

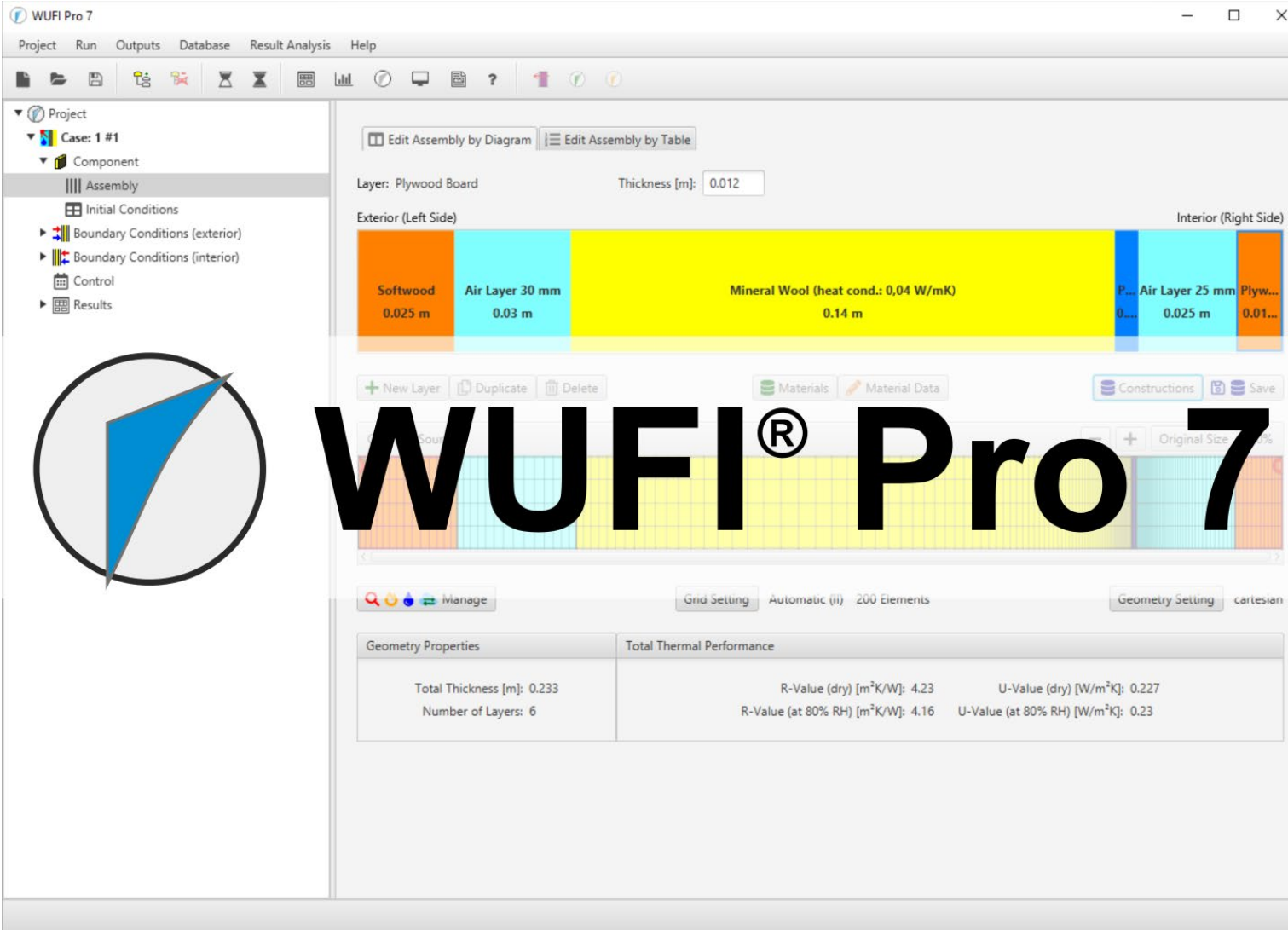
# WUFI® Pro 7: What's new?

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28.11.2024

# WUFI® Pro 7.0

What's new?



The screenshot displays the WUFI Pro 7.0 software interface. On the left, a project tree shows the current assembly structure. The main workspace shows a wall assembly diagram with the following layers and properties:

Layer	Material	Thickness [m]
Exterior (Left Side)	Softwood	0.025 m
	Air Layer 30 mm	0.03 m
	Mineral Wool (heat cond.: 0,04 W/mK)	0.14 m
	Air Layer 25 mm	0.025 m
Interior (Right Side)	Plywood Board	0.012 m

Below the diagram, a table provides the total thermal performance metrics:

Geometry Properties	Total Thermal Performance	
Total Thickness [m]: 0.233	R-Value (dry) [m²K/W]: 4.23	U-Value (dry) [W/m²K]: 0.227
Number of Layers: 6	R-Value (at 80% RH) [m²K/W]: 4.16	U-Value (at 80% RH) [W/m²K]: 0.23



# WUFI® Pro 7

# New User Surface

## Project

The screenshot displays the WUFI Pro 7 software interface. The window title is "WUFI Pro 7" and the menu bar includes "Project", "Run", "Outputs", "Database", "Result Analysis", and "Help". The left sidebar shows a project tree with "Case: 1 #1" expanded, containing "Component", "Boundary Conditions (exterior)", "Boundary Conditions (interior)", "Control", and "Results". The main area features a form for project details:

- Project Name:  Project Number:
- Client:
- Contact Person:
- Street:  City/Zip:
- Phone:  Fax:
- Email:  Date: 27. Nov 2024
- Responsible:
- Remarks:

Below the form is a 3D cutaway model of a house with four zones labeled:

- Zone4: Unbeheizter Dachraum
- Zone3: Schlafräume OG
- Zone2: Nebenräume
- Zone1: Aufenthaltsräume EG

Two small graphs are overlaid on the model. To the right of the model is a control panel with buttons: "Add Picture", "Delete Picture", "Export", "Full Size", and navigation arrows "<" and ">". A red arrow points from the text "Improved image handling" to the "Add Picture" button.

Release Candidate 2

# New User Surface

## Cases

The screenshot displays the WUFI Pro 7 software interface. On the left, a tree view shows the project structure with 'Case: 2 #2' selected. A red box highlights the 'New Case' button and its sub-options: 'Remove Selected Case', 'Expand All', 'Collapse all', 'Expand Children', and 'Collapse Children'. The main panel shows the 'Copy Input Data from' section with a table for 'Case 1: #1' and a list of settings with checkboxes. A red arrow points to the 'Surface' checkbox under 'Boundary Conditions (interior)', accompanied by the text 'All settings can now be selected / deselected'. The interface includes a menu bar (Project, Run, Outputs, Database, Result Analysis, Help), a toolbar, and a status bar at the bottom right indicating 'Release Candidate 2'.

# New User Surface

## Assembly

WUFI Pro 7

Project Run Outputs Database Result Analysis Help

Project

- Case: 1 #1
  - Component
    - Assembly
    - Initial Conditions
    - Boundary Conditions (exterior)
    - Boundary Conditions (interior)
    - Control
    - Results

Edit Assembly by Diagram Edit Assembly by Table

Layer: Wood-Fibre Insulation Board Thickness [m]: 0.3

Exterior (Left Side) Interior (Right Side)

Soft... 0.02... Wood-Fibre Insulation Board 0.3 m Sof... 0.0... Pearlite fill 0.05 m Stora Enso CLT 0.18 m

+ New Layer Duplicate Delete Materials Material Data Constructions Save

Grid Sources

Insert monitor on the left-hand side of the layer  
Insert monitor in the middle of the layer  
Insert monitor on the right-hand side of the layer

grid zoomable

Manage Grid Setting Automatic (II) 200 Elements Geometry Setting cartesian

Geometry Properties	Total Thermal Performance
Total Thickness [m]: 0.587	R-Value (dry) [m <sup>2</sup> K/W]: 10.5 U-Value (dry) [W/m <sup>2</sup> K]: 0.0933
Number of Layers: 9	R-Value (at 80% RH) [m <sup>2</sup> K/W]: 9.06 U-Value (at 80% RH) [W/m <sup>2</sup> K]: 0.108

Release Candidate 2

Save assembly  
in the constructions  
database

Monitors:  
Left mouse click  
to insert  
or  
right mouse click  
for selection menu!

# New User Surface

## Assembly

The screenshot displays the WUFI Pro 7 software interface. On the left, a project tree shows the current assembly structure. The main workspace shows a cross-section of a building assembly with a 'Wood-Fibre Insulation Board' layer. A 'Grid and Sources' panel is visible below the assembly diagram. A 'Hygrothermal Sources' dialog box is open, showing settings for an 'Infiltration Source'. The dialog includes options for 'Spread Area' (left-fixed, right-fixed, variable) and 'Source Type' (Air Infiltration model IBP). A red box highlights the source selection menu in the 'Grid and Sources' panel, which includes options like 'Infiltration Source', 'Rain Source', 'Heat Source', 'Moisture Source', and 'Air Change Source'. The text 'Sources: Draw in or define them with a right mouse click' is overlaid on the interface.

**Sources:**  
Draw in  
or  
define them with  
a right mouse click

**Simple placement  
of sources**

# Material Database

## Systems

WUFI Pro 7

Project Run Outputs Database Result Analysis

Project

Case: 1 #1

Component

Assembly

Initial Conditions

Boundary Conditions (exterior)

Boundary Conditions (interior)

Control

Results

WUFI materials

Search materials

All Sources

WUFI

Fraunhofer-IBP

Concrete and Screeds

Green and Gravel Roofs

Insulating Materials

Masonry Bricks

Membranes

Mortar and Plaster

Natural Stone

Wooden Materials; Boards

Generic Materials

Australia & New Zealand Database

FabTrads, UCD Ireland Database

Japan Database

Korean Database

LTH Lund University, Sweden

MASEA Database, Germany

Materials for thermal calculations (fr

North America Database

NTNU Norwegian University of Scier

Obsolete Materials

University of Technology Vienna, Au

User defined

Recycle Bin

Material Name	Bulk density [kg/m <sup>3</sup> ]	Porosity [m <sup>3</sup> /m <sup>3</sup> ]	Heat Cap. [J/kgK]	Therm. Cond. [W/mK]	Vap. Res. [-]
generic gravel	1400	0.3	1000	0.7	1
generic substrate	1500	0.5	1500	0.9	5
Optigreen Economy Roof 1					
Optigreen Economy Roof 2					
Optigreen Light-weight Roof Solution 1					
Optigreen Nature Roof Solution 1					
Optigreen Pitched Roof 5° - 45°					

Systems can be opened

Hygrothermal Functions Material Information

Added to DB: ---

Last update: ---

Import Export Thickness [m]: Assign Cancel Help

Release Candidate 2

# Material Database

## Systems

The screenshot shows the WUFI Pro 7 software interface. The main window displays a project tree on the left and a material database on the right. The 'WUFI materials' window is open, showing a search for 'WUFI → Fraunhofer-IBP → Green and Gravel Roofs'. The database lists various materials, including generic gravel, generic substrate, and several Optigreen roof solutions. The 'Optigreen Nature Roof Solution 1' is selected, and its details are shown in a pop-up window.

