

2022

Getting started with Naviate Daylight

GENERAL USAGE INSTRUCTIONS

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NAVIATE®

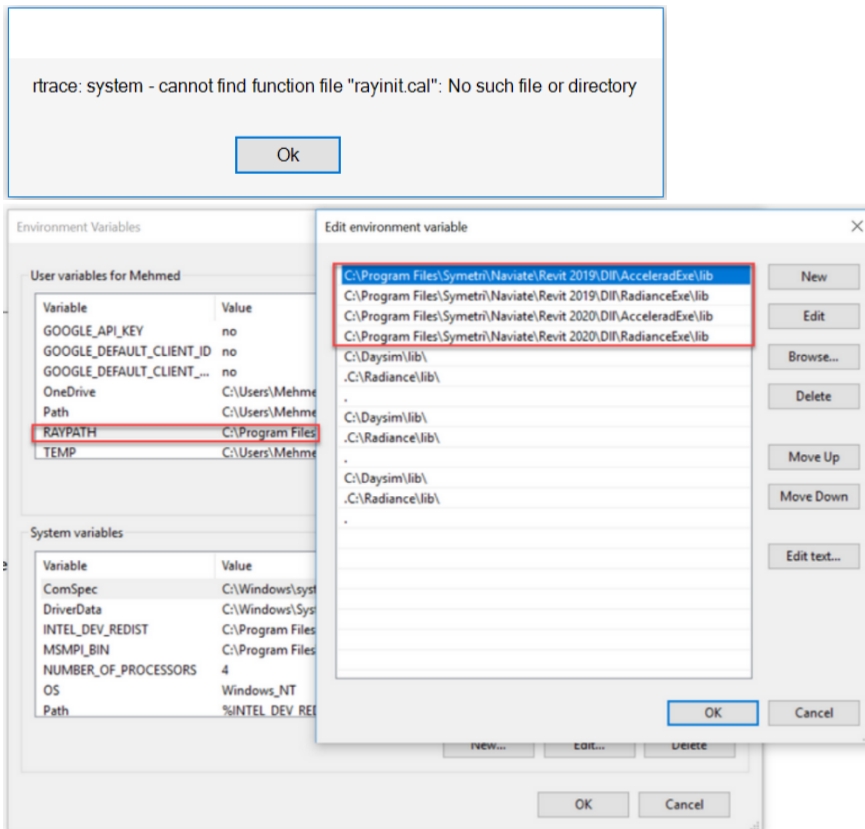
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Things to consider when updating Naviate Analysis:

1. Check if Environmental variables are set in Windows settings

- Some firewall settings are not allowing Naviate Daylight to set these variables due security reasons. In that case, if the following error pops-up, IT support should check if these variables are set in Windows:



For 2021:

C:\Program Files\Symetri\Naviate\Revit 2021\DI\AcceleradExe\lib

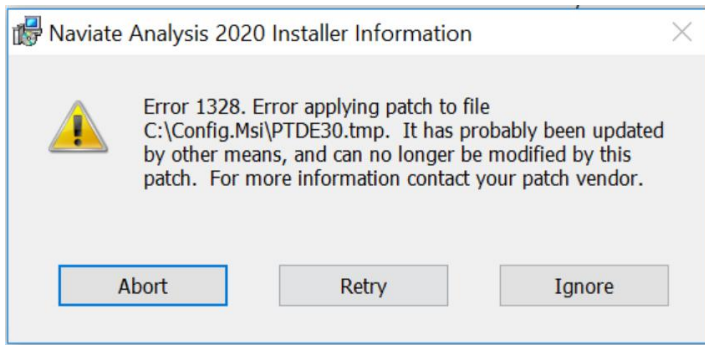
C:\Program Files\Symetri\Naviate\Revit 2021\DI\RadanceExe\lib

For 2022:

C:\Program Files\Symetri\Naviate\Revit 2022\DI\AcceleradExe\lib

C:\Program Files\Symetri\Naviate\Revit 2022\DI\RadanceExe\lib

2. When trying to update Naviate Analysis you get an installation error 1328.



This error appears when you have more than one Naviate application installed and you try to update Naviate Analysis first.

