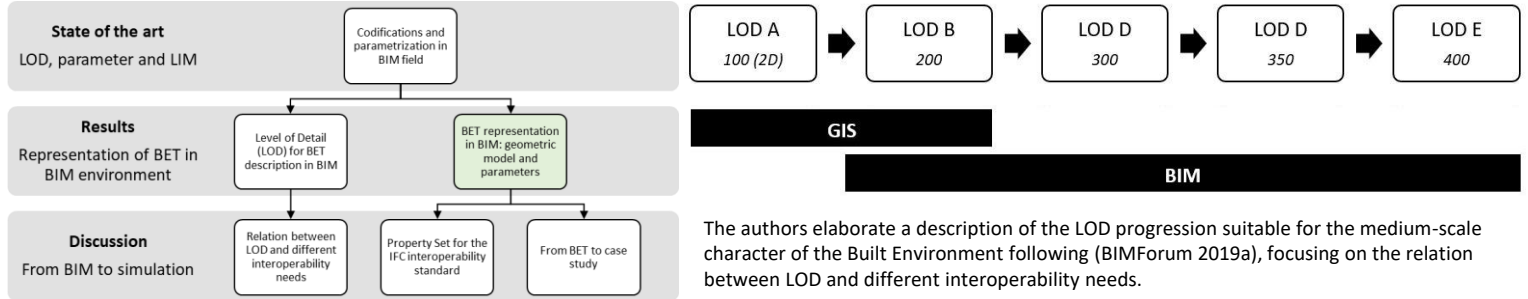# WP 3: Representative models of Built Environment Typologies (BETs) prone to SUOD/SLOD. Case studies selection and data collection
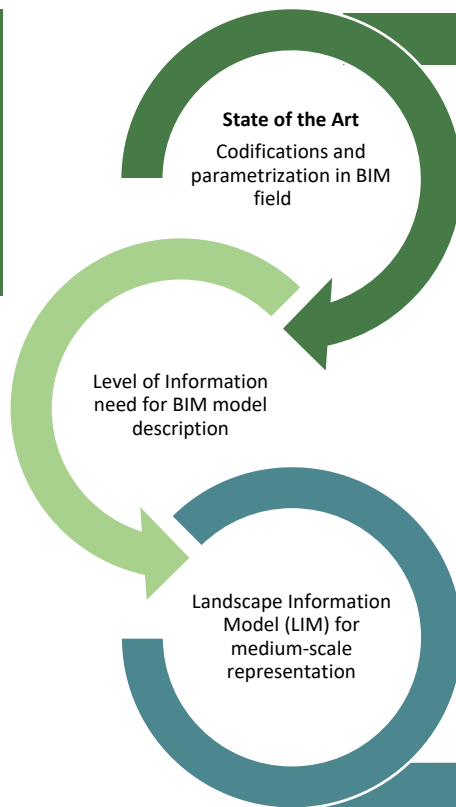
T3.1 - Definition of representative BETs models prone to both SUOD and SLOD. BE characterization as function of the building-open space-infrastructures interfaces (e.g. Façades on Square, Street, Pedestrian route) in terms of morphology and construction technologies. Development of tools/methods for BETs representation in extensive models (BIM based) and fast models (VR/AR oriented).

D3.1.2 – ONTOLOGIES AND BIM MODELS FOR BETS DESCRIPTION ACCORDING TO SUOD/SLOD

The authors elaborate a description of the LOD progression suitable for the medium-scale character of the Built Environment following (BIMForum 2019a), focusing on the relation between LOD and different interoperability needs.
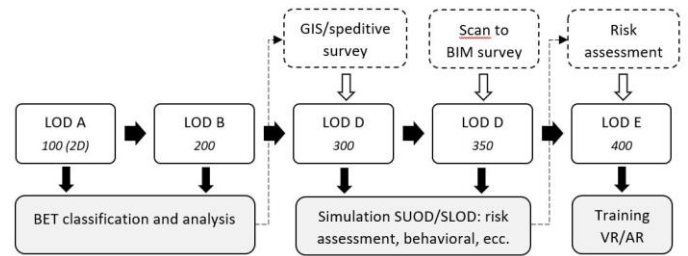
The problem of architectural heritage representation in BIM-based model is a debated topic in literature. The complex and variety of geometry and features of existing buildings raise the issue of their representation, both in term of geometric model and information details.

Moreover, in the recent literature much attention is given to the organization of work-flow from the survey and data acquisition phase to the implementation phase, but mostly of them are focusing on single buildings or small aggregate.
In line with the global objectives of Be2secure research project, the aim of this report is to study and develops a method for BETs representation in BIM-based models, that include buildings, infrastructures and open spaces.

Considering the Level Of Detail (LOD) progression - introduced as standard in national and international regulations - and the interoperability for the information exchange, the authors develop a specific LOD progression for BETs representation, discuss the parameters implementation in Revit BIM software, and introduce the opportunity to develop a Property Set for the IFC interoperability standard.

A LOD PROGRESSION FOR OS IN BE DESCRIPTION

State of the Art
Codifications and parametrization in BIM field

Level of Information need for BIM model description

Landscape Information Model (LIM) for medium-scale representation

Relationship between Level of Detail of Open Space in Built Environment model and output for simulation.
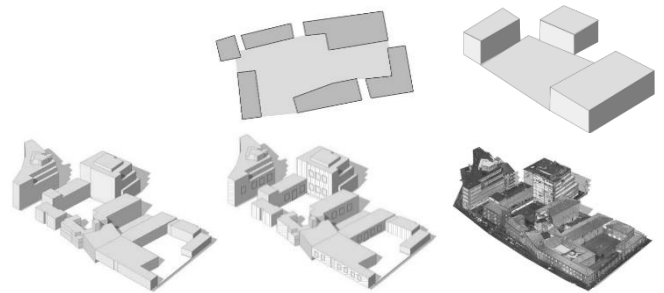
Description of LOD 100 to LOD 400 characteristics for Built Environment Typologies following (BIMForum 2019a) template for building components.

BETS REPRESENTATION IN BIM