BEECET USER GUIDE

Content

A. Installation instructions

i. This programme is implemented in C# and runs on Windows.

ii. The implementation was carried out in MS Visual Studio 2012 and needs to 'build' successfully before being functional.

iii. The programme is a plugin initially developed for Revit 2014 but this version has been configured to and requires Revit 2017 (BIM-enable tool) to run.

iv. To install and run the programme, save the project folder in a convenient location such Visual Studio 2012 Project directory.

v. Copy the database files, ICE database and ICEdatabase_log, in the BEECETPro folder to Revit 2017 installation folder in Programs File in the computer hard (C) drive.

vi. Open (this yields the C# environment) and build the project before running Revit 2017 programme

vii. Ensure that the build is successful (this updates the BEECETool.dll file in the bin folder) by confirming from the Output pane in the C# environment (IDE) and note the output directory string (e.g.: C:\Users\ID00077\Documents\Visual Studio 2012\Projects\BEECETPro\BEECET\bin\Debug\BEECETool.dll)

viii. Open the BEECETConnectRevit.addin) file (contained in BEECETPro folder in Notepad and modify the line:

"<Assembly> C:\Users\Documents\Visual Studio 2012\Projects\BEECETPro\BEECET\bin\Debug\BEECETool.dll<Assembly>"

…by replacing it with the output directory string from (vii) above

ix. Copy the modified 'BEECETConnectRevit.addin' file to the following directory:

   a. In a non-user specific location in "application data" C:\ProgramData\Autodesk\Revit\Addins\2017\

   b. In a user specific location in "application data" C:\Users\<user>\AppData\Roaming\Autodesk\Revit\Addins\2017\

x. Then run Revit 2017 and follow the instructions in Section B to run the BEECET programme.

B. Operation instructions

i. Open a BIM project (e.g. Embodied Energy-BIM 2 FLOORS in BEECETPro folder) in Revit 2017

ii. On the Add-Ins Tab, click on External Tools and then on BEECE Tool from the drop-down menu to call the program.

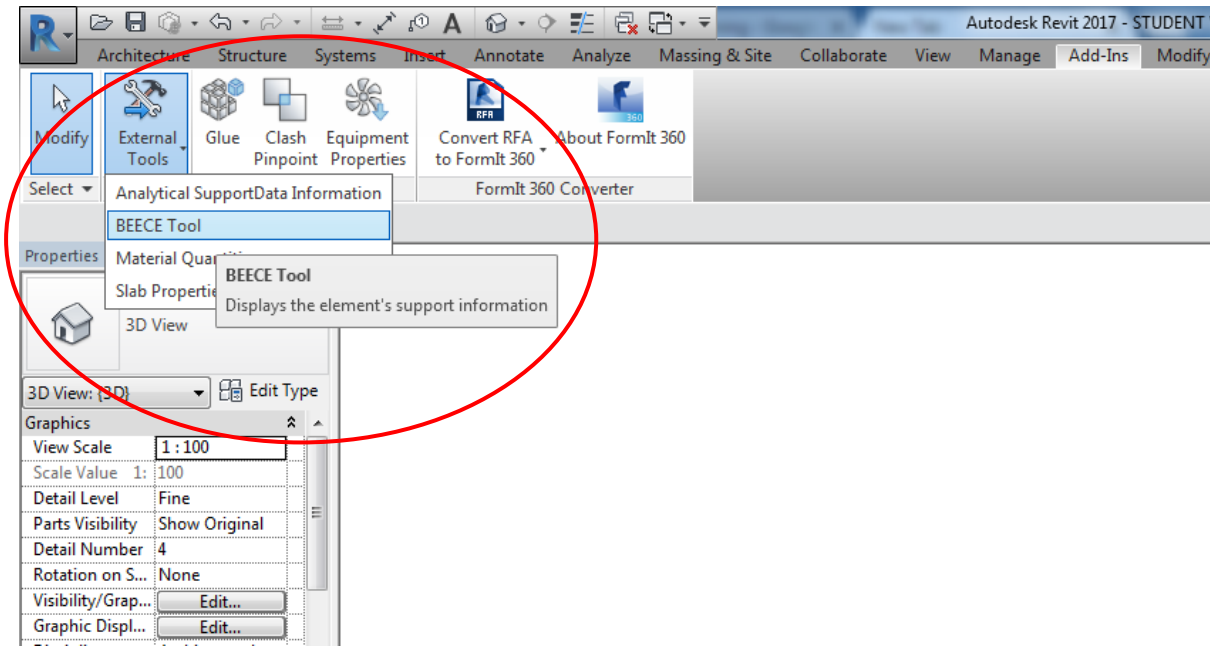

Figure 1: Calling BEECET from External Tools

iii. Follow steps 1-10 (figures 3-7) as described in subsequent pages to complete analysis.

