User Guide: BIM objects.

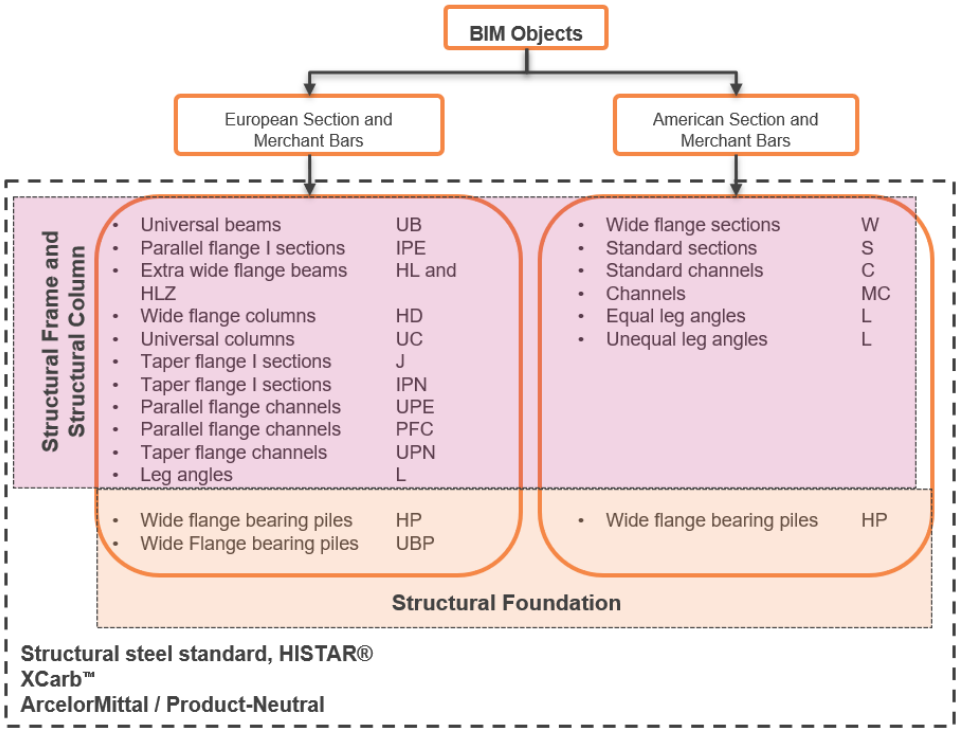
Contents

Introduction

ArcelorMittal Design Aids is pleased to introduce you to BIM objects for Hot Rolled Sections and Merchant bars. The BIM objects are ready to use and are available in IFC (Industry Foundation Class) and RFA (Revit Family File). In this document, a basic navigation to download BIM objects from this website is shown.

Some of the features of the BIM objects are as follows:

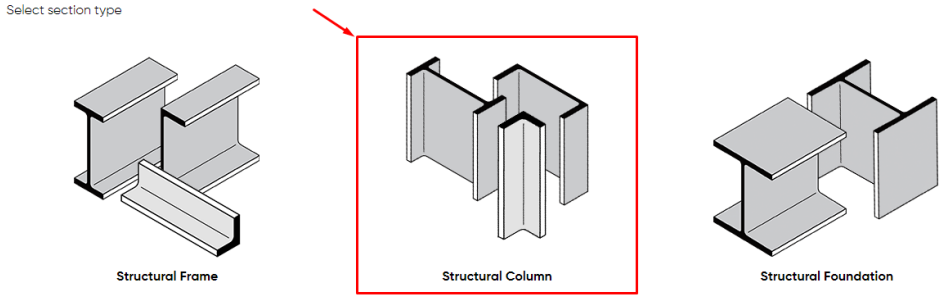
1. Covers wide range of ArcelorMittal Sections for both European and American Market.
2. Sections are available as both structural frames and structural columns, allowing users to fully leverage the features of Autodesk Revit.
3. Wide range of steel material according to European and American standards to choose from, including HISTAR® steels.
   Learn more about HISTAR® here.
4. BIM objects enriched with information on embodied carbon emission.
5. Inclusion of low carbon steel XCarb®.
   Learn more about XCarb® here.
6. Product-neutral BIM objects, ensuring flexibility, compatibility, and standardization across all your design projects.



