



User Manual

# FLAT ROOF module

easyfix

**The FLAT ROOF module** has been designed to enable making appropriate choices of fixings for insulation materials installed on flat roofs. The module relies on calculations conforming with the EN 1991-1-4 standard on wind actions as well as the ETAG 006 guidelines. It is absolutely crucial that results of calculations are very precise in terms of both the number and length of fixings. Such precision would not be possible to attain without the wide selection of options enabling characteristic design data to be entered and changed as well as without other application features, such as the possibility to define the roof surface profile or the substrate to which thermal and hydro-insulation materials are to be fixed. It should be noted that the software version available to every EasyFix user is basic in the scope covered by the FLAT ROOF module, matching the most common design scenarios. However, if you need to perform calculations for a very specific and complicated concept, just contact Rawlplug's Technical Department via the [rawlplug.com](http://rawlplug.com) website, and our experts will support you using a more advanced program version. What they can do includes calculations with variable insulation thickness or defining oval roof edges.

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The FLAT ROOF module contains the following tabs: Project properties, Building parameters, Roof.

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The Project Properties tab enables you to enter detailed information about the given project.

## Project properties

The screenshot shows the 'Project properties' tab selected in the software interface. The form is divided into three main sections: Project, Designer, and Organization. Each section contains several input fields for user data.

Section	Field	Value
Project	Subject	Hala magazynowa - dach
	Street	Kwidzyńska
	City	Wrocław
	Code	51-416
	Notes	
	Organization	RAWLPLUG
Designer	Name	Marian B.
	Phone	71 32 60 100
	E-mail	www.rawlplug.com
	Checked by	Magdalena G.
	Date	Śr 03.01.2018
	Organization	RAWLPLUG
Organization	Name	RAWLPLUG
	Street	Kwidzyńska 6
	City	Wrocław
	Code	51-416
	Phone	71 32 60 100
	E-mail	www.rawlplug.com

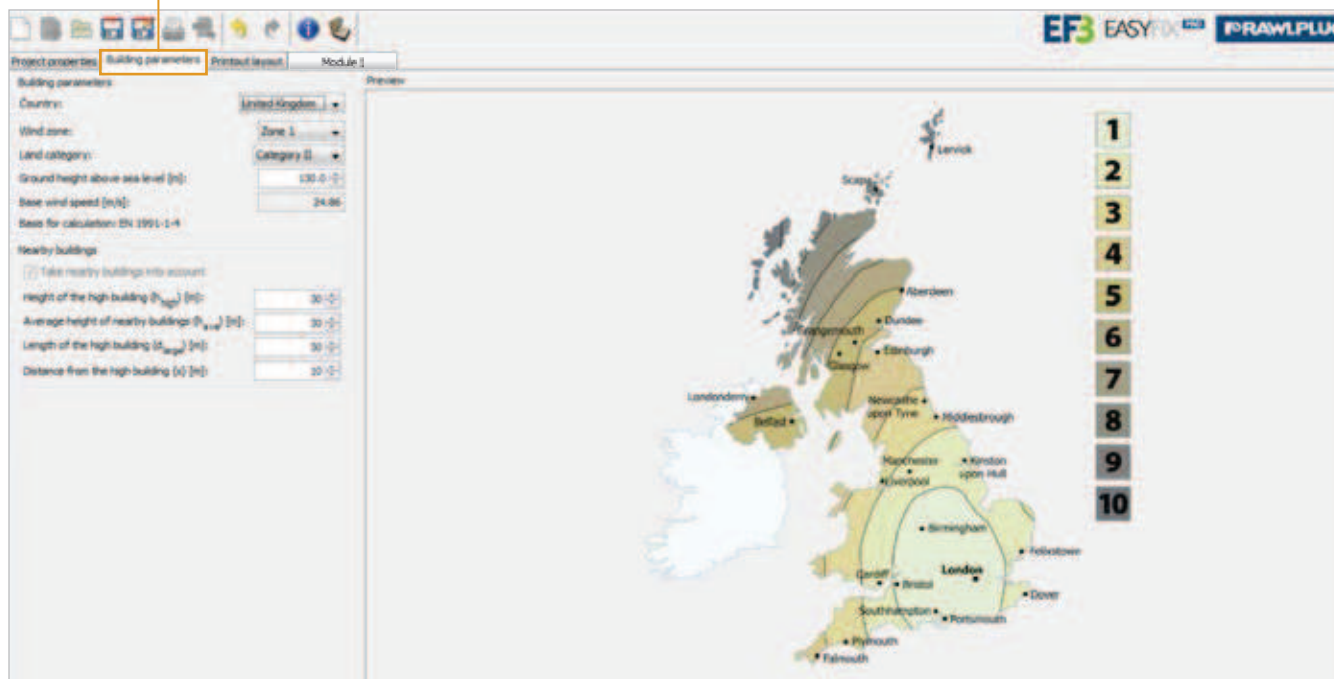
1. Fields for entering data to identify: design project, engineering office location, designer, reviewer