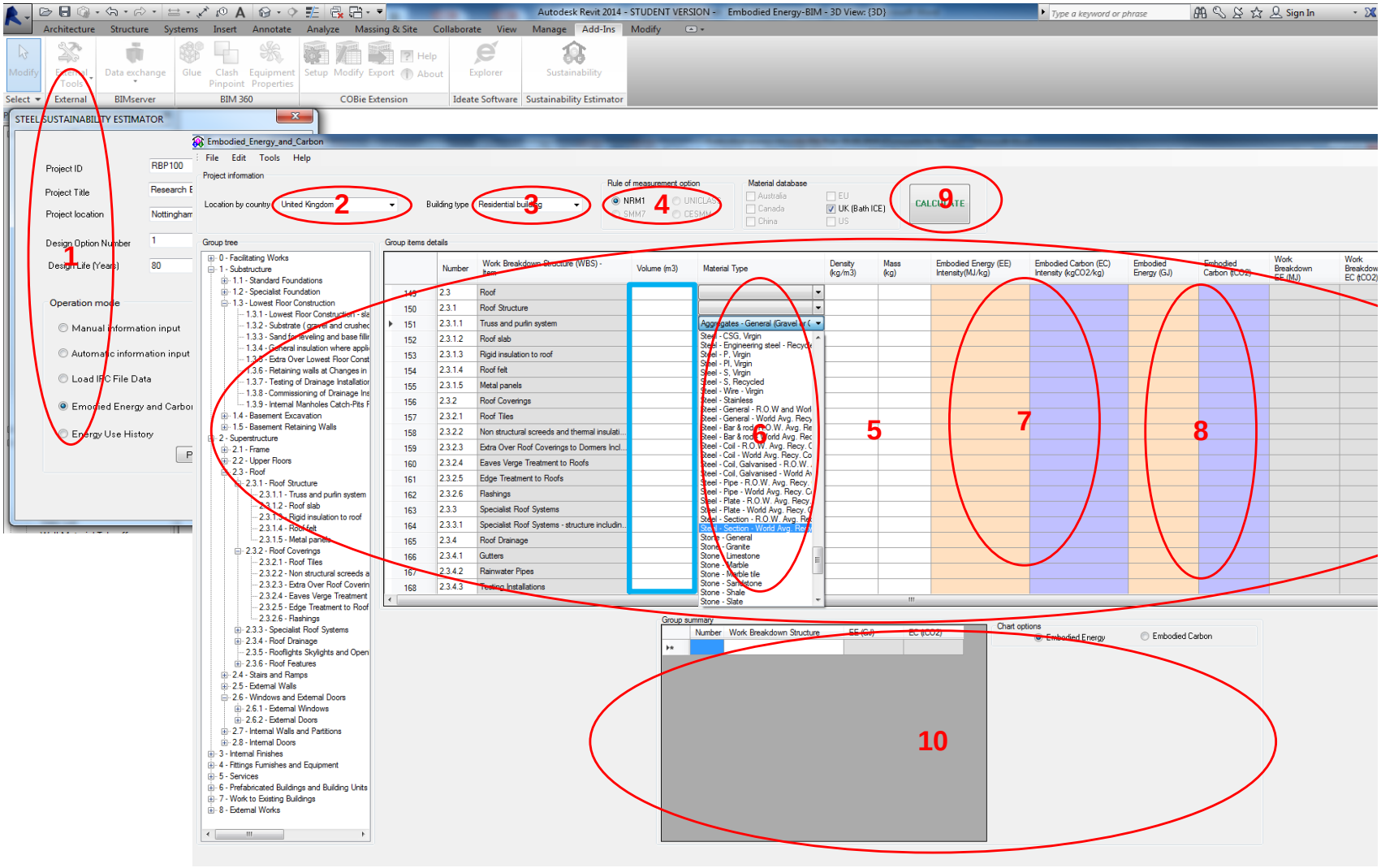

Figure 2: BEECE operation steps

1. Enter appropriate project information and select:
   (i) Energy Use History and then click
   (ii) Proceed as shown in Figure 4 to call the main programme window.

