

MODELLI FEDERATI PER LA GESTIONE BIM DEL PROGETTO DI CONSERVAZIONE

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Abstract.

The federation of models is a pillar of the BIM approach: it allows to keep the contents of each discipline separate during the modelling-creation phase, and to merge them together later during the project management phase, from its feasibility to the construction site, to the management of the entire life-cycle of the building. Generally, these models refer to specific disciplines and the architectural, plant and structural model are always identified. When the asset belongs to Cultural Heritage, more generically an existing building, the BIM approach is faced with an additional level of complexity since it is necessary to model something existing and of which not much information is known. The geometric complexity of the asset often aggravates this situation because if the parametric modelling is preferred, it is difficult to represent such irregular morphologies, and if the surface modelling and a more geometrical detail is preferred, the model becomes very heavy. In many cases the choice is to approximate reality as best as possible through specific and tailor-made modelling approaches, often complex and with some borderline methods, if compared to BIM logic. In other cases it makes sense to define when the geometric complexity and the reliability of the model are necessary, and when, instead, a simplification is required to effectively manage the information. The case study presented is the Arch of Augustus, in Aosta, for the HBIM approach it has been chosen to separate the two approaches, placing side by side the federated models referred to the classical disciplines with two models of the current state: one very accurate with the purpose of maintaining all the quality of acquired 3D geometric information, while the other schematic, necessary as a 3D index for the information. However, the approach described here requires a preliminary reflection to define the BIM granularity and to define the methodological procedures that allow the bidirectional relationship between survey model and conceptual model.

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