module BALUSTRADE

ANCHORS – module Balustrade

General Information:

Data Input:

Model 3D:

Results:

1. General Information
2. General - data input area
3. Substrate
4. Fixture
5. Anchors
6. Loads
7. Model 3D
8. Design method, anchors filter
9. Calculate all anchors
10. Result for selected anchor
11. Instalation data
12. Report printout

– Move on to a topic of your choice

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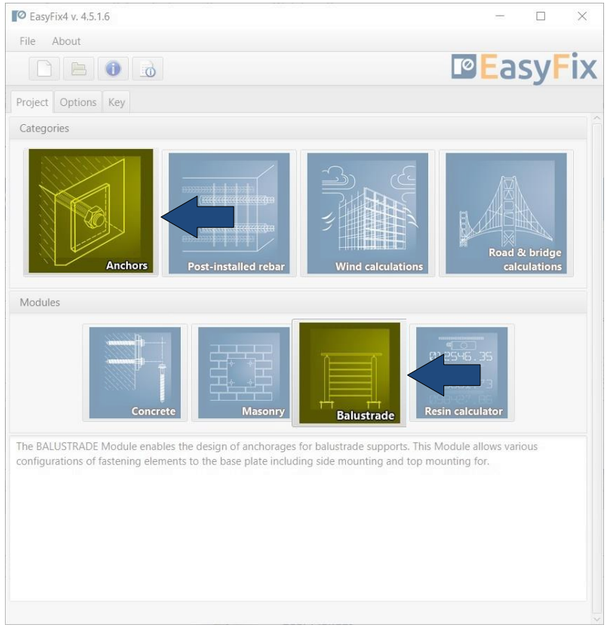
ANCHORS – module Balustrade

1 General information

Select a category and module :



Designation of icons and symbols :

Create a new project

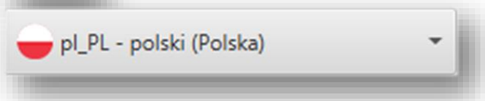
Open project

Save | Save as project

Undo | Redo changes

Generate printout to pdf file

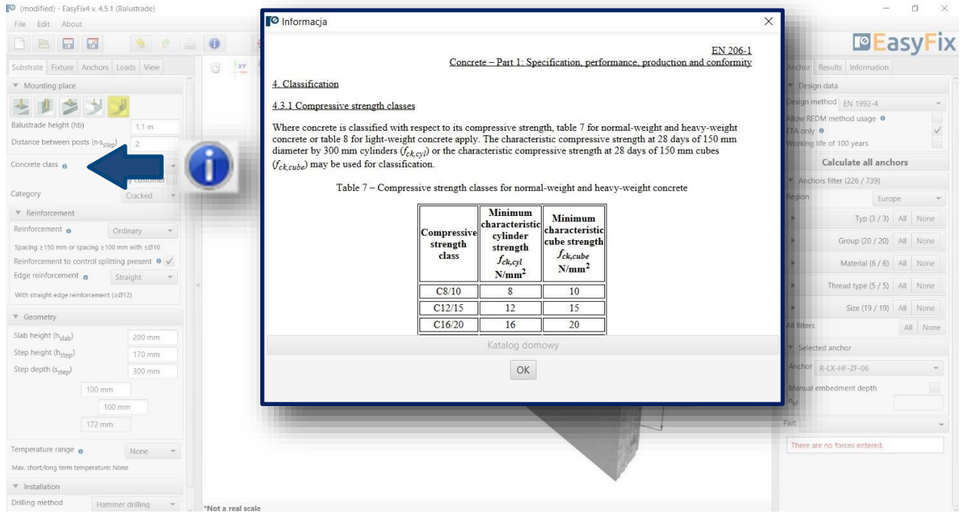
Program information



Selecting the program language

Information icon

User Manual



ANCHORS – module Balustrade

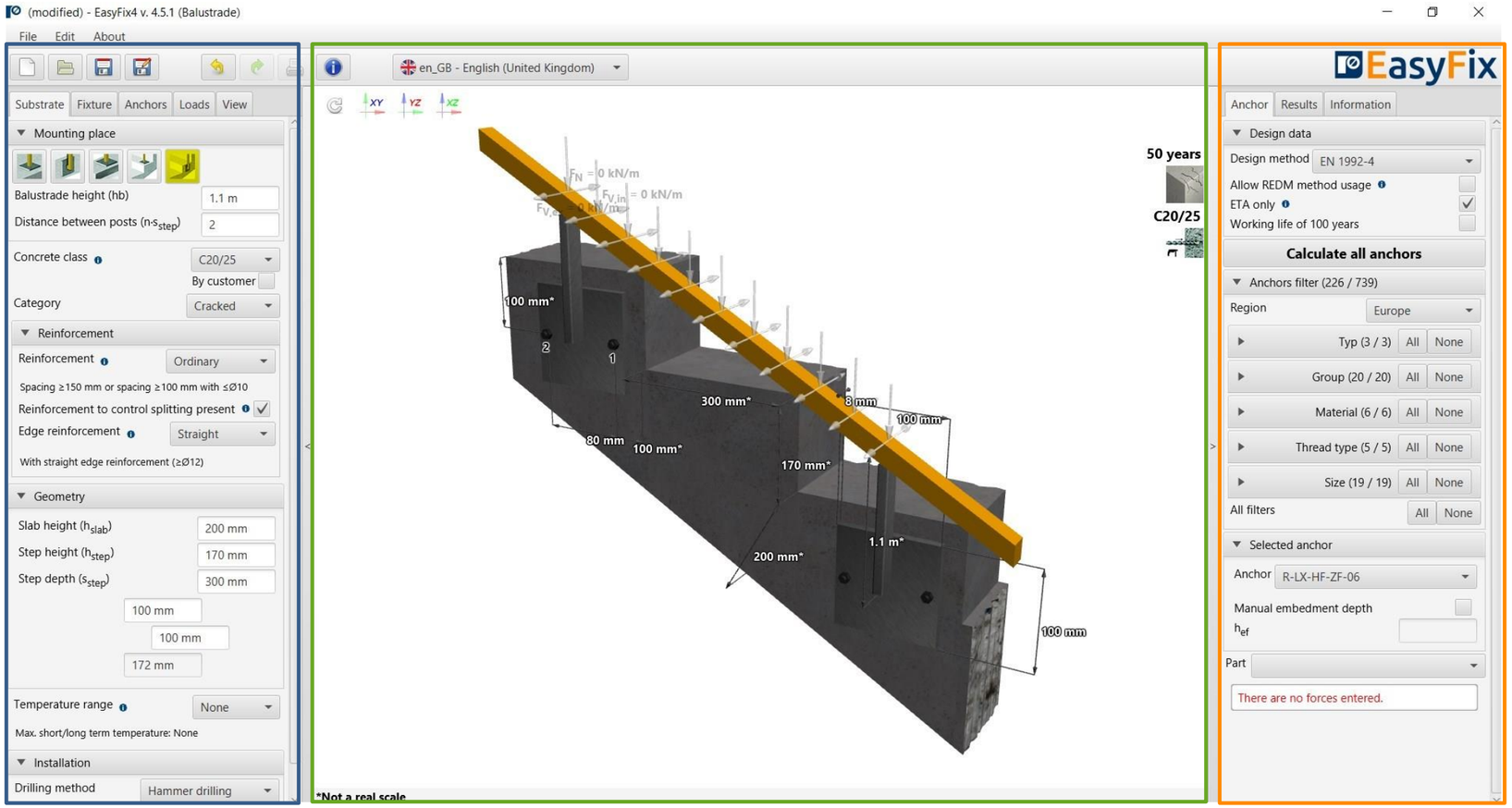
2 Introduction
Basic window of the balustrade module

