A1 Open BIM

Use case – Design of windows and façade

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1. **Use case**

Optimization of façade design with a natural daylight perspective.

1. **Main target for the use case**

The goal is to support design choices and state documentation of natural daylight, according to a certain requirement, in the early design phase (as well as later phases). The case should not be fixed to only one phase of the design but must work flexibly as the LOD can vary in relation to the project.

The stakeholders of this case are mainly consultant architects and MEP engineers. As a secondary stakeholder, the contractor can be added.

1. **Disciplinary subjects**

To solve the case expertise the following subjects must be included:

Daylight, technical properties of building components, energy.

1. **IFC concepts used in the script**

To solve the case the tool must gather information about:

Zone: Location, orientation, dimension, geometrical form, area, windows attached.

Window: Placement, dimension, area, properties of glazing, and the frame.

Materials of surfaces in the zone: Properties as reflectance.

1. **Disciplinary analysis**

Daylight factor calculations. Simulation to precast the level of daylight autonomy and probability of disturbing glare.

1. **Building elements**

Potentially relevant building elements: Exterior wall, windows, floor, ceiling, and interior walls.

1. **What needs to be done before starting the use case?**

Requires pre-stated goals for the daylight and an IFC-file with information about building elements.

1. **In- and outputs**

Missing inputs must be replaced with standard values to obtain an acceptable result.

Diagram, schematic

Description automatically generated

1. **What other use cases are waiting for the use case to complete?**

Cost estimation, energy calculation and indoor environment cases.