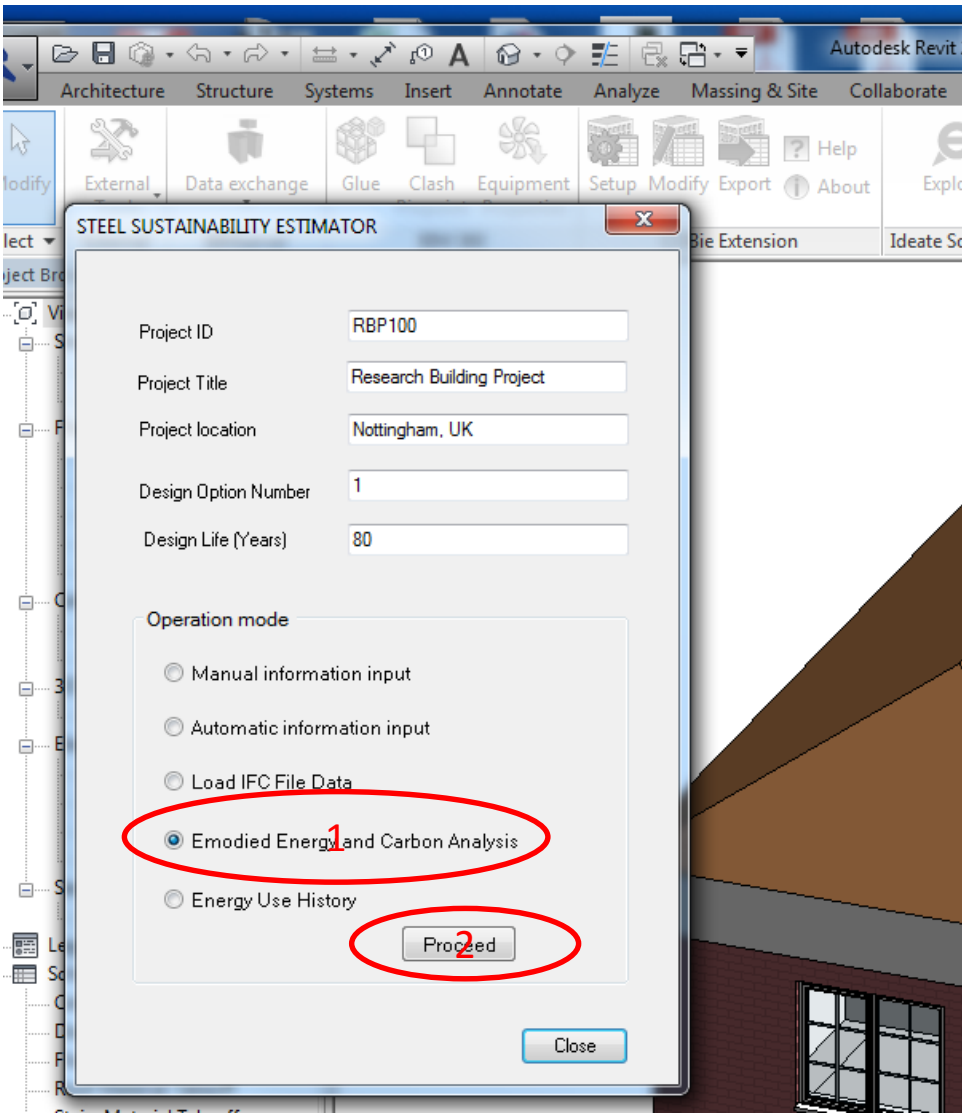

Figure 3: Selecting programme option

2. Select country of project location.
3. Select building
4. Select the rule of measurement (NRM1)
5. Scroll (browse) to all respective items with automated volume entry for confirmation. Alternatively enter independently calculate volume of choice.