It is separated into three areas:
-data entry
-model view
-results with filters

Input area
Substrate
Base
Anchors
Loads
View

Model view
3D view with rotation and zoom in/out

Result area
Anchor - Filter products
Results - for a selected product
Product information



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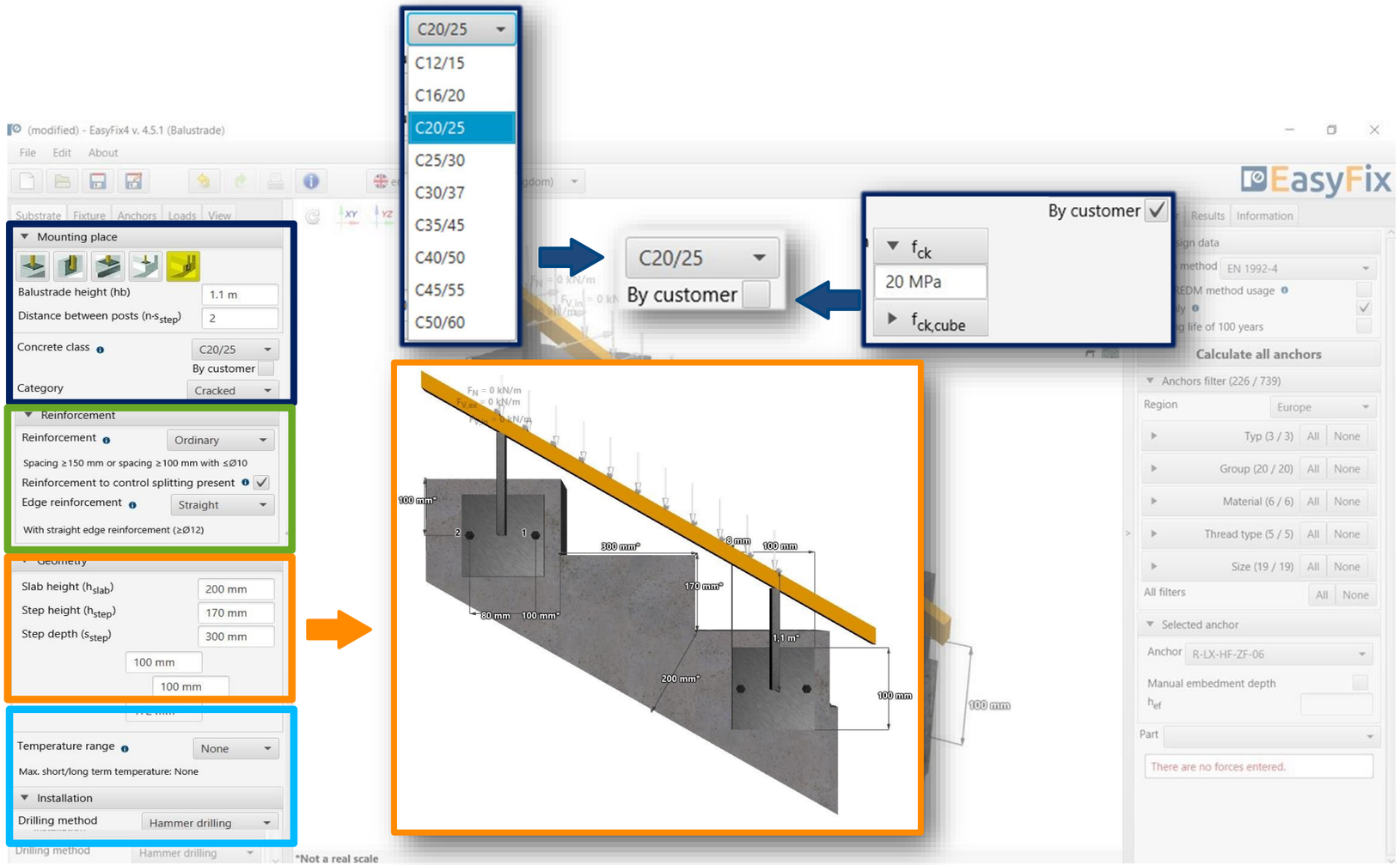
3 Substrate tab
Data input area

Determine **concrete class** (also by user) and select **cracked/un-cracked concrete**

Definition of **reinforcement** or lack thereof in the structure

Definition of **dimensions and edges** of concrete

Definition of the **temperature range** and the **installation method** and conditions determines the filtering range of the anchors