Solution:

In order to install Naviate Analysis successfully you will first need to update one other Naviate application and then you will be able to update Naviate Analysis also.

Things to consider before running Naviate Daylight:

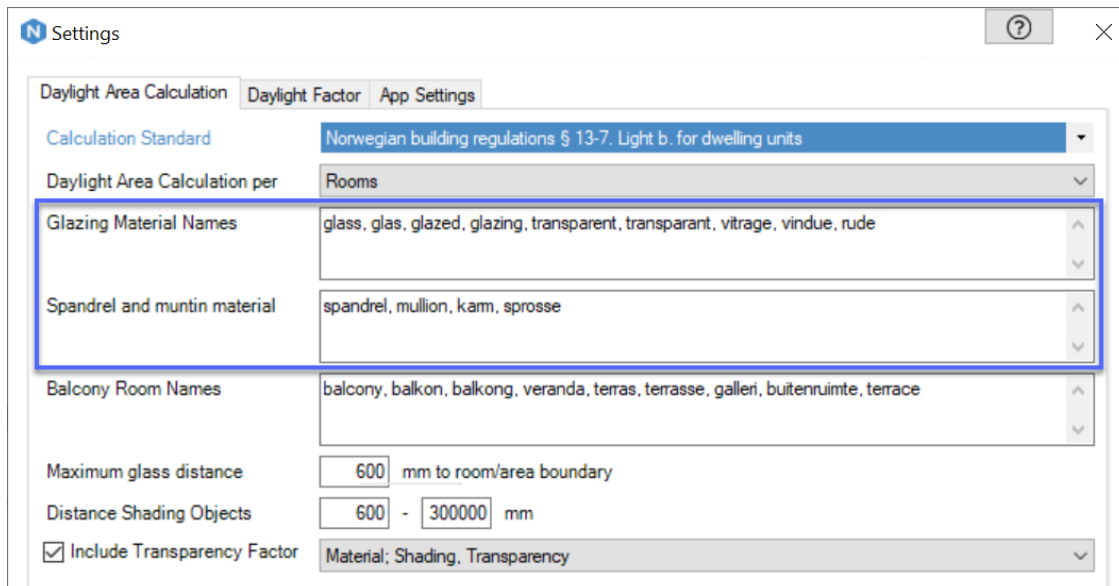
1.Required Revit Elements

1.1. Rooms, spaces, or areas

- The function uses the 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 Daylight Factor, and the tool cannot get the room bounded surrounding walls, windows, and panels without the room elements.

1.2. Glass materials in Windows, Doors, Curtain Walls...

- To get the daylight area ratio of a room, from surrounded windows and/or curtain walls, 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. **The same goes for the Spandrel and muntin materials.**