Material Name	Bulk density [kg/m <sup>3</sup> ]	Porosity [m <sup>3</sup> /m <sup>3</sup> ]	Heat Cap. [J/kgK]	Therm. Cond. [W/mK]	Vap.Res. [-]
generic gravel	1400	0.3	1000	0.7	1
generic substrate	1500	0.5	1500	0.9	5
Optigreen Economy Roof 1					
Optigreen Economy Roof 2					
Optigreen Light-weight Roof Solution 1					
<b>Optigreen Nature Roof Solution 1</b>					
Grasses	1500	0.5	1000	0.2	5
Substrate type E	912	0.65	1000	0.4	3.4
Filter mat	83	0.95	840	0.035	1
Drainage board	60	0.95	850	0.3	1.3
Protection mat	83	0.95	840	0.035	1
Optigreen Pitched Roof 5° - 45°					

The pop-up window for 'Optigreen-System Nature Roof Solution 1' provides additional information:

**Hygrothermal Functions** | System information

Optigreen-System Nature Roof Solution 1

NOTE: Usage of green roof models, boundary conditions and necessary moisture sources are given in the "guideline for the calculation of extensive green roofs" ([www.wufi.de/en/service/downloads/](http://www.wufi.de/en/service/downloads/)). Some additional information is given in the info-text of each material.

Assembly from outside to inside (to the roofing membrane):

- 1 cm grasses: Seeding with sedum shoots and seed mix of grasses and herbs
- 10 cm substrate type E: Extensive Substrate Type E
- 0.1 cm filter mat: Filter Fleece Type 105
- 4 cm drainage board: Drainage board Type FKD 40

Added to DB: Jul 24, 2013  
Last update: ---

Thickness [m]: 0.152

Buttons: Assign, Cancel, Help



# New User Surface

## Systems

The screenshot displays the WUFI Pro 7 software interface. The main window shows a roof assembly diagram with the following layers and thicknesses:

- Substrate type E: 0.1 m
- Drain: 0.04 m
- So...: 0.0 m
- Wood-Fibre Insulation Board: 0.3 m
- So...: 0 m
- Pearlite fill: 0.05 m
- Stora Enso CLT: 0.18 m

The diagram is labeled "Exterior (Left Side)" and "Interior (Right Side)". A red double-headed arrow indicates the thickness of the substrate type E layer. The "Layer: Grasses" is selected, with a thickness of 0.01 m. The system is identified as "Optigreen Nature Roof Solution 1".

Below the diagram, there are buttons for "New Layer", "Duplicate", and "Delete". There are also buttons for "Materials", "Material Data", "Constructions", and "Save".

The "Grid and Sources" section shows a grid with zoom controls (Original Size, 100%).

The "Geometry Properties" section shows:

- Total Thickness [m]: 0.738
- Number of Layers: 13

The "Total Thermal Performance" section shows:

- R-Value (dry) [m<sup>2</sup>K/W]: 11
- U-Value (dry) [W/m<sup>2</sup>K]: 0.0893
- R-Value (at 80% RH) [m<sup>2</sup>K/W]: 9.53
- U-Value (at 80% RH) [W/m<sup>2</sup>K]: 0.103

The interface also includes a menu bar (Project, Run, Outputs, Database, Result Analysis, Help) and a toolbar with various icons. The bottom right corner indicates "Release Candidate 2".

### Systems:

- are treated as one material
- can be moved as a complete unit

### but:

- thicknesses can be changed separately
- properties can be adapted separately
- can be mirrored
- can be resolved if required

# Material Database

## New Catalogues

**FabTrads, UCD Ireland**  
26 new materials

**Australia & New Zealand**  
65 materials

The screenshot shows the 'WUFI materials' application window. On the left is a tree view of material sources, with 'Australia & New Zealand Database' selected. The main area displays a table of materials with columns for Material Name, Bulk density, Porosity, Heat Cap., Therm. Cond., and Vap. Res. Below the table are tabs for 'Hygrothermal Functions' and 'Material Information', with a list of functions and a graph for 'Water Content [kg/m³]' vs 'Relative Humidity [-]'.

Material Name	Bulk density [kg/m³]	Porosity [m³/m³]	Heat Cap. [J/kgK]	Therm. Cond. [W/mK]	Vap. Res. [-]
CL7/290 (untreated)					
CL7/310 (treated)					
CL7/310 (untreated)					
FOAMGLAS Perinsul HL	200	0.25	1000	0.058	1500000
Glasswool Ceiling Insulation Low Density	8.8	0.999	840	0.043	1.21
Membrane 01 Class 1 AS_NZS 4200.1 (7500MN.s/g)	130	0.001	2300	2.3	1500000
Membrane 02 Class 2 AS_NZS 4200.1 (500MN.s/g)	130	0.001	2300	2.3	100000
Membrane 03 Class 2 AS_NZS 4200.1 (250MN.s/g)	130	0.001	2300	2.3	50000

# Constructions Database

WUFI constructions

Search constructions

WUFI → Fraunhofer-IBP → Roofs

Construction Name

- Flat Roof #1
- Flat Roof #2
- Flat roof #3
- Flat roof #4
- Flat roof #5
- Flat roof #6**
- Inclined Roof #1
- Inclined Roof #2
- Inclined Roof #3

Component Assembly Info Text

No.	Layer/Material from Outside to Inside	Thickness [m]
1	Roof Membrane V13	0.001
2	Roof Membrane V13	0.001
3	Softwood (formwork, thin l...	0.024
4	Wood-Fibre Insulation Board	0.3
5	Softwood (formwork, thin l...	0.022
6	Pearlite fill	0.05
7	Cork (heat cond.: 0,04 W/...	0.008
8	Roof Membrane V13	0.001
9	Softwood (formwork, thin l...	0.18

..... 0.... 0.3 0... 0.05 ..... 0.18

Close Help

# New User Surface

## Initial Conditions

The screenshot shows the WUFI Pro 7 software interface. The left sidebar contains a tree view with the following structure:

- Project
  - Case: 1 #1
    - Component
      - Assembly
      - Initial Conditions**
      - Boundary Conditions (exterior)
      - Boundary Conditions (interior)
      - Control
      - Results

The main settings area is divided into sections:

- Initial Temperature**:
  - Constant across Component (Initial Temperature in Component [°C] 20)
  - Manual settings
- Initial Moisture**:
  - Same relative humidity in all layers (e.g. lightweight constructions and fabric) (Initial Relative Humidity [ - ] 0.8)
  - Assign typical built-in moisture (e.g. solid constructions and new buildings)
  - Manual settings
- Initial Conditions in Different Layers**:

No.	Material Layer	Thickness [m]	Temperature [°C]	Rel. Humidity [ - ]	Water Content [kg/m³]	Typical Built-In ... [kg/m³]
1	Roof Membrane V13	0.001	20	0.8	0.001881	0.001881
2	Softwood (formwork, thin layers)	0.024	20	0.8	60	60
3	Wood-Fibre Insulation Board	0.3	20	0.8	19	19
4	Softwood (formwork, thin layers)	0.022	20	0.8	60	60
5	Pearlite fill	0.05	20	0.8	28	28
6	Cork (heat cond.: 0,04 W/mK)	0.008	20	0.8	1.693	1.693
7	Roof Membrane V13	0.001	20	0.8	0.001881	0.001881
8	Stora Enso CLT	0.18	20	0.8	63	48

At the bottom right of the window, it says "Release Candidate 2".

component assembly

# New User Surface

## Initial Conditions

The screenshot shows the WUFI Pro 7 software interface. The left sidebar contains a project tree with 'Initial Conditions' selected. The main window displays the 'Initial Conditions' settings for a component. The 'Initial Temperature' section is set to 'Constant across Component' with a value of 20°C. The 'Initial Moisture' section is set to 'Manual settings' with 'In each Layer' selected. A table titled 'Initial Conditions in Different Layers' lists the following data:

No.	Material Layer	Thickness [m]	Temperature [°C]	Rel. Humidity [-]	Water Content [kg/m³]	Typical Built-In ... [kg/m³]
1	Roof Membrane V13	0.001	20	0.8	0.001881	0.001881
2	Softwood (formwork, thin layers)	0.024	20	0.8714	80.0	60
3	Wood-Fibre Insulation Board	0.3	20	0.8	19	19
4	Softwood (formwork, thin layers)	0.022	20	0.8	60	60
5	Pearlite fill	0.05	20			28
6	Cork (heat cond.: 0,04 W/mK)	0.008	20			593
7	Roof Membrane V13	0.001	20			1881
8	Stora Enso CLT	0.18	20			48