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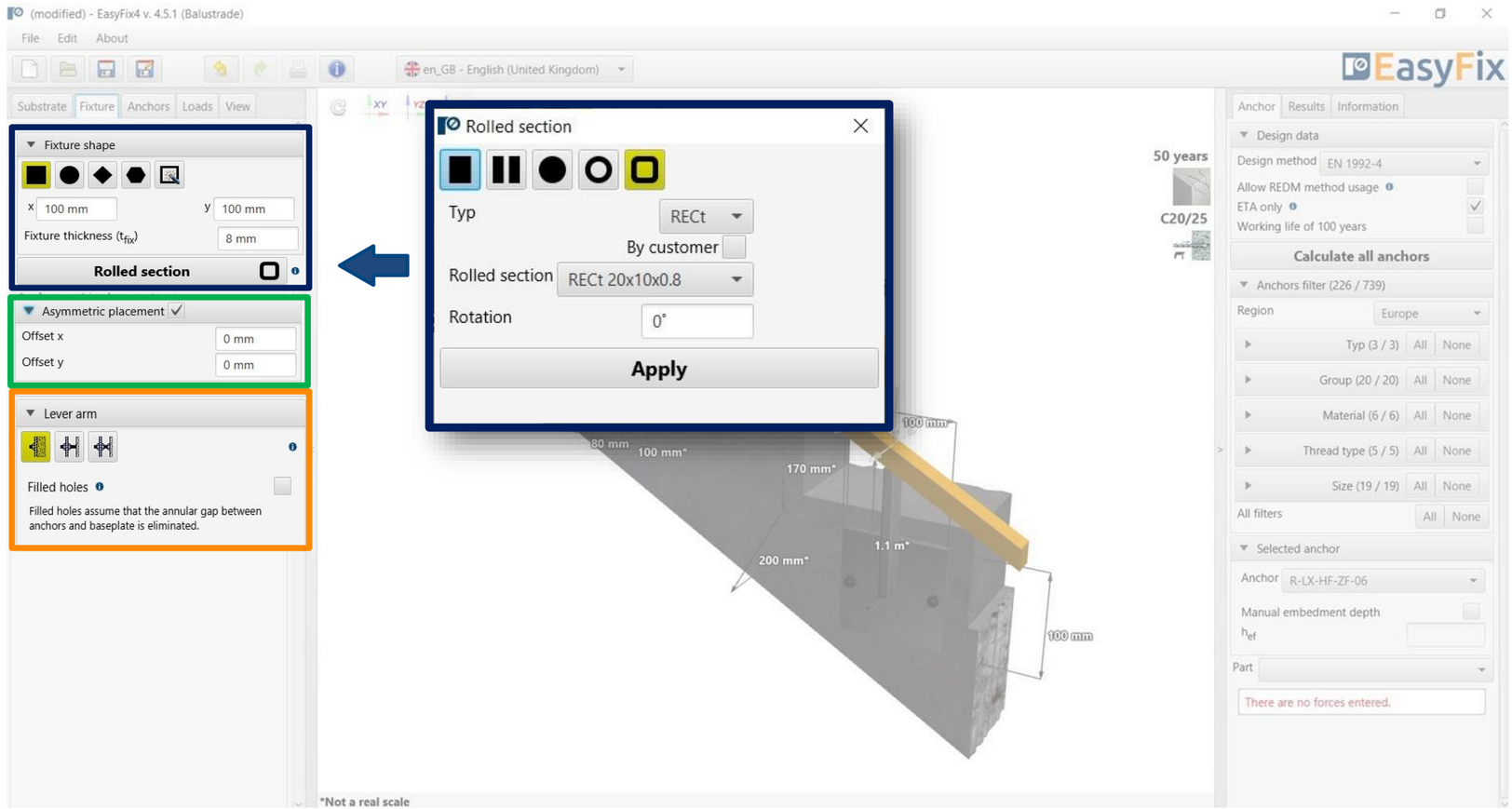
4 Fixture tab
Input area

Definition of the **Fixture shape** from the palette of predefined shapes.
The **Rolled section** button allows you to select the type and size of the shape, as well as your own custom shape

Choosing an **asymmetrical placement** allows you to shift the force application point relative to the base's center of gravity

Selecting **Lever arm** allows you to calculate the forces on the arm due to the distance between the base plate and the ground



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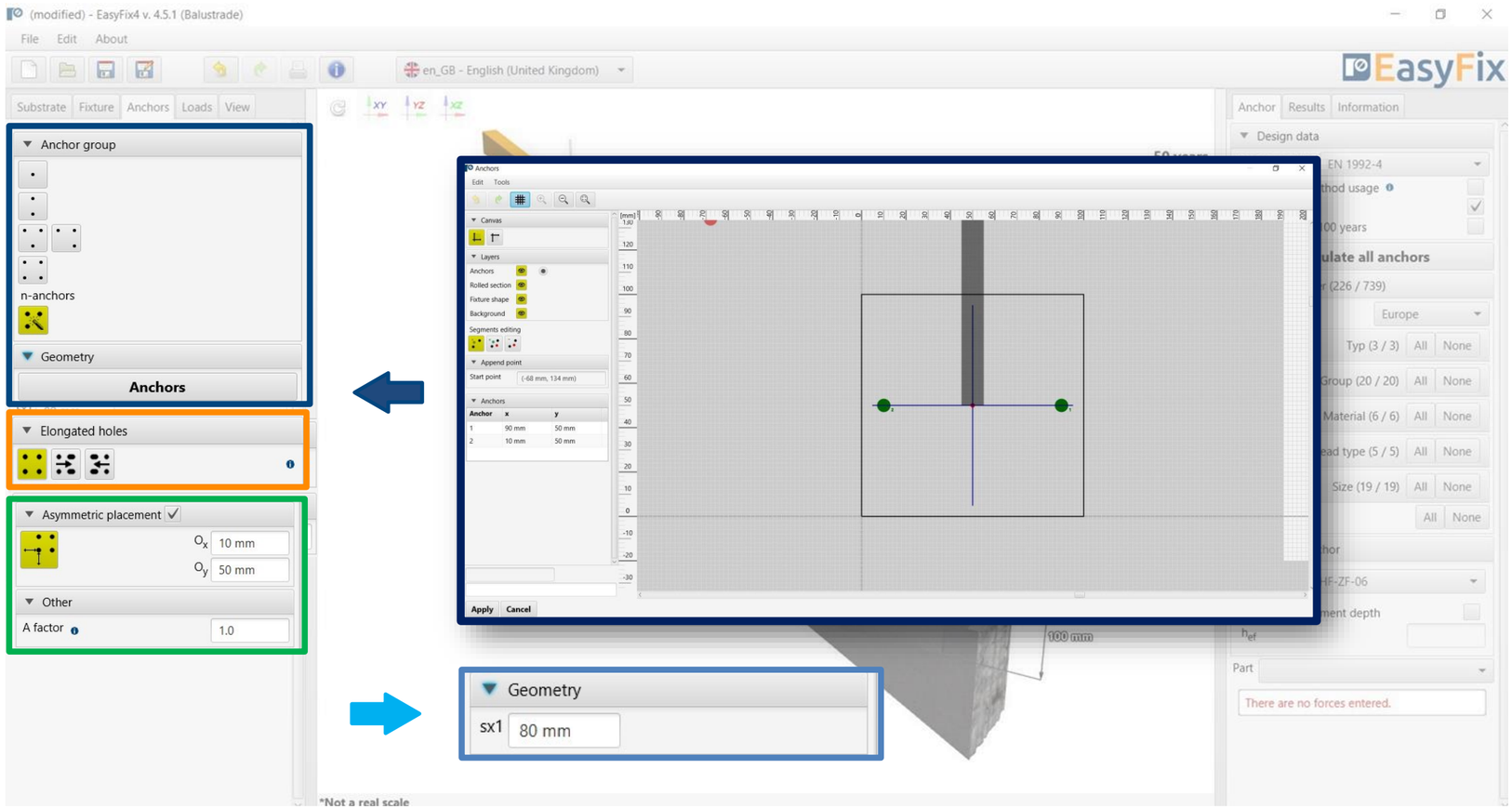
5 Anchors tab
Input area

