


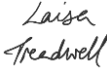

ElliottWood

SEGRO LCA Methodology

Version 6.0

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Version	Date of Issue	Changes:
6.0	27/02/2025	Change log added and Summary of Key changes from Version 5 added.
	05/03/2025	Footnote added.

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1. Introduction

1.1 Aims

SEGRO have committed to becoming a net-zero carbon company by 2050. To achieve this, SEGRO are aiming to reduce Scope 3 emissions in line with the Science Based Targets Initiative (SBTi)¹, which includes the emissions associated with construction of new assets.

Upfront carbon is calculated on a project-by-project basis by carrying out life-cycle assessments (LCAs). To obtain a group average it is now a requirement to complete an LCA on all SEGRO projects which have a lettable area greater than 5,000 sqm.

The aim of this document is to provide a standard set of requirements, in line with latest industry guidance, for all SEGRO LCAs to follow to calculate the upfront carbon of developments.

Note: The methodology outlined in this document is to calculate upfront carbon only and is not equivalent to a full LCA.

1.2 Accompanying documents

This report should be read alongside the following accompanying document:

- SEGRO LCA Results_[insert project name] v5.0.xlsx
 - This Excel template is to be completed by the LCA assessor prior to issuing to Elliott Wood for verification. It includes information about the development, the detailed report exported from OneClick LCA, as well as the verification comments (by Elliott Wood) and responses (by the LCA assessor).
 - The spreadsheet is to be used exclusively for reporting and a written report is no longer required

Key Changes from Version 5:

1. Introduction

Change of method from Embodied to Upfront Carbon

2. LCA Process

Change in LCA parameter - Disable material localisation factors (Use v2.1 for One Click generic data) (2.3)

Change in LCA tool - 'Whole life carbon assessment, RICS - 2nd edition' (2.5)

Change to Method 2 for construction site operations (2.6.5)

3. Assessment Scope

Changes to RICS categories for in scope elements (3.1)

Changes to RICS categories for out-of-scope elements (3.2)

Guidance on tenant fit out added (3.2)

4. Reporting Requirements

New SEGRO LCA results spreadsheet template

Data uncertainty top-up factor added

¹ SEGRO SBTi press release - 2021 report

1.3 Alignment with BREEAM and other Accreditation Schemes

The purpose of this document is to set out the requirements for calculating upfront carbon within SEGRO's developments, to inform SEGRO's ESG and Science Based Targets reporting. As such, each LCA should represent, as accurately as possible, the as-built development. To achieve BREEAM and other accreditation scheme credits, additional calculations are required at concept design stage to inform design decisions.

LCAs completed at design stage will need to be updated with as-built information and product-specific EPDs.

If LCAs have been undertaken for BREEAM, DGNB, or for any other reason, these files can be easily adapted to meet the requirements herein. This is outlined in Section 2.

1.4 RICS Professional Standard 2023

LCAs completed at design stage or before as-built information is available should use best practice design stage assumptions in line with the RICS Professional Standard Whole life carbon assessment for the built environment (2023).

This includes default assumptions for:

- material specifications
- waste factors
- transport distances*
- Transport emissions factors
- End-of-life processes

LCA's will need to be updated with as-built information and product EPDs following project completion.

**Transport distances in RICS PS may not be appropriate for markets outside of the UK. One Click LCA default distance may be used in these markets.*