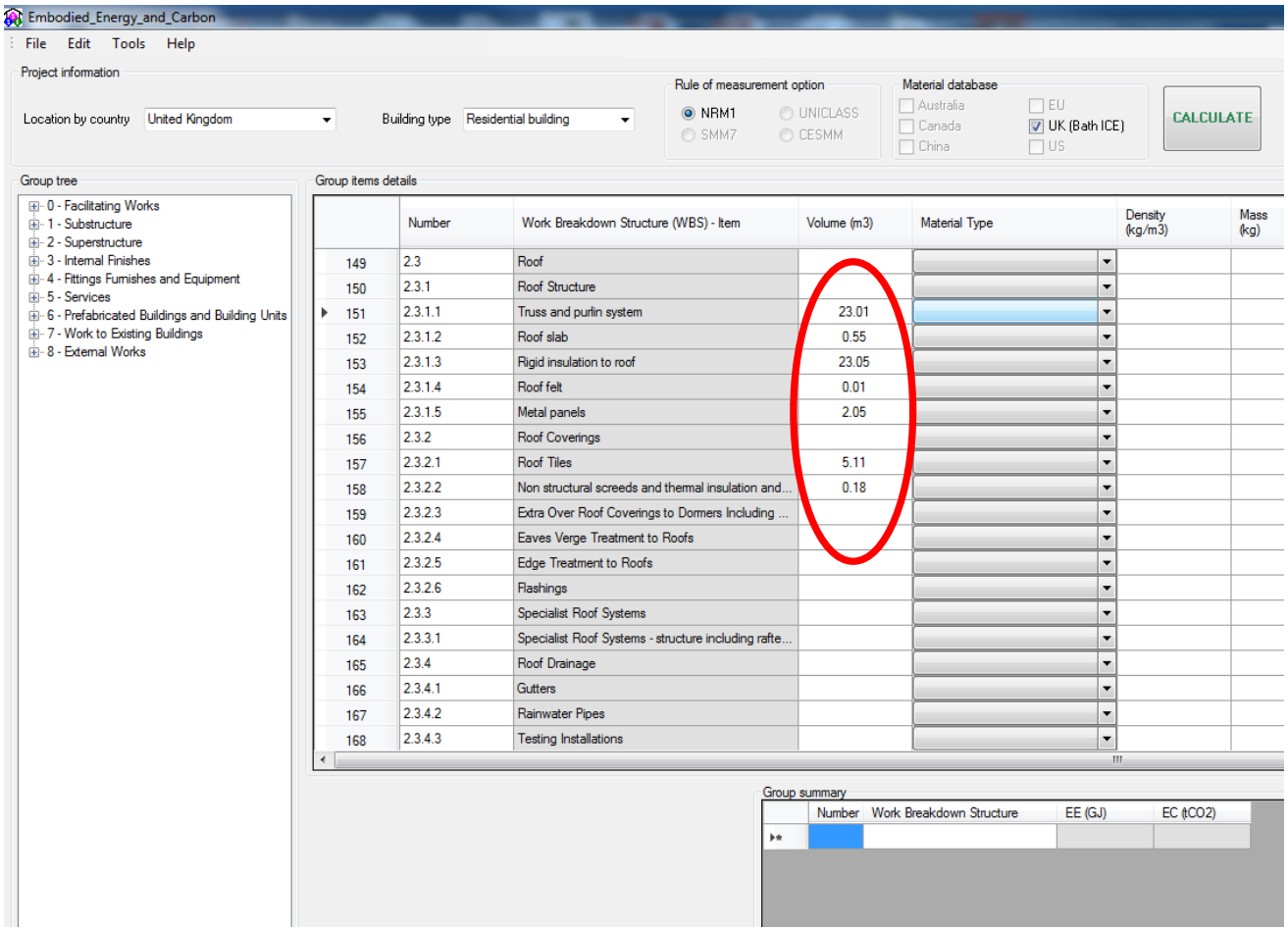

Figure 4: Result from selecting the option of rule of measurement (NRM1)