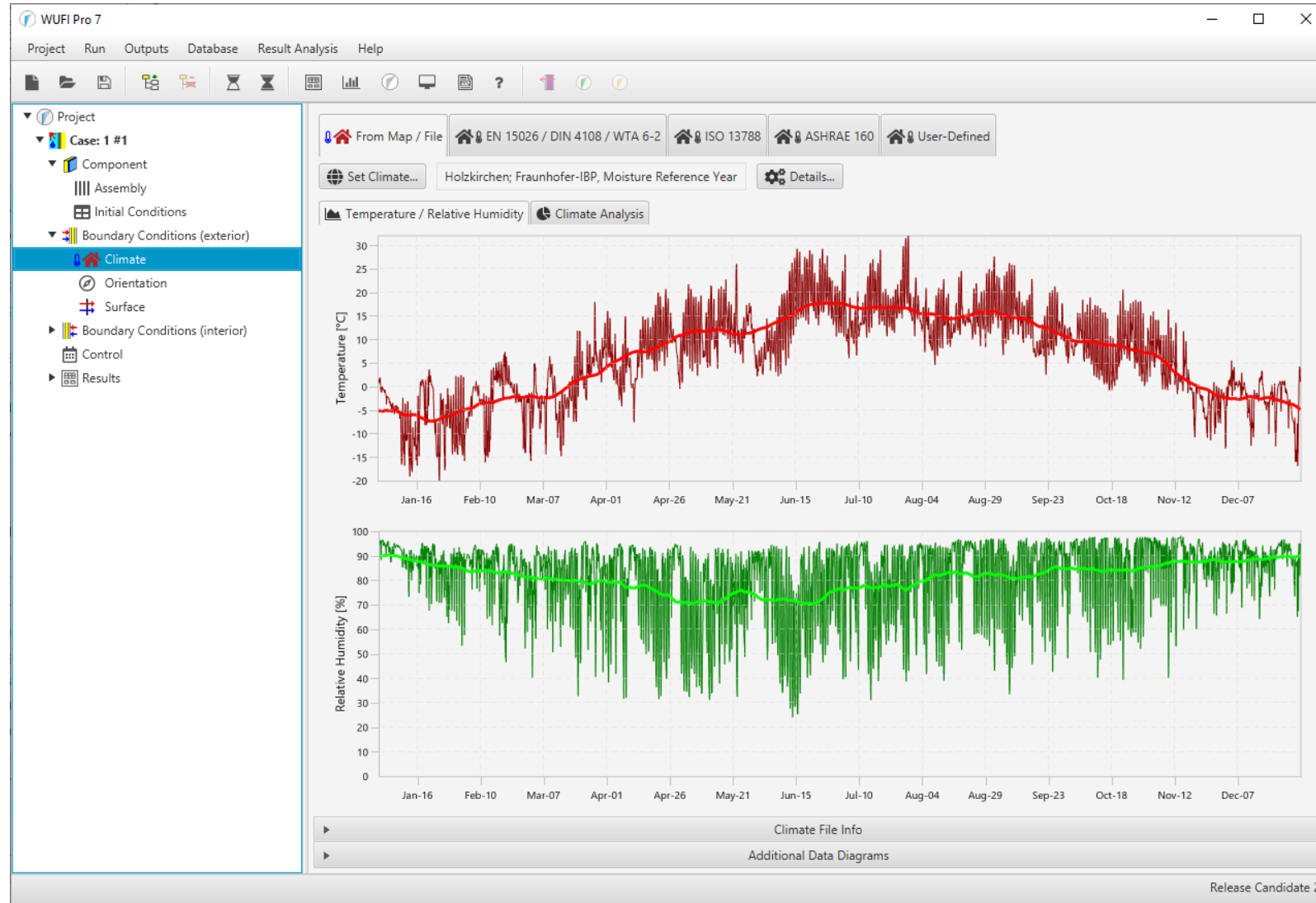
A red arrow points to the 'In each Layer' radio button. Another red arrow points to the 'Water Content' column in the table. A red box highlights a pop-up dialog for editing the water content of the 'Softwood (formwork, thin layers)' layer. The dialog shows the following values:

- Mass-%: 20
- Volume-%: 8
- kg/m³: 80.0

The dialog also shows the calculated values for the other columns: Rel. Humidity (0.8714), Typical Built-In (60), and Water Content (80.0). A green checkmark is visible in the bottom right corner of the dialog.

