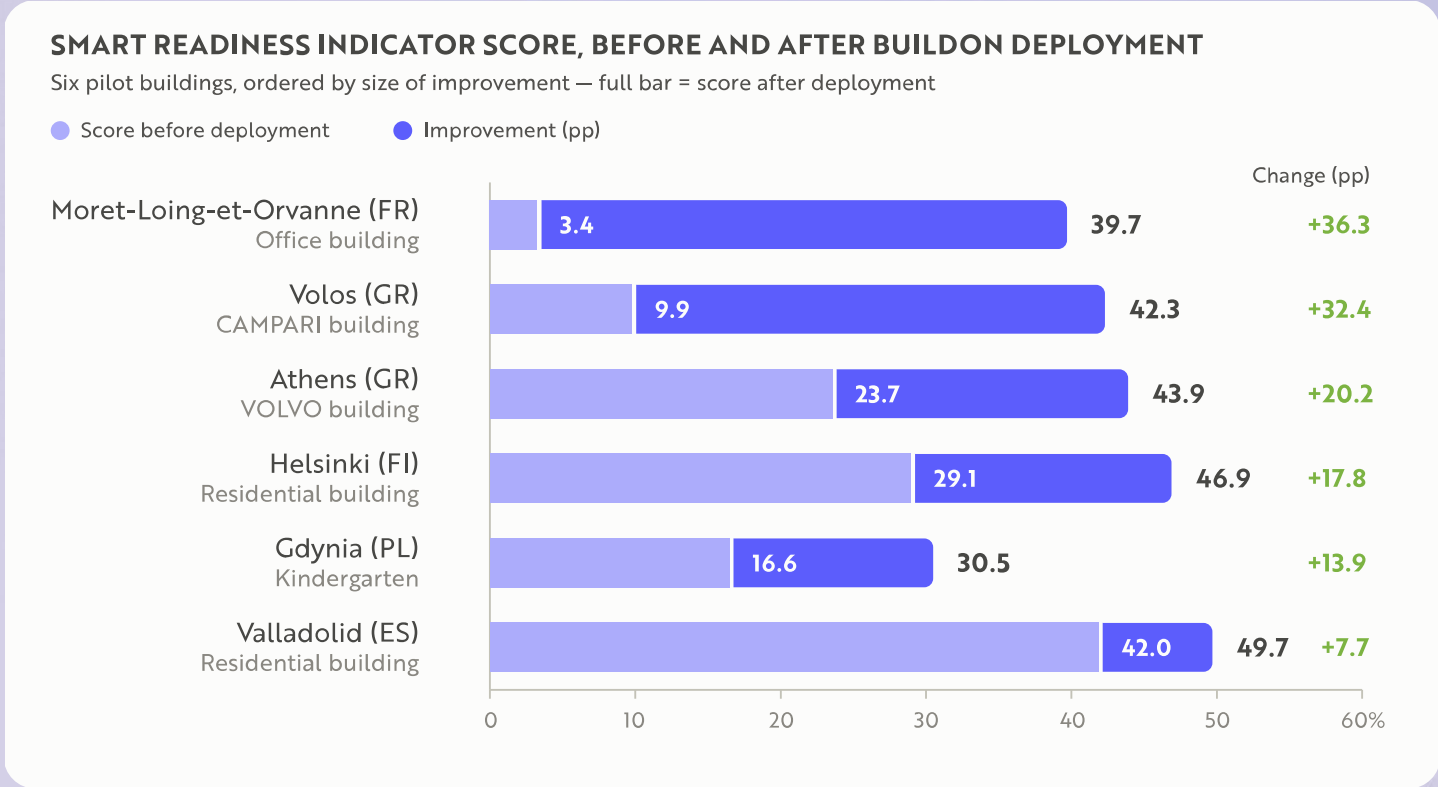
A European framework that measures a building's ability to use smart technologies to improve energy efficiency, occupant comfort and interaction with the energy grid.

The SRI is embedded within the BuildON STT as both an assessment and impact-evaluation mechanism. Initially, the SRI is used to establish the building's smartness baseline and identify improvement opportunities. Based on this assessment, the STT generates upgrade pathways and supports decision-making. After the deployment of BuildON tools, the SRI assessment is repeated to quantify the smartness gains achieved, enabling a clear comparison between the building's pre- and post-implementation performance.

Demonstrated improvement in building smartness

The SRI assessment of the six pilot buildings showed measurable improvements across all sites following the deployment of BuildON tools.

Notable improvements of the buildings' smart readiness include:



Strong results in energy efficiency, comfort and maintenance

BuildON services delivered significant improvements in energy efficiency, occupant-centred operation and predictive maintenance. The French pilot increased its energy efficiency from 3.3% to 53.1%, while the Finnish one improved from 41.0% to 62.8%. The Spanish pilot achieved a maintenance and fault prediction score of 64.0%, almost doubling its initial performance.



A toolbox supporting all building stakeholder

- 1 BuildON digital tools are designed to support occupants, facility managers and building owners.
- 2 End-user applications provide real-time monitoring and recommendations.
- 3 Facility management platforms support operational oversight and anomaly detection
- 4 The SMURF decision-support tool generates renovation scenarios ranked by cost-effectiveness and expected smartness gains

AI and Digital Twins for better decisions

The project combines artificial intelligence services with digital twin technologies.