The Building Parameters tab features the following options:

Building parameters



Project properties | **Building parameters** | Printout layout | Module

**Building parameters**

Country: United Kingdom

Wind zone: Zone 1

Land category: Category II

Ground height above sea level [m]: 130.0

Base wind speed [m/s]: 24.86

Basis for calculation: EN 1991-1-4

**Nearby buildings**

☒ Take nearby buildings into account

Height of the high building ( $h_{high}$ ) [m]: 30

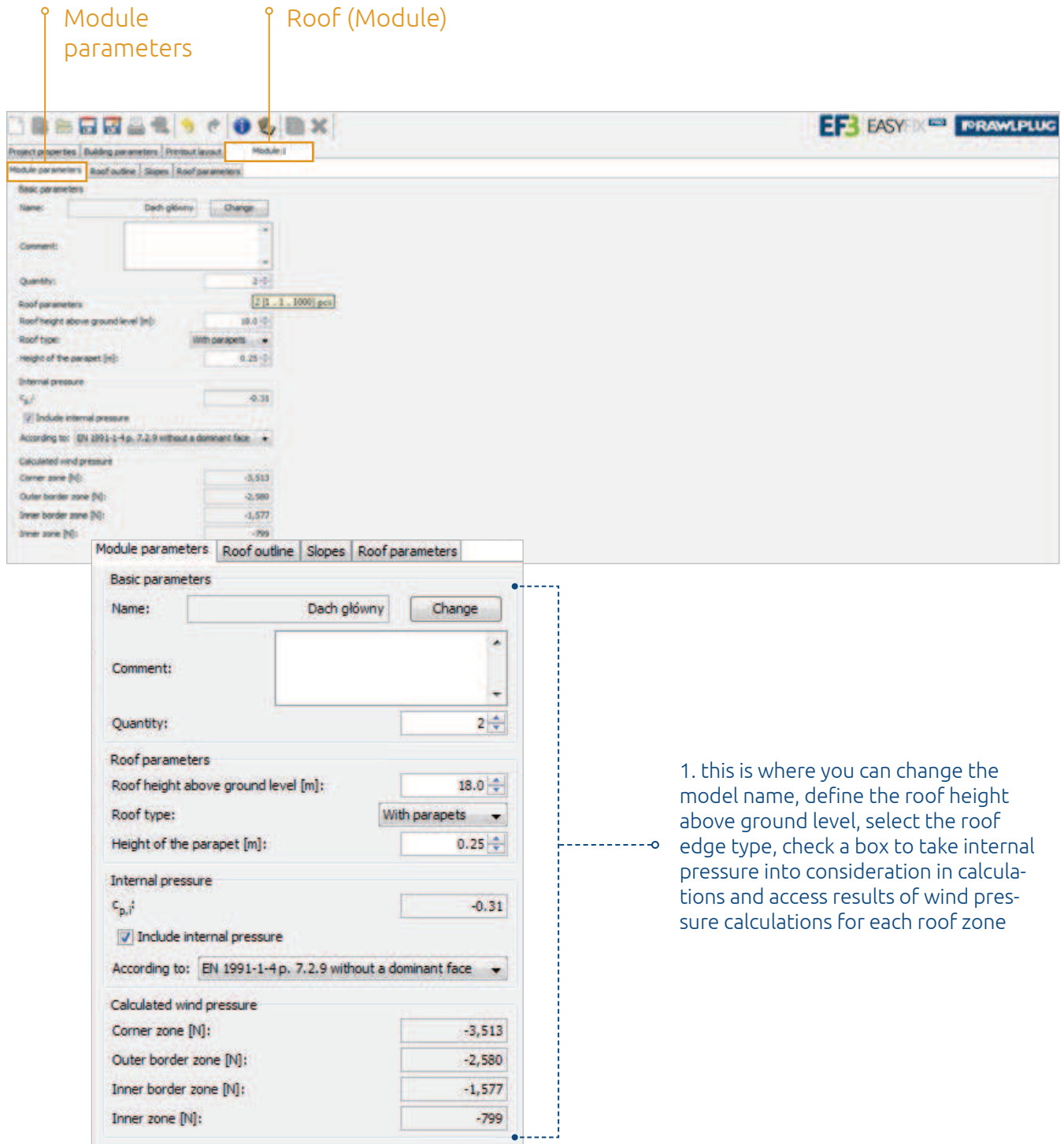
Average height of nearby buildings ( $h_{avg}$ ) [m]: 30