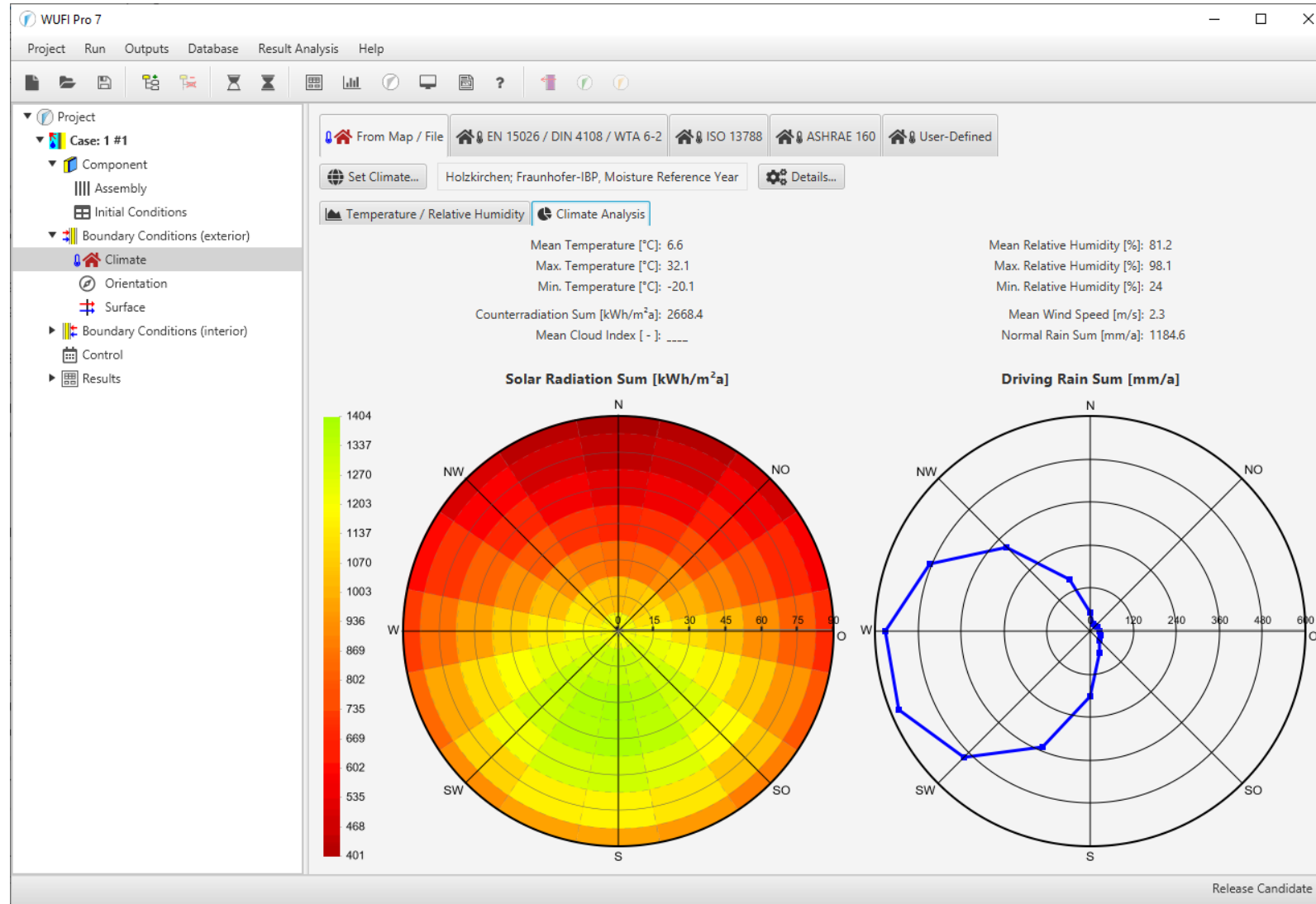
# New User Surface

## Climate



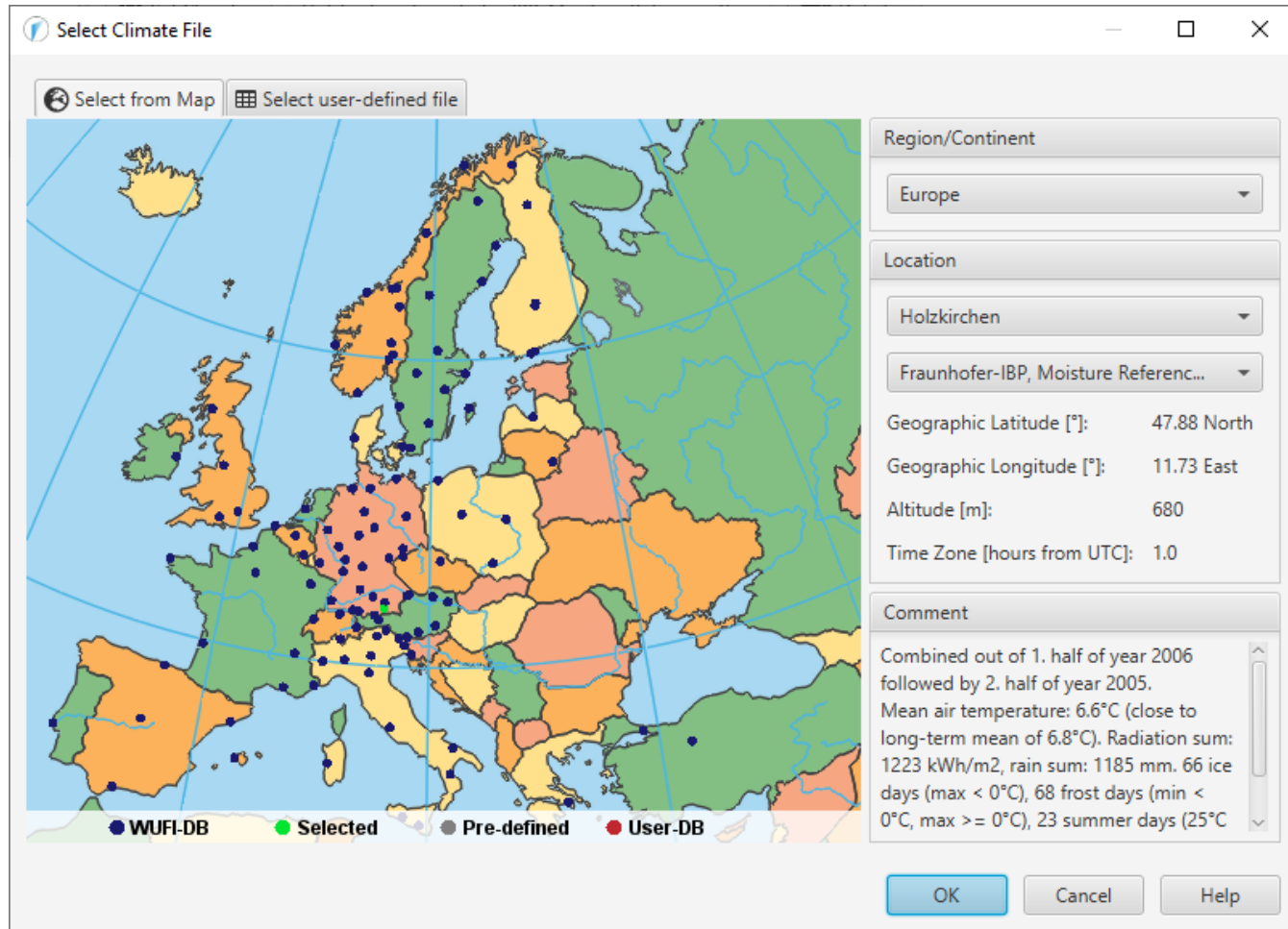
# New User Surface

## Climate



# Climate Database

## New climate locations



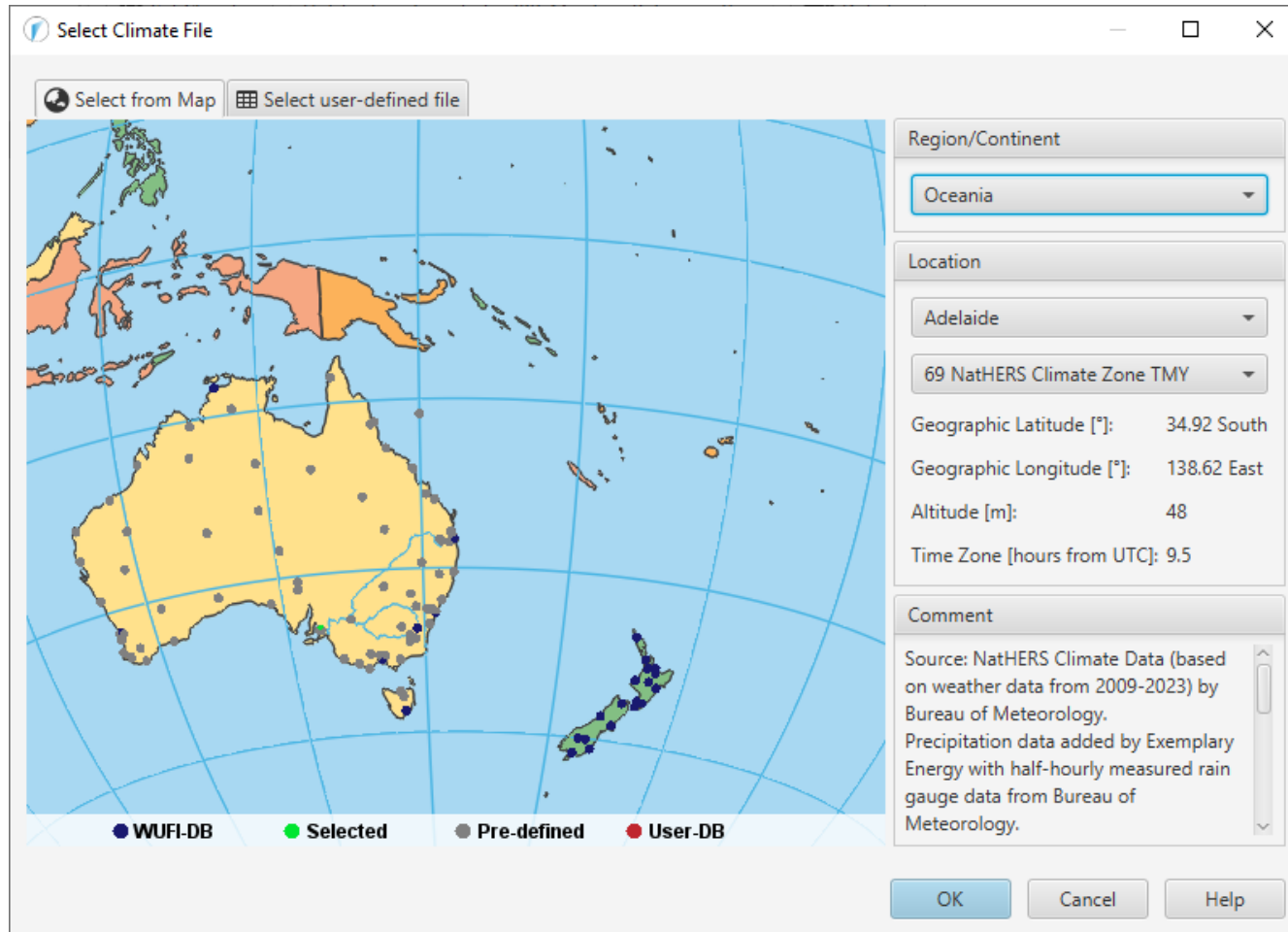
### 23 new locations in Europe:

- Klagenfurt, Zwettl (AT)
- La Chaux De Fond (CH)
- Holzkirchen HRV (DE)
- Copenhagen, Ringkoebing (DK)
- Suolahti (FI)
- Feuquières-en-Vimeu, Nizza (FR)
- Athen (GR)
- Dublin (IE)
- Rome, Verona (IT)
- Vilnius (LT)
- Riga (LV)
- Amsterdam (NL)
- Gniezno (PL)
- Ankara, Istanbul (TR)
- Glasgow, London, Manchester, Southampton (UK)



# Climate Database

## New climate locations



### 8 new locations in Australia

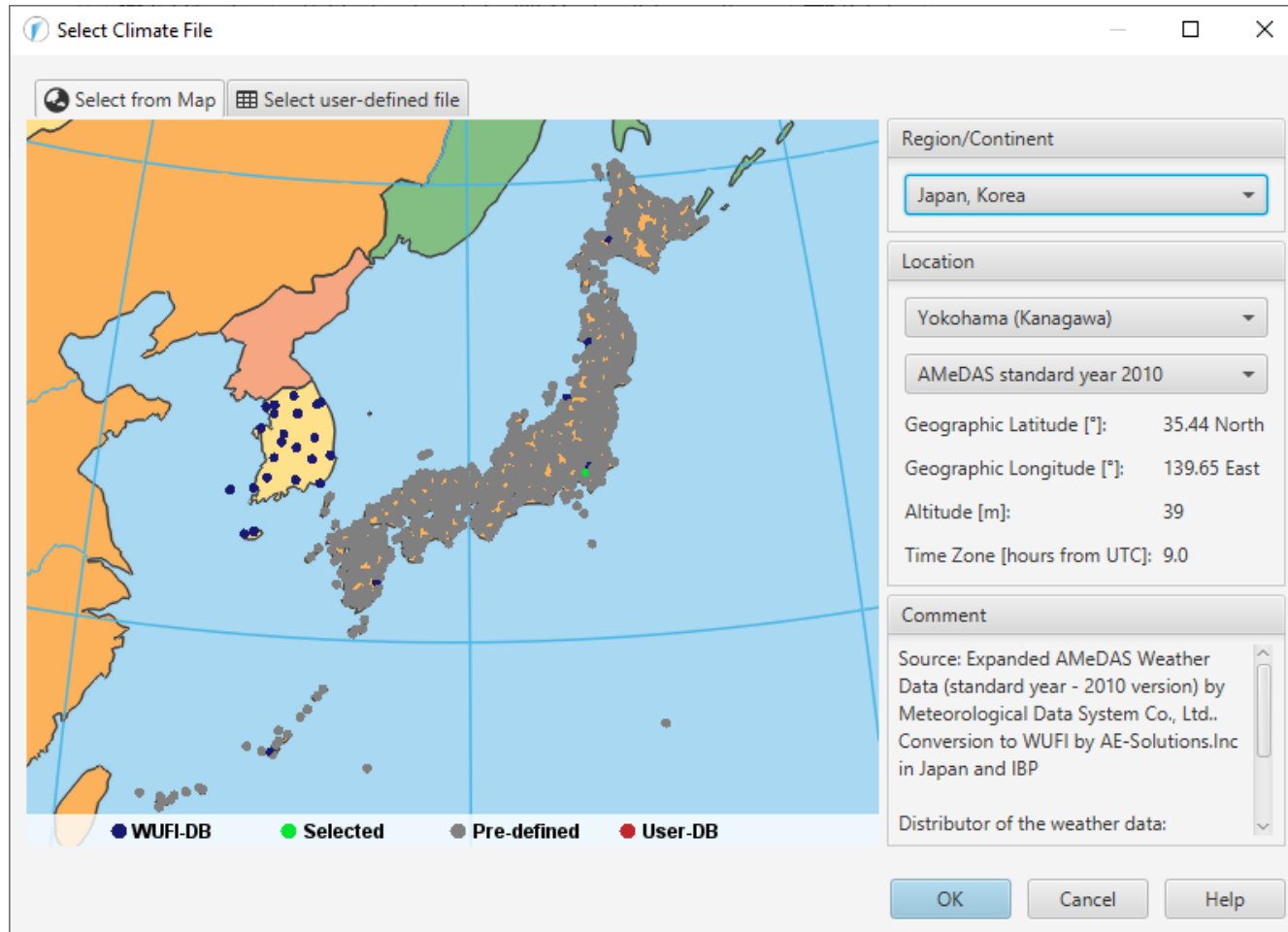
- Adelaide, Brisbane, Canberra, Darwin, Hobart, Moorabbin, Perth
- + 83 available for purchase from Exemplary Energy

### 18 new climate files for New Zealand

- Auckland, Tauranga, Christchurch, Dunedin, Napier, Hamilton, Invercargill, Paraparaumu, Kaitia, Nelson, New Plymouth, Lauder, Queenstown, Rotorua, Turangi, Hokitika, Masterton, Wellington