Navigating Downloads

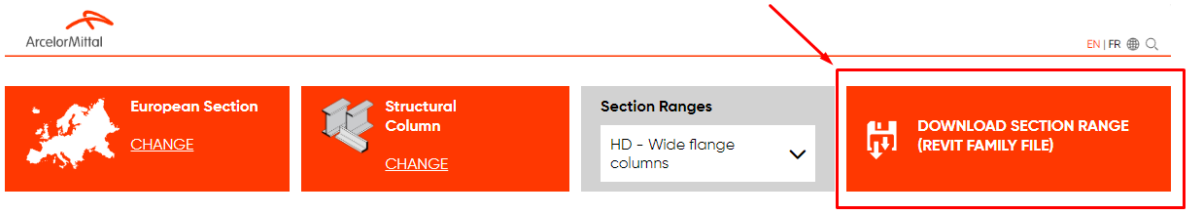
1. Select the Market you would like to choose.

2. Select the section type

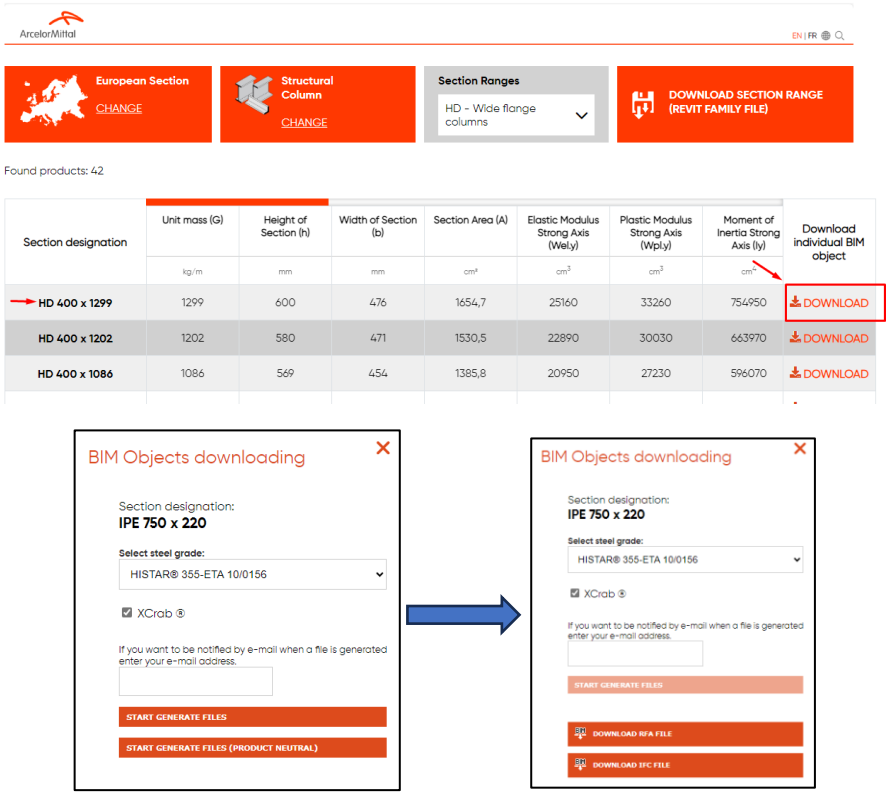


3. Select the section range.

4. To download the whole section range in Revit Family Format (rfa), press “DOWNLOAD SECTION RANGE”. When using this option, the steel grade library is automatically included and is available to select in Autodesk Revit environment.



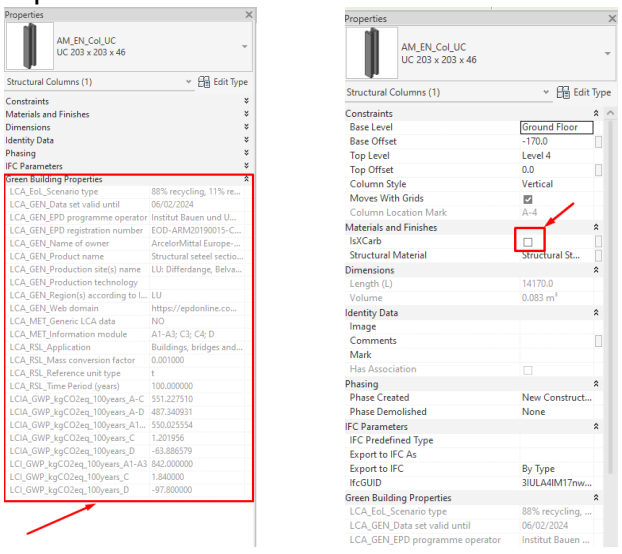
5. To download individual section, with option of downloading Industry Class Foundation (ifc) and product-neutral BIM objects, use individual download button. Also make accurate material selection for individual downloads.