Group Anchor - allows selection of anchor layout from pre-defined layouts or by user using from a group of n-anchors

Declaring elongated **"bean" holes** changes the distribution of shear forces on the anchors

Choosing an **asymmetrical placement** allows you to shift the force application point relative to the base's center of gravity

Dimensions - distances between anchors can be entered in the tab or directly on the model by clicking on the dimension line.



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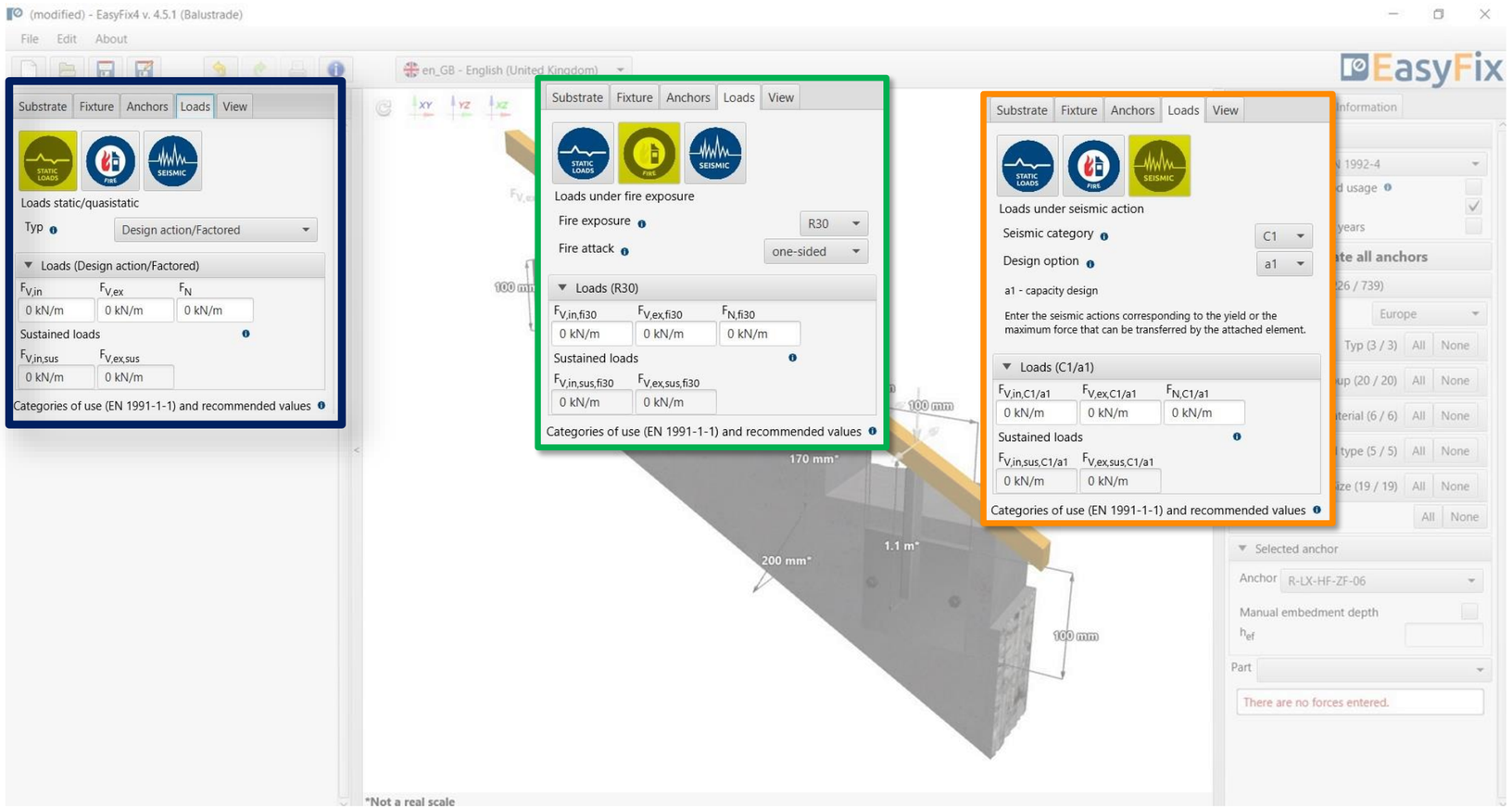
6 Loads tab
Input area

The suffix SUS applies to long-term loads for screw-in anchors according to EN 1992-4

