



# Madaster release notes

2023



This document and its contents have been compiled with the greatest possible care. Nevertheless, it cannot be ruled out that certain information is outdated, incomplete or otherwise incorrect. Madaster is not liable for any damage of any nature whatsoever arising from any use / consultation of this document and its contents and / or from the information obtained through this document, including but not exhaustive also information obtained through references mentioned in this document and / or hyperlinks.



## Table of contents

|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>Releases.....</b>                                  | <b>4</b>  |
| <b>2</b> | <b>Build 23297 .....</b>                              | <b>5</b>  |
| 2.1      | New and changed functionalities.....                  | 5         |
| 2.1.1    | Materials merged with products.....                   | 5         |
| 2.1.2    | Cards in environmental tab reflects phase filter..... | 5         |
| 2.1.3    | Additional options in enrichment.....                 | 6         |
| 2.1.4    | Additional upload preset options .....                | 7         |
| 2.1.5    | DGBC detachability export.....                        | 7         |
| 2.1.6    | New legal role and licenced database options .....    | 8         |
| 2.1.7    | Folder type options for CRREM report.....             | 9         |
| 2.1.8    | Other changes.....                                    | 10        |
| 2.2      | Bugfixes.....   | 11        |
| <b>3</b> | <b>Build 22433.....</b>                               | <b>12</b> |
| 3.1      | New and changed functionalities.....                  | 12        |
| 3.1.1    | CRREM and ESG Features.....                           | 12        |
| 3.1.2    | CRREM.....  | 12        |
| 3.1.3    | Energy use of a building: B6.....                     | 15        |
| 3.1.4    | Splitting 3D and IFC .....                            | 15        |
| 3.1.5    | Sequestered carbon in A1-A3.....                      | 15        |
| 3.1.6    | Transfer fully enriched source file.....              | 16        |
| 3.1.7    | Financial updates.....                                | 16        |
| 3.1.8    | Other changes.....                                    | 16        |
| 3.2      | Bugfixes.....   | 17        |
| <b>4</b> | <b>Build 21775 .....</b>                              | <b>18</b> |
| 4.1      | New or Changed functionalities .....                  | 18        |
| 4.1.1    | Excel import/export for databases .....               | 18        |
| 4.1.2    | Deactivating a building.....                          | 20        |
| 4.1.3    | Targets.....  | 21        |
| 4.1.4    | Financial updates.....                                | 22        |
| 4.1.5    | Other changes .....                                   | 23        |



|          |   |           |
|----------|---|-----------|
| 4.2      | Bugfixes.....                                 | 25        |
| <b>5</b> | <b>Build 21116.....</b>                       | <b>26</b> |
| 5.1      | New or Changed functionalities .....          | 26        |
| 5.1.1    | Account and folder level dashboarding .....   | 26        |
| 5.1.2    | Web-based passport.....                       | 31        |
| 5.1.3    | Other changes.....                            | 35        |
| 5.1.4    | Bugfixes.....                                 | 39        |
| <b>6</b> | <b>Build 20190.....</b>                       | <b>40</b> |
| 6.1      | New or changed functionalities .....          | 40        |
| 3.1.1    | Data settings and edit-layout.....            | 40        |
| 3.1.2    | Other changes.....                            | 46        |
| 3.1.3    | Bug fixes .....                               | 51        |
| <b>4</b> | <b>Build 19365 .....</b>                      | <b>52</b> |
| 4.1      | New or changed functionalities .....          | 52        |
| 4.1.1    | New material passport options and design..... | 52        |
| 4.1.2    | Other changes.....                            | 63        |
| 4.1.3    | Bug fixes .....                               | 79        |



## 1 Releases

| Release | Build number | Release date     |
|---------|--------------|------------------|
| 2023.1  | 19365        | 16 February 2023 |
| 2023.2  | 20190        | 23 March 2023    |
| 2023.3  | 21116        | 18 April 2023    |
| 2023.4  | 21775        | 1 June 2023      |
| 2023.5  | 22433        | 27 July 2023     |
| 2023.6  | 23297        | 1 October 2023   |

Table 1: list of releases in 2023



## 2 Build 23297

### 2.1 New and changed functionalities

#### 2.1.1 Materials merged with products

It used to be possible in Madaster to either add a material or a product to a database:

The screenshot shows the top navigation bar of the Madaster interface. The 'Database' tab is selected, indicated by a teal underline. Below the tabs are several buttons: 'Edit database properties' with a pencil icon, 'Delete Database' with a trash bin icon, 'Add material' with a plus sign icon, and 'Add product' with a plus sign icon.

Since all the material options are present in the product they have been “merged”. It is now only possible to create a product. Existing materials have been migrated as volume products.

This screenshot shows the same top navigation bar as the previous one, but the 'Add material' button is missing, leaving only the 'Add product' button visible.

#### 2.1.2 Cards in environmental tab reflects phase filter

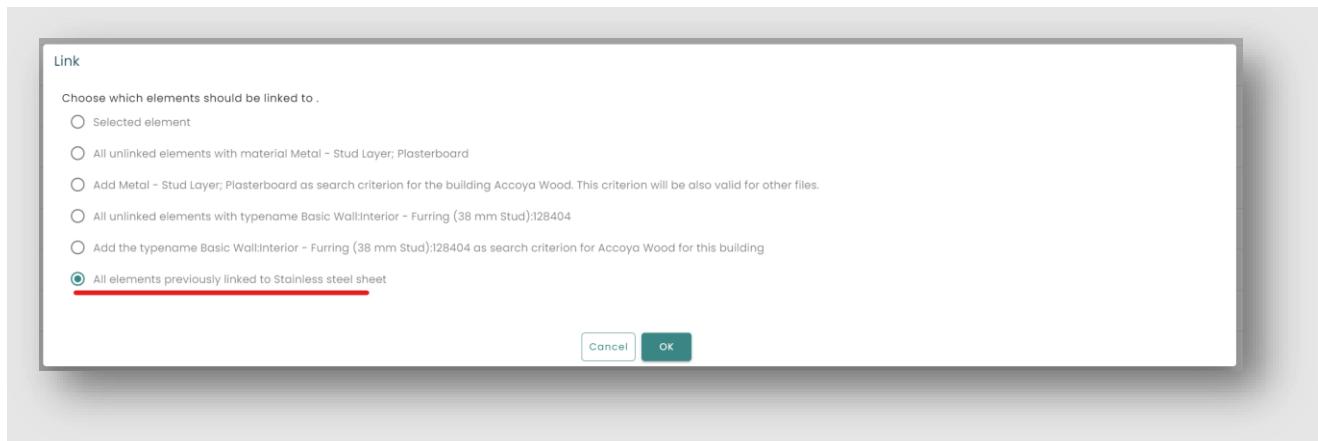
As of this release the filter choice made for the phases in the environmental tab will also change the values in the cards shown in this screen:

The screenshot displays three cards in the environmental section. The first card shows 'Compliance (Environmental product declaration)' for 'EN 15804:2012-04+A1 2013'. The second card shows 'Select key performance indicator (KPI)' set to 'Embodied Carbon (GWP)'. The third card shows '(A1-A3)+(C1-C4)' selected. The bottom row provides detailed data: Embodied Carbon (GWP) at 15.72 kt CO<sub>2</sub>e, Embodied Carbon (GWP) per m<sup>2</sup> at 62.89 t CO<sub>2</sub>e/m<sup>2</sup>, and a breakdown of elements by layer status: Unknown (0%, 0 elements), Elements unlinked (784, 100%), and Elements with insufficient geometry (92, 11.7%).



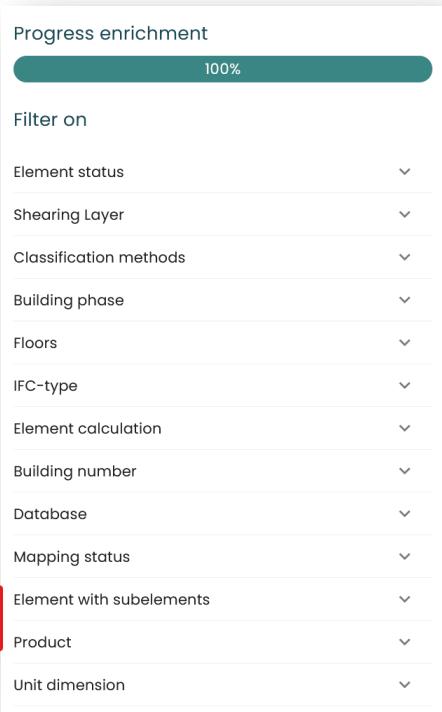
### 2.1.3 Additional options in enrichment

We've added an additional option for linking when an element is already linked in enrichment: to be able to relink all elements previously linked to the same product. This can be for example useful when a file is enriched to a greater level of detail.



Additionally, there are new filter options:

- It is now possible to filter on whether an element has subelements/children
- It is now possible to filter on the product





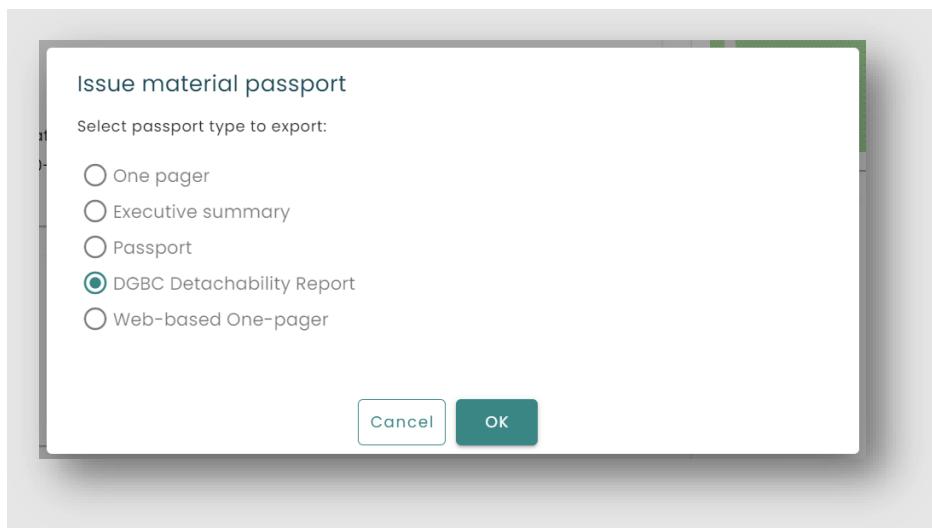
## 2.1.4 Additional upload preset options

It is now possible to use three new properties in the upload presets:

|   |  |
|---|--|
| Property Set for : MadasterId                 | Property name for : Madaster Id                  |
| Property Set for : external Id                | Property name for: external Id                   |
| Propertyset for Article number (Product code) | Property name for: Article Number (Product code) |

## 2.1.5 DGBC detachability export

For the Netherlands we've built the DGBC detachability export; which can be found as an option when choosing to generate a material passport:





## 2.1.6 New legal role and licenced database options

In preparation for further development of sharing data between producers and accounts that use products from these producers we've introduced a new legal role and a menu-option in the account to see licenced databases. Note that for now this does not add any functionality.

The screenshot shows the Madaster application interface. At the top, there is a 'Permissions' dialog box with several radio buttons for roles: Administrator, Manager & Contributor to database, Manager, Reader, and Billing. Below these, there is a checkbox for 'Legal role' which is currently unchecked. A red horizontal bar highlights the 'Legal role' checkbox. In the background, the main interface has a sidebar on the left with the user's name 'ESG' and a 'More' button represented by three dots. A dropdown menu is open from the 'More' button, listing several options: 'Users', 'Materials & products', 'Presets for upload', 'Presets for passports', 'Data settings', 'Licensed databases' (which is highlighted with a light gray background), 'Folder types', and 'Features'. On the far left, there is some partially visible text: 'test Po' and 'r met eer'.



## 2.1.7 Folder type options for CRREM report

The recently released CRREM feature can generate the CRREM Excel on folder and account level. In order to prevent unnecessary file generation this can now be excluded from the folder. This is a folder type setting:

New Folder type

|  |             |
|--|-------------|
| Name *   | Description |
| Plural Name  | Icon        |
| <input type="checkbox"/> Foldertype allowed directly under account?                      | Logo        |
| <input type="checkbox"/> Buildings can be added in this folder type                      |             |
| <input type="checkbox"/> Does folder of this folder type requires an address?            |             |
| <input type="checkbox"/> Folder of this type is a region defined by spatial coordinates? |             |
| <input type="checkbox"/> Allow search criteria   |             |
| <input checked="" type="checkbox"/> CRREM report generation possible                     |             |
| <input type="checkbox"/> Legal role and approval of database licensing possible.         |             |



## 2.1.8 Other changes

- When selecting an LCA phase on the environmental dashboard on account and folder level you will now also get to that phase of a building when clicking in the chart.
- Favourites are now also shown on 'My dashboard'.
- The 'duplicate item' button has been replaced by an 'import product' button when selecting an item from an external database.
- A new field for 'BREEAM registration number' has been added to the building form.
- The color for 'Elements without geometric dimensions' have been changed because it is not necessarily wrong to have elements without geometric dimensions.
- We've updated the Uniclass codes and extended the mapping from Uniclass to RICS.
- On the environmental tab we've added new phase filter options for:
  - C3-C4
  - (A1-A3) + (C3-C4)
- In the technical annex for the passport the product lifespan has been added.
- We've added a new KPI for the IPB 2009/1:2022: Greenhouse gas emission per m<sup>2</sup> per year.
- The '+' button has been moved to the right in the edit lay-out screen
- For Switzerland the following certification fields have been added to the building:
  - SGNI
  - Minergie
  - SNBS
- The 'Weight' column has been removed from the excel import template.



## 2.2 Bugfixes

- Enrichment utilizing the '2BA' database wasn't working correctly; this has been fixed.
- When you only have reader rights on an object you were not able to see it when it was deactivated. This has been fixed.
- With read-only rights you could still see some buttons on the account level for which more extensive authorizations are required; this has been solved.
- It is no longer possible to move a folder to be its own subfolder.
- Detailed information of included elements in the mass and environmental tabs of a building was not always shown correctly, which was fixed.
- The environmental KPI 'Materials for energy recovery (MER)' was shown in the unit MJ which is now corrected to kg.
- It is now properly possible when creating a new product to immediately add a certificate for sustainability.
- The classification would not always show when viewing element details in the mass tab. This was solved.
- In enrichment, when selecting an element and changing the filters the no longer shown element could still be selected, which was fixed.
- Missing translations have been added.
- Retrofit actions in the CRREM screen were not properly processed, this has been fixed.
- Cancelling deleting a manual financial line on a product would still result in the line being deleted. This was solved.
- It wasn't possible to save the 'Gross internal area' on an UMS object; this was fixed.
- Transferring already enriched sourcefiles could sometimes fail; this has been fixed.
- When going directly from the starting dashboard to the 3D view of an object in the circularity tab the colors of the 3D model would be gone, which has been fixed.

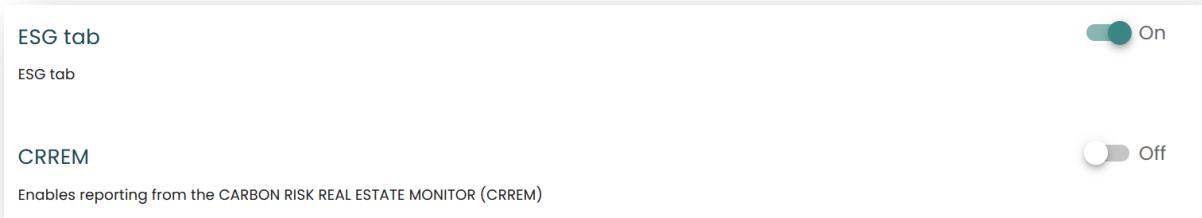
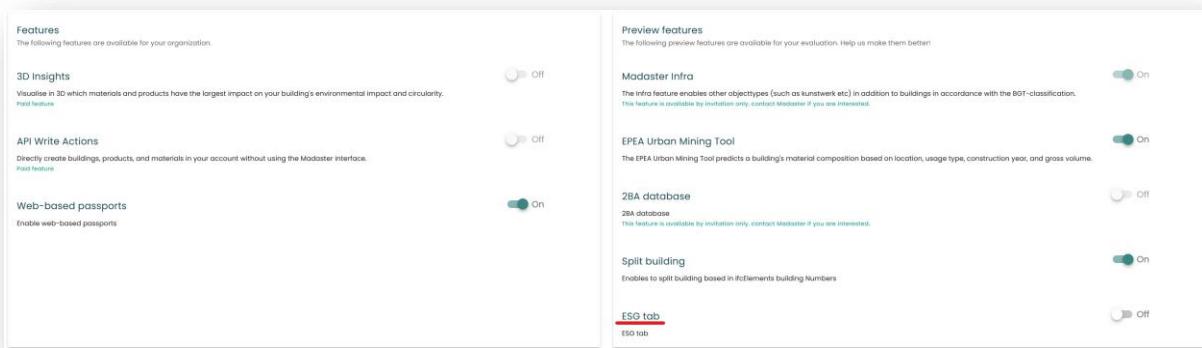


## 3 Build 22433

### 3.1 New and changed functionalities

#### 3.1.1 CRREM and ESG Features

This release sees the introduction of the ESG feature in general and the CRREM feature specifically. Because in the future we expect to introduce multiple features related to ESG we made it possible to first separately activate the ESG features and then choose the features related to this tab individually.



For now the only option for ESG is the CRREM feature. CRREM stands for the Carbon Risk Real Estate Monitor which is a tool to monitor when an asset gets 'stranded'. Explaining the whole tool or what stranded assets are is beyond the scope of these release notes, but [it is explained on their website](#).

#### 3.1.2 CRREM

CRREM is a paid feature. After activating the feature the option to generate a CRREM report will be available from the ESG tab.



The screenshot shows a user interface with a top navigation bar containing tabs: General, Performance, Dossier, Subscription, Mass, Circularity, Environmental, Financial, ESG, and a three-dot menu. Below this, a dropdown menu is open under the heading 'Choose Reporting'. The option 'CRREM' is visible in this dropdown.

The CRREM report can be generated on multiple levels. The excel report is available in the dossier or folder or account level, where it is also possible to upload a new version if there is already a CRREM file. This means it is also possible to edit a lot of buildings at once in the excel and then upload that information instead of editing each building separately in the UI. It is still possible to add the information that is necessary for CRREM through the UI in the individual buildings.

### 3.1.2.1 CRREM on account and folder level

When using the CRREM feature on account or folder level there are the following options:

- When there is no CRREM file it is possible to make an export for the buildings in the file or folder
- If there is a CRREM file present it is also possible to upload a new version of the file

### 3.1.2.2 CRREM on the building level

CRREM needs additional information for each building to be able to do the assessment. Some of these fields are on the building itself, but most of them concern the energy use of a building. We have added a separate screen from the CRREM reporting page for that on a building:



Show settings

Choose Reporting

CRREM

## Settings

Input

User-defined settings

### General

Reporting year

Gross Asset Value

€ Months of data

0

▼

### Building characteristics

Air conditioning

Average annual vacant area

### Total energy procurement

#### Electricity

Usage

0

kWh

Data Coverage

0

m<sup>2</sup>

Maximum Coverage

0

m<sup>2</sup>

#### Natural gas

Usage

0

kWh

Data Coverage

0

m<sup>2</sup>

Maximum Coverage

0

m<sup>2</sup>

#### Fuel Oil

Usage

0

kWh

Data Coverage

0

m<sup>2</sup>

Maximum Coverage

0

m<sup>2</sup>

#### District heating

Usage

0

kWh

Data Coverage

0

m<sup>2</sup>

Maximum Coverage

0

m<sup>2</sup>

#### District cooling

Usage

0

kWh

Data Coverage

0

m<sup>2</sup>

Maximum Coverage

0

m<sup>2</sup>

#### Other energy consumption type 1

Type

▼

Usage

kWh

Data Coverage

m<sup>2</sup>

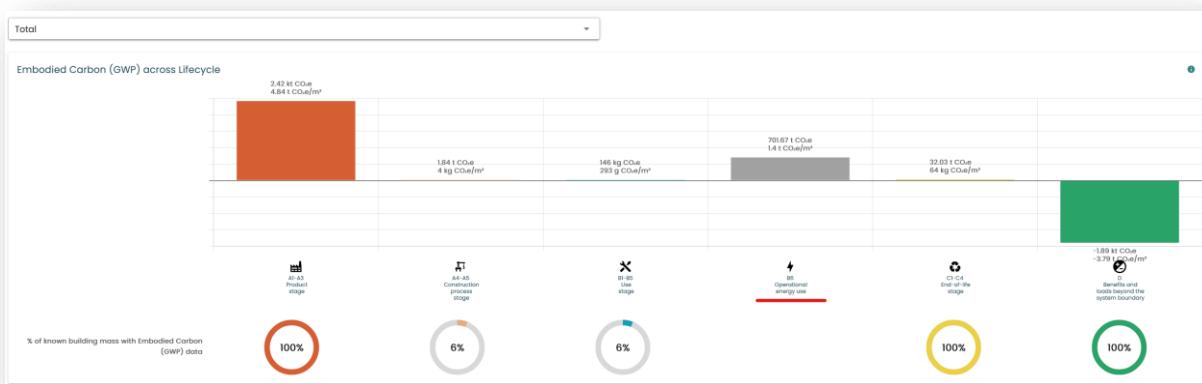
Maximum Coverage

m<sup>2</sup>



### 3.1.3 Energy use of a building: B6

With the addition of energy fields introduced by CRREM we can calculate the energy use in the lifecycle of the building (B6) for GWP. Note that this is only fillable when the CRREM feature is enabled.