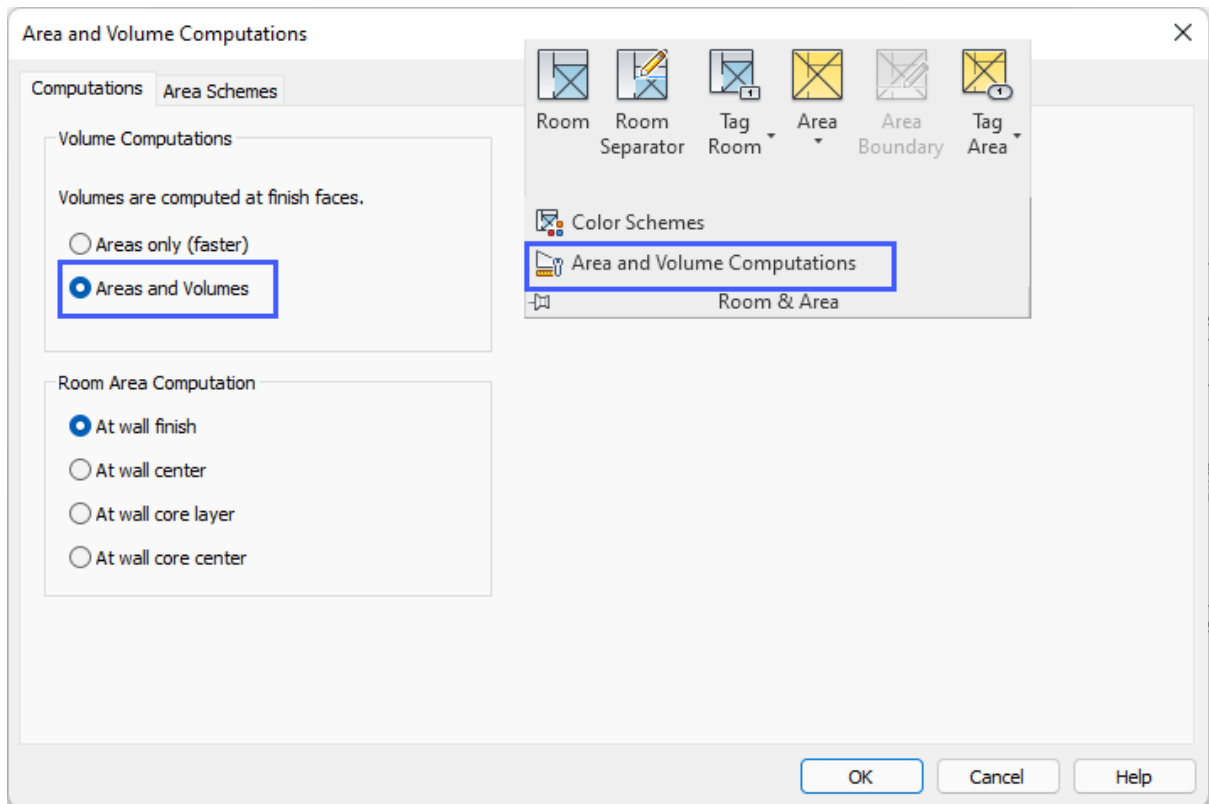
1.3. Correctly modelled Walls, Floors, Ceilings....

- When it comes to solid building elements it is important to have them modelled precisely, avoiding any unnecessary gaps or overlapping between elements. By doing so you will avoid incorrect Daylight Ratio and Daylight Factor calculations, because any inaccuracies in modelling can affect the correction factor calculations or how much light is present in the rooms.

2. Required Revit Model set-up

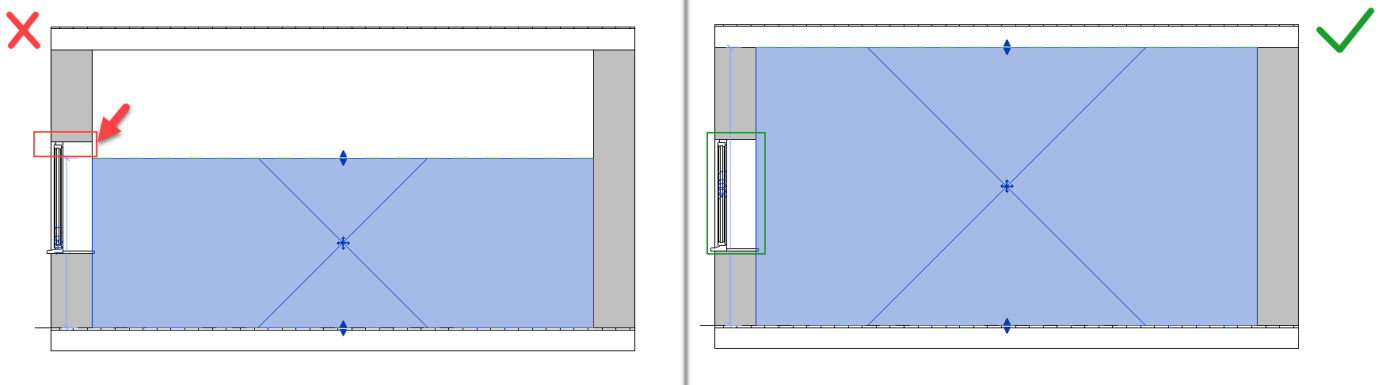
2.1. Set Room Area and Volume Computations

- In order to get the correct daylight area ratio results for each room the Volume Computations need to be set to "Areas and Volumes". This way you enable Revit to calculate the volume of the Rooms, which Naviate Daylight uses to analyse elements all around the Rooms.