AI services support monitoring, benchmarking, profiling, forecasting and anomaly detection



Digital twins integrate BIM models, simulations and real-time data to improve diagnostics and decision-making

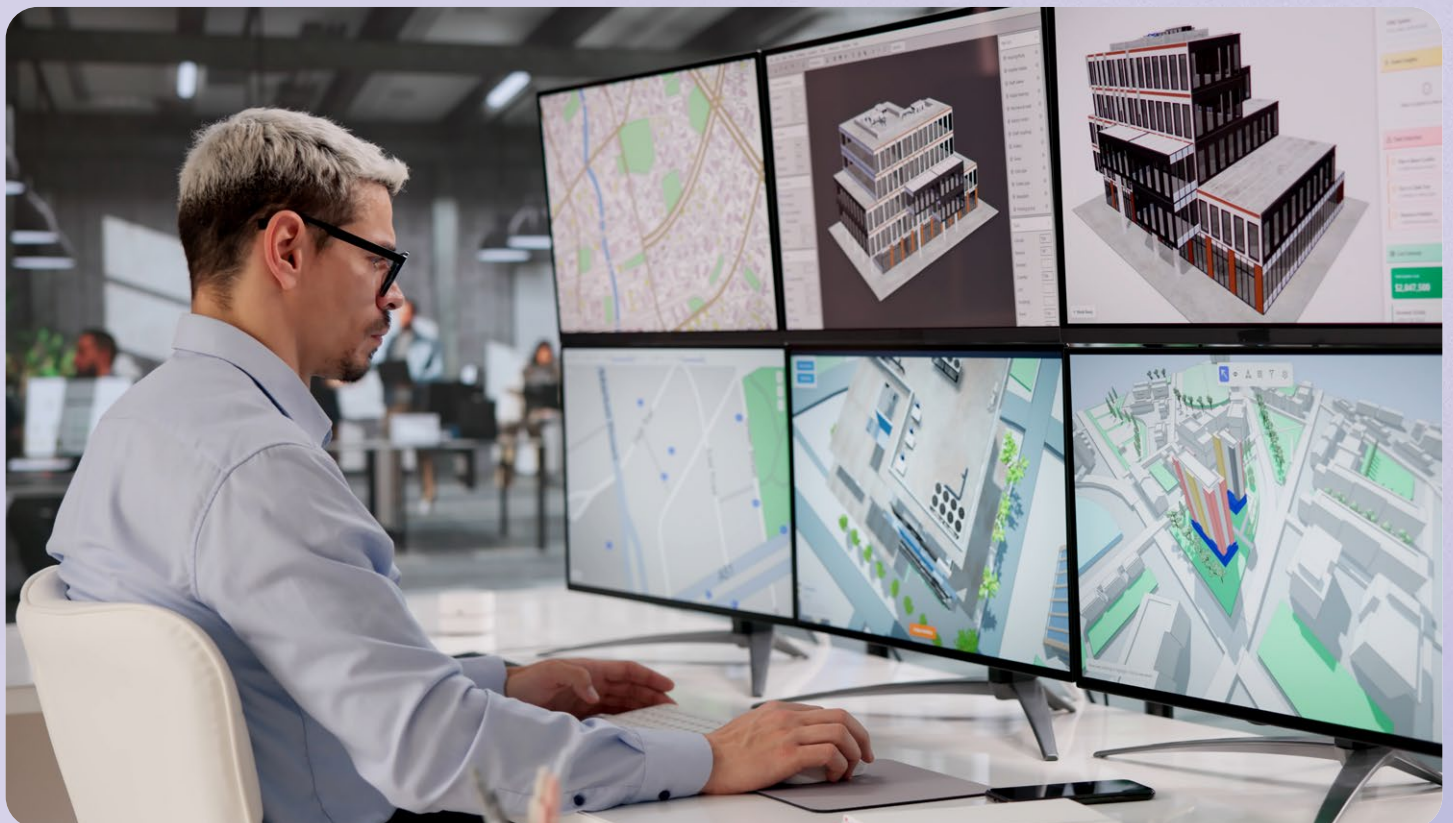
Preparing for quantitative impact evaluation

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Following the successful deployment and qualitative validation of the STT, BuildON has developed a measurement and verification framework. This will measure the effects of smart services on energy performance, occupant comfort and energy flexibility across the pilot sites.

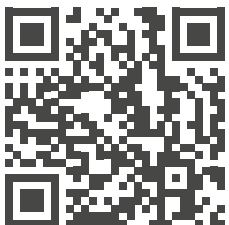
To support this quantitative assessment, the monitoring infrastructure has been enhanced through additional meters and environmental sensors, providing more detailed and reliable datasets. These will allow the benefits of BuildON solutions to be evaluated.

With the STT operational and validated across pilot sites, the project will deliver a final quantitative assessment, focusing on energy savings, comfort improvements and flexibility benefits enabled by advanced optimisation and control services.



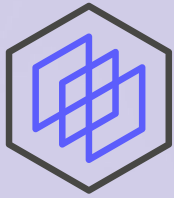
Looking ahead: scalability and replicability

The BuildON STT was designed for deployment across different building typologies, climates and operational contexts. Thanks to its modular architecture, interoperability framework, standardised APIs and SRI-based methodology, the toolbox can be readily adapted and replicated in buildings beyond the project pilots.



Scan this QR code to read more about the toolbox

OR VISIT THIS [LINK](#) →



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This infopack is based on the contents of deliverable 6.2 - BuildON Smart Transformer Toolbox impact assessment 1st Release



Keep up with all the project updates.

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