### 3.1.4 Splitting 3D and IFC

In Madaster it is possible to split a building if the ifc file contains the correct information. It used to be that both the ifc and the 3D model of the splitted building would still contain the information of the whole set instead of only the information of the splitted building. This has now been changed so that it only shows the IFC and 3D information of the splitted building. In cases where we cannot we do not show the 3D model and we disable the option to download the ifc file.

### 3.1.5 Sequestered carbon in A1-A3

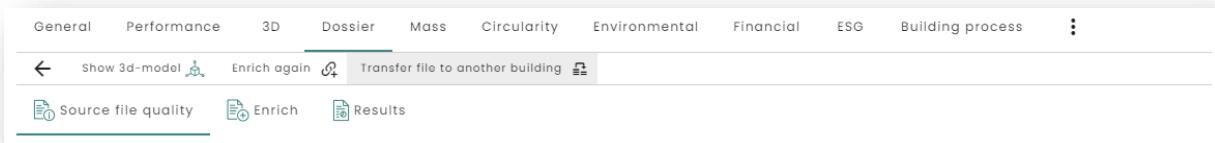
Some products contain sequestered carbon, which can result in a negative GWP in the A1-A3 phase. We have included this now in the building LCA so that you can see the effects of this sequestered carbon in the lifecycle of the building.





### 3.1.6 Transfer fully enriched source file

It is now possible to transfer an enriched file to an existing building so that it is possible for separate parties to enrich their files and combine them in one place.



### 3.1.7 Financial updates

- The currency exchange rated from the existing API stopped working. We rebuild this so it connects to the ECB data for Euro-USD, Euro-GBP and Euro-CNY
- A number of pricesets have been added, corrected or changed

### 3.1.8 Other changes

- The recently introduced field for gross internal area has been added to the passport
- When you're on the performance tab and you are recalculating the building the dashboard will refresh once the calculations are done



### 3.2 Bugfixes

- Downloading some documents from the dossier didn't work properly anymore; this has been fixed
- Fixed an added url in the dossier not opening
- In the calculations for the B4 phase it could happen that products were wrongfully added multiple times, which has been corrected
- Deleted objects could count towards the number of objects in use; this has been solved.
- Refreshing the browser on the performance tab could result in a blank page. This is fixed.



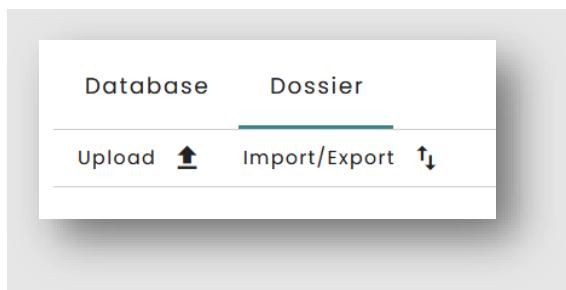
## 4 Build 21775

### 4.1 New or Changed functionalities

#### 4.1.1 Excel import/export for databases

This release functionality has been introduced to be able to export or import excel files from or to your database. This new functionality is only available on request.

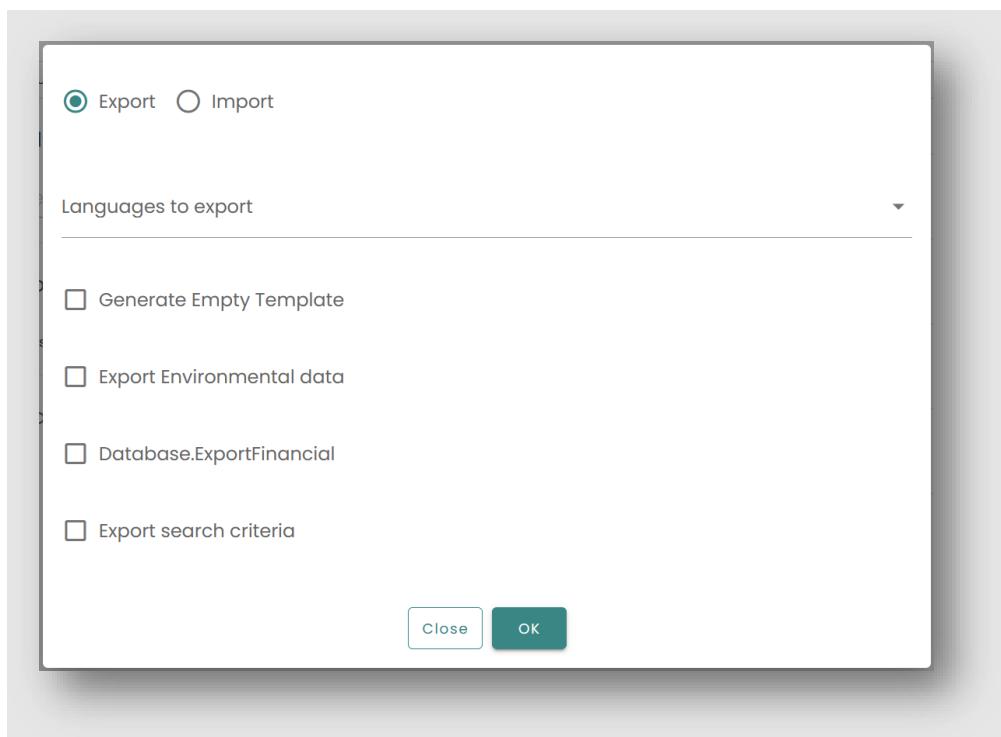
From the dossier tab of a database this option has been added:



Using the button shows the different templates available for importing and exporting.

#### 4.1.1.1 Exporting data

Exporting data can be done with the following options:





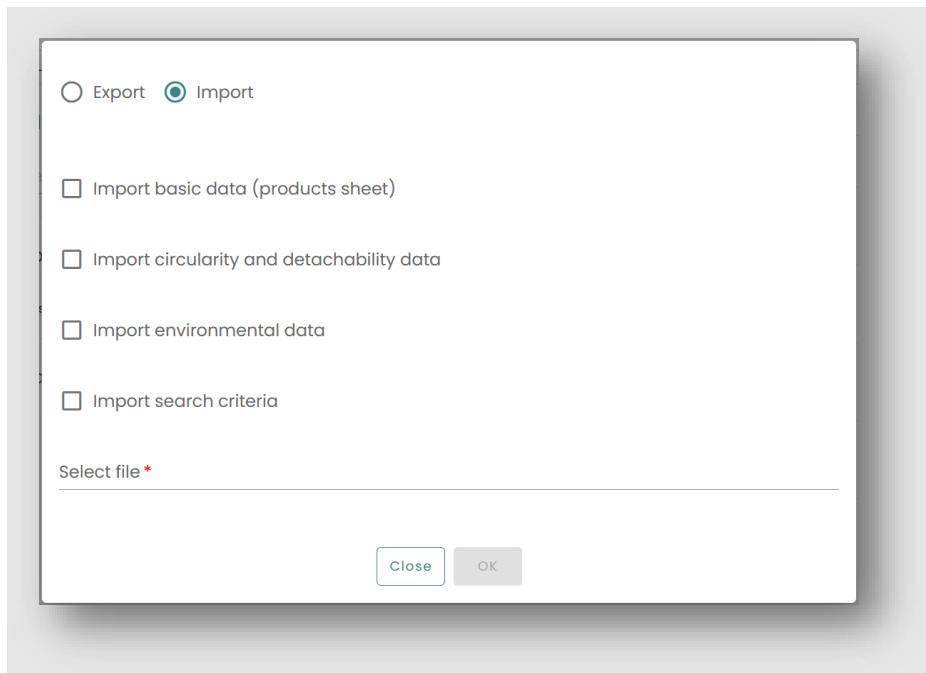
All of the options will place the excel file in the dossier of the database. These options are:

- For which languages you want to export the data, multiple options are possible.
- Generate empty template: this will create an empty excel template which can be used to fill in and upload to get all the data in more easily.
- Export environmental data: this will export all the environmental data from the records in the database.
- Export financial data: this will export all the financial data from the records in the database.
- Export search criteria: this will export all the current search criteria of the database.

Please note that only products will be exported or imported, and not materials.

#### 4.1.1.2 Importing data

Importing the data only works when the excel is structured in the same way the export templates are. The following options are available for import:



The following data can be imported:

- Regular product data, which are also the fields shown on the product information tab in the database.

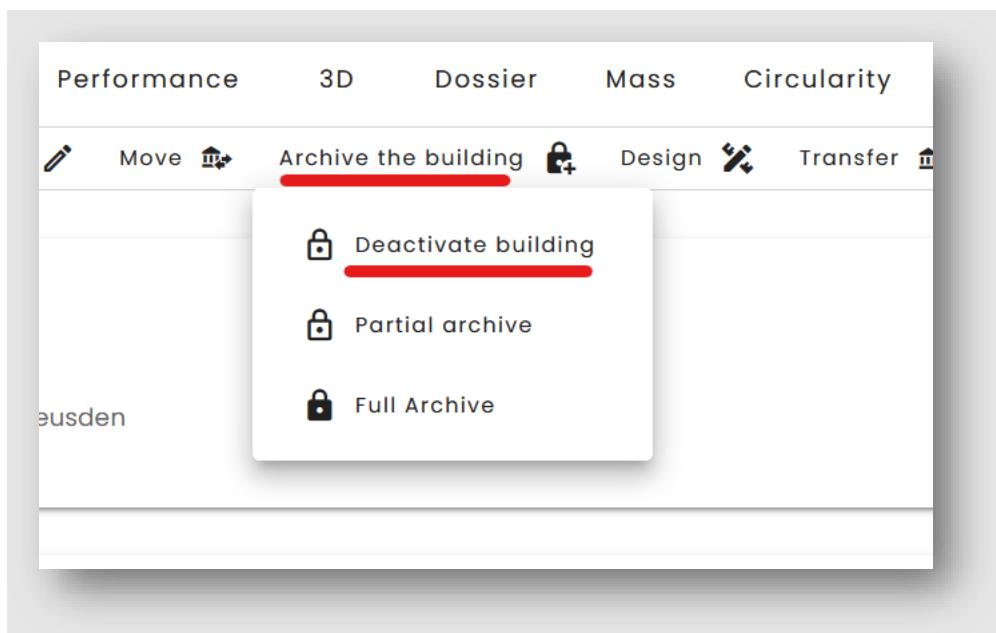


- Circularity and detachability data, corresponding to the data shown on the circularity tab.
- Environmental data, which is the data as shown in the environmental tab
- Search criteria

It is possible to select multiple of these.

#### 4.1.2 Deactivating a building

It is now possible to deactivate a building:



Which is a far quicker way to change an existing building into an 'archived building'. It is also possible to immediately deactivate the building in your own account when you transfer a building.



Choose account

Building Name  
Dorpsstraat 1

Deactivate original building

▼ □ ▲ Aan de Steeg Twello

#### 4.1.3 Targets

In the data settings on either account, folder or object it is now possible to add your own targets for a given KPI. This does not as of yet show up in the dashboarding or reporting, so stay tuned for further updates on this functionality.

Data settings

Select preferences Targets

|   |   |
|---|---|
| <input checked="" type="checkbox"/> MCI                     | 50 <input type="button" value="▼ %"/>   |
| <input checked="" type="checkbox"/> Material Flows          | <input type="button" value="+ Add target"/>                                   |
| X   | Key Performance Indicator<br>Input Primary <input type="button" value="▼ %"/> |
| <input checked="" type="checkbox"/> Scarcity                | <input type="button" value="▼ %"/>  |
| <input checked="" type="checkbox"/> Detachability           | <input type="button" value="▼ %"/>  |
| <input checked="" type="checkbox"/> Environmental           | <input type="button" value="+ Add target"/>                                   |
| <input checked="" type="checkbox"/> Net Present Value (NPV) | <input type="button" value="▼ %"/>  |
| <input checked="" type="checkbox"/> Current value           | <input type="button" value="▼ %"/>  |



#### 4.1.4 Financial updates

This release a number of sources for prices of materials have been updated. This concerns the following:

- Wood
- Rubber
- Platinum
- Palladium
- Plastics
- Glass
- Sand
- Asphalt
- Gravel
- Gypsum
- Stones

The fallback for pricing has been made more granulated, so that for example not all metals with unknown pricing will default to the price for Steel scrap. The price sets connected to the material families can be seen in the platform now as well:

The screenshot shows the 'Material Classification' section of the Madaster platform. On the left is a sidebar with navigation links: My Dashboard, Favorites, several collapsed categories, System databases & suppliers, Information, Classification methods, Material families (which is the active tab), and Support. The main area displays two bar charts labeled 'Madaster' and 'Madaster V2'. Both charts show a series of teal-colored bars of varying heights, representing different material categories or price sets. The 'Material families' link in the sidebar is highlighted with a light green background.



Home / Material families / Madaster V2

## Madaster V2

| ↑ | Name                               | Default priceset | Last known value |
|---|------------------------------------|------------------|------------------|
|   | E - NATURAL STONE                  | Mixed stones     | €0.057/kg        |
|   | E1 - Igneous rock                  | Mixed stones     | €0.057/kg        |
|   | E2 - Marble                        | Mixed stones     | €0.057/kg        |
|   | E3 - Limestone (other than marble) | Mixed stones     | €0.057/kg        |
|   | E4 - Sandstone, grit stone         | Mixed stones     | €0.057/kg        |
|   | E5 - Slate                         | Mixed stones     | €0.057/kg        |
|   | E9 - Other natural stone           | Mixed stones     | €0.057/kg        |
|   | E - PRECAST WITH BINDER            | Concrete         | €0.034/kg        |

### 4.1.5 Other changes

- The preset for passports has been made more clear in the UI when generating a passport and if there is a custom preset this one is now chosen by default.
- Icons giving more information about selected databases have been implemented on more places and extended:



- The recalculate button has been added to more places on a building
- When searching in a database and going back to the overview the last search term will be kept



- The fields 'gross internal area' and 'gross asset value' have been added on the building form
- The filter for delivered date on the map on a account or folder has been changed from a slider to start and end years. It is now also possible to filter on a year in the future:

The screenshot shows the Madaster software interface. At the top, there is a navigation bar with tabs: General, Performance (which is currently selected), Dossier, Subscription, Mass, Circularity, and Environmental. Below the tabs, there is a search bar with a magnifying glass icon. Underneath the search bar, there are two input fields for filtering: 'from' set to '1200' and 'to' set to '2023'. To the right of these fields is a small map. Below the date filters, there is a dropdown menu labeled 'Usage' which is currently expanded. Underneath the usage dropdown, there is a checkbox labeled 'Hide Map' which is checked. At the bottom left, there is a dropdown menu for 'Items per page:' with '10' selected. The bottom right corner of the interface shows a portion of a map.



## 4.2 Bugfixes

- The sorting arrows for the building pictures were not visible on a black background. This has been fixed.
- Property values in the 3D viewer could go offscreen, which has been corrected.
- Fixed a bug where the map could overlap with the topbar
- When saving a passport preset without filling all the required fields the form would close and nothing would be saved. This has been changed so that a message is shown.



## 5 Build 21116

### 5.1 New or Changed functionalities

#### 5.1.1 Account and folder level dashboarding

In this release dashboarding details for account and folder level have been introduced. This means it is now possible to see how the building scores on different KPI's on for example a whole portfolio.

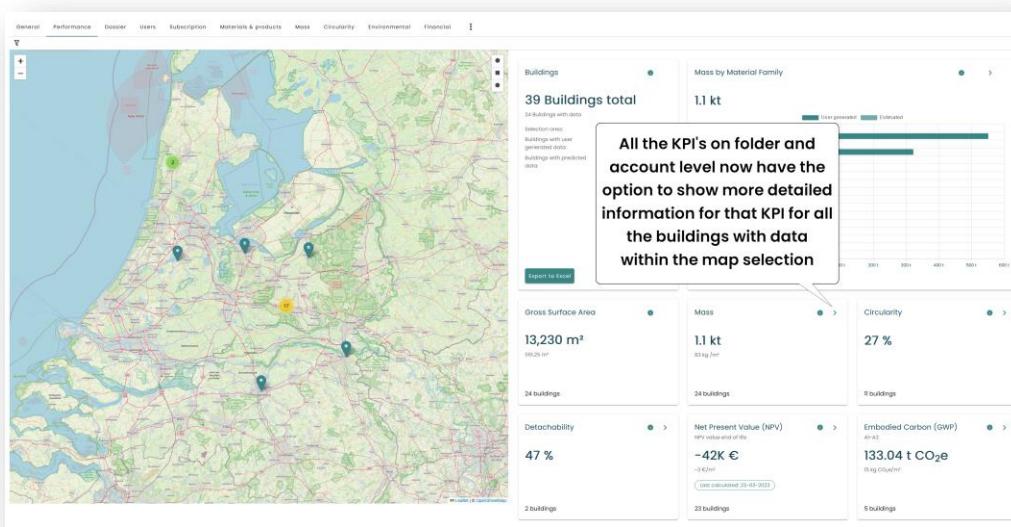


Figure 1: the performance tab on an account with the default settings for KPI's shown

It is also possible to go straight to one of the new tabs in the folder or account



Figure 2: the new tab structure of an account with the new mass, circularity, environmental and financial tabs. These new tabs have also been added to folders.

The KPI's shown are dependent on which have been chosen in the edit lay-out settings for the user. If no specific lay-out has been chosen the default KPI's from the Madaster platform will be shown.



### 5.1.1.1 The Mass tab and general dashboarding options

The mass tab on folder and account level will show the map on the left and on the right an overview of all the buildings with data for the chosen KPI within the map selection:

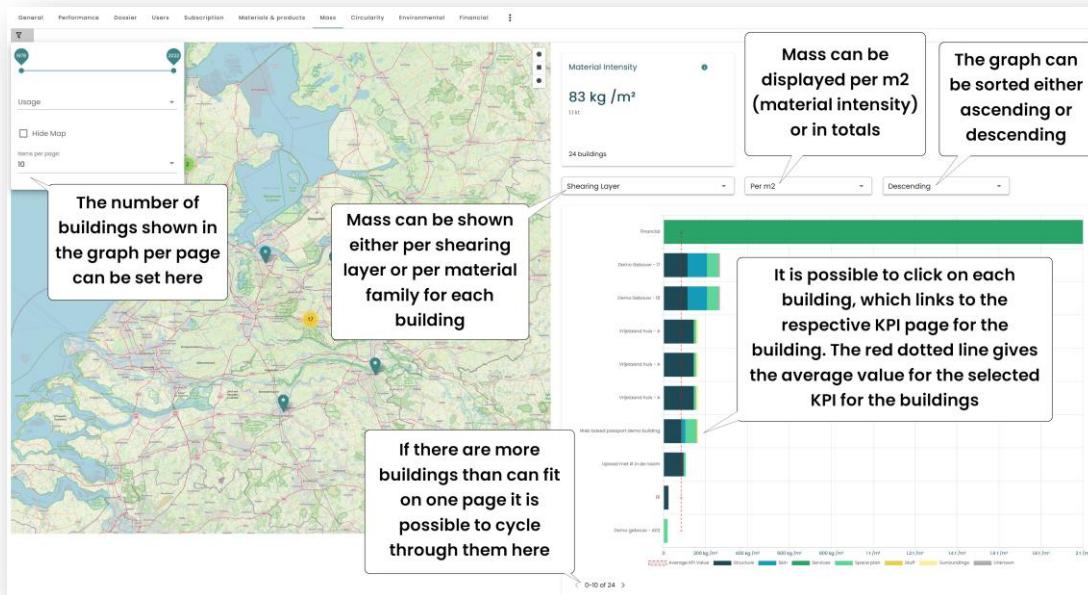


Figure 3: an example of the mass tab on an account

Note that a number of options will be available on every tab, whether it is mass, circularity, environmental or financial. These are:

- Paging: setting the number of items per page and cycle through them.
- Clicking the building in the graph, this will for all tabs and KPI's result in navigating to the selected KPI page of that specific building.
- The average is shown for a lot of KPI's, but not all of them.
- Sorting the graph ascending or descending.
- Hovering over the bars in a chart will show a tooltip giving more specified information.