Compute carbon emission

The BIM objects from ArcelorMittal, includes data for green building properties and can be used for generating values for embodied carbon emission from steel sections in any project. An example is described below.

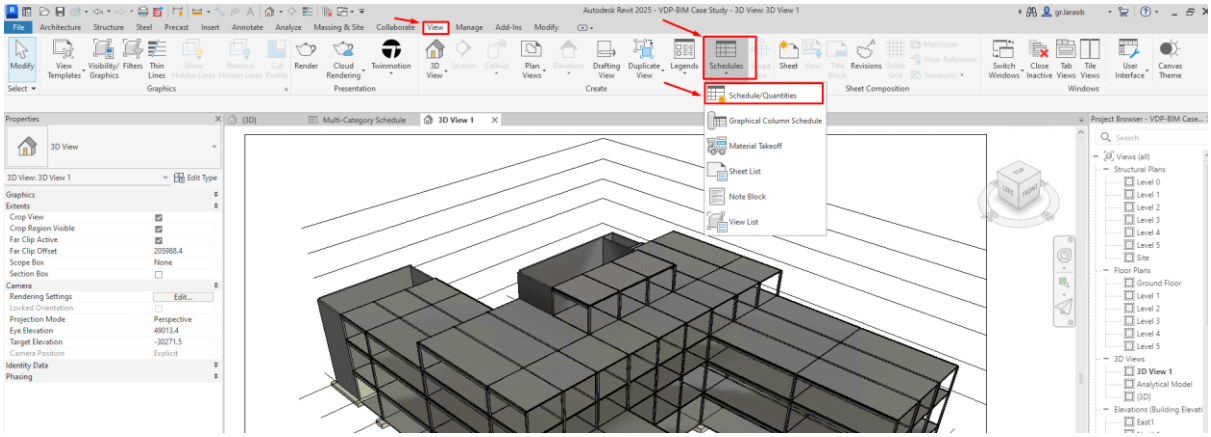
1. The green building properties are a part of the BIM object and can be viewed in the properties of each BIM object. One can toggle between XCarb® and Standard structural steel, in properties tab under “Materials and finishes”.



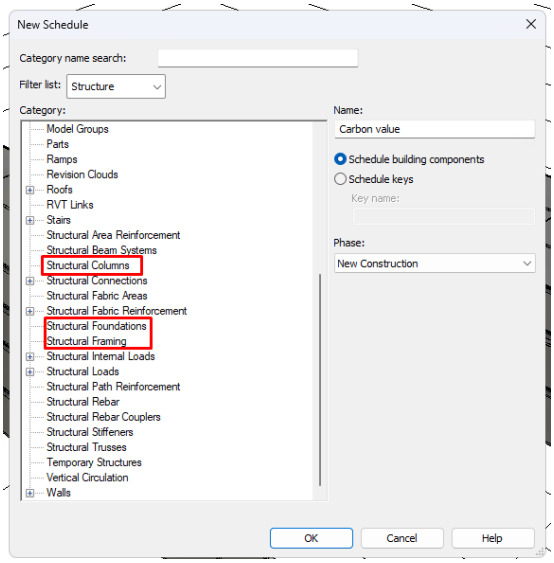
2. The properties are implemented following EN ISO 22057. The lifecycle phases A1-A3, C and D are considered as per EN 15804.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D