Static loads - calculated or characteristic, with user-defined safety factors

Loads under fire - for different fire resistances

Seismic loads - for seismic resistance C1 and C2



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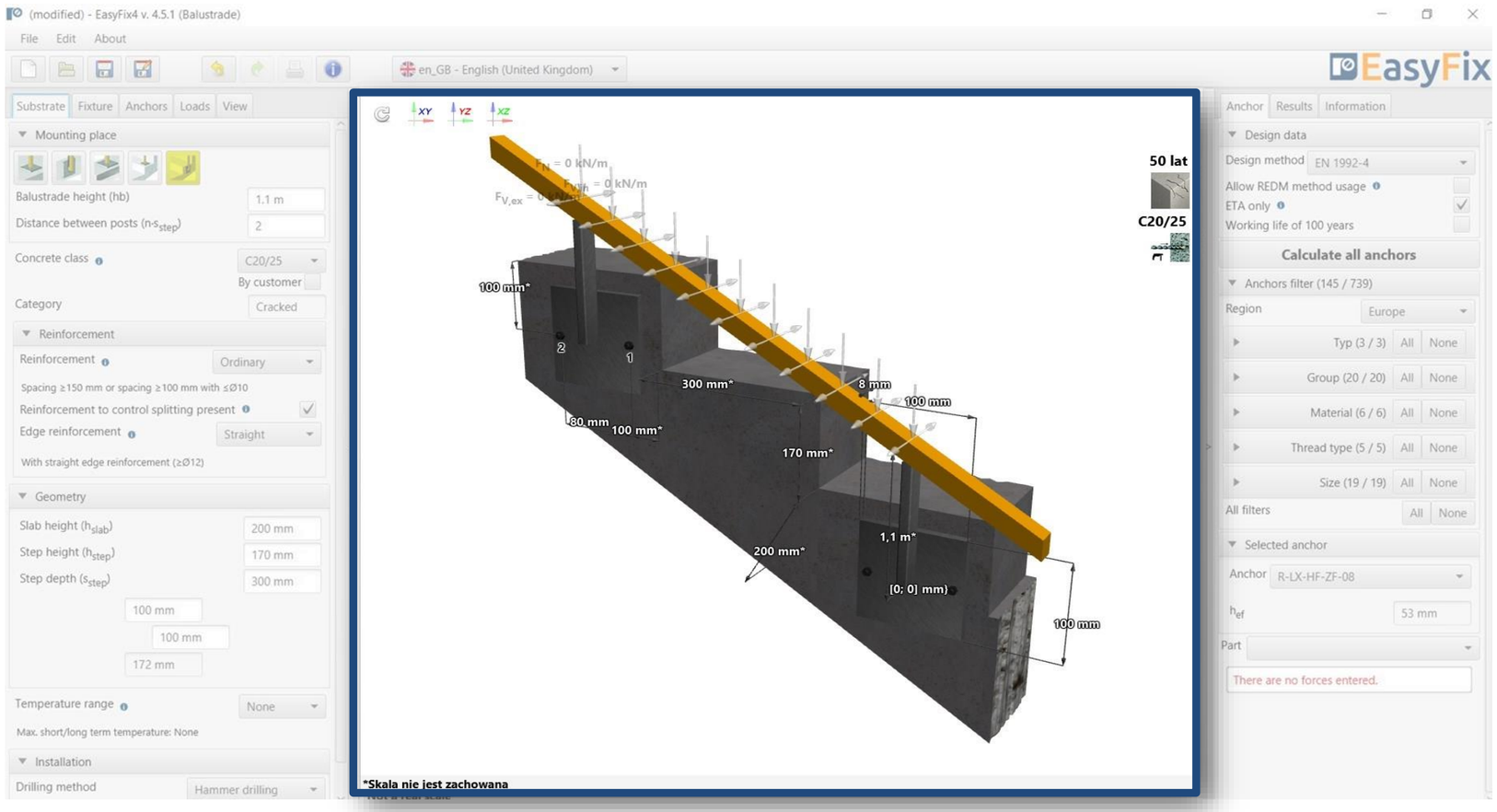
7 Model tab
Model 3D view

View - Clicking on a dimension line or force vector allows you to enter data directly into the drawing



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8 Anchor tab
Result area

REDM - Rawlplug Engineering Design Method - is a method which allows for the calculation of anchor systems not covered by EN and ETAG methods.