For mass specifically the following options are available:

- The bar for each building can be stacked showing either the mass or material intensity for each shearing layer or the mass or material intensity for each material family.
- The mass can be shown per m<sup>2</sup>, which is the material intensity, or for the total mass of the whole building. This will also change the card above the chart.



### 5.1.1.2 The Circularity tab

The circularity tab on account or folder level has the following options:

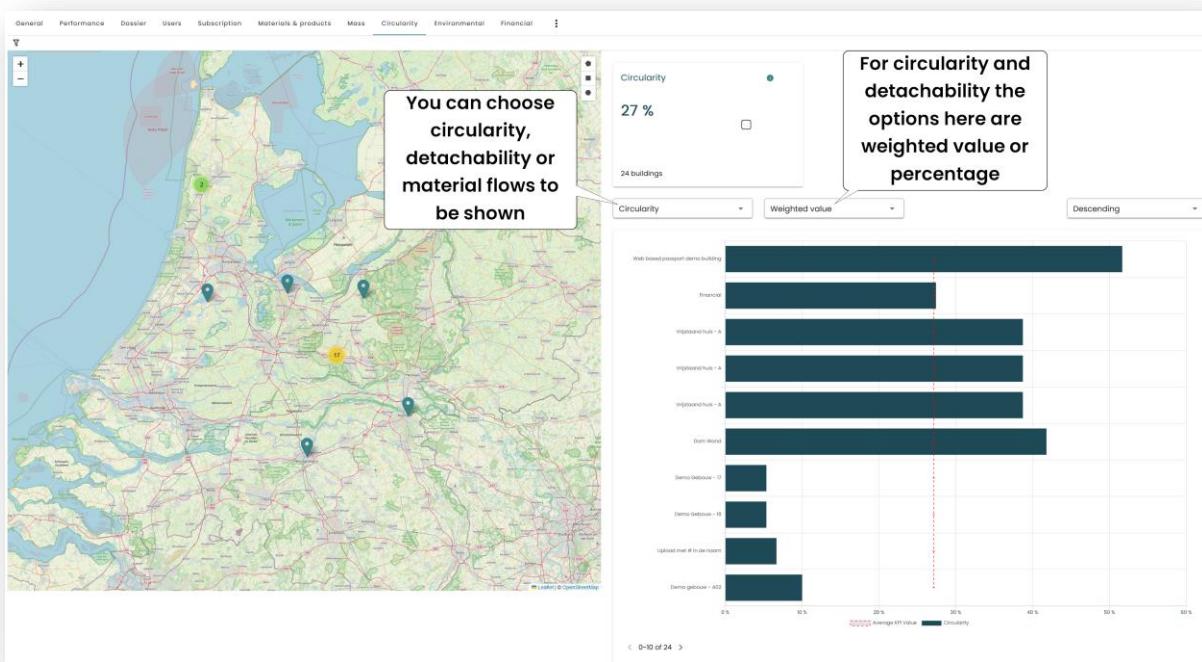


Figure 4: the new tab for circularity on an account

For the circularity and detachability information:

- When choosing the percentage the buildings will be sorted by their respective KPI scores; either the MCI or their detachability score.
- The weighted value will sort the buildings by their KPI score multiplied by their mass. This gives insights into which buildings have the largest impact on the aggregated circularity score of the selected buildings. The graph itself will still show the actual MCI or detachability score.



For the material flows there are slightly different options:

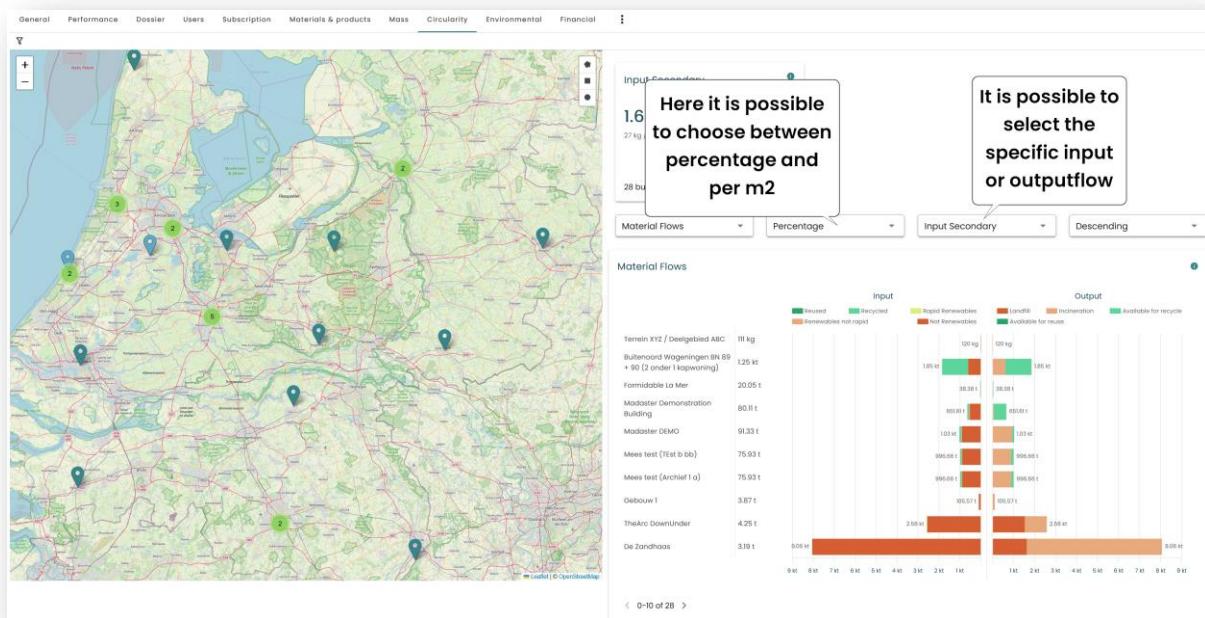


Figure 5: the material flows on the circularity tab on an account

- Percentage orders the buildings by which building has the highest percentage of the chosen material flow. It is also possible to order by  $m^2$ .
- The material flows can be ordered by the following:
  - Total mass
  - MCI
  - Input Primary
  - Input renewables sustainably produced
  - Input Secondary
  - Output Waste
  - Output recoverable



### 5.1.1.3 The Environmental and financial tabs

As elsewhere in the platform the environmental KPI's are based on compliance. Furthermore, it is possible to choose from a set of LCA phases or combination of phases. It is also possible to sort based on the totals or by m<sup>2</sup>.

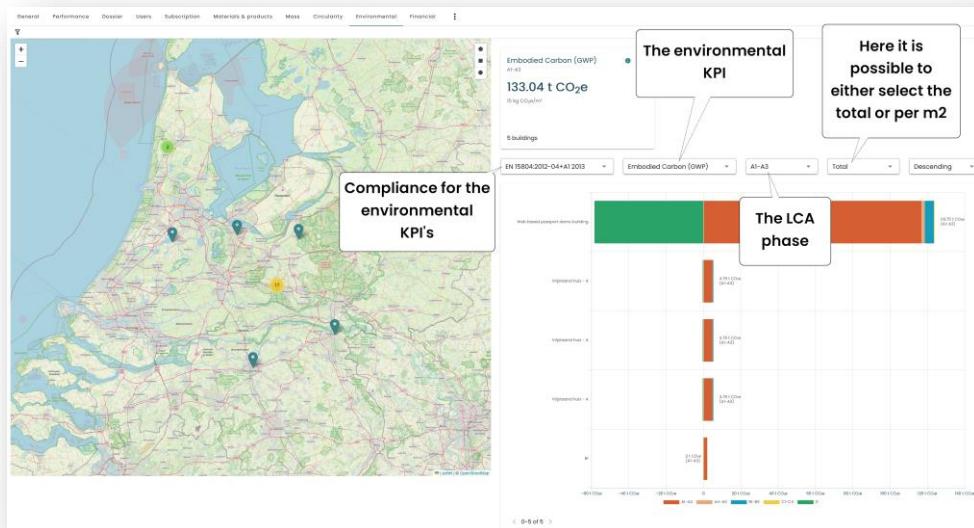


Figure 6: the environmental tab on an account

The financial tab shows the residual value of the buildings in terms of material value. You can choose either the Net Present Value, for which a stacked bar with the layers of Brand is shown, or the Current Value, which shows the material families.

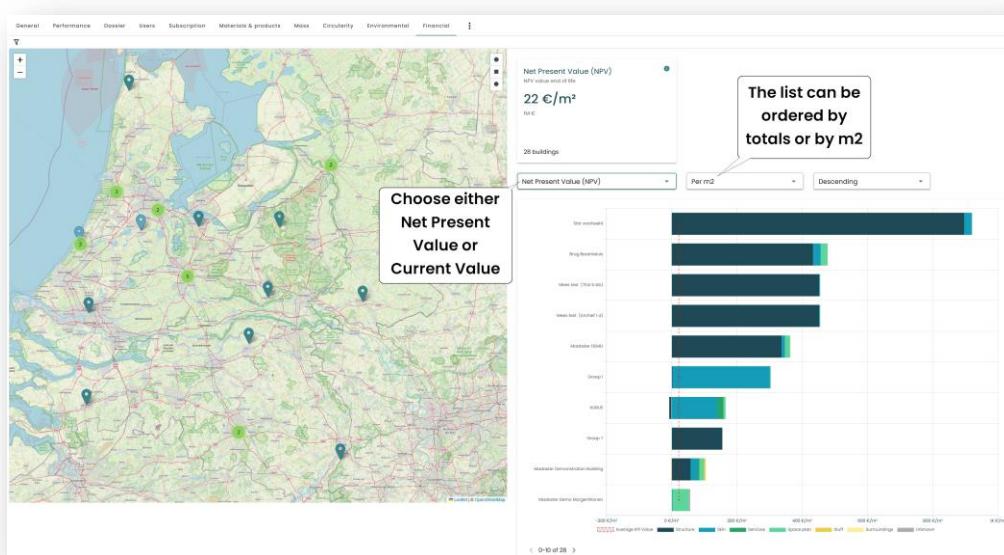


Figure 7: the financial tab on an account



## 5.1.2 Web-based passport

The web-based passport is a one-pager material passport that is published on the internet and can be shared by either directly sharing the link or via social media.

### 5.1.2.1 Generating a web-based passport

To generate a web-based passport the 'issue material passport' on a building is used.

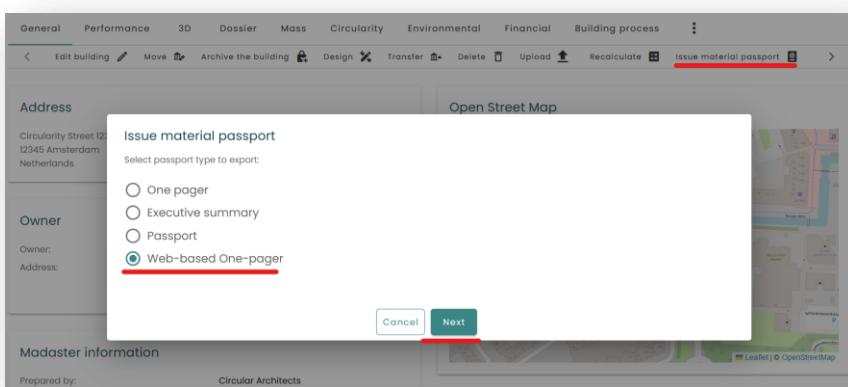
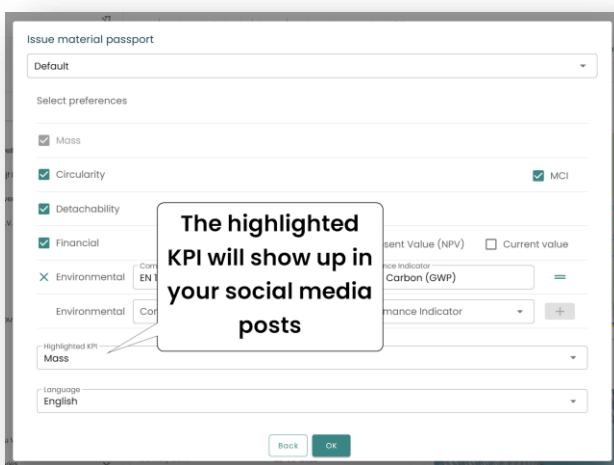


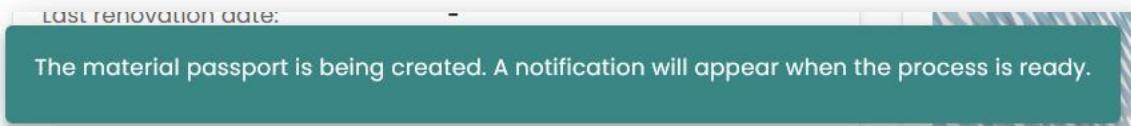
Figure 8: selecting to issue a material passport on the building page

The options for what to show on the web-based one-pager material passport are the same as for the regular one-pager with the addition to select a highlighted KPI. This KPI is the one which will show up on the preview in the social media post that are made using this passport. As with the regular one-pager, only a maximum of four KPI's (excluding mass) can be chosen.

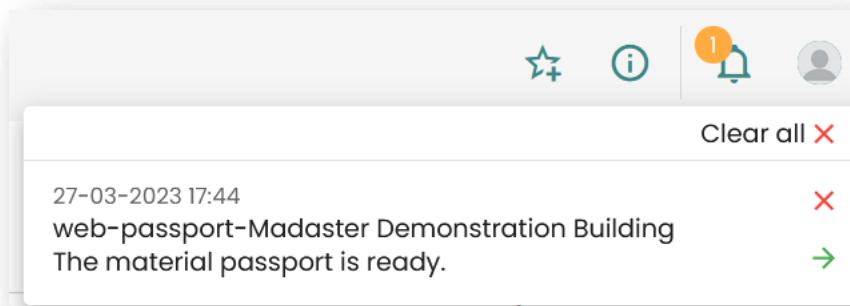




After selecting the preferred options a notification will appear



Followed by an alert once the passport is ready



### 5.1.2.2 Using the web-based passport

The web-based passport will appear in the dossier of the building, from where it is possible to open the link, share it on social media or delete it.

The web-based passport can be opened in the browser, shared on twitter or linkedin, or deleted

Opening the link will show the web-based passport in the browser. This is a responsive design, meaning it will scale to the size of the screen and therefore fits on both a bigger screen and a smaller one, such as on a mobile device.



Material passport  
Madaster Demonstration Building

PREPARED BY  
Circular Architects

ADDRESS  
Circularity Street 123  
12345 Amsterdam  
Netherlands

GROSS SURFACE AREA  
300 m<sup>2</sup>

|                    |                          |   |
|--------------------|--------------------------|---|
| Material Intensity | 2.17<br>t/m <sup>2</sup> | Material Intensity measures the amount of materials used per m <sup>2</sup> .   |
| Circularity        | 48%                      | Circularity measures the degree of secondary materials used during construction, and potential for reuse & recycling at their end of use. |
| Detachability      | 73%                      | Detachability measures the degree to which materials and products can be disassembled without being damaged.                              |

**Madaster**

This Passport was created using Madaster – the online register for materials and products in the built environment. In Madaster, data is recorded on all materials and products used in a real estate or infrastructure object, providing insight into an object's material composition, circularity, detachability, environmental impact, and material value at end of life. Documenting materials in such a manner enables a better future with more material reuse, less impact on natural ecosystems, and less CO<sub>2</sub> emissions.

[Madaster platform](#) [Our purpose](#)

Disclaimer  
This Material Passport was realized without any intervention by (personnel and/or employees of) Madaster Services B.V. (hereinafter referred to as: "Madaster") and/or the Madaster Foundation is the sole and exclusive result of data imported by, or on behalf of the user, from the user's source files. Consequently, Madaster cannot be held accountable in any way for the incorrect, and/or incomplete and/or injudicious entry by the user of the required information.

**madaster**  
Increasing the value of Materials

Material passport  
Madaster Demonstration ...

PREPARED BY  
Circular Architects

ADDRESS  
Circularity Street 123  
12345 Amsterdam  
Netherlands

GROSS SURFACE AREA  
300 m<sup>2</sup>

|                    |                          |   |
|--------------------|--------------------------|---|
| Material Intensity | 2.17<br>t/m <sup>2</sup> | Material Intensity measures the amount of materials used per m <sup>2</sup> .   |
| Circularity        | 48%                      | Circularity measures the degree of secondary materials used during construction, and potential for reuse & recycling at their end of use. |
| Detachability      | 73%                      | Detachability measures the degree to which materials and products can be disassembled without being damaged.                              |

**Madaster**

Figure 9: the web-based passport in different sizes. Left on a bigger screen, right how it looks on a mobile device.

Some remarks about the web-based passport:

- Generating web-based passports can be disabled by disabling the web-based passport feature.
- You can only have one web-based passport for a building, creating a new one will overwrite the existing one.
- When you archive or transfer a building the web-based passport will not be copied.
- Deleting the building will also delete the web-based passport.
- The picture chosen for the passport is the first picture on the building. If the building has no pictures a warning will be shown when a web-based passport is generated

Issue material passport

ⓘ This building has no image to be displayed on the passport.

Select preferences

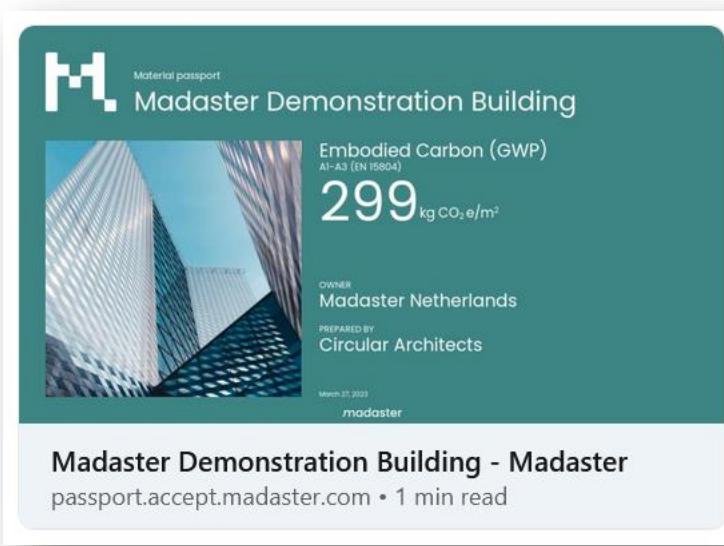
Mass



- Like the other passports, data settings can limit the KPI's to be used in the passport.
- It is possible to define a passport preset for a web-based passport
- Deleting the passport will result in a 404 when navigating to the URL



- Using the sharing buttons in the dossier will open either Twitter or LinkedIn. The preview card used in the social media post shows the chosen highlighted KPI. The card on the post links to the whole web-based passport:



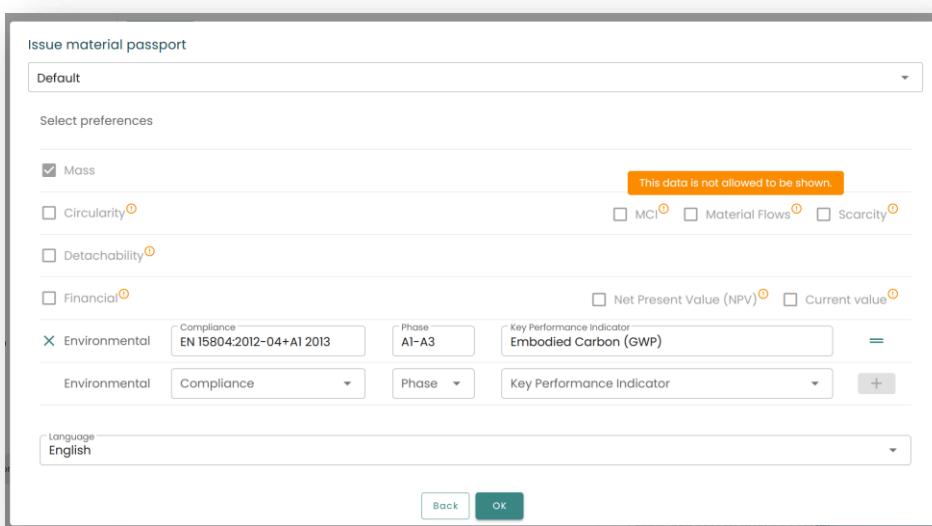


## 5.1.3 Other changes

### 5.1.3.1 UI changes

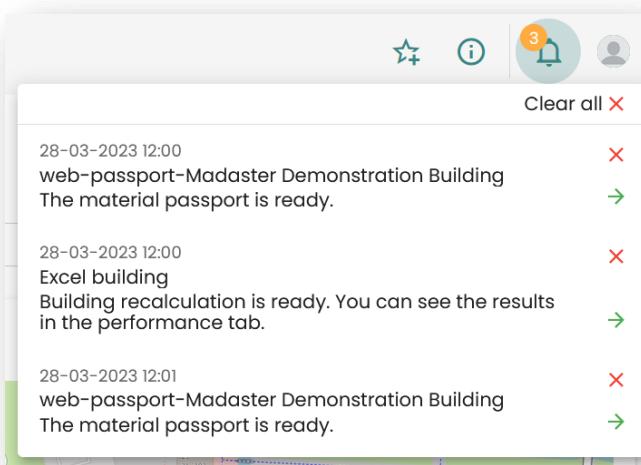
#### 5.1.3.1.1 Show unavailable data when generating a passport

If certain data has been made unavailable in data settings this now also shows up when generating a passport:



#### 5.1.3.1.2 Notifications

It is now possible to dismiss all notifications at once. Furthermore, if you dismiss one notification and there are more the popup will not close.





