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Technical Annexes to the Competition Rules - Annex 1 General BIM Goals of the Competition and Uses of BIM (or BIM USES)

GENERAL BIM GOALS AND BIM USES

One of the central goals of the Competition is to receive design proposals in the form of a digital BIM model of a Concept Design, containing information about spatial distribution, areas, volumes and quantities, as well as three-dimensional views of buildings and landscape¹.

ABC - The Architecture BIM Competition defined the following list of BIM Requirements (or BIM Uses) for the proposals participating in **ABC | MONZA 2019**.

Competitors are allowed to apply further BIM Uses in order to best present their project proposal.

BIM Requirements / BIM Uses	Description
MANDATORY GENERAL BIM GOALS	
1. Production of a digital BIM model	Competitors deliver a digital model "BIM model" of a Concept Design in open Industry Foundation Classes (IFC) format.
2. Modeling (Design Authoring) of Architecture and Landscape	<p>Development of the architectural design proposal through a digital model, which describes for example:</p> <ul style="list-style-type: none"> • inclusion in the context • architectural features • zoning • sustainability solutions • flows • building management strategy • spatial distribution • material palettes <p>Development of the landscape design proposal through a digital model, which describes for example:</p> <ul style="list-style-type: none"> • landscape and ecology strategy • zoning • careful design of water consumption • master plan / concept • flows • building management strategy • spatial distribution • types of planting
3. Identification of key modelling elements	<p>The digital model is developed in the categories necessary to adequately communicate the design in the Concept Design phase.</p> <p>The Level of Definition (LOD) is low, with approximate geometries in shape, size, location and orientation.</p> <p>A LOD 200 is considered adequate.</p>

¹ further details and examples of BIM for the Concept Design phase: International BIM Implementation Guide, Royal Institution of Chartered Surveyors (RICS), 2014, paragraphs 3.2.1, 3.2.2, 3.2.3.

MANDATORY BIM USES

4. Definition of volumes	The project volumes are modeled in such a way as to understand their shape, dimensions and proportions. The external surfaces are divided into opaque / transparent, so as to be able to carry out, for example, estimates in Facility Management.
5. Spatial and functional programming	Design / zoning surfaces are virtual objects of the digital model.
6. Studies on circulation	The horizontal and vertical connection elements (corridors, stairs, elevators, walkways ...) are virtual objects of the digital model and communicate the connections between the various areas of the project.
7. Graphic and three-dimensional views	The graphic drawings (plans, sections, elevations) and the three-dimensional views (perspectives, axonometric projections, renderings) are generated using the digital BIM model.
8. Sustainability studies	Preliminary environmental sustainability studies are conducted using the digital BIM model.

OPTIONAL BIM USES

9. BIM / GIS integration for analysis and visualization	Use of BIM not mandatory but suggested for projects focused on the landscape / urban / territorial potential of the Competition area.
10. Project budget	Use of BIM not mandatory but suggested for projects focused on the potential of the Competition area in terms of Real Estate.
11. Site analysis	Identify the best positioning of the building, the possible limits of the context, points of view or important axes, future territorial developments.

STANDARDS AND REFERENCES

The Competition bases its BIM requirements on the following standards and references:

- **The Uses of BIM, V0.9 2013, PennState:**

https://www.bim.psu.edu/download/the_uses_of_bim.pdf

- **Guida internazionale per l'implementazione dei sistemi BIM, RICS (IT, 2014):**

<https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/sector-standards/construction/international-bim-implementation-guide-1st-edition-italian-translation.pdf>

- **International BIM Implementation Guide, RICS (EN, 2014) :**

<https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/sector-standards/construction/international-bim-implementation-guide-1st-edition-rics.pdf>

- **Plan of Work 2013, RIBA (Concept Design Phase)**

<https://www.ribaplanofwork.com/>

- **PAS 1192-2** (in the next edition of the Competition ISO 19650 will be considered)

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