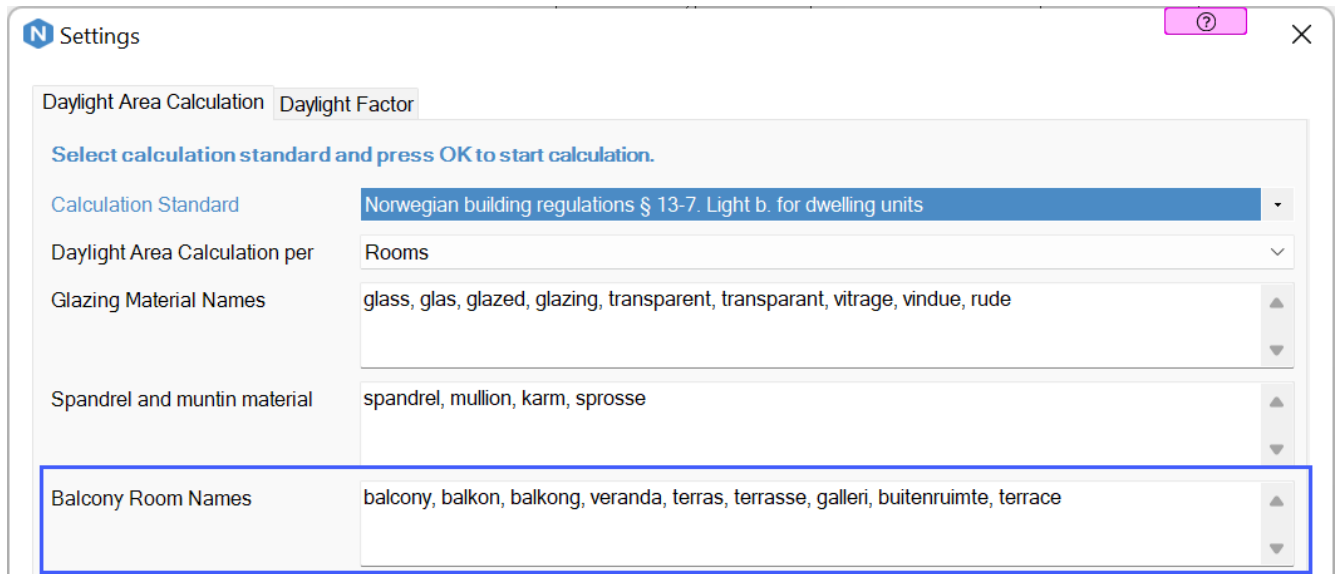


2.2. Check Room Height

In order to get the complete glazing area included in the Daylight area ratio calculations always check if the Room Height is enclosing the complete Room and the glazing area around the Room.



2.3. Add Balcony Rooms, and name them as specified in the settings



Settings

Daylight Area Calculation Daylight Factor

Select calculation standard and press OK to start calculation.

Calculation Standard Norwegian building regulations § 13-7. Light b. for dwelling units

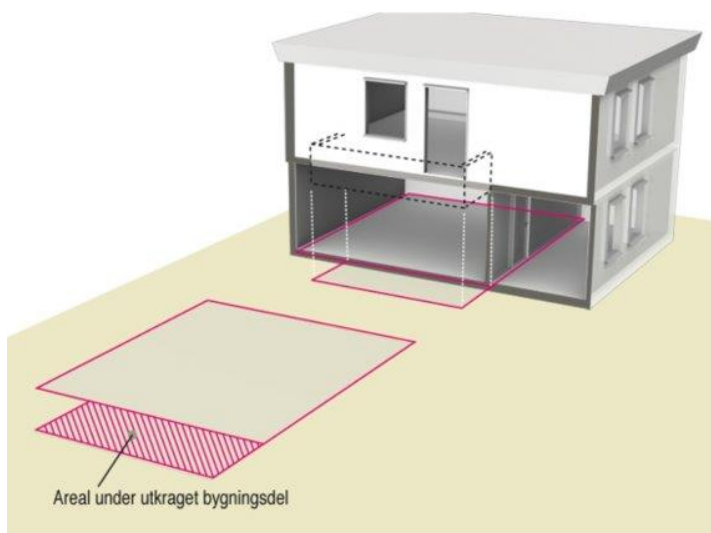
Daylight Area Calculation per Rooms

Glazing Material Names glass, glas, glazed, glazing, transparent, transparant, vitrage, vindue, rude