Length of the high building ( $d_{large}$ ) [m]: 30

Distance from the high building ( $x$ ) [m]: 10

1. selection of basic parameters that identify the building location, i.e. country, height above sea level and land category or wind zone
2. option to define base wind speed for locations which are not available by default in the application for specific reasons
3. possibility to take the impact of nearby (tall) buildings into account on the roof designed

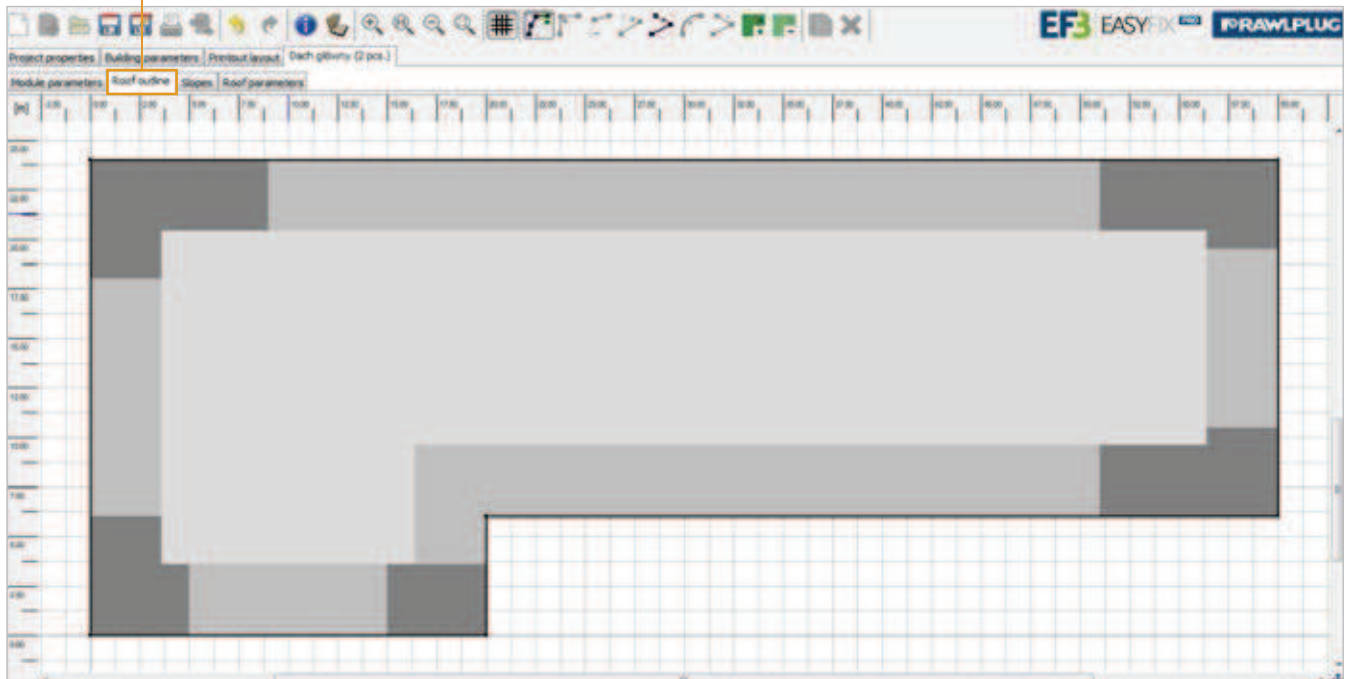
The Roof (Module) tab groups the available features into four subtabs: Module Parameters, Roof Outline, Slopes and Roof Parameters.