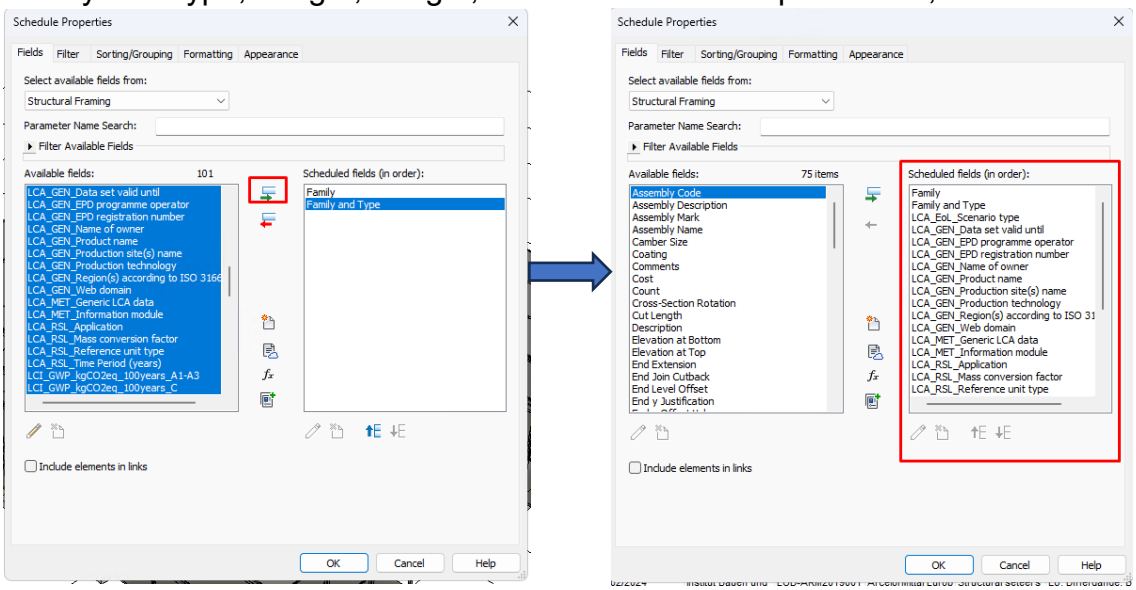
3. Once the project is running in Revit environment, the Schedule features can be used for computing embodied carbon form the structure.
4. Go to “View” Tab in Ribbon→ “Schedules/Quantities”



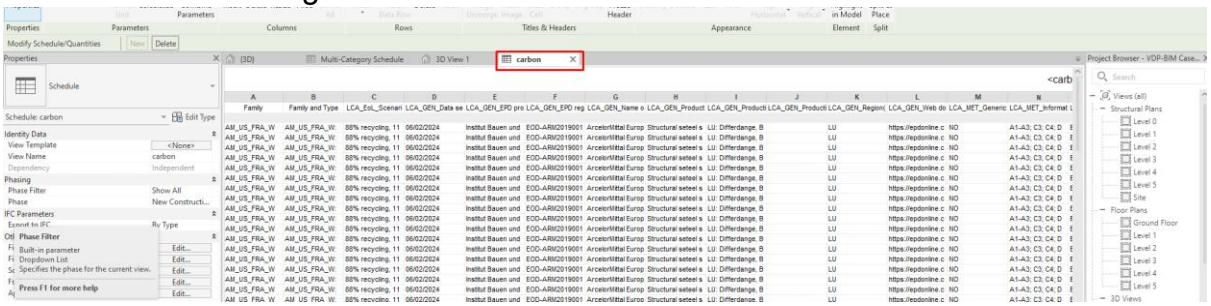
5. Create a schedule with <Multi-category> option. The user can also create a schedule with “Structural Columns”, “Structural Framing” and “Structural Foundations” separately if the user wants to generate separate schedule for columns, frames or foundations.



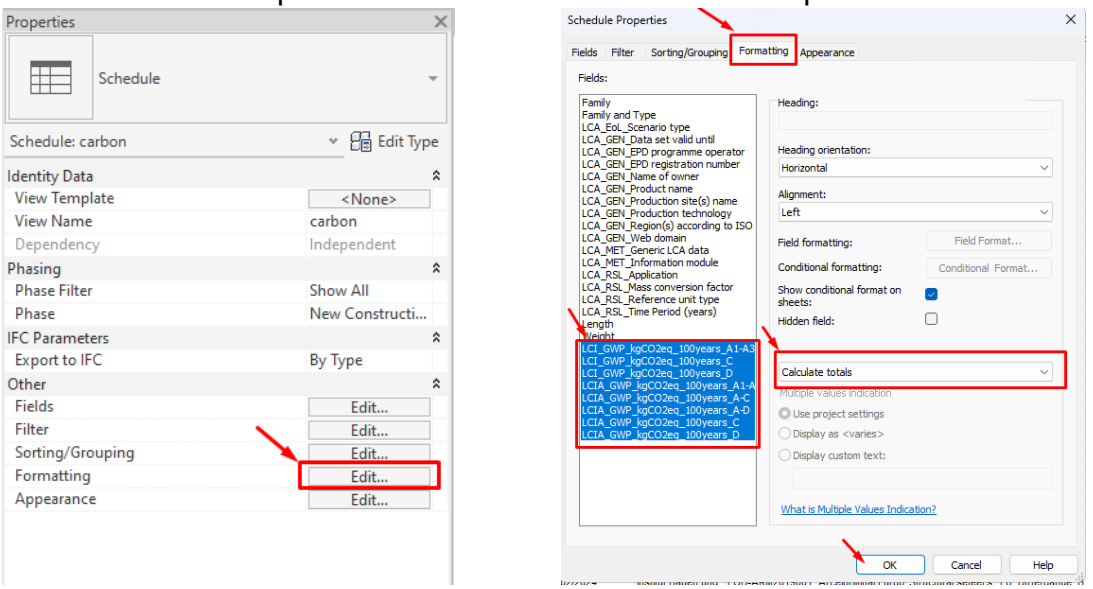
6. In the field selection, select appropriate selections. A field set would be Family, Family and Type, Length, Weight, and all the field with prefix LCA, LCI and LCIA.