Spandrel and muntin material spandrel, mullion, karm, sprosse

Balcony Room Names balcony, balkon, balkong, veranda, terras, terrasse, galleri, buitenruimte, terrace

- This enables the tool to recognize balcony/overhang areas and include them in the daylight ratio calculations as proposed by the calculation standards.



NOTE: Please keep the height of the balcony to a minimum of 1.6m and smaller than the adjacent rooms.

2.4. Remove unnecessary elements from the project (furniture, electrical and MEP equipment....)

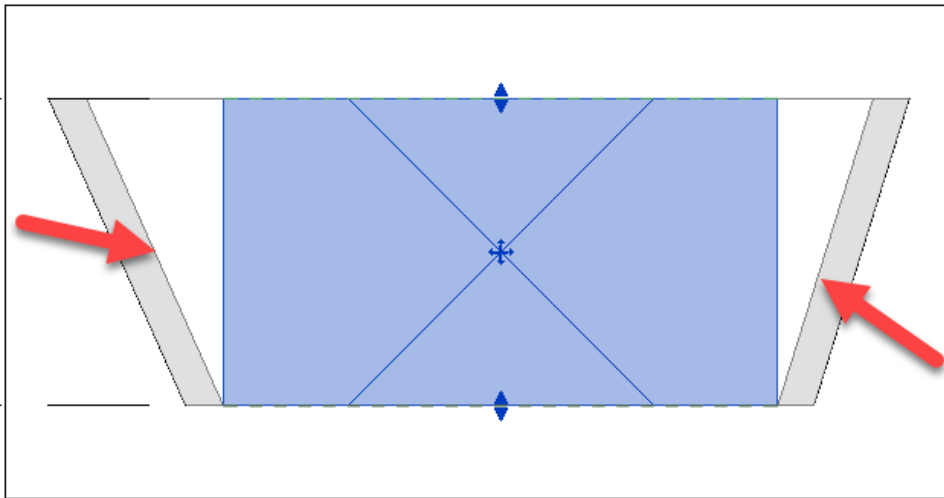
- We suggest to delete any elements that are not required for the daylight calculations. By doing so you will reduce the time of the calculations significantly and also avoid errors when exporting the geometry to Radiance.

2.5. In a work-shared environment Naviate Daylight parameters won't be saved to elements which belong to other users

- Naviate Daylight does not support sending Editing requests to other users when trying to edit their elements.

Solution: Create a local copy of the project when you want to run daylight simulations.

2.6. Walls(Curtain Walls) and elements hosted on them that are slanted outwards will not be recognized by Daylight Ratio calculations



- Due to Revit's inability to bound the Room geometry to the slanted Walls Naviate Daylight will not recognize elements on slanted Walls and slanted Curtain Walls when calculating Daylight Ratio.

Things to consider after running Naviate Daylight:

Saving of Naviate Daylight shared parameters:

- The following parameters will be set in the Revit project when clicking "Save Results". These values can be accessed by the element properties in Revit, and by Revit schedules.

Room parameters:

- **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 [%] = $\text{Glazing Area} / \text{Floor Area} * 100\%$ [read-only]

Windows /Curtain Walls/Doors parameters [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.

References:

For more detailed information please visit our help pages. Detailed information about how Naviate Daylight works are provided to you.

Daylight Ratio:

<https://portal.pinnacleseries.com/#/cheatsheetviewer?id=666b06bc-4a1e-45f4-bd7b-afa40bfe3821>

Daylight Factor:

<https://portal.pinnacleseries.com/#/cheatsheetviewer?id=cdb3fae3-15a7-41d7-82b7-6be546d256c6>

FAQ: <https://portal.pinnacleseries.com/#/cheatsheetviewer?id=9f1dba84-9c21-4027-bd86-2893530ad2ca>