# Climate Database

## New climate locations

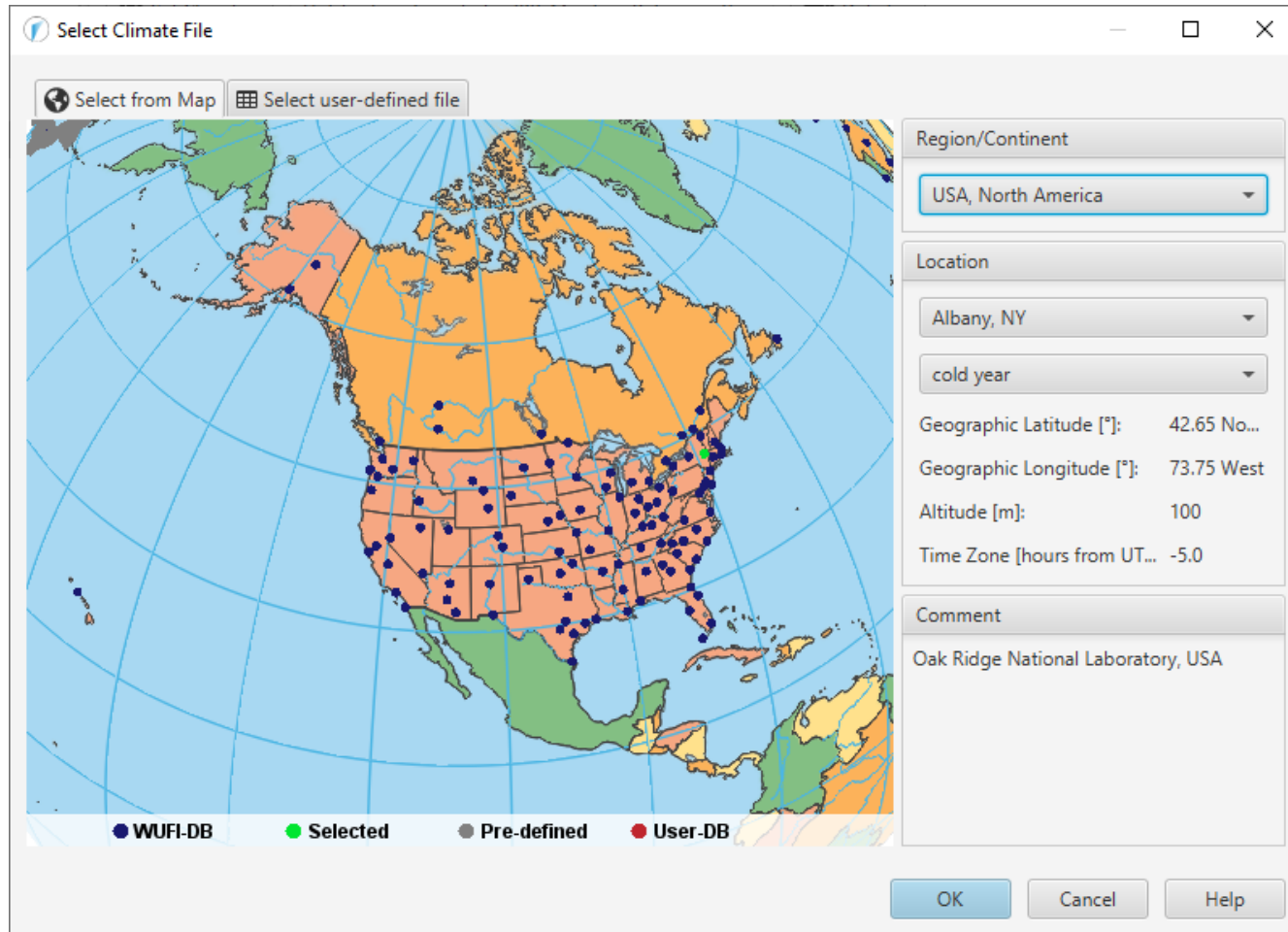


### 7 new climate files for Japan

- Sapporo, Akita, Niigata, Tokyo, Yokohama, Miyazaki, Naha
- + ca. 800 available for purchase from EI.Ltd

# Climate Database

## New climate locations

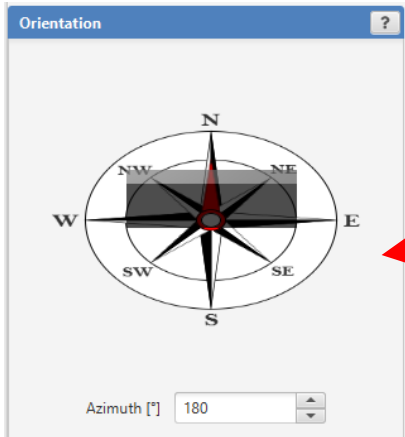


### 1 new location in USA:

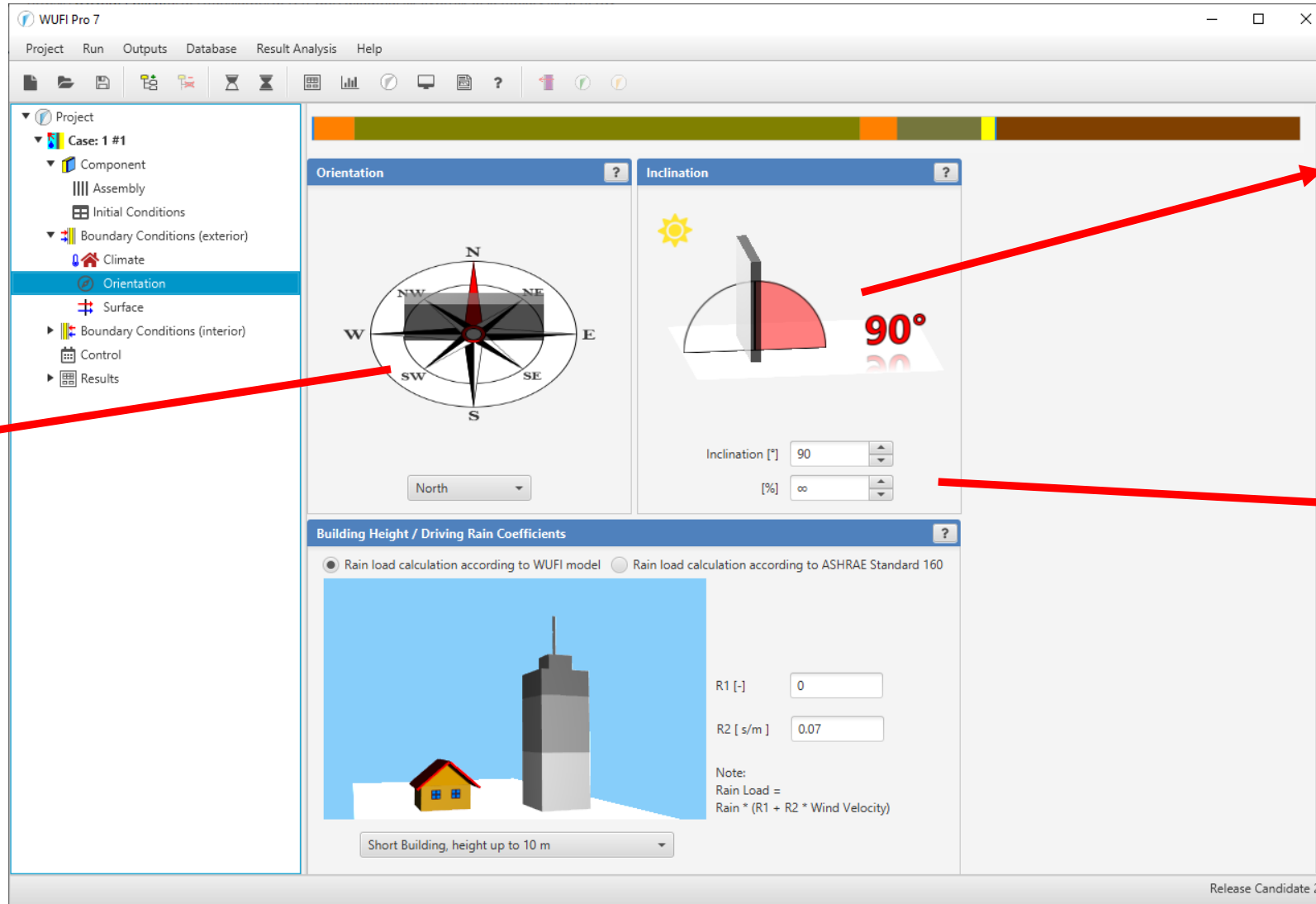
- Greenwood, SC

# New User Surface

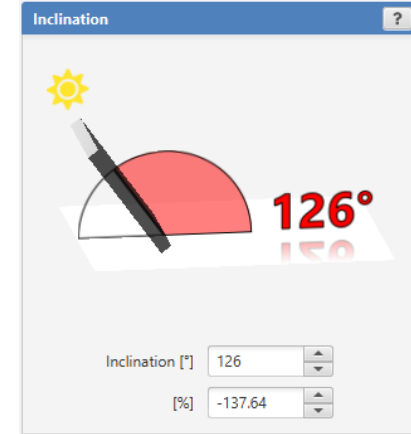
## Orientation



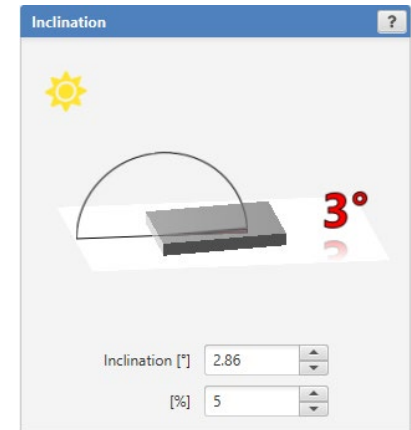
Orientation can be changed to Azimuth [°]



Inclination now up to 180° (overhang / passage)

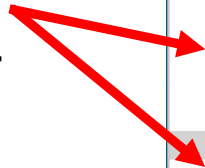


Inclination in % (for flat roofs)



# New User Surface

Boundary conditions exterior/interior separated



WUFI Pro 7

Project Run Outputs Database Result Analysis Help

Project

- Case: 1 #1
  - Component
    - Assembly
      - Initial Conditions
      - Boundary Conditions (exterior)
        - Climate
        - Orientation
        - Surface
      - Boundary Conditions (interior)
      - Control
      - Results

**Heat Transfer**

Heat Transfer Coefficient [W/m<sup>2</sup>K] 19 Roof

long-wave radiation parts Heat Transfer Coefficient [W/... 6.5

wind-dependent

Wind-dependence formula

**Vapour Transfer**

Additional diffusion resistance (e.g. coating), sd-Value [m] ---- No coating

Note: This setting does not affect rain absorption.

**Radiation**

Short-wave absorptivity, e.g. solar radiation [-] 0.6 Green roof, Optigreen system

Radiative overcooling  Note: Explicit Radiation Balance. Includes radiative cooling due to long-wave emission.