### 5.1.3.1.3 Focus on missing fields on building form

When you create or edit a building and try to save without one of the required fields not filled in the screen will now focus automatically on the location of the missing fields.

Usage \*

Detached house

Override the demolition costs (default: 64 euro/m<sup>2</sup>)

Gross Surface Area \*  
300 m<sup>2</sup>

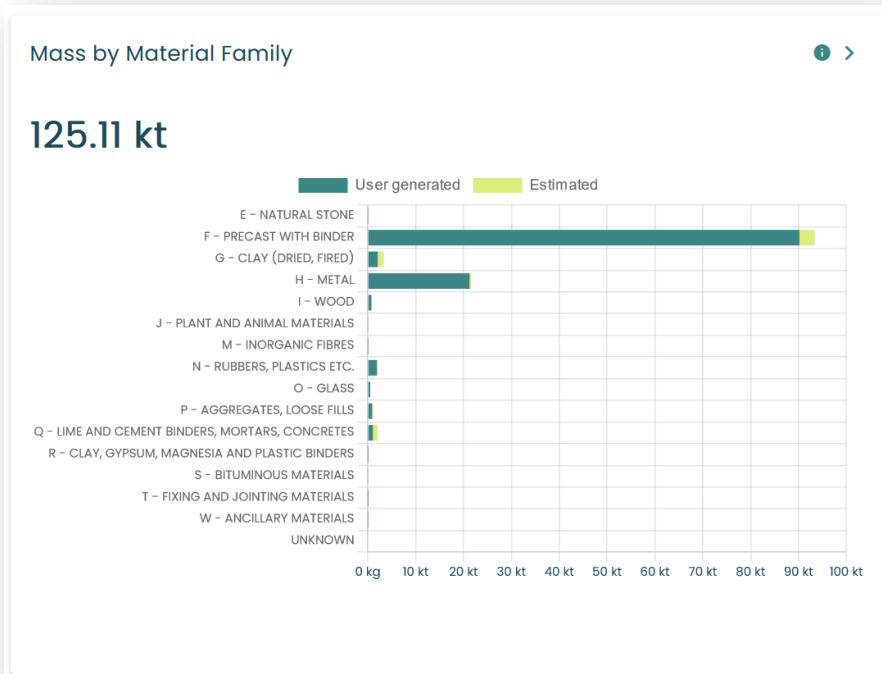
Building phase \*

The Building phase field is required

Calendar icon Delivery date \*  
The Delivery date field is required

### 5.1.3.1.4 Color difference between user generated and estimated data

When the difference is shown between user generated and estimated data the colors were very similar and it was difficult to distinguish. The colors have been changed.





### 5.1.3.1.5 Sort or select all filters

When using the material & products tab on an account or folder, when using a database or when linking an element from enrichment it is now possible to sort the filters alphabetically or to select/unselect all of them.

| Manufacturer                        |          |
|-------------------------------------|----------|
| <input checked="" type="checkbox"/> | Area     |
| <input checked="" type="checkbox"/> | Length   |
| <input checked="" type="checkbox"/> | Material |
| <input checked="" type="checkbox"/> | Quantity |
| <input checked="" type="checkbox"/> | Volume   |

| Product type (5)                    |          |
|-------------------------------------|----------|
| <input checked="" type="checkbox"/> | Area     |
| <input checked="" type="checkbox"/> | Length   |
| <input checked="" type="checkbox"/> | Material |
| <input checked="" type="checkbox"/> | Quantity |
| <input checked="" type="checkbox"/> | Volume   |

| Status (1)                          |          |
|-------------------------------------|----------|
| <input checked="" type="checkbox"/> | Active   |
| <input type="checkbox"/>            | Inactive |

### 5.1.3.1.6 Sorting of pictures and adding a screenshot picture

It is now possible to sort the pictures on a building by using the arrow icons when editing a building. Also, taking a screen capture from the 3D model will now add the picture without a need to refresh.





### 5.1.3.2 Support for IfcMaterialConstituentSet from the IFCv4 standard

In the IFCv4 standard the property IfcMaterialConstituentSet can be used to define the material and optionally the fraction of that material within a single IFC element. When this is used in an IFC file Madaster will now support this.

### 5.1.3.3 Material flows now available as KPI in edit-layout

When defining which KPI's to show in the edit lay-out options it is now also possible to add the material flows to building, folder or account level.

The screenshot shows the 'Edit layout' dialog box with the 'Building' tab selected. Under the 'Show' section, several KPIs are listed with 'Hide charts' toggle switches:

- Mass
- Circularity
- Detachability
- Embodied Carbon (GWP)
- Net Present Value (NPV)

Below these, there is a checkbox for 'Hide cards when data is not allowed.' A note says: 'Once configured the material flow KPI is added using the '+''. There are three callout boxes with arrows pointing to specific features:

- A box on the left points to the '+ Material flows' button and says: 'Once configured the material flow KPI is added using the '+''.
- A box in the center points to the sorting dropdown and says: 'It is possible to choose either percentage or per m2'.
- A box on the right points to the 'Key Performance Indicator Input Secondary' dropdown and says: 'Any of the material flows can be chosen here'.

At the bottom right are 'Cancel', 'Restore default', and 'Save' buttons.



#### 5.1.4 Bugfixes

The following bugs have been resolved:

- Archives, designs and splitted buildings were not shown correctly in the list view on accounts and folders. This has been fixed.
- When cancelling a transfer a notification would appear that the process was scheduled. This wrong notification has been removed.
- The color representation on the percentage of elements linked after enrichment could be wrong. That has been corrected.
- When archiving or splitting a building and generating a passport the passport would not appear, which has been fixed.
- Selecting a database in the navigation could result in it looking like multiple databases were selected. This is fixed.
- An empty template used as a source file would result in infinite loading in the enrichment screen. This is fixed.
- When linking an element in enrichment to a material it was possible to match it on typename. This option has been removed.



## 6 Build 20190

### 6.1 New or changed functionalities

#### 3.1.1 Data settings and edit-layout

This release new functionality has been added which enables administrators to choose which data to show for their buildings and also for a user to decide which KPI's they want to see.

##### 3.1.1.1 Data settings

On an account, folder or building it is now possible as an administrator to select which data from a building is accessible/shown in the platform.

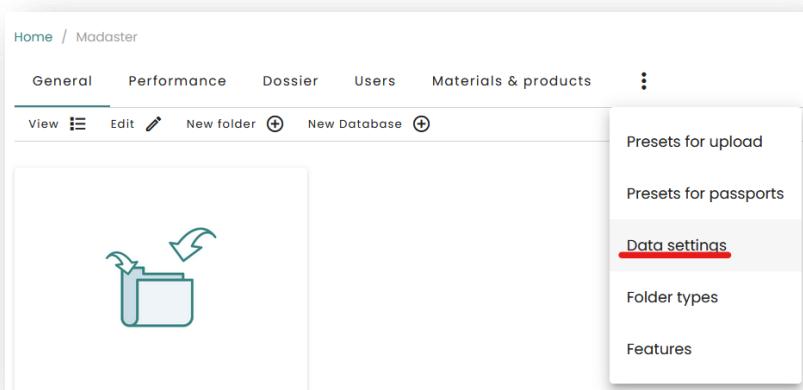


Figure 10: data settings at the account level. It is also available in folders or buildings.

This gives the following options:



General   Performance   Dossier   Users   Materials & products   :

Data settings

Select preferences

Circularity    MCI    Material Flows    Scarcity

Detachability

Environmental

Financial    Net Present Value (NPV)    Current value

Save

Figure 11

Unmarking and saving an option will exclude that information from being available in the platform. So if an administrator would exclude detachability, for example because it is not known or there is not enough data for it this will show up in the circularity tab in the following way:

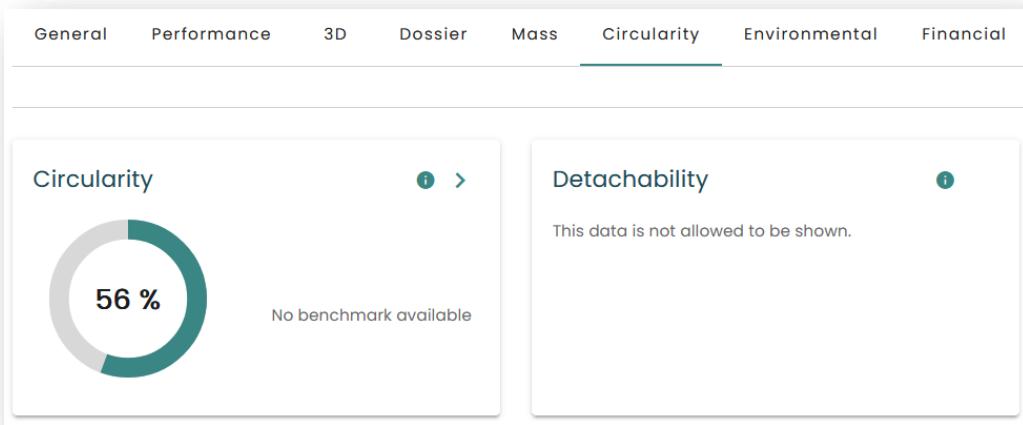


Figure 12: detachability has been excluded in the data settings

This will also impact the passport: in this case detachability will not be part of the material passport. For aggregations of data it will also be excluded; if on the data settings of a building the detachability is excluded then the detachability of that building is not taken into account for the detachability score on the account or folder that building is a part of.



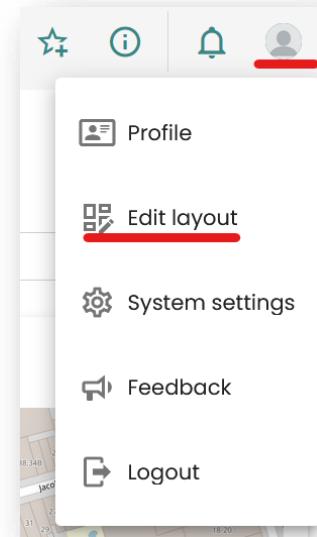
The data settings are inherited from higher levels. So the building inherits the data settings from a folder, and a folder from another folder or the account. This inheritance can be broken if it is necessary to have different settings at a lower level. If no data settings are set at any level the default from the Madaster platform is used.

The screenshot shows the 'Data settings' page within the 'Building process' section of the platform. At the top, there are several tabs: General, Performance, 3D, Dossier, Mass, Circularity, Financial, and Building process. The 'Building process' tab is active. Below the tabs, a button labeled 'Restore inheritance from parent level.' is highlighted with a red box. The main area is titled 'Data settings' and contains a section for 'Select preferences'. It lists several options with checkboxes: Circularity (checked), MCI (checked), Material Flows (unchecked), Scarcity (unchecked), Detachability (unchecked), Environmental (unchecked), Financial (checked), Net Present Value (NPV) (checked), and Current value (unchecked). A 'Save' button is located at the bottom right of this section.

Figure 13: this building does not inherit the data settings from its parent, but it can be restored.

### 3.1.1.2 Edit Lay-out

As any user in the platform it is now possible to define your own preferences for which KPI's should be visible in the performance tab on account, folder or building level.





It is possible to have different settings for accounts/folders on the one hand, and buildings on the other:

The screenshot shows the 'Edit layout' interface. At the top, there are two tabs: 'Account/Folder' (underlined in red) and 'Building' (also underlined in red). Below the tabs is a section labeled 'Show' containing four items: 'Mass', 'Circularity', 'Detachability', and 'Embodied Carbon (GWP)'. Each item has a 'Hide charts' toggle switch and a horizontal drag handle. At the bottom of the screen, there are some small text elements: 'FN 15804:2012-04+A1:2013', 'A1-A3', and another 'Hide charts' switch.

Figure 14: the edit layout screen with the building tab selected

There are a number of options in this screen:

- It is possible to include or exclude KPI's; the KPI's at 'shown' are included, the ones at 'Don't show' are not.
- It is possible to let the chart related to a KPI be shown or not
- It is possible to drag the KPI's; this will influence the sequence in which the cards are shown
- The 'Hide cards when data is not allowed' is related to the new functionality as described in 2.1.1: the option for administrators to hide data. Here it is possible exclude these cards from the overview. If included a card is shown with the message that the data is not allowed to be shown.
- Pressing the cancel button will close the screen without any changes being saved
- 'Restore default' will restore the Madaster default settings
- Save will save the changes you've made and close the screen



Edit layout

Account/Folder Building

Show

Embodied Carbon (GWP) EN 15804:2012-04+A1 2013 A1-A3  Hide charts

Mass  Hide charts

Circularity  Hide charts

Hide cards when data is not allowed.

Don't show

+ Current value

+ Detachability

+ Net Present Value (NPV)

+ Environmental  Compliance  Phase  Key Performance Indicator

Cancel  Restore default  Save

Figure 15: a different configured lay-out for the building level

Example: for the lay-out settings as shown in figure 7 and for a building for which the environmental data has been excluded in the data settings I see the following on the performance tab of that building:

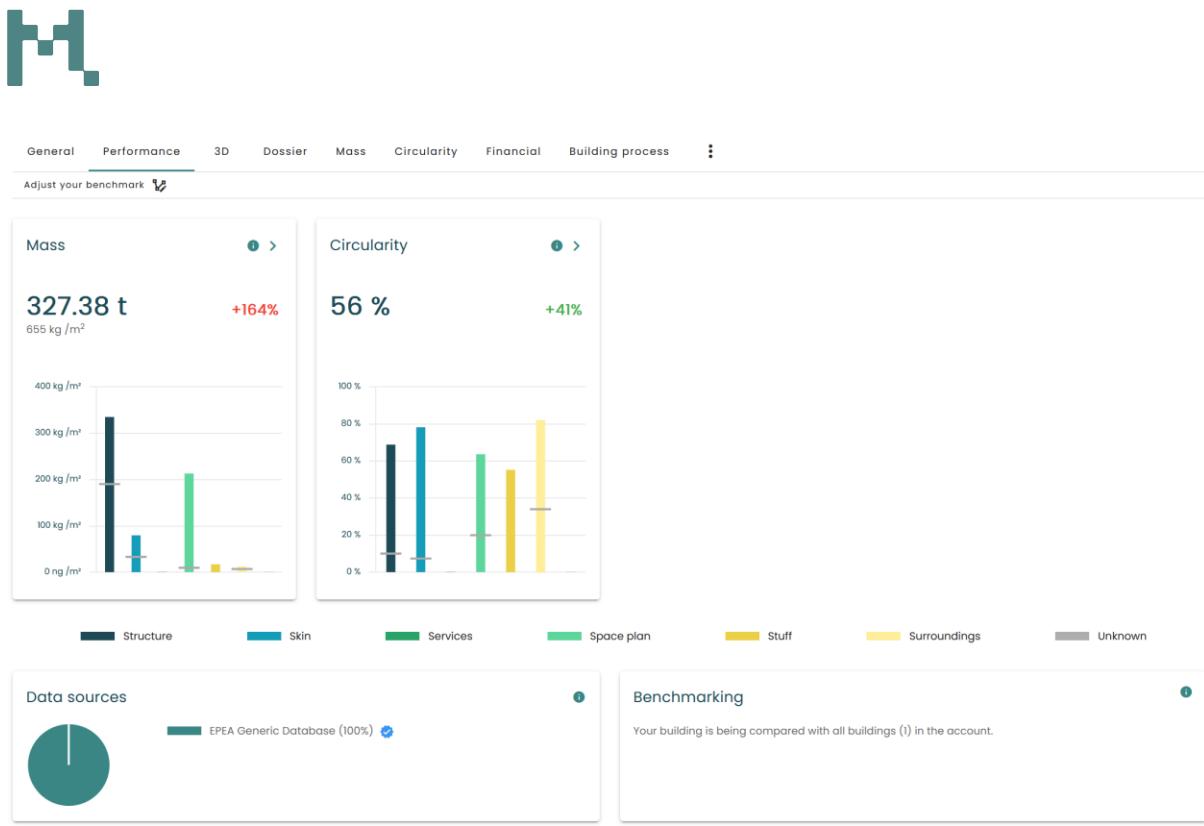


Figure 16: the embodied carbon is not shown because it is excluded in the data settings and I've chosen not to show cards for excluded data. Mass and circularity are shown

If I now allow environmental data to be shown for this building in the data settings it will change to this:

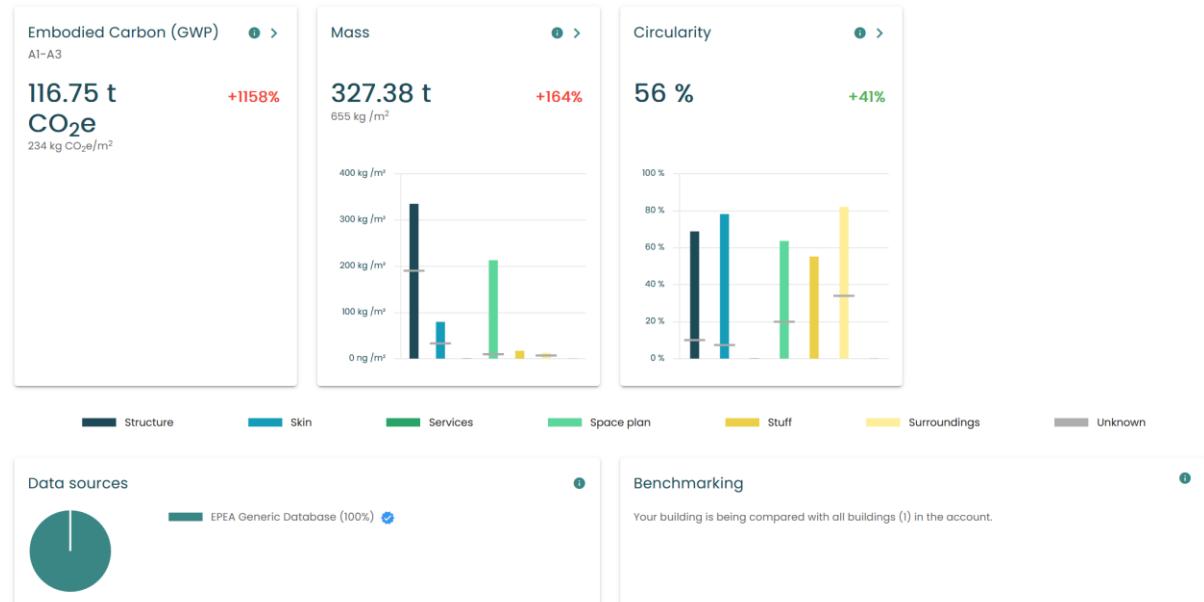


Figure 17: now the embodied carbon is shown. Since I've chosen to hide the chart for it there is no chart for it.