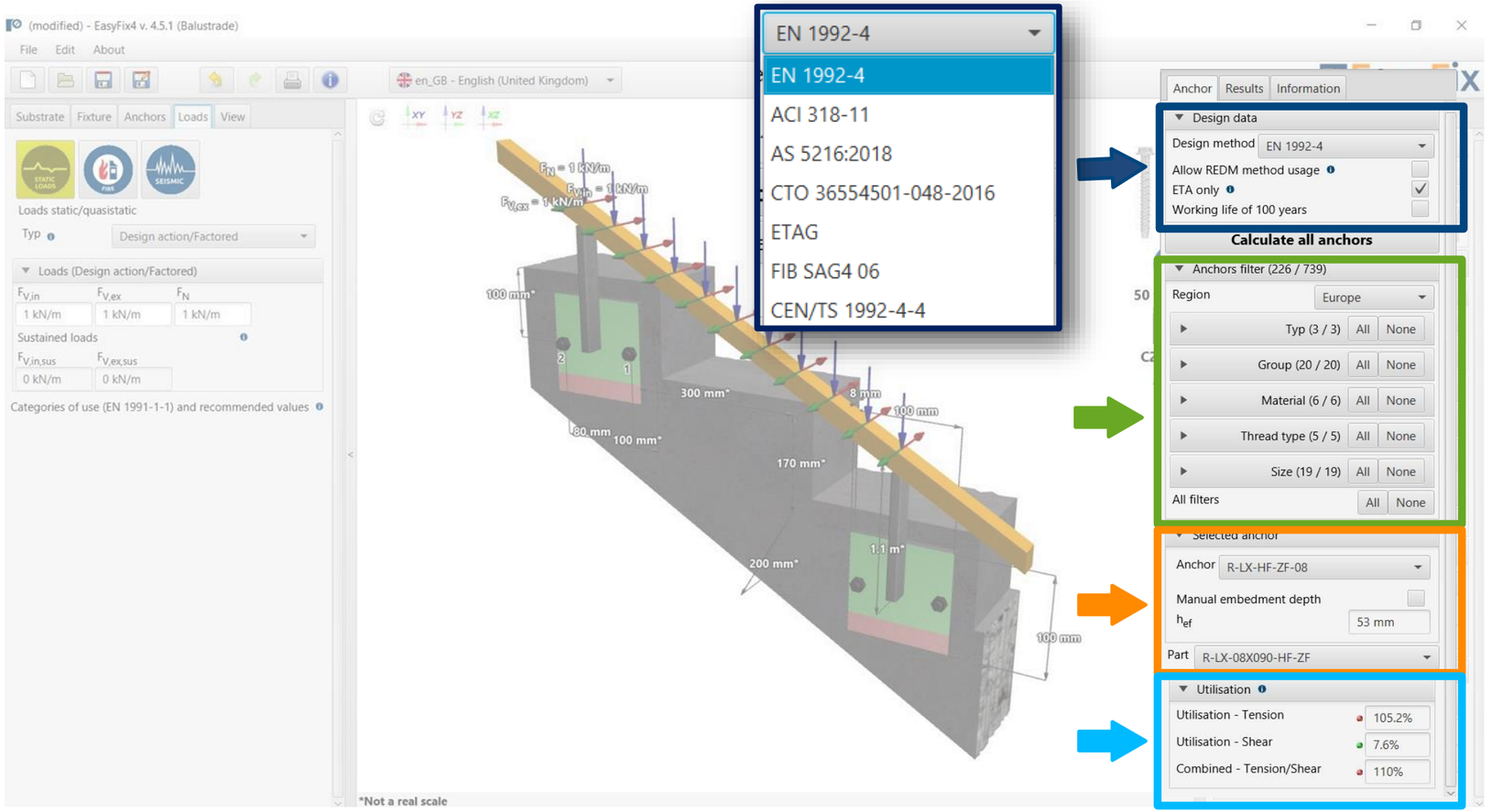
By checking the box **Only ETA** data it is possible to use test data from Rawlplug

Design method - enables selection of the calculation method and the program database.

Filters allow selection of anchors by design region, and type and material of construction

Selected anchors- makes it possible to specify the choice of anchor, to impose the depth of anchorage

Utilisation - summary results window for the selected anchor



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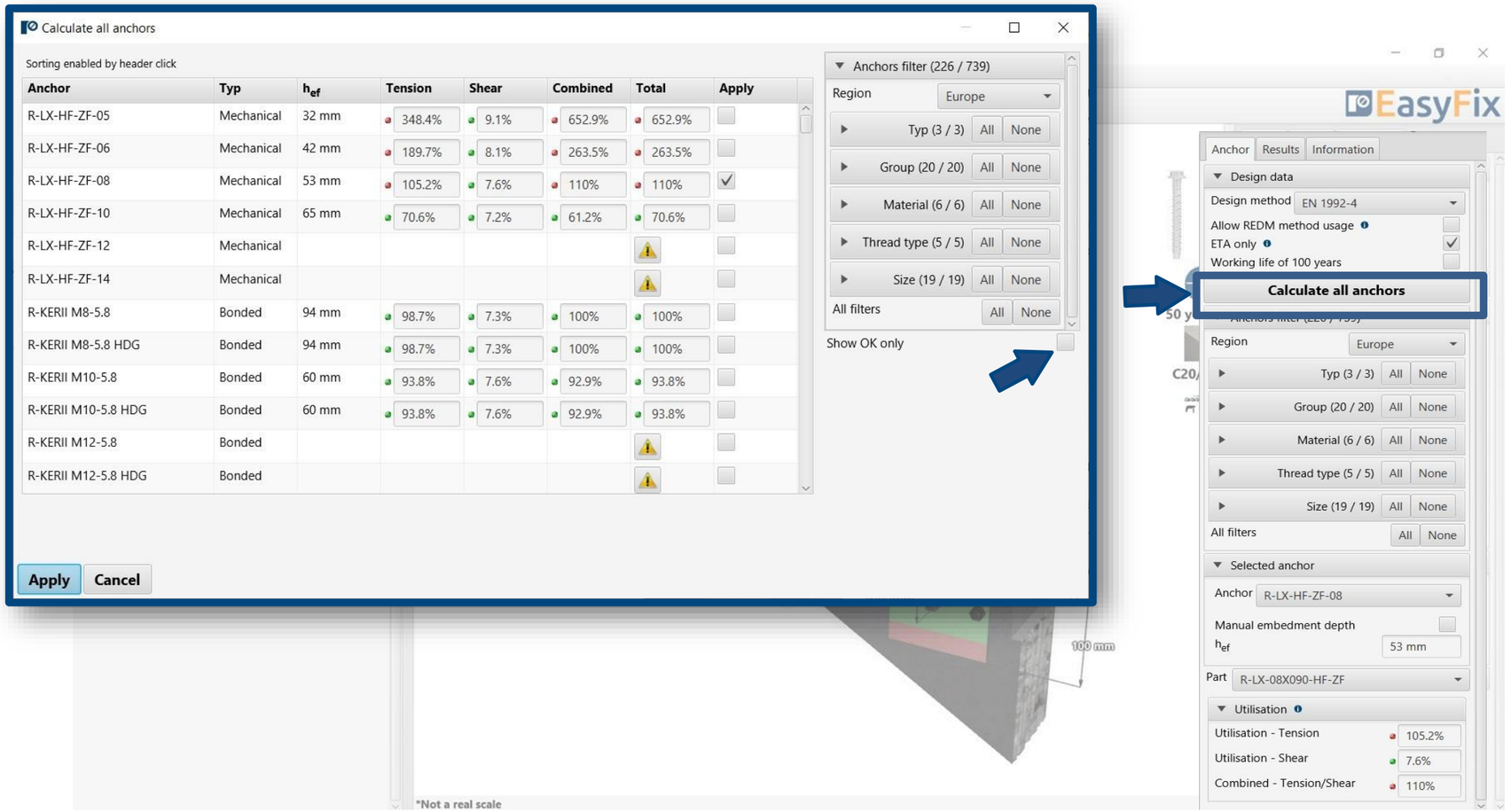
Anchor tab
Result area