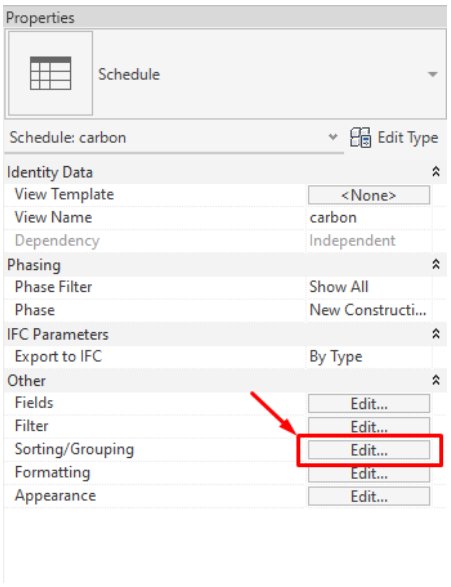
7. The schedule will be generated.

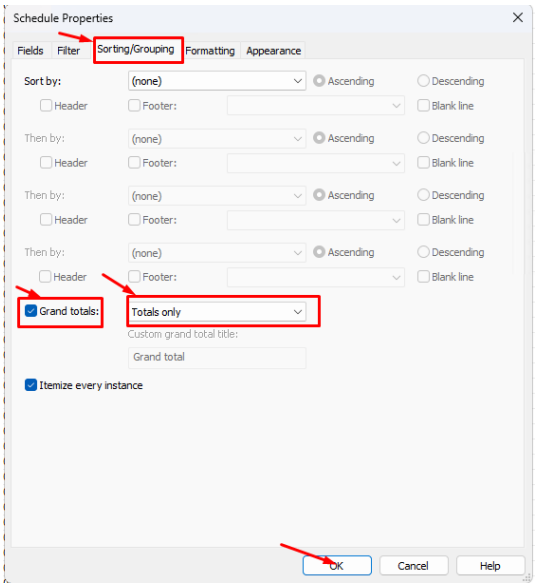


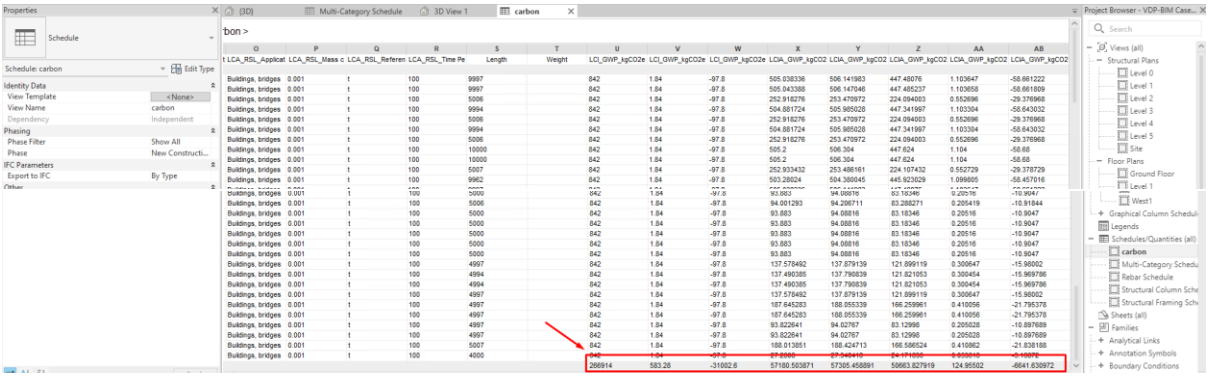
8. To calculate totals, go to the schedule properties→ Formatting tab and select fields for which totals are required. Choose “Calculate totals” and press “OK”.



9. Finally, to display the totals Edit Sorting/Grouping, and check “Grand totals” with selection “Totals only”, then press “OK”.







10. The user can still toggle between XCarb® and standard steel. However, they have to select sections separately according to category, ex. Structural frame, Structural columns or Structural Foundation.