Long-wave emissivity, e.g. nighttime radiative cooling [-] 0.9

Additional radiation parameters

Reduction factors

for absorptivity [-] ---- No reduction

for emissivity [-] ----

**Rain**

Simulation takes rain into account

Rain parameters

Release Candidate 2

# New User Surface

## Surface

The screenshot displays the WUFI Pro 7 software interface. The main window is titled "WUFI Pro 7" and has a menu bar with "Project", "Run", "Outputs", "Database", "Result Analysis", and "Help". Below the menu bar is a toolbar with various icons. On the left side, there is a project tree with the following structure:

- Project
  - Case: 1 #1
    - Component
      - Assembly
      - Initial Conditions
      - Boundary Conditions (exterior)
        - Climate
        - Orientation
        - Surface
      - Boundary Conditions (interior)
      - Control
      - Results

The main area of the interface is divided into several sections, each with a blue header and a question mark icon:

- Heat Transfer**:
  - Heat Transfer Coefficient [W/m<sup>2</sup>K]: 19
  - long-wave radiation parts Heat Transfer Coefficient [W/...]: 6.5
  - wind-dependent:
  - Wind-dependence formula:
- Vapour Transfer**:
  - Additional diffusion resistance (e.g. coating), sd-Value [m]: ----
- Radiation**:
  - Short-wave absorptivity, e.g. solar radiation [-]: 0.6
  - Radiative overcooling:  Note: Explicit Radiation Balance. Includes radiative cooling due to long-wave emission.
  - Long-wave emissivity, e.g. nighttime radiative cooling [-]: 0.9
  - Additional radiation parameters:
  - Reduction factors:
  - for absorptivity [-]: ----
  - for emissivity [-]: ----
- Rain**:
  - Simulation takes rain into account:
  - Rain parameters:

A dropdown menu is open over the "Roof" selection in the Heat Transfer section. The menu items are:

- User-Defined
- No transfer (infinite resistance)
- External Wall
- DIN 4108-3 - Exterior component
- Roof
- Pitched roof (highlighted in blue)
- Basement
- Partition wall (inner)
- ÖNORM 8110-2
- Green roof, Optigreen system

Below the "Pitched roof" item, there are three sub-options, each with a question mark icon:

- Pitched roof, weak ventilated
- Pitched roof, normal ventilated
- Pitched roof, strong ventilated

The bottom right corner of the window displays "Release Candidate 2".

# New User Surface

## Surface

The screenshot displays the WUFI Pro 7 software interface. The main window is titled "WUFI Pro 7" and has a menu bar with "Project", "Run", "Outputs", "Database", "Result Analysis", and "Help". Below the menu bar is a toolbar with various icons. On the left side, there is a project tree with the following structure:

- Project
  - Case: 1 #1
    - Component
      - Assembly
      - Initial Conditions
    - Boundary Conditions (exterior)
      - Climate
      - Orientation
      - Surface
    - Boundary Conditions (interior)
    - Control
    - Results

The main area of the software is divided into several sections for configuring the surface properties:

- Heat Transfer**: Heat Transfer Coefficient [W/m<sup>2</sup>K] (19), long-wave radiation parts Heat Transfer Coefficient [W/... (6.5), wind-dependent (checkbox), Wind-dependence formula (checkbox).
- Vapour Transfer**: Additional diffusion resistance (e.g. coating), sd-Value [m] (----), No coating (checkbox). Note: This setting does not affect rain absorption.
- Radiation**: Short-wave absorptivity, e.g. solar radiation [-] (0.6), Radiative overcooling (checkbox checked), Long-wave emissivity, e.g. nighttime radiative cooling [-] (0.9), Additional radiation parameters (checkbox), Reduction factors (checkbox), for absorptivity [-] (----), for emissivity [-] (----).
- Rain**: Simulation takes rain into account (checkbox checked), Rain parameters (checkbox).

A dropdown menu is open, showing a list of surface materials. The "Roof" category is selected, and the "Green roof, Optigreen system" option is highlighted. The list includes:

- Alwitra EVALON graphitegrey
- Alwitra EVALON light grey
- Alwitra EVALON white
- Bituminous felt sanded grey
- Bituminous felt sanded red brown
- Gravel roof, generic model
- Green roof, generic model
- Green roof, Optigreen system
- PVC roofing membrane white
- PVC roofing membrane white, dirty
- Roofing, bituminous felt
- Roofing, sheet, black matt surface
- Roofing, sheet, green
- Tiles, clay, beavertail, brown
- Tiles, clay, brick red
- Tiles, clay, natural clay red, matt
- Tiles, clay, purple
- Tiles, clay, red, high gloss glazed
- Tiles, concrete, black
- Tiles, concrete, black
- Tiles, concrete, brown
- Tiles, concrete, light grey
- Tiles, concrete, light red, matt (weathered)
- Tiles, concrete, light red, semi-matt
- Tiles, concrete, natural clay red, matt
- Tiles, concrete, uncoloured
- Tiles, red
- WOLFIN M black
- WOLFIN TECTOFIN RG grey
- WOLFIN TECTOFIN RV plus grey

# New User Surface

WUFI Pro 7

Project Run Outputs Database Result Analysis Help

Project

- Case: 1 #1
  - Component
    - Assembly
    - Initial Conditions
    - Boundary Conditions (exterior)
      - Climate
      - Orientation
      - Surface
    - Boundary Conditions (interior)
    - Control
    - Results

**Heat Transfer**

Heat Transfer Coefficient [W/m<sup>2</sup>K] 19 Roof

long-wave radiation parts Heat Transfer Coefficient [W/... 6.5

wind-dependent

Wind-dependence formula

**Vapour Transfer**

Additional diffusion resistance (e.g. coating), sd-Value [m] ---- No coating

Note: This setting does not affect rain absorption.

**Radiation**

Short-wave absorptivity, e.g. solar radiation [-] 0.6 Green roof, Optigreen system

Radiative overcooling  Note: Explicit Radiation Balance. Includes radiative cooling due to long-wave emission.

Long-wave emissivity, e.g. nighttime radiative cooling [-] 0.9

Additional radiation parameters

Reduction factors

- for absorptivity [-] ----
- for emissivity [-] ----

**Rain**

Simulation takes rain into account

Rain parameters

No reduction

User-Defined

No reduction

Rack-mounted PV modules (WTA 6-8)

Shading by horizontal obstruction (WTA 6-8)

Shading by vertical obstruction (WTA 6-8)

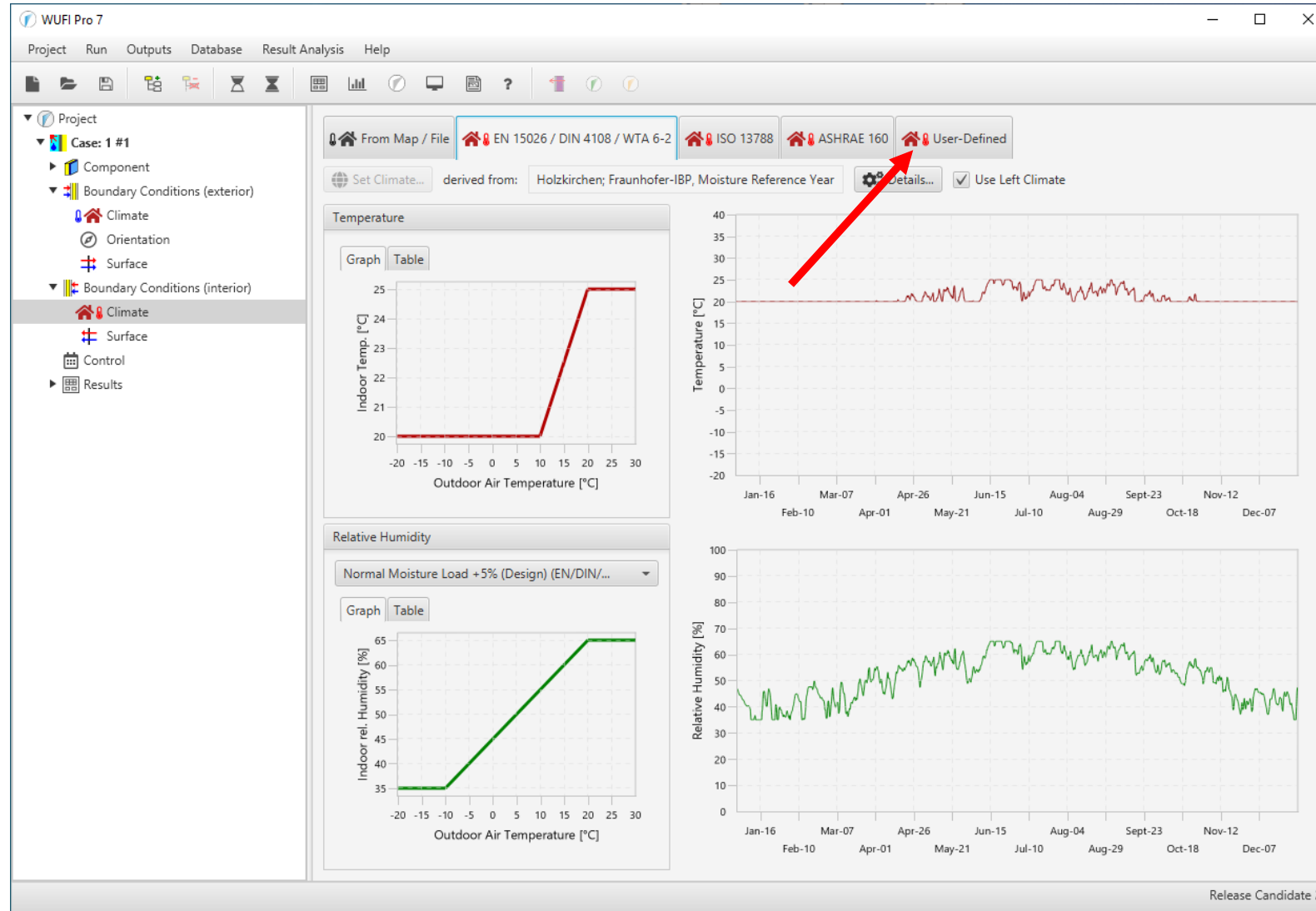
Pitched roof, ventilated, middle position

Release Candidate 2



# New User Surface

## Indoor Climate



### User-Defined:

- Own setting of the derivation possible
- Can be saved as a template

# New User Surface

## Indoor Climate

The screenshot displays the WUFI Pro 7 software interface. The top menu bar includes 'Project', 'Run', 'Outputs', 'Database', 'Result Analysis', and 'Help'. The left sidebar shows a project tree with 'Case: 1 #1' expanded to show 'Boundary Conditions (interior)' selected. The main workspace is divided into two sections: 'Indoor Temperature' and 'Indoor Rel. Humidity'. The 'Indoor Temperature' section shows a 'Sine Curve' graph of indoor temperature vs. outdoor air temperature, with a 'Transfer function' set to 'dependent' and a 'Moving daily average' selected. The 'Indoor Rel. Humidity' section shows a 'Sine Curve' graph of additional moisture vs. outdoor air temperature, with a 'Transfer function' set to 'dependent' and a 'Moving daily average' selected. Both sections include time-series graphs showing the resulting indoor climate over a year. The bottom right corner of the interface indicates 'Release Candidate 2'.