6. On the Material Type column, select appropriate material type from the comboBox for all valid entries.

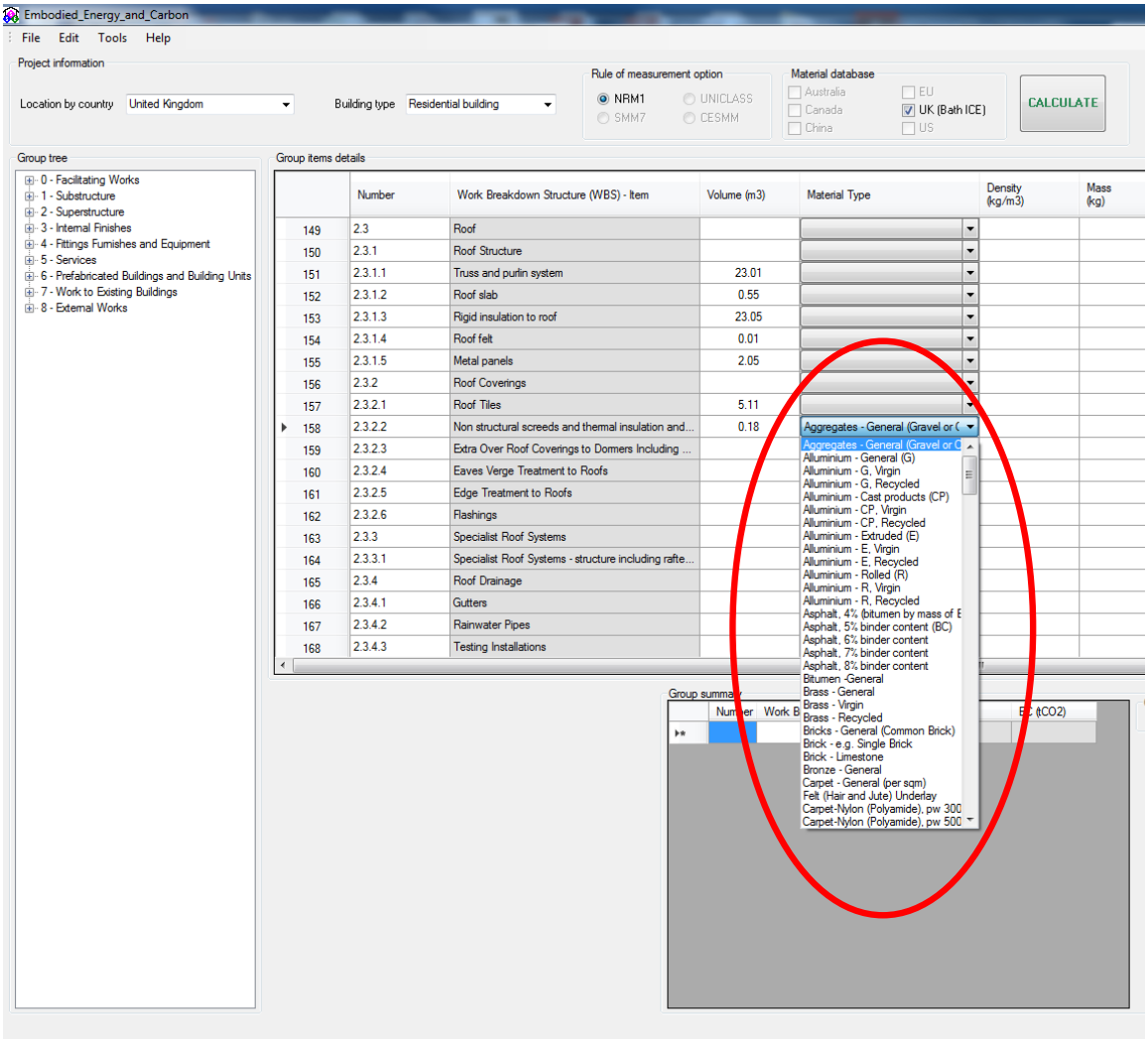

Figure 5: Selecting option of material from drop-down list connected to the ICEdatabase