### 3.1.2 Other changes

#### 3.1.2.1 Changes to the general and performance tabs on accounts and folders

This release a number of changes have been made to the general and performance tab on both the account and folder level. The area map has been integrated with the KPI cards on the performance tab for a better overview of the buildings in that account or folder. Furthermore; in the general tab it is now more clear in both the icon and list views which buildings have either designs, archives or have been split. Only the 'real' objects are counted (as per last release). This means that if you have for example a building with two designs the data for those designs are not aggregated in order to prevent one single real building to be included multiple times.

##### 3.1.2.1.1 Area map integrated into the performance tab

The performance tab now has the area map integrated into it.

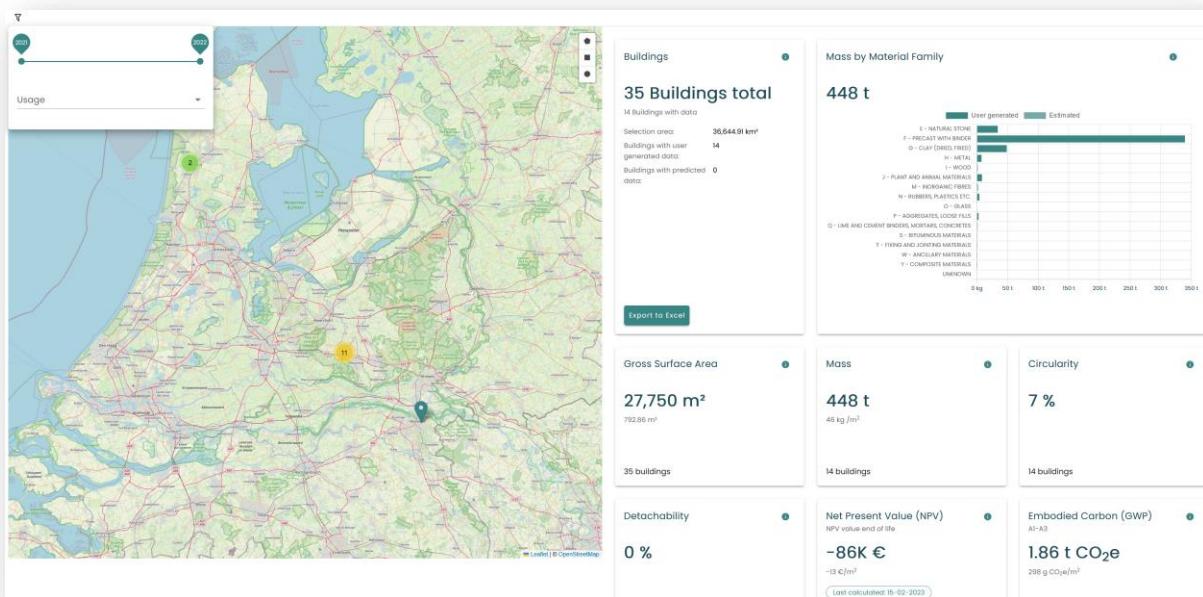


Figure 18: the performance tab with the area register



The following elements are therefore now moved from the area map to the performance tab:

- The map
- The summary card (now called 'buildings')
- The mass by material intensity card
- The filters on construction year and usage; you have to click on the filter icon in the toolbar in the top left to set these.

The selection on the map changes the scope of the calculations. To prevent the map zooming because of scrolling in the page zooming can now only be done by double clicking (which zooms in) and using the '+' and '-' icons on the map. In the cards the number of buildings which are used for the calculations is shown.

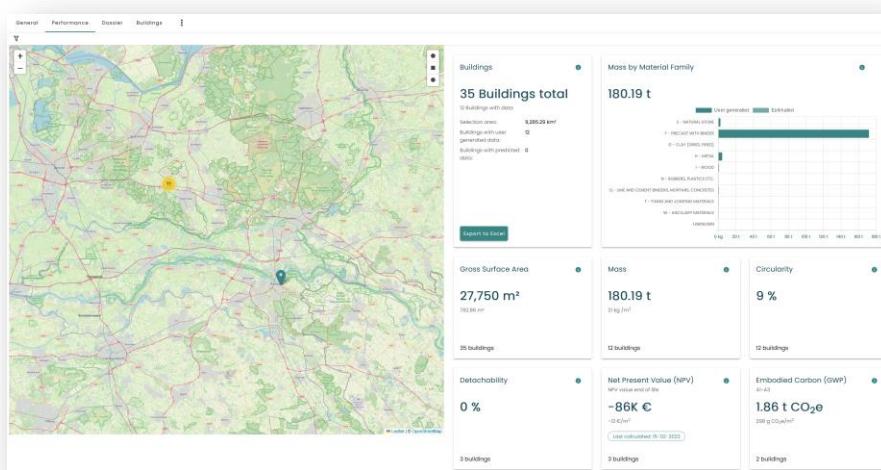


Figure 19: in this map section there are 12 buildings with data about their mass and 2 buildings with GWP data. In the buildings card it is shown that in the whole account/folder there are 35 buildings, 12 of which have data that we use in this performance tab.

Within each map segment buildings which are excluded from the calculations are:

- Designs
- Archives (unless there only is an archive)
- If a building has been split into multiple buildings all the newly split buildings are included, but the building that has been split is not



### 3.1.2.1.2 Visibility of designs, archives and split buildings

This release designs archives and split buildings have been removed as separate building cards from the general tab on accounts and folders. Icons have been added to buildings cards in the general tab of accounts and folders and in the list view for designs, archives and split buildings.

The screenshot shows two parts of the Madaster interface. On the left, a building card for 'Madaster Demo' is displayed, featuring a large image of a modern building facade and a green status bar at the bottom indicating 'Design' and 'Size x 1000m²'. On the right, a list view titled 'Buildings' is shown, displaying a table with columns for 'Type' and 'Design'. The table lists several entries, each with a building icon and a 'Design' icon next to it. A tooltip 'Design' is visible over one of the icons. The top navigation bar includes tabs for General, Performance, Dossier, Buildings, Materials & products, and other options like View, Edit, Move, New building, and New Database.

Figure 20: on the left an example of how the new icons are implemented on a building card, including the tooltip. On the right how it looks in the list view

### 3.1.2.2 Changes to enrichment and source file processing

There are new options for filtering in the enrichment screen:

- It is now possible to filter on the database:

| Search | Filter on | Element    | Mat   |
|--------|-----------|------------|-------|
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Dak-x  | ALG   |
|        |           | ... Wand-x | Dakp  |
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Wand-x | Steel |
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Wand-x | ALG   |
|        |           | ... Wand-x | Dakp  |
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Wand-x | Hout  |
|        |           | ... Wand-x | dam   |
|        |           | ... Wand-x | Grinx |



- When the mappings have failed an alert is shown. It is also possible to filter on all the mapping mismatches. This alert is triggered when the element quantity does not match with that of the product or material. So for example when the element is described in volume whilst the product/material is described in area.

| Filter on                     |     |   |               |   |     |  |
|-------------------------------|-----|---|---------------|---|-----|--|
| Element status                |     |   |               |   |     |  |
| Mapping status                |     |   |               |   |     |  |
| <input type="radio"/> Invalid | 120 | <input type="checkbox"/> ... Ceiling grille (steel) | IPE           | <input type="checkbox"/> ... Steel - Profile                    | 1/1 |  |
| <input type="radio"/> Valid   | 112 | <input type="checkbox"/> ... Ceiling grille (steel) | IPE           | <input type="checkbox"/> ... Steel - Profile                    | 1/1 |  |
| Database                      |     | <input type="checkbox"/> ... Toilet                 | unglazed tile | <input type="checkbox"/> ... Steel - Profile                    | 1/1 |  |
| Building number               |     | <input type="checkbox"/> ... Ceiling grille (steel) | IPE           | <input type="checkbox"/> ... Ceramic Tiles - Unglazed Porcelain | 1/1 |  |
|                               |     | <input type="checkbox"/> ... Toilet                 | unglazed tile | <input type="checkbox"/> ... Ceramic Tiles - Unglazed Porcelain | 1/1 |  |
|                               |     | <input type="checkbox"/> ... Toilet                 | unglazed tile | <input type="checkbox"/> ... Ceramic Tiles - Unglazed Porcelain | 1/1 |  |
|                               |     | <input type="checkbox"/> ... Ceiling grille (steel) | IPE           | <input type="checkbox"/> ... Steel - Profile                    | 1/1 |  |

- It is now possible to add a element description in the excel templates when uploading an excel as a source file

| GTIN | ArticleNumber | Madaster Id | External Database | Description | Material/Product | Class |
|------|---------------|-------------|-------------------|-------------|------------------|-------|
|      |               |             |                   |             |                  |       |
|      |               |             |                   |             |                  |       |
|      |               |             |                   |             |                  |       |
|      |               |             |                   |             |                  |       |
|      |               |             |                   |             |                  |       |
|      |               |             |                   |             |                  |       |

### 3.1.2.3 Additional phase groupings for LCA KPI's available

Two phase groupings for LCA have been added for use in the passports or on the performance and environmental tabs:

- Sum of the product and end-of-life phases: [A1-A3] + [C1-C4]
- Sum of all phases: A-D



The screenshot shows a user interface for managing material families. On the left, there's a sidebar with a tree view under 'Buildings'. In the center, there's a map-like visualization of a building's structure. A tooltip is open over the map, listing categories: A4-A5, B1-B5, C1-C4, (A1-A3)+(C1-C4), A-C, A-D, and D. At the bottom right of the tooltip are 'Cancel' and 'Restore default' buttons. Above the map, there are dropdown menus for 'Environmental' and 'Compliance'.

### 3.1.2.4 Usability changes

#### 3.1.2.4.1 Spinning wheel

After uploading a file as long as the platform is busy processing this file a spinning wheel is shown in the dossier:

| <input type="checkbox"/> | Name  | Size    | Classification method | Date exported       | Tags | Owner                | Active  |
|--------------------------|---|---------|-----------------------|---------------------|------|----------------------|---|
| <input type="checkbox"/> |  <a href="#">Office_A_20110811.ifc</a><br>20100326_1700<br>(Solibri IFC Optimizer); IFC2X3 | 3.91 MB | NL-SfB V2019I2        | 11-08-2011<br>16:18 |      | Paul Klein Lankhorst |  |
| <input type="checkbox"/> |  <a href="#">Office_A_20110811.ifc</a>   | 3.91 MB | NL-SfB                | 27-02-2023<br>09:50 |      | Paul Klein Lankhorst |  |

#### 3.1.2.4.2 Tooltips

The styling of the tooltips have been made uniform throughout the platform.

#### 3.1.2.4.3 Show that a recalculation is done when changing the lifespan of a building

When you change the lifespan of a building a recalculation is done, this is now also shown:

 Building information is being recalculated. While this process is running, no changes which affect calculations are possible on the building.



### 3.1.3 Bug fixes

The following bugs have been resolved:

- Saving an EPEA urban mining tool object would sometimes be stopped by an empty value which was unnecessary. This has been fixed.
- A number of checkbox bugs with the passports presets and generating material passports have been fixed.
- For smaller resolutions the tool bar could become too big, with buttons disappearing offscreen. This has been resolved.
- In the mass tab of a building, with the material family selected, the colors and offset of the chart could be wrong, what has been corrected.
- The building process tab would not open detailed information; this has been solved.



## 4 Build 19365

### 4.1 New or changed functionalities

#### 4.1.1 New material passport options and design

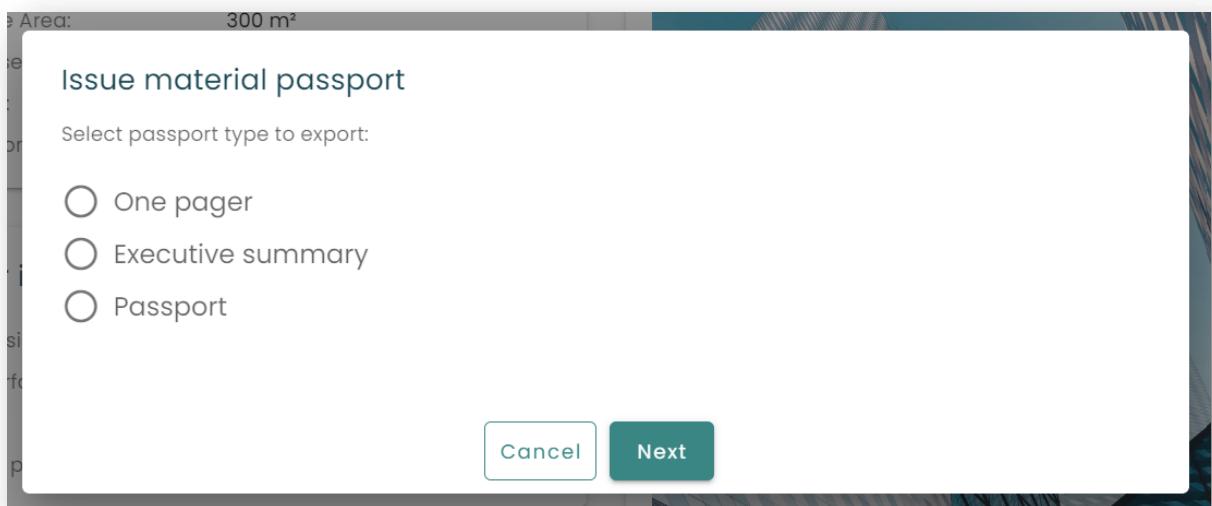
In this release, the material passports have been redesigned. They have a different look and feel as well as new options. There are different types of passports now: the one-pager, an executive summary and a (full) passport that can include a technical annex with the base data in an excel file. Apart from that it is now possible to preset what data can be included in the passport, such as the Madaster Circularity Index or any of the environmental KPI's.

##### 4.1.1.1 Issuing and generating a passport

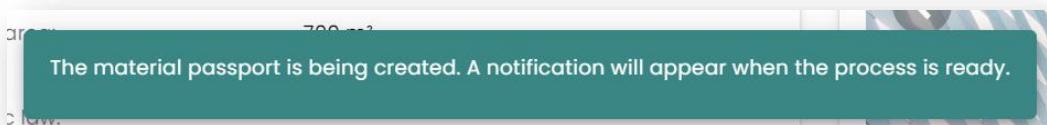
The option to generate passports from a folder has been removed; this can now only be done from the building.

The screenshot shows a top navigation bar with 'Home', 'Madaster Netherlands', 'Demo', and 'Madaster Demonstration Building'. Below this is a toolbar with several buttons: 'General' (underlined), 'Performance', '3D', 'Dossier', 'Mass', 'Circularity', 'Environmental', 'Financial', and a more icon. Underneath the toolbar are additional buttons for 'Edit building', 'Move', 'Archive the building', 'Design', 'Transfer', 'Delete', 'Upload', 'Recalculate', 'Issue material passport' (which has a red underline), and 'New Database'.

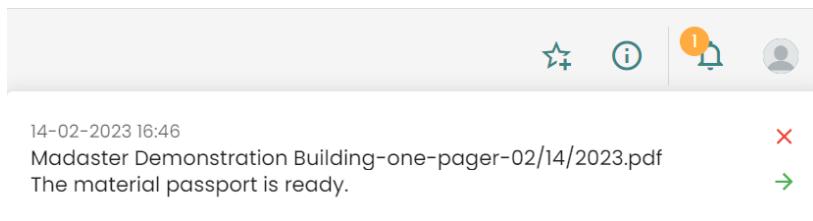
Once selected, this will open a pop-up from which it is possible to choose the type of passport to be generated for this building.



Regardless of the type, once the passport setup has been chosen a message is shown that the passport is being generated.



And as soon as it is ready a user notification is shown.



21: the notification which will appear on the top right when a passport is ready. Clicking the 'x' will remove the notification, clicking the arrow will open the dossier where the passport is located.

Which means it is available in the dossier of the building. Note that if data is unavailable for a chosen KPI or for a default field it will not appear in the passport.



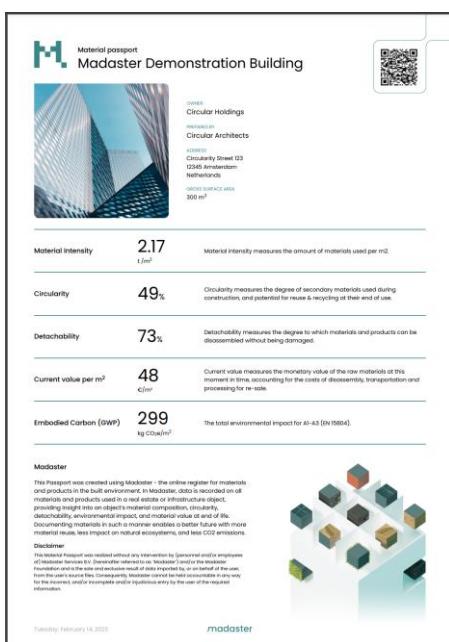
#### 4.1.1.2 One pager

The one pager passport is meant to give a concise overview of the building without too much additional insights. It can include only few items, since it needs to fit on one page. Therefore only a maximum of 5 KPI's can be included. Mass will always be included, which leaves 4 more options for configuration.

The screenshot shows the 'Issue material passport' dialog box. Under 'Select preferences', 'Mass' is checked by default. Other options like 'Circularity', 'Detachability', and 'MCI' are also checked. There are dropdown menus for 'Environmental' (Compliance EN 15804:2..., Phase A1-A3) and 'Financial' (Net Present Value (NPV), Current value). A note at the bottom states: 'On a one pager it is only possible to select a maximum of four options. (Excluding Mass)'. The language is set to English. At the bottom are 'Back' and 'OK' buttons.

22: the one pager screen with too many KPI's selected

The one pager has the following design:



23: an example of the one pager passport. Only known data is shown. Elements like the building picture or the owner are included by default, the KPI's be chosen apart from mass – which is mandatory.



### 4.1.1.3 Executive summary passport

The executive summary is meant to give a lot more information than the one pager. It does not have a set maximum for the KPI's to be included.

Issue material passport

Select preferences

Mass

Circularity

Detachability

Environmental

Environmental

Environmental

Environmental

Financial

MCI

Material Flows

Key Performance Indicator  
Embodied Carbon (GWP)

Key Performance Indicator  
Use of renewable primary energy resources used as raw ..

Key Performance Indicator  
Abiotic Depletion Non Fossil (ADPE)

Key Performance Indicator

Net Present Value (NPV)

Current value

Language  
English

Back OK

But also in general it contains more detailed information.

Material passport  
Madaster Demonstration Building

Address: Brouwersgracht 123, 1018 AE Amsterdam, Netherlands

Owner: Circular Holdings

Prepared by: Circular Architects

Published on: 01/01/2023

QR code

**Material passport**

**Madaster Demonstration Building**

**General information**

**Building**

Name: Madaster Demonstration Building

Address: Brouwersgracht 123, 1018 AE Amsterdam, Netherlands

Circular Street 123, 12345 Amsterdam, Netherlands

Delivery date: 01/01/2022

Surface area: 300 m<sup>2</sup>

Building phase: New building

Community: Conference complex/small complex > 2000 m<sup>2</sup>

**Labels**

Risk: Low

Excellent

Material LCA score: 12 eCm<sup>2</sup>/g

**Energy**

Efficiency label: A+++

**LifeSpan**

EXPECTED LIFESPAN BUILDING (YEARS): 60

EXPECTED LIFESPAN STRUCTURE (YEARS): 100

EXPECTED LIFESPAN ROOF (YEARS): 20

EXPECTED LIFESPAN SERVICES (YEARS): 15

EXPECTED LIFESPAN SPACE (IN) (YEARS): 10

EXPECTED LIFESPAN STUFF (YEARS): 5

EXPECTED LIFESPAN SURROUNDINGS (YEARS): 20

**Cadaster information**

CADASTER INFORMATION: Amsterdam 1234

GENERAL SURFACE AREA: 700 m<sup>2</sup>

LOT NUMBER: 1234

Tuesday, February 14, 2023 madaster

Tuesday, February 14, 2023 madaster

page 2 of 3

24: In the executive summary a lot more general information from the building is shown - if available



## Material passport Madaster Demonstration Building Source Information

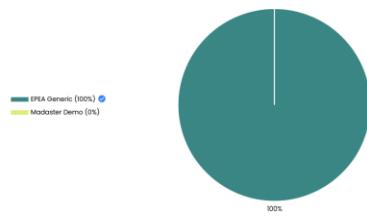
### Sources

When generating a building file, to capture the material presence, it is very important to have a unique identifier of the objects in the report. This identifier must be assigned a material property, as well as a classification code. Madaster does not calculate quantities or geometric information and all quantities are imported directly from the IFC model. On the Madaster platform, there is no way to import geometry from other sources. If geometry is missing, it cannot be imported and therefore made within these frameworks. Consequently, any missing and/or incomplete and/or incorrect information in the source files immediately results in inaccurate results. Therefore, Madaster cannot warrant the quality of these results. As a secondary source of information, a Microsoft Excel file (based on a Madaster Excel template) can be imported containing geometric information about the building. Information on the building parts and/or components/materials, as well as classification codes.