Calculate all anchors - calculation of all anchors for a given load



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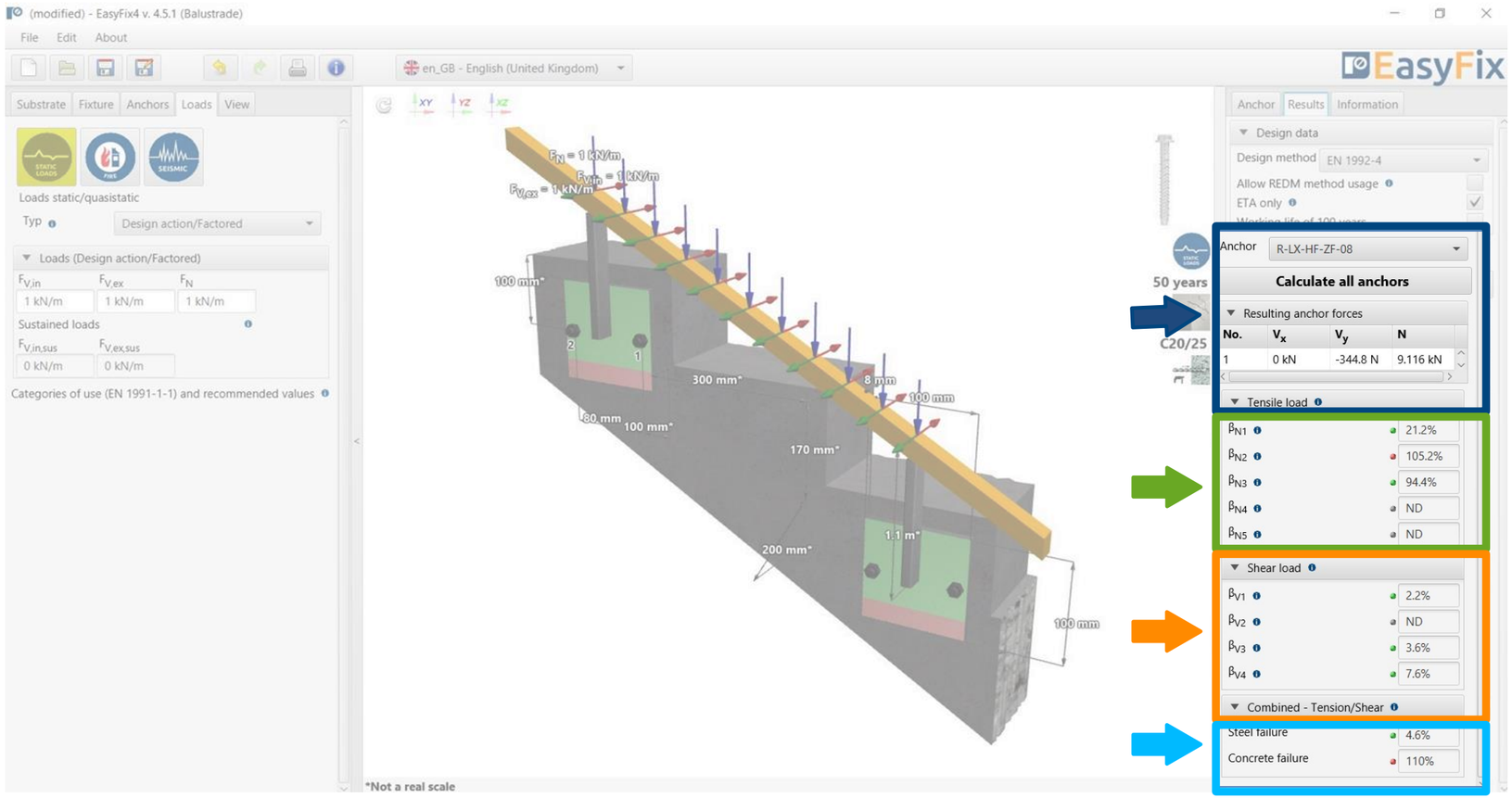
Anchor tab
Result area

Resulting forces in anchors - gives values for pull-out and shear forces acting on individual anchors

Tensile loads - percentage strain of the anchor system from tensile forces in individual failure images

Shear loads - percentage stress of the anchor system from shear forces in individual failure images

Combined action - shear and tensile interaction - percentage of steel and concrete stresses