7. Check and confirm corresponding embodied energy and carbon intensities and

8. The corresponding values embodied energy and carbon for items are displayed in adjourning columns

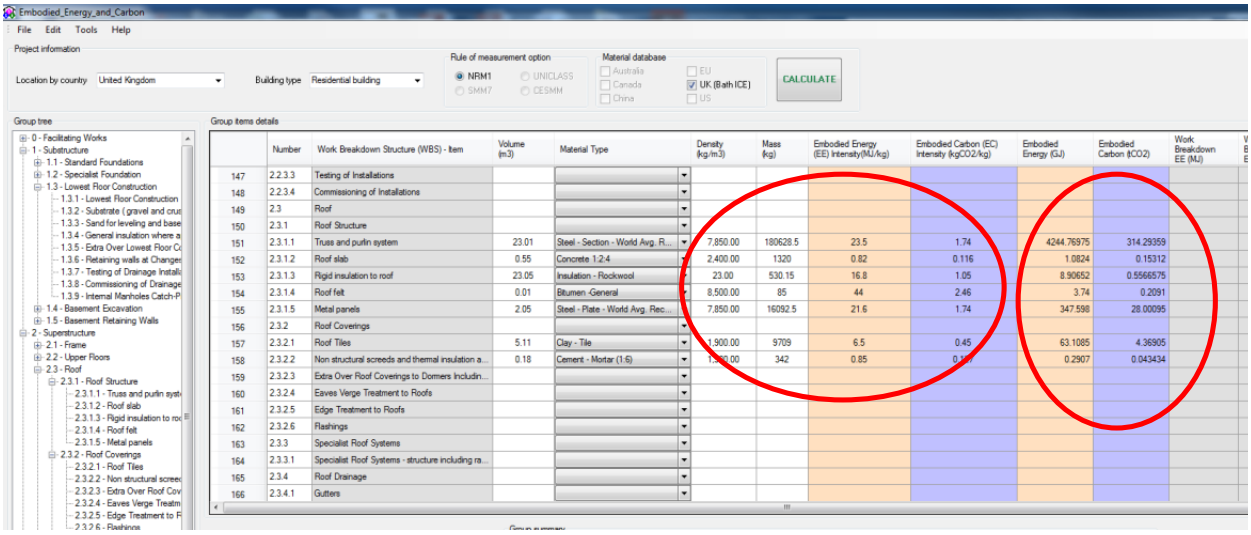

Figure 6: Expanded view of columns showing automated calculations

9. Click calculate button to get estimations and summary

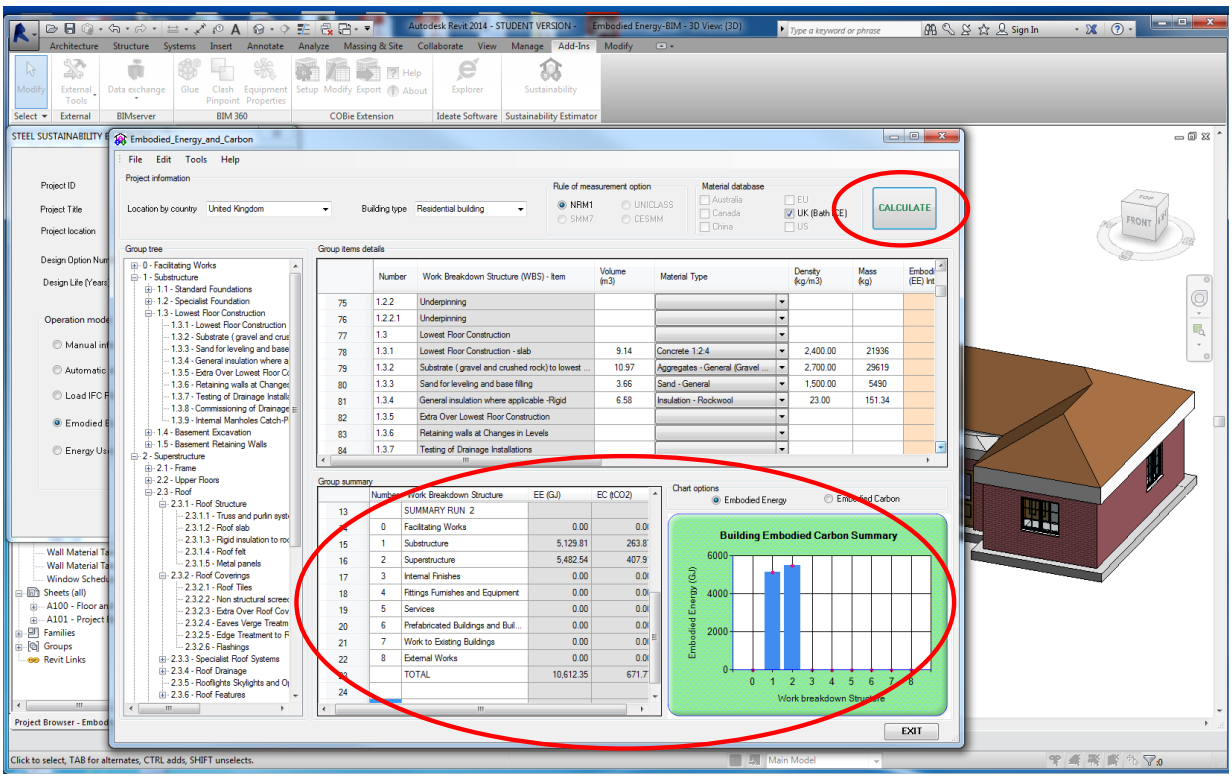

Figure 7: Final output window from the estimation process