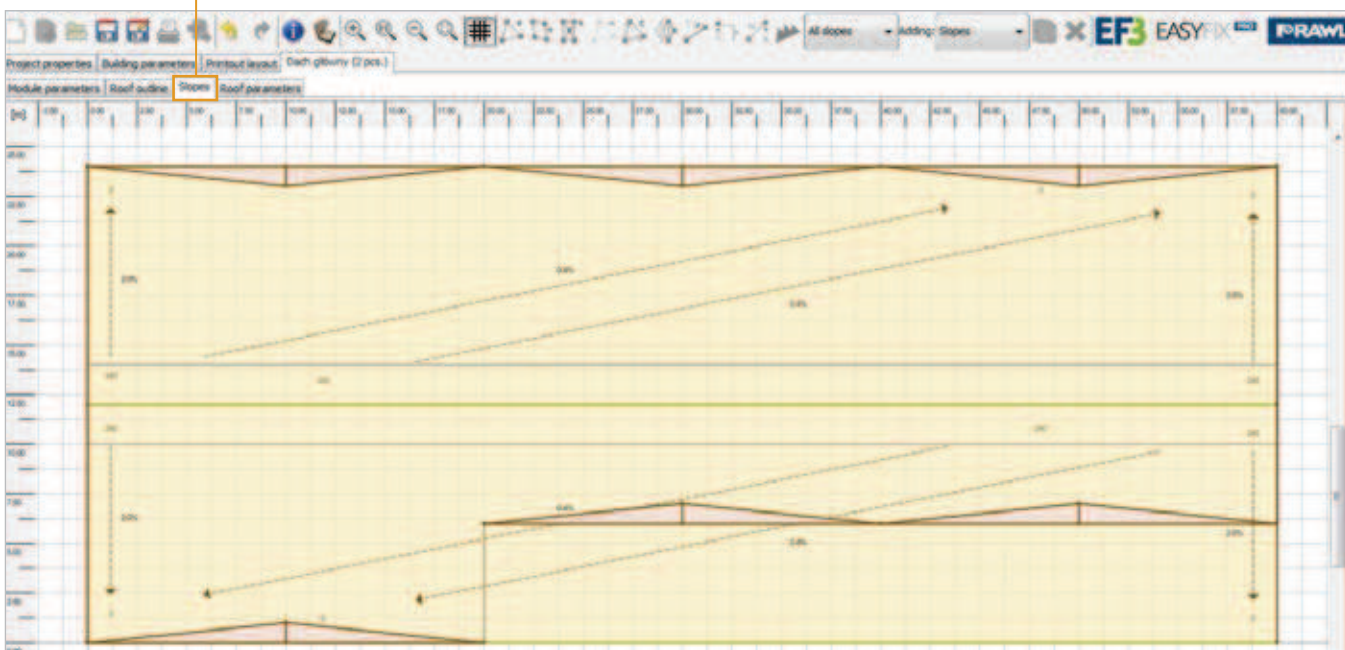
1. this is where you can change the model name, define the roof height above ground level, select the roof edge type, check a box to take internal pressure into consideration in calculations and access results of wind pressure calculations for each roof zone



Roof outline is where you can enter the outline of the roof being designed using various drawing functions.



The Slopes tab allows you to enter slopes and counterslopes to be developed with insulation material of variable thickness (feature available upon submitting a design to Rawlplug's Technical Department).



Roof Parameters is a tab that provides the user with the following selection of features:

1. choice of hydro-insulation, substrate and fixing type

4. option to define the membrane and overlap width for the given roof zone, with additional fixing available

5. option to define maximum spacing between fixings

The screenshot shows the 'Roof parameters' tab in the software. It includes sections for 'Basic parameters' (Membrane producer, Membrane, Substrate type, Norm, Substrate parameters, Screws, Telescope), 'Base insulation height', 'Installation safety factor', 'Fringe layout' (Zone, Membrane width, Overlapping width, Additional fixing), 'Sizes of fixings to use' (Telescope, Screw), and 'Installation schemes'.

3. option to declare membrane load capacity, if it is relevant

2. option to define base insulation height and old insulation height

6. option to enter sheet dimensions to be taken into account in spacing calculations for roofing made of steel decking

Calculated values					Quantities of fixings (500 total)			
Fixing depth of the screw: 15					Telescope			
Design resistance of the elements (ETA-09/0346-2012) (kN): 505					Screw			
Zone	Area (m²)	Density of fixings (pcs./m²)	Number of fixings (pcs.)	Spacing (m)	Quantity	Quantity	Quantity	Quantity
Corner	156.96	7.02	1,102	330.00	135	583	50	335
Outer border	296.00	5.13	2,033	330.00	365	125	60	101
Inner border	647.04	3.38	2,194	330.00	595	887	80	2640
Total	1,100.00	4.43	5,329	-	225	610	190	1200

7. displaying calculation results for screw anchoring depth, load capacity of fixings, surface area of zones, density and number of fixings per zone

8. displaying the chosen set of fixings along with their number