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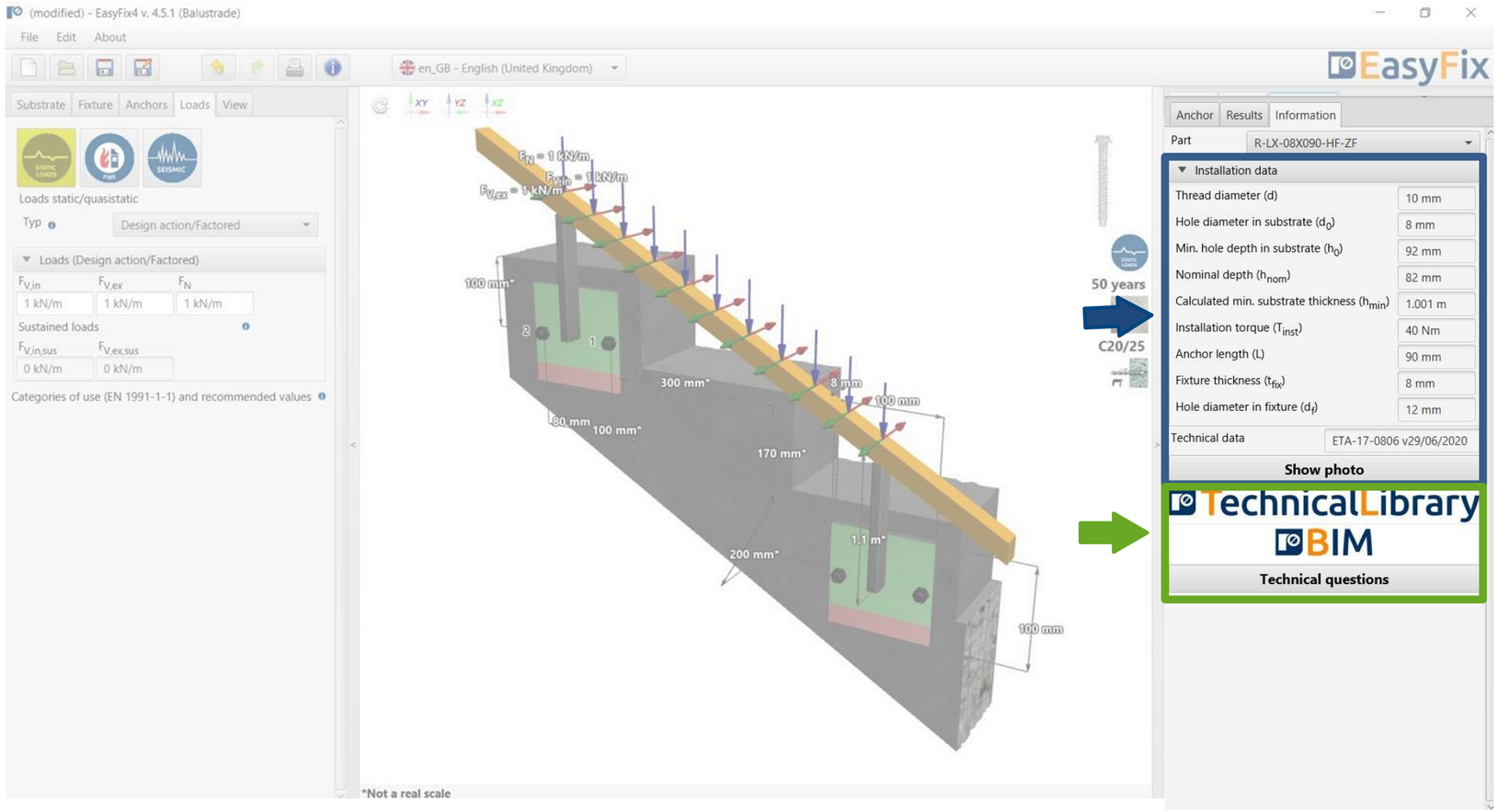
Anchor tab
Result area

Installation data - installation parameters for the designed anchor

Links to:
Technical Library
BIM Library
RTH Technical Help



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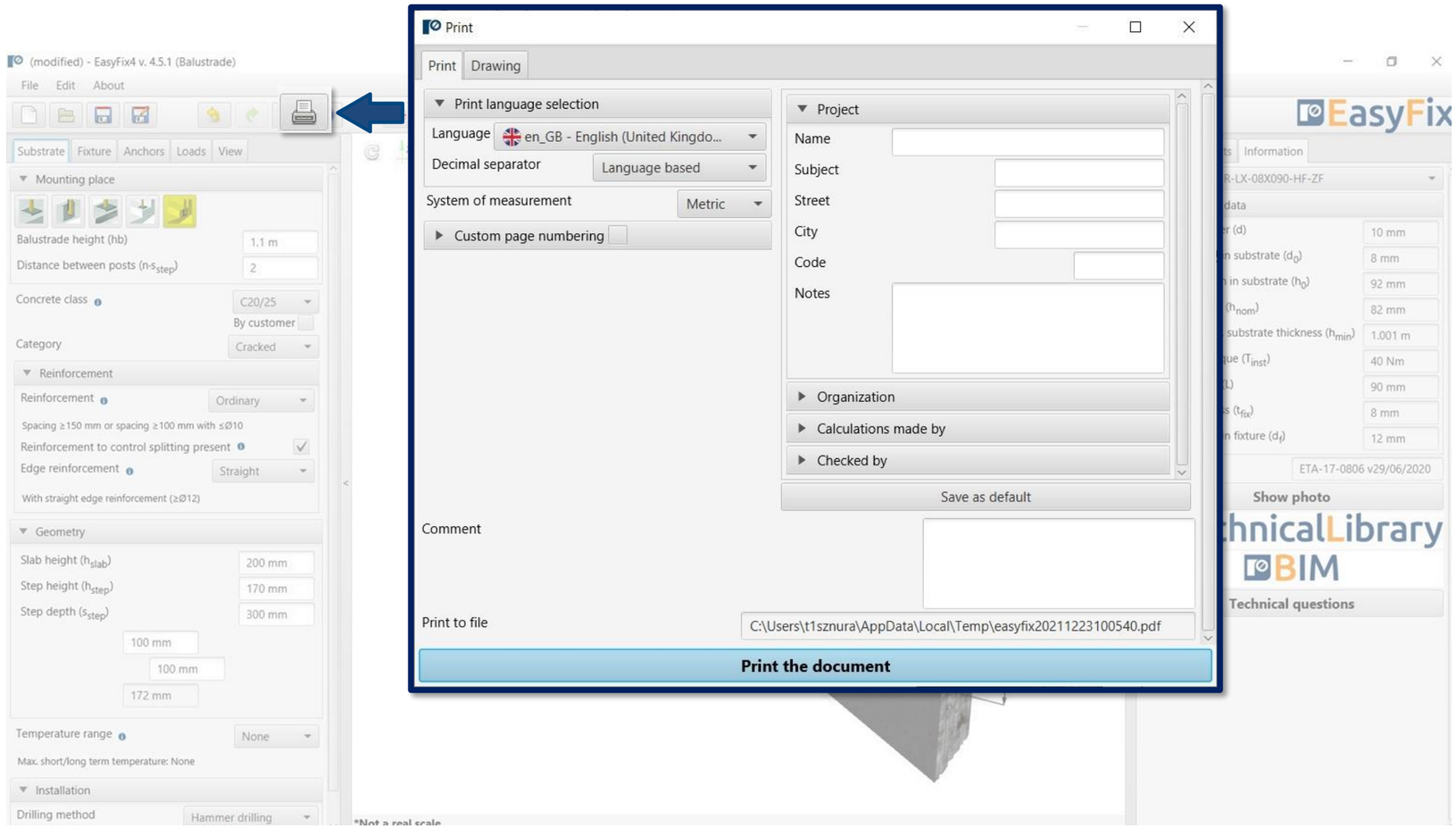
12 Generation of **Printout**

Print option - enables generation of a document in pdf extension.