### Active Source files

| Name                          | Classification method | Date exported |
|-------------------------------|-----------------------|---------------|
| 20279 DMG - Instalaties.dfc   | Omniclass             | 8/1/2022      |
| 20279 DMG - Bouwkenmerken.dfc | Omniclass             | 8/1/2022      |
| 20279 DMG - Interieur.dfc     | Omniclass             | 8/1/2022      |
| 20279 DMG - Constructie.dfc   | M-98                  | 8/1/2022      |

### Applied Material and Product Databases



### Completeness of Source Information

|                          |                                    |   |
|--------------------------|------------------------------------|---|
| 0 (0%) Elements unlinked | 0 (0%) Elements with unknown layer | 762 (23.2%) Elements with insufficient geometry |
|--------------------------|------------------------------------|---|

Tuesday, February 14, 2023

madaster

page 3 of 11

## Material passport Madaster Demonstration Building Mass

Total mass and mass/m<sup>2</sup> demonstrate the quantity and intensity of materials temporarily stored within the building. While mass cannot be eliminated, the goal is to use less materials to achieve the same goal.

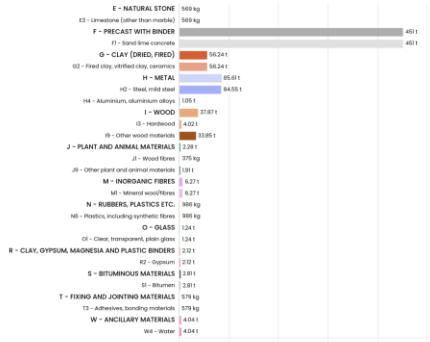
651.61 t

### Construction Materials

2.17 t/m<sup>2</sup>

The building is comprised of material subfamilies, grouped into the following material families.

### Material families



Tuesday, February 14, 2023

madaster

page 4 of 11

25: Source information like the classification method for the source files or the used databases is summarized. Each KPI, in this case the mass, is provided with insightful charts.

### 4.1.1.4 Full passport and the technical annex

The (full) passport is the most extensive passport option. It shows a lot more of the underlying data and it also has the option to include a technical annex, which is a separate excel export of the products and/or materials per shearing layer.

26: the configuration options for the full passport. It is possible to exclude the explanation about a material passport and to also generate the technical annex. Scarcity is also an additional option for the full passport, but is only available together with material flows.

An example is the mass, where it is clear from the screenshot from an example passport that it contains more detailed information about what it is and where it is located.



## Material passport Madaster Demonstration Building

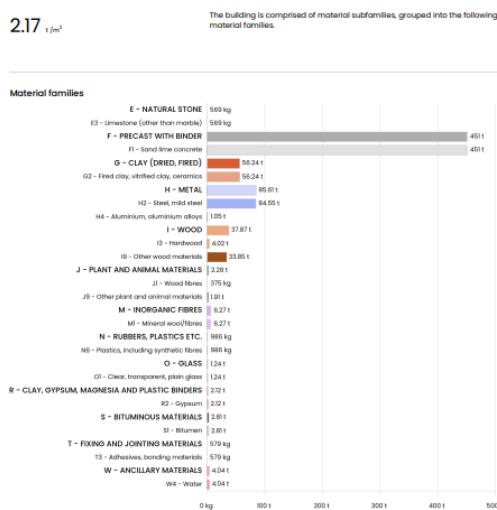
### Mass

Total mass and mass/m<sup>2</sup> demonstrates the quantity and intensity of materials temporarily stored within the building. While mass cannot be eliminated, the goal is to use less materials to achieve the same goal.

**651.61**

#### Construction Materials

The building is comprised of material subfamilies, grouped into the following material families.



Tuesday, February 14, 2023

madaster

page 7 of 14

## Material passport Madaster Demonstration Building

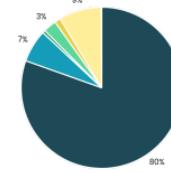
### Mass by Shearing Layer

#### Shearing Layers

Madaster uses the "Shearing Layers" model [Duffy, Brand, 1994] to divide a building into 6 layers: Site, Structure, Skin, Services, Space Plan, and Stuff.

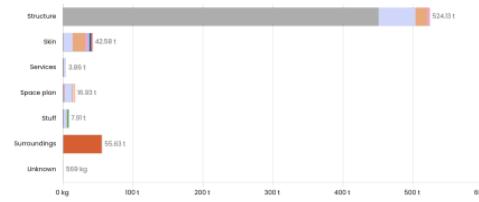
#### Material families

The 3283 unique materials comprising the building have been grouped into 29 material families.



■ Structure ■ Skin ■ Services ■ Space plan ■ Stuff ■ Surroundings ■ Unknown

#### Layer Composition



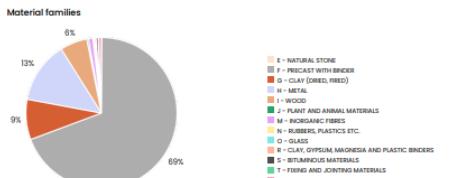
Tuesday, February 14, 2023

madaster

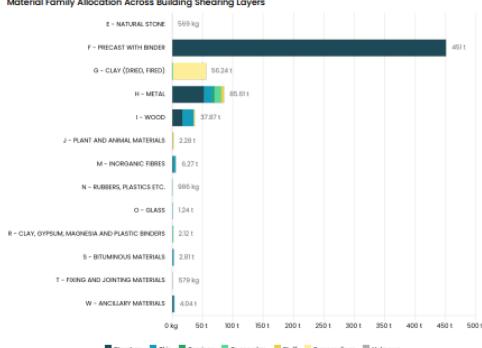
page 8 of 14

## Material passport Madaster Demonstration Building

### Mass by Material Families



#### Material Family Allocation Across Building Shearing Layers



Tuesday, February 14, 2023

madaster

page 9 of 14

## Material passport Madaster Demonstration Building

### Mass details

| Material family                                | Total     | Structure | Skin | Services | Space plan | Stuff | Surroundings | Unknown |
|--|-----------|-----------|------|----------|------------|-------|--------------|---------|
| E - NATURAL STONE                              | 0.76 kg   | 0 kg      | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0.76 kg |
| E3 - limestone (other than marble)             | 0.76 kg   | 0 kg      | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0.76 kg |
| F - PRECAST WITH BINDER                        | 451 kg    | 451 kg    | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| F1 - Sand lime concrete                        | 451 kg    | 451 kg    | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| G - CLAY (DRIED, FIRED)                        | 56.241 kg | 56.241 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| G2 - Fired clay, vitrified clay, ceramics      | 56.241 kg | 56.241 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| H - METAL                                      | 65.611 kg | 65.611 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| H2 - Steel, mild steel                         | 65.611 kg | 65.611 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| H3 - Aluminium, aluminium alloys               | 0.76 kg   | 0.76 kg   | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| I - WOOD                                       | 37.871 kg | 37.871 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| I1 - Hardwood                                  | 37.871 kg | 37.871 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| I2 - Softwood                                  | 4.021 kg  | 4.021 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| I3 - Other wood materials                      | 33.851 kg | 33.851 kg | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| J - PLANT AND ANIMAL MATERIALS                 | 2.281 kg  | 2.281 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| J1 - Wood fibres                               | 2.281 kg  | 2.281 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| J2 - Other plant and animal materials          | 0.76 kg   | 0.76 kg   | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| M - INORGANIC FIBRES                           | 0.271 kg  | 0.271 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| M1 - Mineral wool/fibres                       | 0.271 kg  | 0.271 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| N - RUBBERS, PLASTICS ETC.                     | 988 kg    | 988 kg    | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| N1 - Plastics, including synthetic fibres      | 988 kg    | 988 kg    | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| O - GLASS                                      | 1241 kg   | 1241 kg   | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| O1 - Clear, transparent, plain glass           | 1241 kg   | 1241 kg   | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| R - CLAY, GYPSUM, MAGNESIA AND PLASTIC BINDERS | 2.021 kg  | 2.021 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| R1 - Gypsum                                    | 2.021 kg  | 2.021 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| S - BITUMINOUS MATERIALS                       | 2.811 kg  | 2.811 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |
| S1 - Bitumen                                   | 2.811 kg  | 2.811 kg  | 0 kg | 0 kg     | 0 kg       | 0 kg  | 0 kg         | 0 kg    |

Tuesday, February 14, 2023

madaster

page 10 of 14



Another KPI, circularity, in the full passport contains not just the MCI, but also information about how it is calculated, as well as circularity by either shearing layer or phase.

**Material passport**  
**Madaster Demonstration Building**  
**Madaster Circularity Indicator (MCI)**

Circularity measures the degree of secondary materials used during construction, and potential for reuse & recycling at their end of use.

**Madaster Circularity Indicator (MCI)**

The Madaster Circularity Indicator (MCI) assesses the total circularity of a building based on three phases: 1) Input in the construction process, 2) the utility during the use phase, and 3) the destination of the materials at the end-of-life phase. A building with a high score is constructed with reused and recycled materials and has a higher-than-average utility. A fully circular building has a score of 100%. The MCI is based on the Material Circularity Indicator that has been developed by the Ellen MacArthur Foundation. All rights reserved.

**MCI Calculation Components**

**MCI by Shearing Layer**

|   | Structure | Skin | Services | Space plan | Stuff | Surroundings | Unknown |
|---|-----------|------|----------|------------|-------|--------------|---------|
| Madaster Circularity Indicator (MCI) Score                        | 58%       | 88%  | 47%      | 77%        | 52%   | 64%          | 46%     |
| CI building score   | 58%       | 88%  | 95%      | 53%        | 67%   | 94%          | 46%     |
| Score Subcomponents   |           |      |          |            |       |              |         |
| Circularity Construction Phase<br>Secondary materials (goal 100%) | 9%        | 34%  | 77%      | 80%        | 53%   | 3%           | 0%      |
| Circularity Use Phase<br>Utility (goal >100%)                     | 97%       | 304% | 334%     | 532%       | 777%  | 742%         | 83%     |
| Circularity End of Life Phase<br>Recoverable content (goal 100%)  | 99%       | 82%  | 93%      | 72%        | 58%   | 99%          | 100%    |

**Material passport**  
**Madaster Demonstration Building**  
**Circularity Construction Phase**

|   | Structure | Skin    | Services | Space plan | Stuff  | Surroundings | Unknown |
|---|-----------|---------|----------|------------|--------|--------------|---------|
| Secondary materials (goal 100%)   | 9%        | 34%     | 77%      | 80%        | 53%    | 3%           | 0%      |
| Mass of product (t)   | 47.02 t   | 14.31 t | 2.98 t   | 10.12 t    | 4.18 t | 1.62 t       | 0 kg    |
| Mass Composition  |           |         |          |            |        |              |         |
| Applied recycled materials (% of mass)  | 0%        | 34%     | 77%      | 80%        | 53%    | 3%           | 0%      |
| Applied rapidly renewable material (% of mass)                                | 0 kg      | 0 kg    | 0 kg     | 0 kg       | 0 kg   | 0 kg         | 0 kg    |
| Applied reused components (% of mass)   | 0%        | 0%      | 0%       | 0%         | 0%     | 0%           | 0%      |
| Recycling   |           |         |          |            |        |              |         |
| Efficiency of recycling process for construction phase (%)                    | 100%      | 100%    | 100%     | 100%       | 100%   | 100%         | 0%      |
| Mass of waste generated during recycling process (t)                          | 0 kg      | 0 kg    | 0 kg     | 0 kg       | 0 kg   | 0 kg         | 0 kg    |
| Circularity Use Phase   |           |         |          |            |        |              |         |
|   | Structure | Skin    | Services | Space plan | Stuff  | Surroundings | Unknown |
| Utility (goal >100%)  | 97%       | 304%    | 334%     | 532%       | 777%   | 742%         | 83%     |
| Actual average lifetime of materials (years)                                  | 97        | 61      | 50       | 53         | 39     | 148          | 50      |
| Actual industry-average lifetime of materials (years)                         | 100       | 20      | 15       | 10         | 5      | 20           | 60      |
| Circularity End-Of-Life Phase   |           |         |          |            |        |              |         |
|   | Structure | Skin    | Services | Space plan | Stuff  | Surroundings | Unknown |
| Recoverable content (goal 100%)   | 99%       | 82%     | 93%      | 72%        | 58%    | 99%          | 100%    |
| Mass of product (t)   | 524.13 t  | 42.58 t | 3.86 t   | 16.93 t    | 7.91 t | 55.63 t      | 569 kg  |
| Mass Composition  |           |         |          |            |        |              |         |
| Materials for recycling which are going to be collected (% of mass)           | 99%       | 34.21%  | 3.57%    | 12.24%     | 4.59%  | 99%          | 100%    |
| Components for reuse which are going to be collected (% of mass)              | 0%        | 0%      | 0%       | 0%         | 0%     | 0%           | 0%      |
| Mass of potential landfill & energy incineration (t)                          | 3 t       | 7.86 t  | 286 kg   | 4.69 t     | 3.36 t | 548 kg       | 0 kg    |
| Recycling   |           |         |          |            |        |              |         |
| Efficiency of recycling process for end of life phase (%)                     | 100%      | 100%    | 100%     | 100%       | 100%   | 100%         | 0%      |
| Mass of potential landfill & energy incineration of the recycling process (t) | 0 kg      | 0 kg    | 0 kg     | 0 kg       | 0 kg   | 0 kg         | 0 kg    |

Tuesday, February 14, 2023

madaster

page 13 of 28

Tuesday, February 14, 2023

madaster

page 14 of 28

When one has opted for also generating the technical annex a separate excel file will be placed in the dossier of the building. This annex will be filled with the materials or products divided in separate sheets for each shearing layer. The columns for each product/material are dependent on which KPI's have been chosen for the passport.

Madaster release notes  
2023

page 58 of 79



| Classification Level 1 | A                             | Classification Level 2          | B  | Classification Level 3 | C | D    | Materiel/Product                              | E   | AA              | AB                                   | AC                      | AD | Embodied Carbon (tCO2e) | Use of non renewable primary en<br>ergy (tCO2e) |
|------------------------|-------------------------------|---------------------------------|--|------------------------|---|------|---|-----|-----------------|--------------------------------------|-------------------------|----|-------------------------|---|
|                        |                               |                                 |  |                        |   |      |   |     | Insulation (kg) | Madaster Circularity Indicator (MCI) | Detachability Indicator |    | tCO2e                   | kg CO2e   |
| 1                      | 21-01-00 Substructure         | 21-01-10 Foundations            | 21-01-10 Standard Foundations  |                        |   | TRUE | Oak wood                                      | 0   | 0               | 0%                                   | 0%                      | 0% | 21.8011949              |   |
| 2                      | 2- STRUCTURE PRIMARY ELEMENTS | 28 Building frames              | 28.1 hoofdraagconstructie; kolommen en liggers                       |                        |   | TRUE | Steel - Profile                               | 121 | 846             | 72%                                  | 2311.62045              |    |                         |   |
| 3                      | 2- STRUCTURE PRIMARY ELEMENTS | 21 External walls               | 21.22 buitenwanden; constructief; spouwanden                         |                        |   | TRUE | Porous Concrete                               | 0   | 0               | 24%                                  | 0%                      | 0% | 790.010454              |   |
| 4                      | 2- STRUCTURE PRIMARY ELEMENTS | 23 Floors                       | 23.20 vloeren; constructief; algemeen                                |                        |   | TRUE | Mineral wool [pitched roof insulation]        | 480 | 0               | 0%                                   | 0%                      | 0% | 2194.15642              |   |
| 5                      | 2- STRUCTURE PRIMARY ELEMENTS | 23 Floors                       | 23.21 vloeren; constructief; verhoogde vloeren                       |                        |   | TRUE | Reinforced concrete C25/30 (2% Reinforcement) | 0   | 0               | 57%                                  | 0%                      | 0% | 2009.57325              |   |
| 6                      | 1- GROUND, SUBSTRUCTURE       | 16 Retaining walls, foundations | 16.0 funderingsconstructies; algemeen                                |                        |   | TRUE | Reinforced concrete C25/30 (2% Reinforcement) | 0   | 0               | 57%                                  | 0%                      | 0% | 1398.4803               |   |
| 7                      | 2- STRUCTURE PRIMARY ELEMENTS | 28 Building frames              | 28.11 hoofdraagconstructies; kolommen en liggers /tijgerconstructies |                        |   | TRUE | Reinforced concrete C25/30 (2% Reinforcement) | 0   | 0               | 57%                                  | 0%                      | 0% | 2144.106731             |   |
| 8                      | 2- STRUCTURE PRIMARY ELEMENTS | 21 External walls               | 21.21 buitenwanden; constructief; massive wanden                     |                        |   | TRUE | Reinforced Laminate Timber                    | 484 | 0               | 43%                                  | 0%                      | 0% | 2139.65905              |   |
| 9                      | 1- GROUND, SUBSTRUCTURE       | 37 Pile foundations             | 28.11 hoofdraagconstructies; kolommen en liggers /tijgerconstructies |                        |   | TRUE | Reinforced Concrete C25/30 (2% Reinforcement) | 0   | 0               | 57%                                  | 0%                      | 0% | 2147.361557             |   |
| 10                     |                               |                                 |  |                        |   |      |   |     |                 |                                      |                         |    |                         |   |
| 11                     |                               |                                 |  |                        |   |      |   |     |                 |                                      |                         |    |                         |   |
| 12                     |                               |                                 |  |                        |   |      |   |     |                 |                                      |                         |    |                         |   |

| Classification Level 1 | A                             | Classification Level 2          | B  | Classification Level 3 | C | D    | Materiel/Product                              | E   | F           | G       | H       | I      | J | K | L | M           | N      | O                                    | P  |
|------------------------|-------------------------------|---------------------------------|--|------------------------|---|------|---|-----|-------------|---------|---------|--------|---|---|---|-------------|--------|--------------------------------------|----|
|                        |                               |                                 |  |                        |   |      |   |     | Weight (kg) | U       | V       | W      | X | Y | Z | Volume (m³) | Amount | Madaster Circularity Indicator (MCI) |    |
| 1                      | 21-01-00 Substructure         | 21-01-10 Foundations            | 21-01-10 Standard Foundations  |                        |   | TRUE | Oak wood                                      | 0   | 18          | 22.437  | 22.437  | 0      | 0 | 0 | 0 | 0,024       | 5      | 0%                                   | 0% |
| 2                      | 2- STRUCTURE PRIMARY ELEMENTS | 28 Building frames              | 28.1 hoofdraagconstructie; kolommen en liggers                       |                        |   | TRUE | Steel - Profile                               | 121 | 846         | 2,858   | 169     | 84%    |   |   |   |             |        |                                      |    |
| 3                      | 2- STRUCTURE PRIMARY ELEMENTS | 21 External walls               | 21.22 buitenwanden; constructief; spouwanden                         |                        |   | TRUE | Porous Concrete                               | 0   | 0           | 1,646   | 1,646   | 0      | 0 | 0 | 0 | 0,023       | 10     | 24%                                  |    |
| 4                      | 2- STRUCTURE PRIMARY ELEMENTS | 23 Floors                       | 23.20 vloeren; constructief; algemeen                                |                        |   | TRUE | Mineral wool [pitched roof insulation]        | 480 | 0           | 1,480   | 1,480   | 0      | 0 | 0 | 0 | 49,324      | 1      | 0%                                   |    |
| 5                      | 2- STRUCTURE PRIMARY ELEMENTS | 23 Floors                       | 23.21 vloeren; constructief; verhoogde vloeren                       |                        |   | TRUE | Reinforced concrete C25/30 (2% Reinforcement) | 0   | 0           | 342.458 | 321.029 | 21.429 | 0 | 0 | 0 | 136,492     | 2      | 57%                                  |    |
| 6                      | 1- GROUND, SUBSTRUCTURE       | 16 Retaining walls, foundations | 16.0 funderingsconstructies; algemeen                                |                        |   | TRUE | Reinforced concrete C25/30 (2% Reinforcement) | 0   | 0           | 116.500 | 100.512 | 7.735  | 0 | 0 | 0 | 46,561      | 17     | 24%                                  |    |
| 7                      | 2- STRUCTURE PRIMARY ELEMENTS | 28 Building frames              | 28.11 hoofdraagconstructies; kolommen en liggers /tijgerconstructies |                        |   | TRUE | Reinforced Concrete C25/30 (2% Reinforcement) | 0   | 0           | 2,827   | 1,998   | 133    | 0 | 0 | 0 | 0,081       | 2      | 57%                                  |    |
| 8                      |                               |                                 |  |                        |   |      |   |     |             |         |         |        |   |   |   |             |        |                                      |    |
| 9                      |                               |                                 |  |                        |   |      |   |     |             |         |         |        |   |   |   |             |        |                                      |    |
| 10                     |                               |                                 |  |                        |   |      |   |     |             |         |         |        |   |   |   |             |        |                                      |    |
| 11                     |                               |                                 |  |                        |   |      |   |     |             |         |         |        |   |   |   |             |        |                                      |    |
| 12                     |                               |                                 |  |                        |   |      |   |     |             |         |         |        |   |   |   |             |        |                                      |    |

28: two different excel annexes from the same building with differently chosen KPI's

#### 4.1.1.5 Passport presets

Since it is now possible to select the data you want to include in the passport, functionality has been added to preset your own default KPI's. This can only be done by the Madaster administrator. The presets are available on account, folder and building level. Normally only the presets at the account level are available, but it is possible to break this inheritance in case the presets at a lower level should be different.

