

## Italian demonstration site

Tools to be tested	Measure of success
Tool 1 Digital tool for fast mapping of buildings	3.1 Time reduction on digital data acquisition $\geq 30\%$
	3.1 Time reduction on BIM model's creation $\geq 30\%$
Tool 2 BIM-assisted energy refurbishment assessment tool	1.4 Reduction on energy audit time $\geq 50\%$
	1.5 Reduction of net primary energy use $\geq 10\%$
	2.2 Use of dynamic simulation tools for energy assessment $\geq 30\%$
	2.3 Integration of GIS data in BIM models for energy purpose
Tool 3 Human-Machine interface tool	3.3 Time reduction on decision making for different renovation scenarios $\geq 30\%$
	1.5 Reduction of net primary energy use $\geq 10\%$
	3.4 Deviation between predicted and real user occupancy schedules $\leq 10\%$
Tool 4 Tool for connecting BIM models and BACS	3.5 Reduction of net primary energy use $\geq 10\%$
	1.3 Deviation between predicted and real thermal performance $\leq 10\%$
Tool 5 Fast tracking tool for renovation operations	3.2 Time reduction on BACS – requirements definition with users $\geq 10\%$
	1.2 Reduction on renovation cost $\geq 15\%$
Management system	1.1 Reduction on renovation working time $\geq 20\%$
	2.4a Development of digital logbooks for renovated buildings
	2.4b Management of as-built data in "operational" BIM models