### User-Defined:

- Own setting of the derivation possible
- Can be saved as a template

# New User Surface

## Indoor Climate

WUFI Pro 7

Project Run Outputs Database Result Analysis Help

From Map / File EN 15026 / DIN 4108 / WTA 6-2 ISO 13788 ASHRAE 160 User-Defined

Holzkirchen; Fraunhofer-IBP, Moisture Reference Year Template: Draft WTA 6-2-2024 (design moisture load)

Constant Graph Table

Sine Curve

Transfer function

dependent

Indoor Temperature... [Graph]

Outdoor Air Temperature [°C]

Average: Moving daily average

Indoor Rel. Humidity

Sine Curve Graph Table

Transfer function

dependent

Additional Moisture... [Graph]

Outdoor Air Temperature [°C]

Average: Moving daily average

Relative Humidity [%] [Graph]

Upper Limit 100 Lower Limit 0

Release Candidate 2

### User-Defined:

- Own setting of the derivation possible
- Can be saved as a template

### Included:

- Unheated attic
- Basement garage
- Basement side room
- Crawl space
- Staircase
- Draft WTA 6-2:2024
- French indoor climate
- ...

# New User Surface

## Interior Surface

The screenshot displays the WUFI Pro 7 software interface. The window title is "WUFI Pro 7" and the menu bar includes "Project", "Run", "Outputs", "Database", "Result Analysis", and "Help". The toolbar contains various icons for file operations, simulation, and analysis. The left sidebar shows a project tree with the following structure:

- Project
  - Case: 1 #1
    - Component
      - Assembly
      - Initial Conditions
    - Boundary Conditions (exterior)
      - Climate
      - Orientation
      - Surface
    - Boundary Conditions (interior)
      - Climate
      - Surface
    - Control
    - Results

The main workspace is divided into two sections:

- Heat Transfer**: Includes a checked option "Apply list selection from exterior surface" and a field for "Heat Transfer Coefficient [W/m<sup>2</sup>K]" set to 8, with a dropdown menu showing "Roof (Interior Surface)".
- Vapour Transfer**: Includes a field for "Additional diffusion resistance (e.g. coating), sd-Value [m]" set to "----" and a dropdown menu showing "No coating".

A progress bar at the top of the workspace shows a multi-colored bar (green, grey, orange, yellow, brown). The bottom right corner of the window indicates "Release Candidate 2".

# New User Surface Control

The screenshot displays the WUFI Pro 7 software interface. The left sidebar shows a project tree with the following structure:

- Project
  - Case: 1 #1
    - Component
      - Assembly
      - Initial Conditions
    - Boundary Conditions (exterior)
      - Climate
      - Orientation
      - Surface
    - Boundary Conditions (interior)
      - Climate
      - Surface
    - Control
    - Results

The main panel shows the 'Control' settings for the selected case. The 'Numerics' section is expanded, showing the following options:

- Mode of Calculation
  - Heat Transport Calculation
  - Moisture Transport Calculation
  - 1 Max. Number of Threads
- Hygrothermal Special Options
- Numerical Expert Settings

A red arrow points to the 'Max. Number of Threads' spinner control, which is currently set to 1. A text box next to the arrow states: **Number of threads directly selectable for current case**.

Release Candidate 2

# New User Surface

## Calculation

The screenshot shows the WUFI Pro 7 software interface. The left sidebar contains a project tree with categories like Project, Case: 1 #1, Component, Assembly, Initial Conditions, Boundary Conditions (exterior), Boundary Conditions (interior), Control, and Results. The main window displays the 'Status of Calculation' section, which includes a progress bar at the top and several data tables. A red arrow points to the 'Status of Calculation' section.

**Status of Calculation**

Calculation: Time and Date	27 Nov 2024, 11:29
Begin / End of calculation	1 Oct 2024 / 1 Oct 2029
Computing Time	0:00:51.909
Current Date/Time	4 Oct 2025, 14:00

**Check for numerical quality**

<b>No. of Convergence Failures</b>		<b>213</b>	
Sum of diffusive fluxes (left/right)	[kg/m <sup>2</sup> ]	-74.26	1.32
Sum of capillary fluxes (left/right)	[kg/m <sup>2</sup> ]	109.57	0.00
<b>Balance (mass vs. sum of surface-fluxes)</b>	<b>[kg/m<sup>2</sup>]</b>	<b>35.58</b>	<b>33.99</b>

**Water Content [kg/m<sup>2</sup>]**

	Start	End	Min.	Max.
Total Water Content	22.39	57.97	22.21	60.92

**Water Content [kg/m<sup>3</sup>]**

Layer/Material	Start	End	Min.	Max.
Grasses	12.00	296.83	3.19	299.77
Substrate type E	10.60	330.30	10.12	357.89
Filter mat	0.00	126.92	0.00	324.11
Drainage board	0.00	43.47	0.00	44.43
Protection mat	0.00	292.63	0.00	419.56

Release Candidate 2

### Calculation:

- Table is updated during calculation

# New User Surface

## Calculation

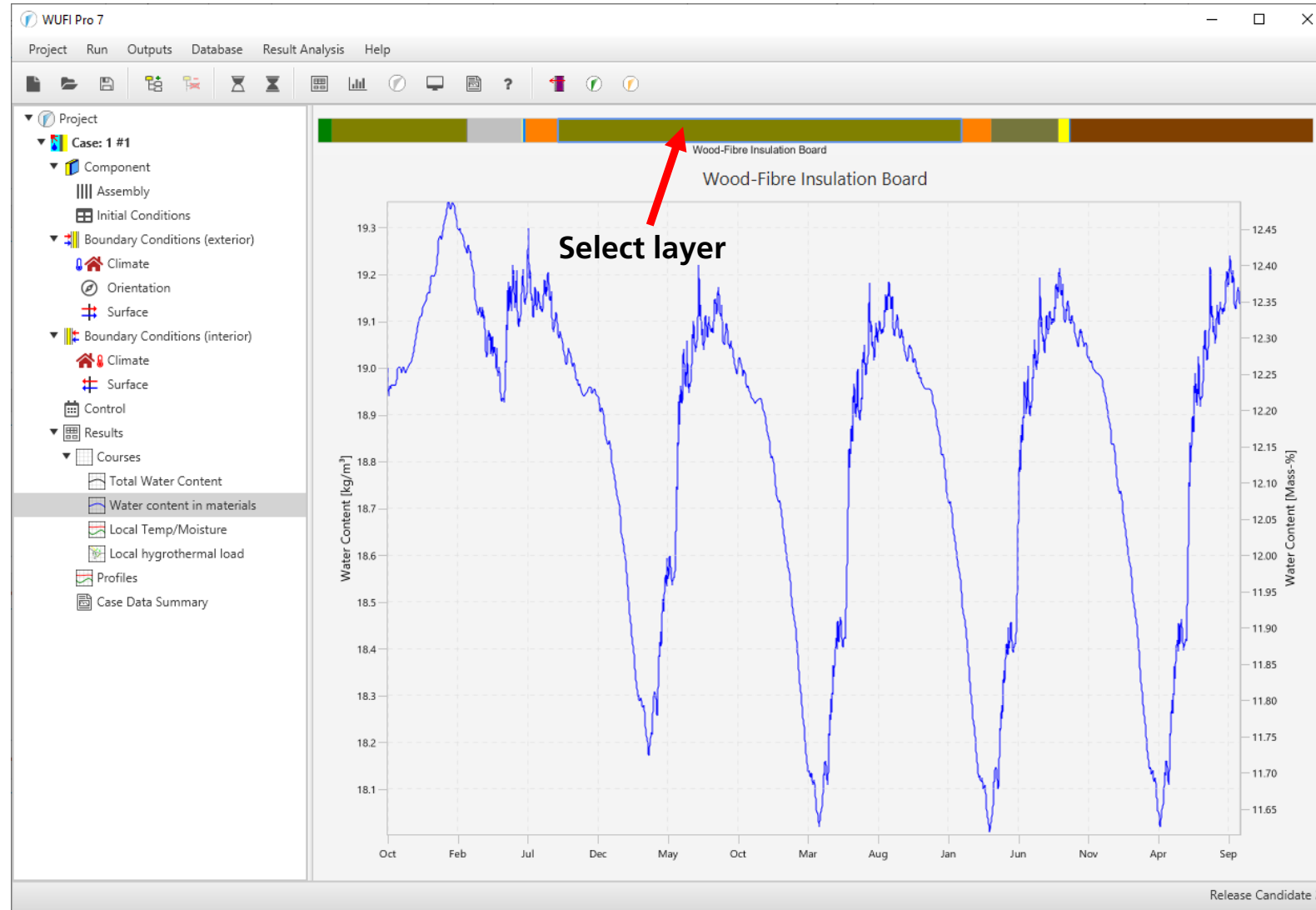


### Calculation:

- Profiles run during the calculation (replaces "Calculate with film")