- ⋮ ⋮
- Presets for upload
- Presets for passports
- Folder types
- Features

29: presets for passports can be picked at the three vertical dots on accounts, folders or buildings

In this screen it is possible to add a new preset

| General  | Performance       | Area register | Dossier | Users | Subscription | Materials & products | ⋮ |
|--|-------------------|---------------|---------|-------|--------------|----------------------|---|
| Presets for passports <span style="color: red;">⊕</span> |                   |               |         |       |              |                      |   |
| Presets for passports                                    |                   |               |         |       |              |                      |   |
| Name   | Type              |               |         |       |              |                      |   |
|  | No data available |               |         |       |              |                      |   |



Once clicked a new popup will open where it is possible to define this new preset. All the options for the KPI's you have on the regular passport screen can be filled in here as well as a name for your preset and of course for which passport type it is.

Presets for passports

Name\*  
One pager Madaster

Type\*  
One pager

Select preferences

Mass

Circularity  MCI

Detachability

Environmental      
 Financial  Net Present Value (NPV)  Current value

This new preset will then be an option when you generate a new passport of that type

Issue material passport

One pager Madaster  
Default

Select preferences

Mass

Circularity  MCI

Detachability

Environmental      
 Financial  Net Present Value (NPV)  Current value

Language  
English

*30: Options at the top of the screen for generating a passport. "Default" is the default from the Madaster platform.*

Now, to have different presets on for example the building level it is possible to break the inheritance



General Performance 3D Dossier Mass Circularity Environmental Financial :  
Break inheritance

Presets for passports

| Name               | Type      |
|--------------------|-----------|
| One pager Madaster | One pager |

Rows per page: 10 1-1 of 1 < >

This will make a copy of the current presets, but they can be edited or deleted

Presets for passports

| Name               | Type      |
|--------------------|-----------|
| One pager Madaster | One pager |

It is also possible to restore the inheritance. This will, however, delete the presets on this level.

Presets for passports Restore inheritance from parent level.

Presets for passports

| Name               | Type      |
|--------------------|-----------|
| One pager Madaster | One pager |

#### 4.1.1.6 Generate passport options when splitting, transferring or archiving

It is possible to generate a passport when splitting, transferring or archiving buildings



## Split the building

Prefix for building name (Will be concatenated with Building Number) \*

Split test

Choose building numbers \*

Choose passport types to generate

One pager

Executive summary

Passport

Language

English

[Cancel](#)

[Split](#)



## 4.1.2 Other changes

### 4.1.2.1 New feature: 3D insights on circularity and environmental tabs of a building

A new feature has been added to the platform, which when bought will give 3D insights on circularity and environmental information of the materials/products of a building.

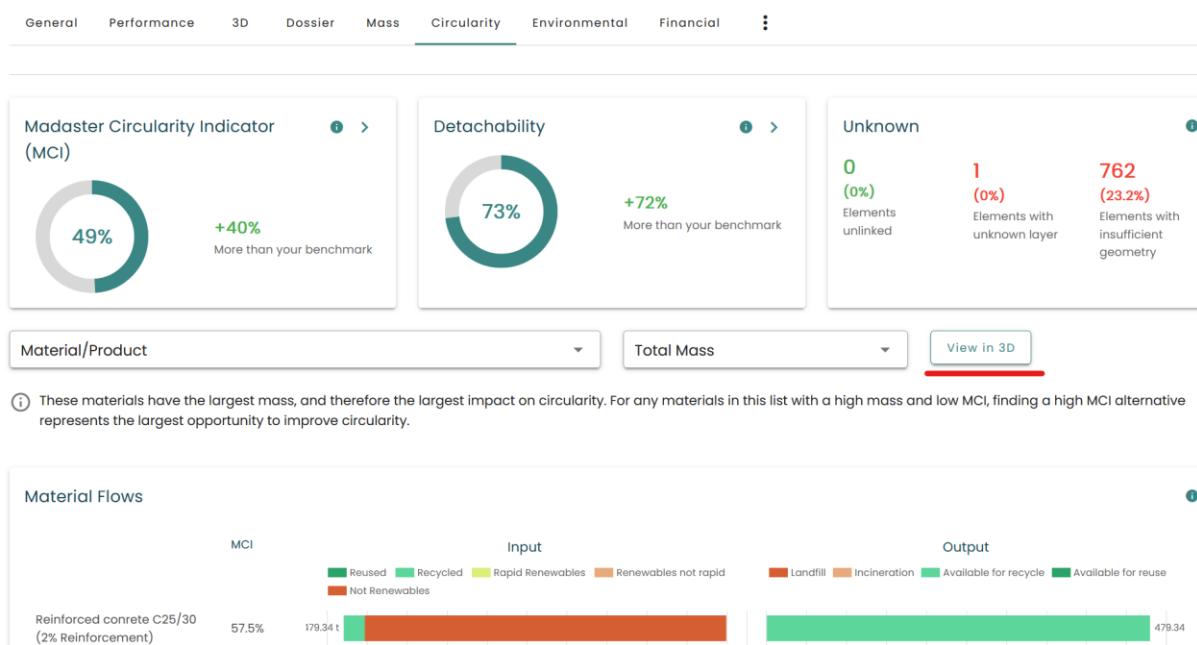


Figure 31: in the circularity and environmental tabs it is now possible to view the materials/products in the 3D model by using this button



Material/Product      Total Mass      View Graph

These materials have the largest mass, and therefore the largest impact on circularity. For any materials in this list with a high mass and low MCI, finding a high MCI alternative represents the largest opportunity to improve circularity.

| <input checked="" type="checkbox"/> | Name  | Mass     | Madaster Circularity Indicator (MCI) Score |
|-------------------------------------|---|----------|--|
| <input checked="" type="checkbox"/> | Reinforced concrete C25/30 (2% Reinforcement) | 479.34 t | <span style="color: yellow;">57.48%</span> |
| <input checked="" type="checkbox"/> | Facing bricks / Clinkers (NL)                 | 54.76 t  | <span style="color: green;">94.12%</span>  |
| <input checked="" type="checkbox"/> | Steel - Profile                               | 54.56 t  | <span style="color: green;">92.15%</span>  |
| <input checked="" type="checkbox"/> | Glued Laminated Timber                        | 36.76 t  | <span style="color: yellow;">64.59%</span> |
| <input checked="" type="checkbox"/> | Mineral wool (pitched roof insulation)        | 5.51 t   | <span style="color: yellow;">54.72%</span> |
| <input checked="" type="checkbox"/> | Bituminous sheeting                           | 2.81 t   | <span style="color: yellow;">40%</span>    |
| <input checked="" type="checkbox"/> | Beech wood                                    | 2.79 t   | <span style="color: green;">82%</span>     |
| <input checked="" type="checkbox"/> | Gypsum Fibre Plate                            | 2.5 t    | <span style="color: green;">82%</span>     |
| <input checked="" type="checkbox"/> | Cotton sheet                                  | 1.91 t   | <span style="color: yellow;">55%</span>    |
| <input checked="" type="checkbox"/> | Plywood Board                                 | 1.72 t   | <span style="color: green;">82%</span>     |

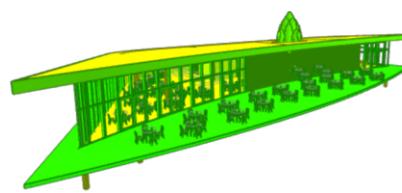
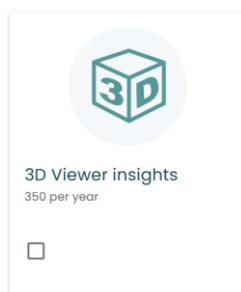


Figure 32: when using the 3D button the graph will change to the 3D model where it is also possible to select certain materials or products. With the view graph button it will switch back to the graph.

The 3D insights can be bought from the subscription tab on the account.

Choose Features



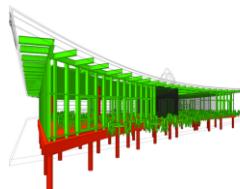
When the feature is not active a preview is shown when clicking the 'view in 3D button' in the circularity or environmental tabs.

Material/Product      Total Mass      View Graph

These materials have the largest mass, and therefore the largest impact on circularity. For any materials in this list with a high mass and low MCI, finding a high MCI alternative represents the largest opportunity to improve circularity.

| <input checked="" type="checkbox"/> | Name               | Mass      | Madaster Circularity Indicator (MCI) Score |
|-------------------------------------|--------------------|-----------|--|
| <input checked="" type="checkbox"/> | Zykkonite          | 278.36 t  | <span style="color: red;">0%</span>        |
| <input checked="" type="checkbox"/> | Plaster board      | 47.56 t   | <span style="color: red;">0%</span>        |
| <input checked="" type="checkbox"/> | Plywood Board      | 14.18 t   | <span style="color: orange;">32.5%</span>  |
| <input checked="" type="checkbox"/> | Cabinet of Wonders | 256 kg    | <span style="color: green;">73%</span>     |
| <input checked="" type="checkbox"/> | Buffalo Bill oM    | 190.71 kg | <span style="color: red;">0%</span>        |

Interested in 3D insights?  
Buy the '3D viewer' feature to enable this functionality.  
Subscription



#### 4.1.2.2 Designs, archived and split buildings in the performance tab and area register

For the calculations on the performance tab on folder, account level or in the area register, and also for which buildings are shown in the area register a number of objects are excluded:



- Designs of buildings
- Archives of buildings
- If a building is split: the original

The screenshot shows the Madaster software interface. On the left, there is a sidebar with a tree view of projects. Under 'Madaster test Portfolio', there are three items: 'Nieuw ontwerp dorpsstraat 1 -', 'New design dorpsstraat 1 -', and 'Alternatief ontwerp dorpsstraat 1 -'. Below this, under 'Split test', there are two items: 'Split test - 17' and 'Split test - 18'. The main area has tabs at the top: 'General', 'Performance' (which is selected), 'Area register', and 'D'. The 'Performance' tab displays a box for 'Buildings' with the number '3' and another box for 'Detachability'.

33: Two buildings, one of them is split, results in 3 buildings in the performance tab and for calculations and in the area register.

#### 4.1.2.3 Changes to benchmarking on the performance tab of a design or archive

It is now possible to change your benchmark settings in the performance tab on a design or archived building to compare it with other specific buildings, for example other designs:

The screenshot shows the 'Internal benchmarks' settings in the Madaster software. It includes a 'Settings' section where you can choose to benchmark against 'None', 'Account', 'Folder', or 'Building'. Below that is a 'Select the individual buildings for benchmark' section with a 'Filter to benchmark against specific building types' button. A list of buildings is shown, with 'Dorpsstraat 1' checked. Other buildings listed are 'Alternatief ontwerp dorpsstraat 1 -' and 'New design dorpsstraat 1 -'.

This selection is visible on the performance tab itself



## Benchmarking



Your building is being benchmarked against the following 1 buildings:

Dorpsstraat 1

### 4.1.2.4 Changes to the calculations for LCA stage B4 (use stage: replacement)

The lifespan of a product connected to a building is now taken into account in relation to the lifespan of the whole building. This means that if a product is expected to be replaced four times during the lifespan of the building this is taken into account for the calculations in the replacement use stage.

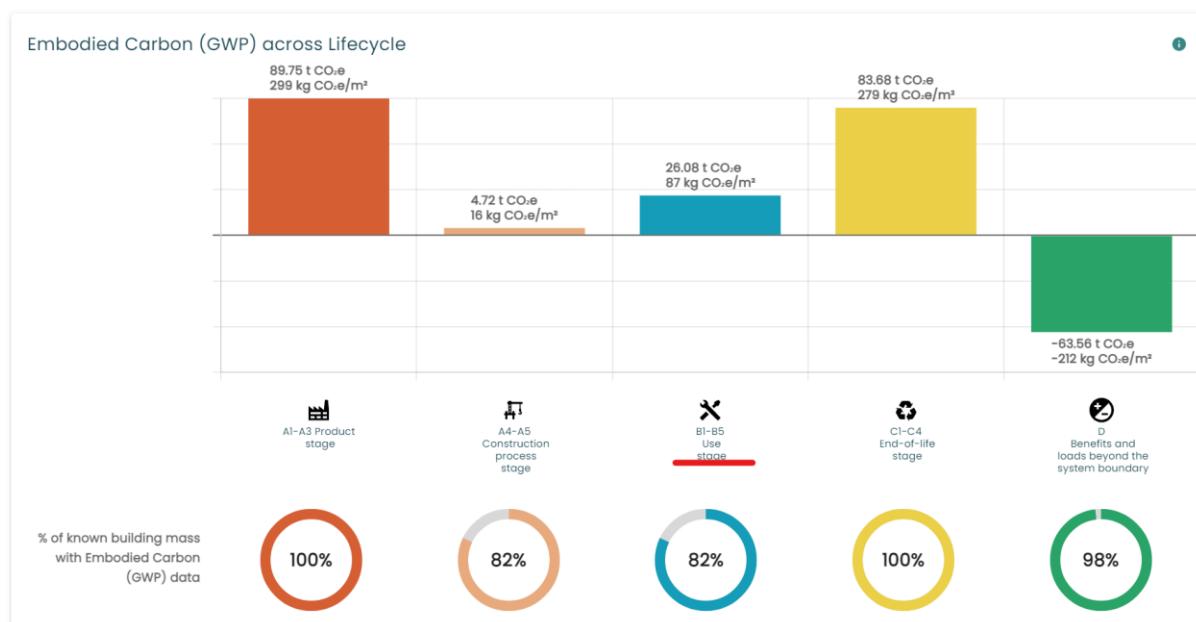


Figure 34: a building with an expected lifespan of 60 years



Embodied Carbon (GWP) across Lifecycle



Figure 35: the same building as in figure 12; but now with an expected lifespan of 120 years

#### 4.1.2.5 Additional information at the MCI detail view

When clicking on the MCI details two new columns have been added:

- The penalty for unknown materials
- Madaster Circularity Indicator (MCI) Score

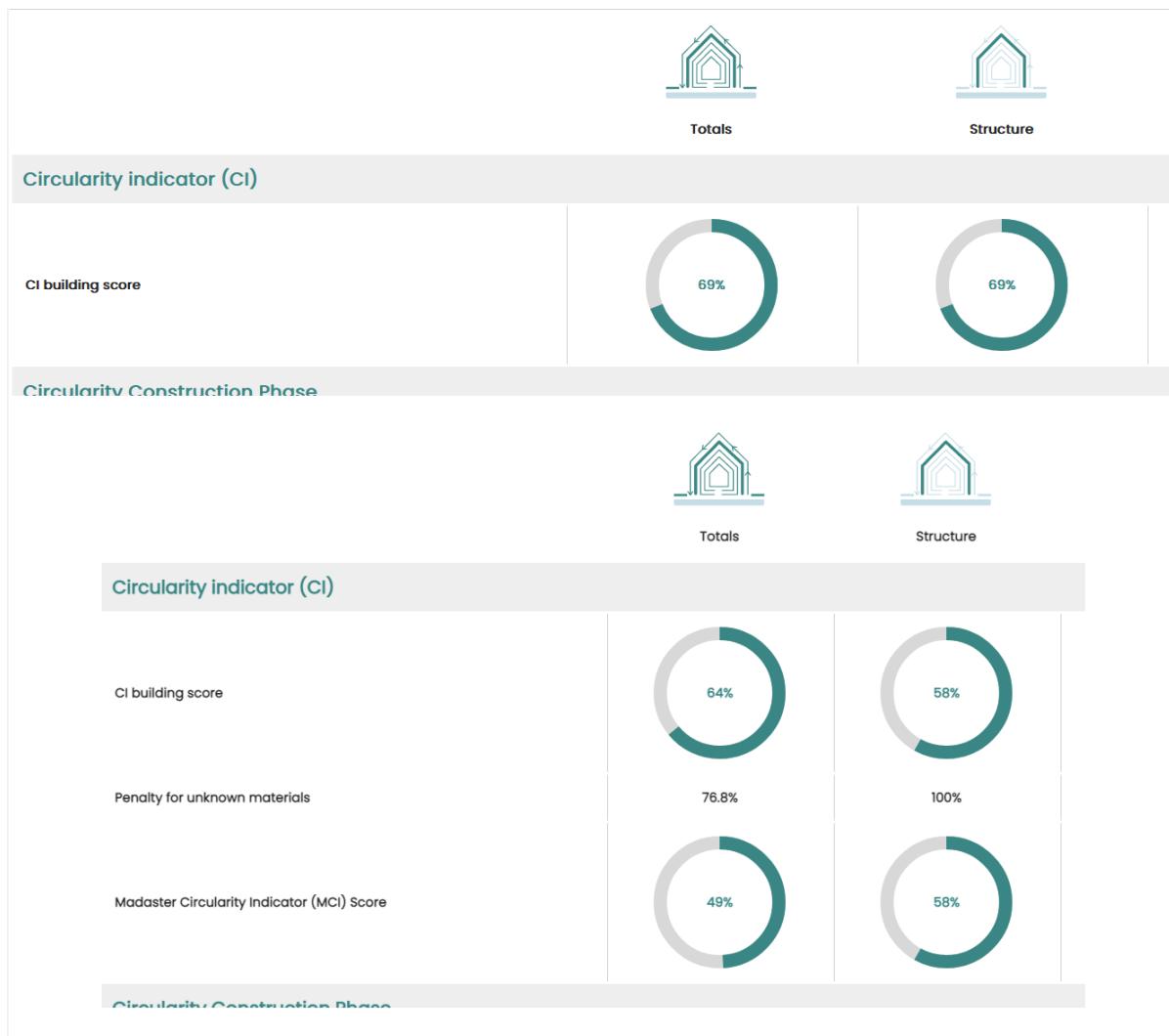


Figure 36: on top how it was, on the bottom what it is now.

#### 4.1.2.6 Split building can now be activated

The split building feature used to be only accessible through invitation, this has been changed

#### 4.1.2.7 “See more” at database information

To indicate that there is more text a ‘...see more’ has been added to the database information field



#### Database information

The EPEA Generic database enables country-specific, full-building calculations regarding material composition (mass), circularity, and embodied carbon (kg CO<sub>2</sub>e).

The database, which is expert-rev ...[see more](#)

#### 4.1.2.8 Billing information shown when modifying a subscription

When a subscription is modified, the current known billing information is shown:

##### Billing Information

Billing email:

Company name:

att.:

Refence / PO number:

Address:

I agree that the billing information is correct

If the above billing information is not correct, please [contact us](#). before proceeding with the su

#### 4.1.2.9 Database selection when uploading files for a building

The EPEA generic database is now the default when uploading a file for a building. We've removed the blue checkmark for the Madaster database.



Add file

Indicate to which sources in the Madaster platform the elements in the file to be uploaded should automatically be linked and in which order this should be done per element. To add or remove a source, select the '+' or 'x' sign at the end of a source name.

