Daylight

The Naviate Daylight function is a smart "early design" assessment feature that automates static daylight analysis and provides direct insights into your building daylight performance, according to: Swedish, Norwegian, Danish, Finnish, Dutch and LEED standards(simplified method).

The Naviate Daylight function consists of two calculation tools:

- **Daylight Ratio**
  A tool that quickly calculates the Window-to-Wall and Floor Ratios of each room and identifies if they meet the requirements, based on the selected calculation rules and regulations.

- **Daylight Factor**
  A tool for calculating the average Daylight Factor, a ratio of the light levels inside a structure to the light level outside the structure.

- **General Usage instructions:**

  **Required Revit instances**

  **Rooms, spaces, or areas**
  The function uses the floor area of all defined rooms, spaces, or areas in the model. Without rooms, spaces or areas the tool cannot define floor areas needed to calculate daylight area ratio, and the tool cannot get the room bounded surrounding walls, windows, and panels.

  With an offset of 600 mm, the tool searches for glazing panels surrounding each room. Although the window is not adjacent to the wall or the wall is not a room boundary, the tool still finds the glazing panels around each room.

  **Glass material in Windows, Doors, Curtain Walls...**
  To get a daylight area of a room, surrounded windows and/or curtain walls need to have glass material. The Daylight tool looks for materials with a name containing “glass” or “glazing” or any other material name that you have set in the settings menu. The area of panels containing this material will be included in the daylight area.

  **Daylight shared parameters:**

  The following parameters will be set in the Revit project when clicking save (or save and close). These values can be accessed by the element properties in Revit, and by the Revit schedules.

  **Rooms:**
  - Glass Area = The calculated net glass area of the room. [read-only]
  - Required Window-to-Floor Ratio = The demanded ratio between the floor area and glazing area in the building envelope of a room. [editable]
  - Window-to-Floor Ratio = The ratio between the floor area and glazing area in the building envelope of a room. Daylight Area Rate [%] = Glazing Area / Floor Area * 100% [readonly]

  **Windows /Curtain Walls/Doors [all read-only]:**
  - Gross Glass Area = The area of all glazing panels in the window element.
  - Panels = The number of glazing panels found in the window element.
  - Glazing Bead Area = The glazing bead area underneath the mullion or the window frame.
  - Shading Reduction Glass Area = The area of the glazing reduced by shading
  - Area Lower Glazing = The glass area below a defined height above floor.
  - Spandrel Panel Area = The opaque glass area in front of spandrel panels.
  - Net Glass Area = The glass area excluding spandrel panels, frames and Mullions, shading, transparency ratios etc.
  - Shading Factor = The area of the glazing reduced by shading
  - Transparency Factor = The average transparency factor of the glass panels.
  - Transparency Reduction Glass Area = The glass area to be reduced as a result of the transparency factor of the glass panels.

Daylight Ratio
Daylight Factor