# New User Surface

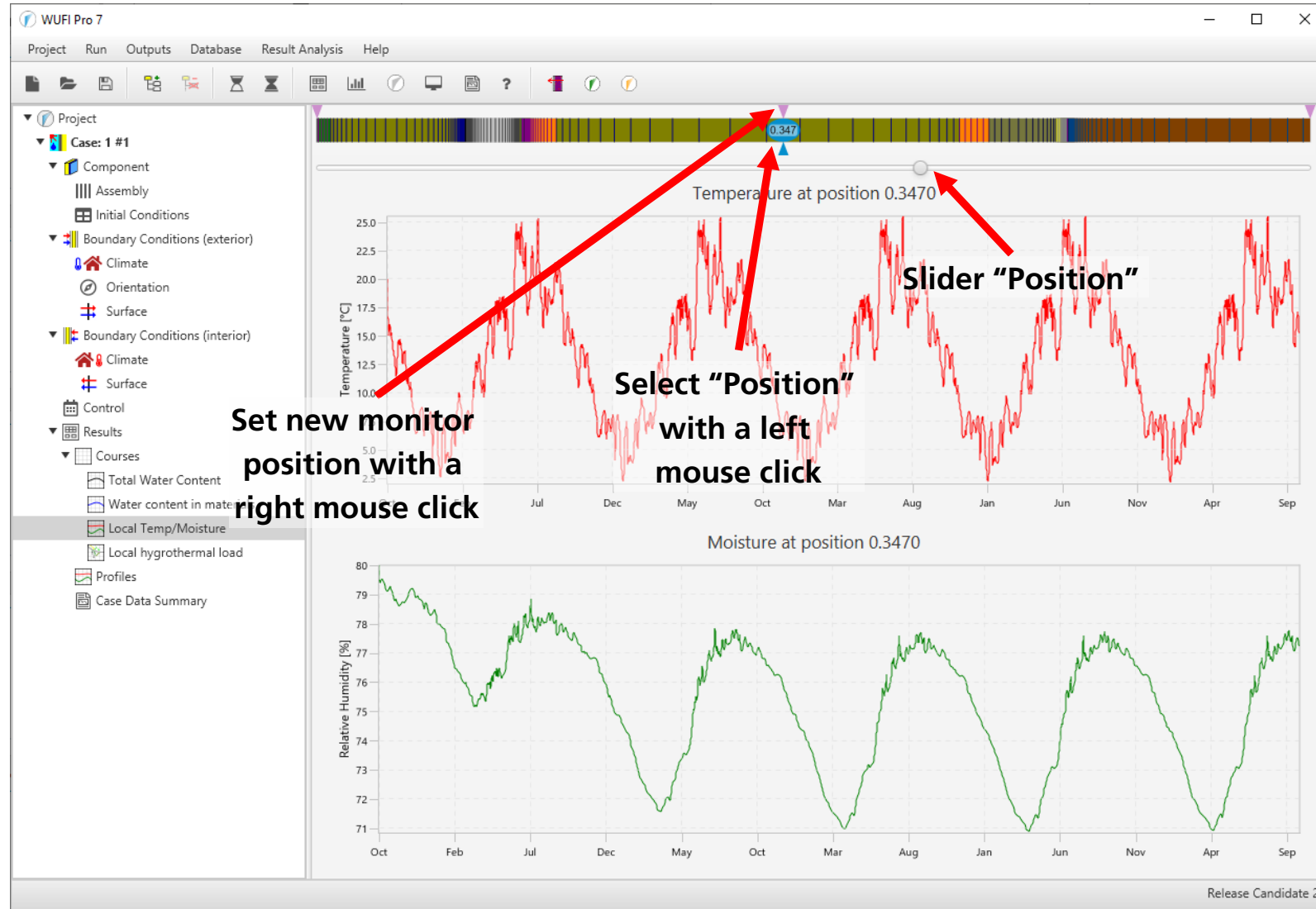
## Results





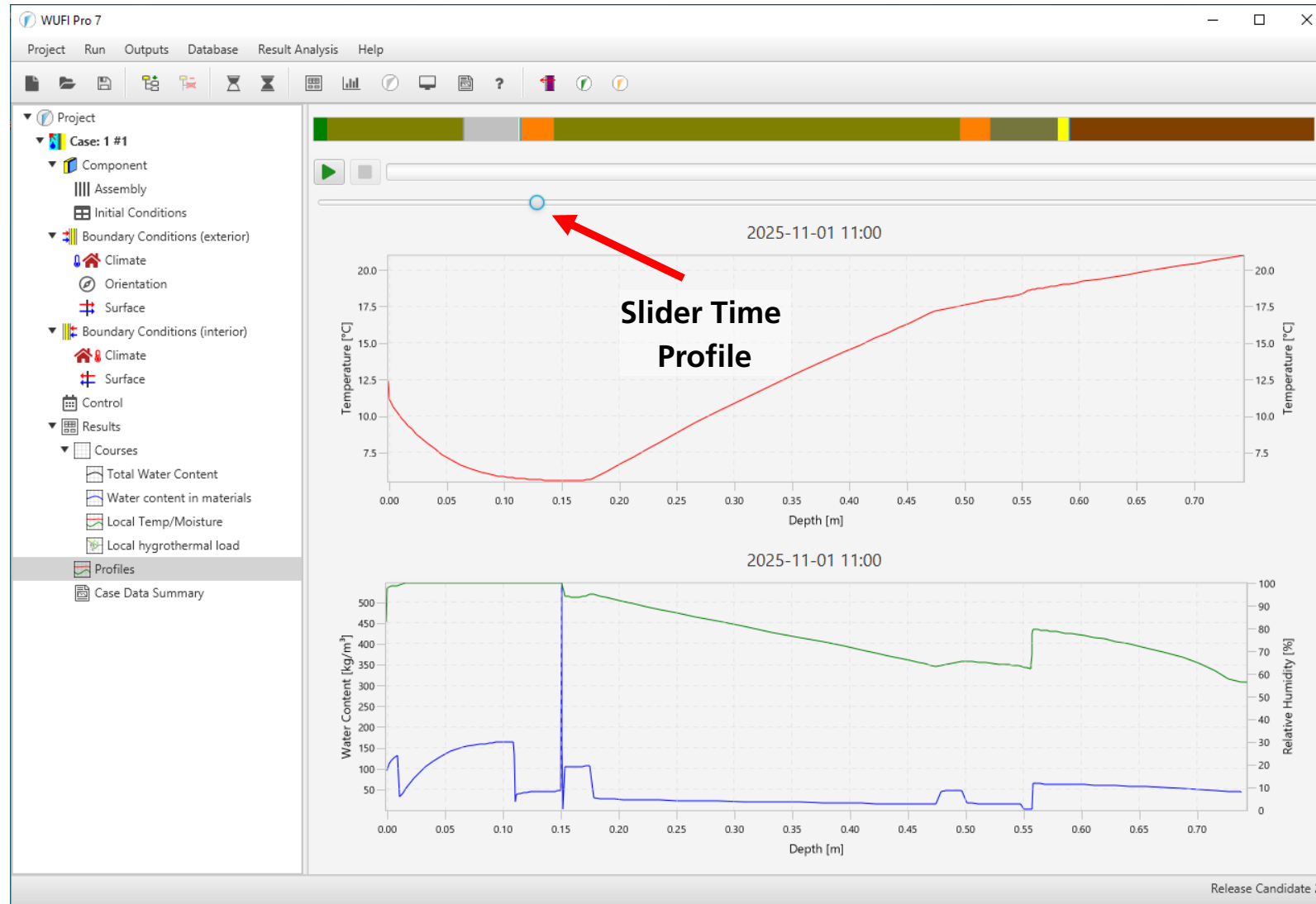
# New User Surface

## Results



# New User Surface

## Results



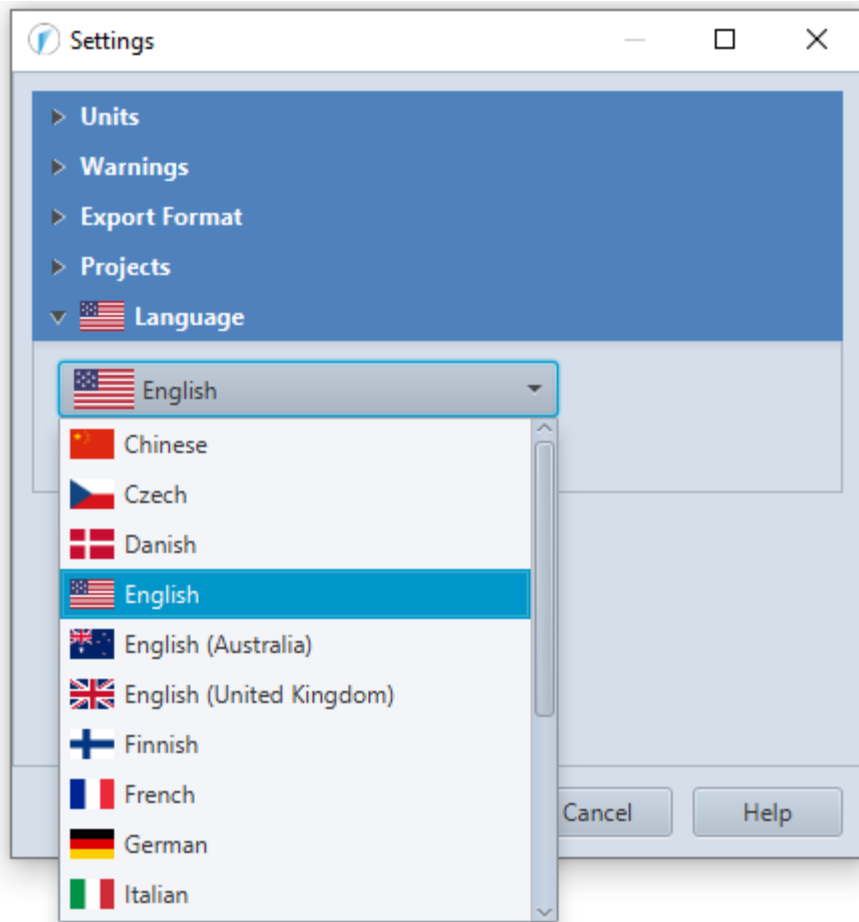
# New User Surface

## Case Data Summary

The screenshot shows the WUFI Pro 7 software interface. The left sidebar contains a tree view of the project structure, with 'Case Data Summary' selected. The main window displays the 'Case Data Summary' page, which includes a header with the WUFI logo and version (WUFI Pro 7.0). Below the header, there are two buttons: 'Open Pdf' and 'Settings'. A red arrow points to the 'Open Pdf' button. The main content area is divided into sections: 'Project info' (Project Name, Project Number, Client, Contact Person, City/Zip, Street, Phone, Fax, Email, Responsible, Remarks, Date: 2024-11-28), 'Component' (Case name: #1), and a cross-section diagram showing 'Exterior' and 'Interior' layers. The diagram consists of several colored blocks (green, orange, grey) representing different material layers. The bottom right corner of the window indicates 'Release Candidate 2'.

# Others

## Language Database



### New Language Databases:

- Country-specific expressions possible
- Material names and info text of the materials can contain country-specific information (units, contact)

# Others

## New WUFI® Graph