Available sources

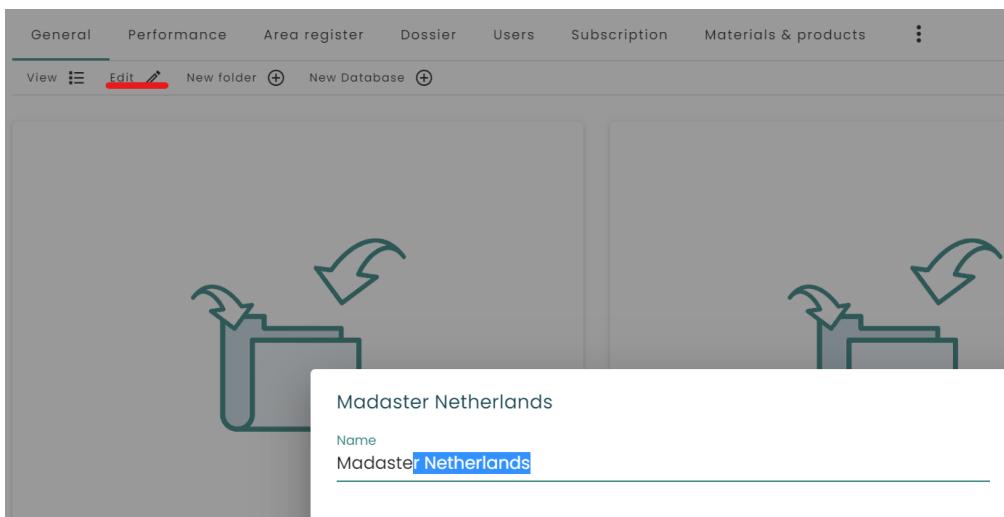
- NMD  +
- Madaster  +
- 2BA  +
- Hook Producer  +
- MRPI  +
- IBU DATA  +
- ECOPLATFORM  +
- ENVIRONDEC  +
- ÖKOBAUDAT 2019-  +

Selected sources

- EPEA Generic
- Lankhorst B.V.

#### 4.1.2.10 Possibility to change the name of the account

It is now possible to change the name of an account in Madaster by using the edit button in the general tab of an account. This will only change the name in the platform, so not for billing or other purposes.



#### 4.1.2.11 Additional Madaster V2 classification

There is now an additional option for the Madaster V2 classification when adding or editing a material in a database and when enriching.



Material information    Circularity    Environment    Search criteria    Fin

Save Close

Material name \*

Kryptonite



Specific weight \*

5,000

kg/m<sup>3</sup>

Madaster

Unknown



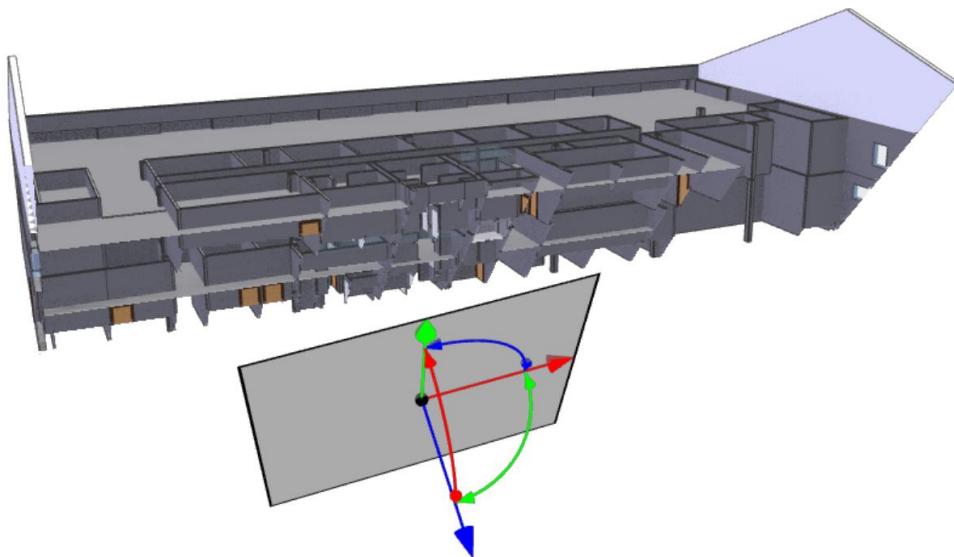
Madaster V2 \*

Z - OTHER



#### 4.1.2.12 Slice a 3D model

In the 3D viewer of a building it is now possible to slice it.



Slice object





#### 4.1.2.13 The 'bill of materials' for circularity is unchecked by default

If you would add a product to a database in Madaster the default was to use the bill of materials for the circularity data, this has been changed.

| Product information  | Circularity       | Environment | Search cri  |
|--|-------------------|-------------|-------------|
| Save  Close  | Save  Close       | Save  Close | Save  Close |
| <b>General</b>   |                   |             |             |
| Product name *   |                   |             |             |
| Type *   | Volume            |             |             |
| Product code   |                   |             |             |
| GTIN   |                   |             |             |
| Functional lifespan (years)<br>0   | Year              |             |             |
| <input checked="" type="checkbox"/> Do not calculate circularity values from Bill of Materials |                   |             |             |
| <input type="checkbox"/> Calculate environmental values from Bill of Materials                 |                   |             |             |
| Madaster   |                   |             |             |
| Name   | Type              |             |             |
| No data available  |                   |             |             |
| Density *  | kg/m <sup>3</sup> |             |             |
| <input type="checkbox"/> Calculate environmental values from Bill of Materials                 |                   |             |             |

Figure 37: on the left the old situation, on the right the new one

#### 4.1.2.14 Color changes in the charts

A number of charts have been given different colors in line with our new design which was introduced not long ago.

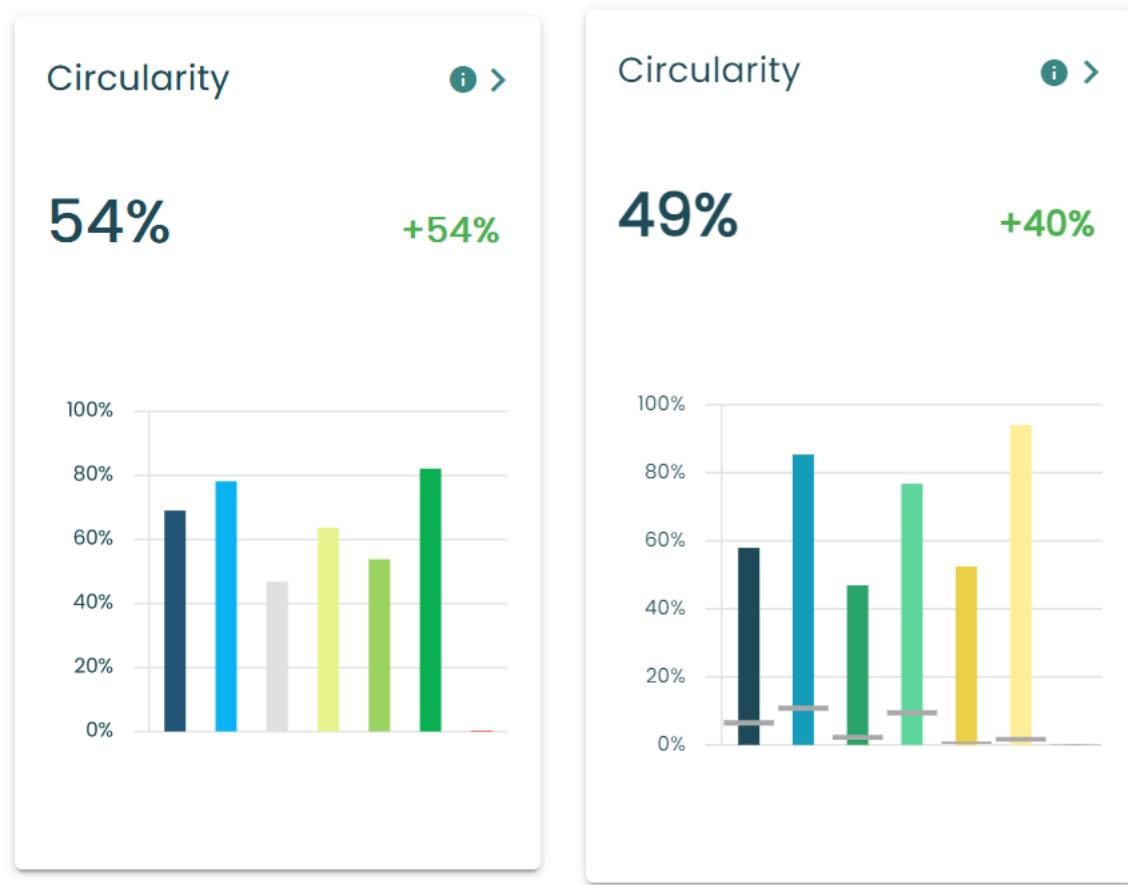


Figure 38: on the left the old color scheme and on the right the new one. One of many charts that have changed colors.

#### 4.1.2.15 Changes on building and folder type fields

- The manual or indicative MPG score is now shown in €/m<sup>2</sup>.jr instead of €/m<sup>2</sup>

##### Labels

BREEAM: Excellent  
Manual MPG score: 12 €/m<sup>2</sup>.ir

- There are new fields for the owner on a building



Owner  
Owner  
Circular Holdings

Address line 1  
Reuse Street 123

Address line 2

Postal code  
12345

City  
Amsterdam

Country  
Netherlands

General Performance 3D Dossier Mass Circularity En  
Edit building Move Archive the building Design Transfer

#### Address

Circularity Street 123  
12345 Amsterdam  
Netherlands

#### Owner

Owner:  
Circular Holdings  
Address:  
Reuse Street 123  
12345 Amsterdam  
Netherlands

39: The new owner fields. Left how they are when editing a building, on the right what they look like in the general tab of the building

- Because of the addition of the owner field on the building the fields 'specify owner in passport' and 'owner label in passport' have been removed from folder type.

New Folder type

Name \* Portfolio Description

Plural Name Portfolios

Foldertype allowed directly under account? Allowed folder types in subfolders

Buildings can be added in this folder type

Does folder of this folder type requires an address?

Folder of this type is a region defined by spatial coordinates?

Specify owner in passport

Owner label in passport

Icon X

Logo

Cancel Save

- Fields for 'prepared by' and 'design stage' have been added. The design stage is filled using the level of detail (LOD).



## Madaster information

Prepared by  
Circular Architects

Design Stage \*  
Unknown

Design Stage \* Unknown

- LOD 100 - Concept Design
- LOD 200 - Schematic Design
- LOD 300 - Detailed Design
- LOD 350 - Construction Documentation
- LOD 400 - Fabrication & Assembly
- LOD 500 - As-Built

General Performance 3D Dossier Mass Circularit Envir

Edit building Move Archive the building Design Transfer Delete

**Address**  
Circularity Street 123  
12345 Amsterdam  
Netherlands

**Owner**  
Owner: Circular Holdings  
Address: Reuse Street 123  
12345 Amsterdam  
Netherlands

**Madaster information**  
Prepared by: Circular Architects  
Design Stage: Unknown

- It is now possible to choose any country at the address for a building

### Address

Use map to create a location

Street

Circularity Street

House number

123

House number suffix

Postal code

12345

City

Amsterdam

Country \*

Afghanistan

Åland Islands

Albania

Algeria

American Samoa

Andorra

- It is now possible to allow search criteria for a folder type:



New Folder type

Name \*  
Complex

Plural Name  
Complexes

Foldertype allowed directly under account?

Buildings can be added in this folder type

Does folder of this folder type requires an address?

Folder of this type is a region defined by spatial coordinates?

Allow search criteria

Allowed folder types in subfolders  
 Complex  Portfolio  Project

Icon  
 mdi-domain

Logo

[Cancel](#) [Save](#)

#### 4.1.2.16 Changes in navigation

- When at a dossier on a building the source files are now a 'folder', and when you select a folder only the files from that specific folder are shown. It used to be that the source files were always kept on top, which is still the case when no folders are selected. Also, the sequence of the folders has been changed.

| General                       | Performance                | 3D                       | Dossier   | Mass      | Circularity           | Environmental    | Financial            | ⋮                                   |
|-------------------------------|----------------------------|--------------------------|---|-----------|-----------------------|------------------|----------------------|-------------------------------------|
| Upload                        |                            |                          |   |           |                       |                  |                      |                                     |
| Filter on                     | Source file (BIM or Excel) |                          |   |           |                       |                  |                      |                                     |
| Keyword                       | <input type="text"/>       | <input type="checkbox"/> | Name  | Size      | Classification method | Date exported    | Tags                 | Owner                               |
| Consumer dossier              |                            | <input type="checkbox"/> | 220729_DM2 - Installaties.ifc                                   | 108.26 MB | Omniclass             | 01-08-2022 18:11 | Michiel Lankamp      | <input checked="" type="checkbox"/> |
| Source files                  |                            | <input type="checkbox"/> | 220729_DM2 - Bouwkundig.ifc                                     | 19.85 MB  | Omniclass             | 01-08-2022 19:14 | Michiel Lankamp      | <input checked="" type="checkbox"/> |
| Passports                     |                            | <input type="checkbox"/> | 220729_DM2 - Interieur.ifc                                      | 14.84 MB  | Omniclass             | 01-08-2022 17:50 | Michiel Lankamp      | <input checked="" type="checkbox"/> |
| Contractual agreements        | <input type="checkbox"/>   | <input type="checkbox"/> | 220729_DM2 - Constructie.ifc                                    | 6.91 MB   | NL-SIB                | 01-08-2022 19:15 | Michiel Lankamp      | <input checked="" type="checkbox"/> |
| Usage, Maintenance & Renov... |                            |                          |   |           |                       |                  |                      |                                     |
| Tags                          |                            |                          |   |           |                       |                  |                      |                                     |
| General document              |                            |                          |   |           |                       |                  |                      |                                     |
|                               |                            |                          | Name  | Size      | Last modified         | Tags             | Owner                | ⋮                                   |
|                               |                            | <input type="checkbox"/> | Madaster_Demonstration_Building-technical-annex-02/14/2023.xlsx | 26.29 kB  | 14-02-2023 20:15      |                  | Paul Klein Lankhorst |                                     |
|                               |                            | <input type="checkbox"/> | Madaster_Demonstration_Building-passport-02/14/2023.pdf         | 30.86 MB  | 14-02-2023 20:15      |                  | Paul Klein Lankhorst |                                     |

40: the view when no folders are selected. The source files are on top and the other documents below.

The screenshot shows a file management interface. At the top, there are tabs: General, Performance, 3D, Dossier, Mass, Circularity, Environmental, Financial, and three vertical dots. Below the tabs is a 'Upload' button with a file icon. A sidebar on the left is titled 'Filter on' and contains sections for 'Consumer dossier', 'Source files', 'Passports' (which is selected and highlighted in grey), 'Contractual agreements', and 'Usage, Maintenance & Renov...'. There is also a 'Tags' section. A search bar with a magnifying glass icon is located above the file list. The main area is titled 'Passports' and lists several files with columns for Name, Size, Last modified, Tags, and Owner. The files are:

| Name   | Size     | Last modified    | Tags | Owner                |
|--|----------|------------------|------|----------------------|
| Madaster Demonstration Building-technical-annex-02/14/2023.xlsx  | 26.29 kB | 14-02-2023 20:15 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-passport-02/14/2023.pdf          | 30.86 MB | 14-02-2023 20:15 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-executive-summary-02/14/2023.pdf | 28.58 MB | 14-02-2023 19:55 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-passport-02/14/2023.pdf          | 30.90 MB | 14-02-2023 19:52 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-technical-annex-02/14/2023.xlsx  | 39.48 kB | 14-02-2023 18:29 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-passport-02/14/2023.pdf          | 33.21 MB | 14-02-2023 18:29 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-executive-summary-02/14/2023.pdf | 29.05 MB | 14-02-2023 17:46 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-one-pager-02/14/2023.pdf         | 27.24 MB | 14-02-2023 16:46 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-one-pager-02/13/2023.pdf         | 27.24 MB | 13-02-2023 17:31 |      | Paul Klein Lankhorst |
| Madaster Demonstration Building-one-pager-02/13/2023.pdf         | 27.24 MB | 13-02-2023 16:52 |      | David Parker         |

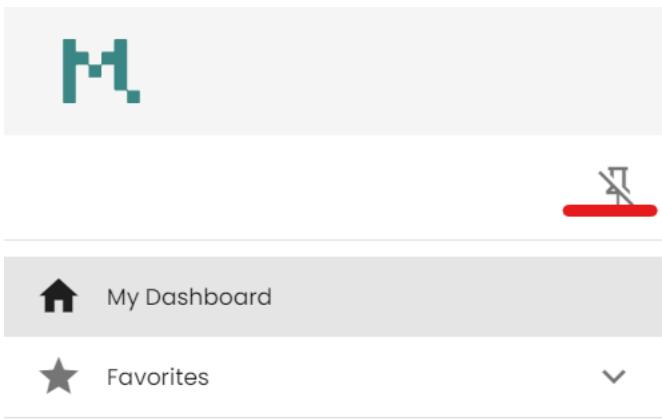
At the bottom right, there are buttons for 'Rows per page' (set to 10), '1-10 of 62', and navigation arrows.

41: once a folder is selected only the files from that folder are shown.

- In the building tabs “Users” and “Presets for Upload” (and the newly introduced “Presets for Upload” have been placed as additional options under three vertical dots

The screenshot shows the left navigation pinned by default. The navigation bar at the top includes tabs: General, Performance, 3D, Dossier, Mass, Circularity, Environmental, Financial, and three vertical dots. Below the tabs are buttons for 'Edit building' (pencil), 'Move' (move icon), 'Archive the building' (lock icon), 'Design' (cross icon), 'Transfer' (transfer icon), 'Delete' (trash icon), 'Upload' (up arrow icon), and 'Reset' (refresh icon). The left navigation is pinned and shows sections for 'Address' (Circularity Street 123, 12345 Amsterdam, Netherlands) and 'Open Street Map'. A dropdown menu on the right is open and contains three items: 'Users', 'Presets for upload', and 'Presets for passports'.

- For new users the left navigation is pinned by default



- Linking to specific results on the circularity or environmental tab

It is now possible to copy an URL that contains the specific filters on the circularity or environmental tab.

platform.accept.madaster.com/building/b61f9cc5-005c-4935-833b-8ac0e26e1336/circularity/?view=materials&sorting=4&viewer=false

≡ **Madaster Demonstration Building**

Home / Madaster Netherlands / Demo / Madaster Demonstration Building / Circularity

General Performance 3D Dossier Mass **Circularity** Environmental Financial :

**Madaster Circularity Indicator (MCI)** +40% More than your benchmark

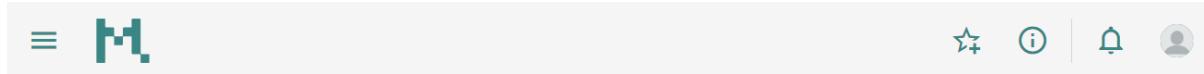
**Detachability** +72% More than your benchmark

Material/Product Output Waste

- Users with regular authorizations will no longer see the user tab
- The option to create a design or archive a building have been removed for home-owners



- When a user enters the platform with no recent items on 'my dashboard' a welcome text is shown:



## Welcome to Madaster

Madaster is an innovative platform that provides an easy way to register, manage and analyze the materials used in your construction projects. We believe that to achieve a circular construction industry, materials must be centrally registered so they can again become resources in the future. Thank you for taking this important first step.

*Things look a little empty, but not for long!*

We've put together a user guide for you to create objects, enrich them with data, and view and share their performance.

[Get started](#)

### 4.1.3 Bug fixes

The following bugs have been resolved:

- When transferring a building the authorizations on the transferred building were set wrong, this has been adjusted so that the authorizations are set correctly on the transferred building.
- Rounding has been adjusted so that for example 2 kt of CO<sub>2</sub>e as displayed on the performance tab for GWP can now be displayed with two decimals (i.e. 1,7)
- In the mass tab of a building at 'unknown' the values would sometimes incorrectly be '0', this has been fixed.
- When creating a new design the notification when this design is ready would mention that the archive was ready. This has been fixed so that it correctly mentions design.
- Deleting a design would mention that the whole building would be deleted where it would only delete the design, this has been textually adjusted so that it mentions only deleting the design.
- We found some wrong mappings in the Omniclass classification, these have been corrected.