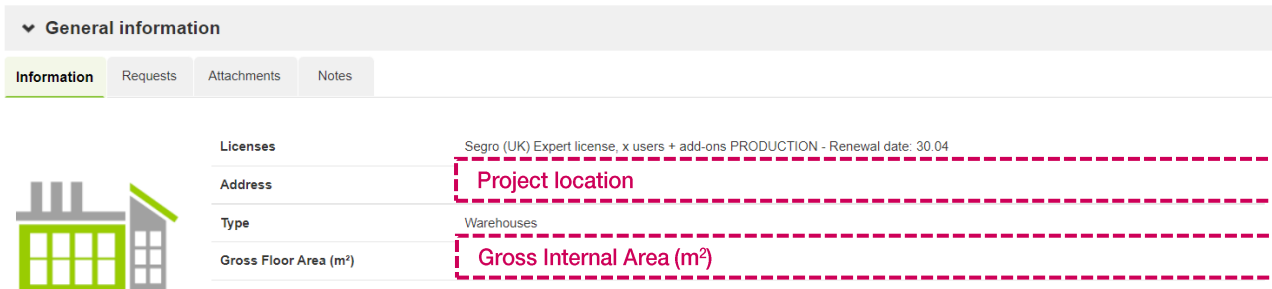
2. LCA Process

All LCAs must be undertaken using 'One-Click LCA', which can be accessed here. For free software license access please email Jack.Shepherd@segro.com. The following links provide more information:

- [Registering an account and creating a project](#)
- [Workflow and basics](#)
- [Selecting materials and references](#)
- [Background information and documentation](#)
- [Video guides](#)

One Click LCA recommend that all users complete their kick-off training prior to using the software.

2.1 General information



General information			
Information	Requests	Attachments	Notes
Licenses	Segro (UK) Expert license, x users + add-ons PRODUCTION - Renewal date: 30.04		
Address	Project location		
Type	Warehouses		
Gross Floor Area (m ²)	Gross Internal Area (m ²)		

All projects must include the following key information:

- Address: project name and location (business unit)
- Type: warehouses
- Gross floor area: This is the 'Net Lettable Area' taken from the SEGRO MRI database

The project name and area must be checked and validated internally in SEGRO. The SEGRO Building ID and Unit ID must be included.

2.2 Users

When the Project file is set up in One-Click LCA, it is important to add all users of the file. As a minimum this should include the following:

Managers

- Jack Shepherd - Jack.Shepherd@segro.com
- Ian Poole - i.poole@elliottwood.co.uk
- Louisa Treadwell - l.treadwell@elliottwood.co.uk
- Vincent Cutler - v.cutler@elliottwood.co.uk
- SEGRO lead for the Project
- Lead LCA Assessor for the Project

Modifiers

- All other LCA Assessors
- Additional members of SEGRO and Elliott Wood as requested

Read Only

- Any additional members of the design or construction team upon request

2.3 LCA parameters

The following LCA parameters must be selected within One Click LCA:

- **Service life values for materials:** technical service life (same for same material)
- **Transportation distance defaults for materials:** European or UK RICS (depending on project location)
- **Material manufacturing localisation method:** Disable material localisation. Use method v2.1 for One Click Generic Data
- **End of life calculation method:** market scenarios, user adjustable

2.4 Creating a Design

Multiple designs can be set up in One-Click LCA, which can be used for optioneering studies, or for creating new files at different stages of a project. It is important that if multiple designs are present in the One-Click LCA file, the final as-built assessment is clearly named and labelled as outlined below. The SEGRO building ID must be included in the One-Click – this must be confirmed with Jack Shepherd.

Create a design

Name, design stage and calculation tools

Name

Final As-Built

Additional information (e.g. description in portfolio)

Building I.D.

Stage of construction process (RIBA / AIA stages)

8 - Handover and Close Out / Project Close Out

Choose the tools you want to use in this design

MEP Carbon tool

LCA for BREEAM UK

Whole life carbon assessment, GLA / RICS / Green Mark including EN15804 +A2 data

Whole life carbon assessment, RICS - 2nd Edition

Building Circularity, Greater London Authority

Scope and type of analysis

Pre-defined scopes (if available)

RICS: Whole life carbon assessment

Project type

New construction, whole building

Frame type

Not determined/not sure

Included parts. Check all applicable.

Foundations and substructure

Structure and enclosure

Finishings and other materials

External areas

Services

2.5 Selecting the Tool







The LCAs must be completed in line with the RICS 'Whole Life Carbon Assessment for the Built Environment' Professional Statement 2nd edition⁵. The use of this Standard ensures consistency across projects and ensures the reporting is aligned to SEGRO requirements.

In One-Click LCA, the 'Whole life carbon assessment, RICS – 2nd edition' tool must be used, and can be selected as shown below.

⁵ Whole Life Carbon Assessment for the Built Environment (rics.org)

Available calculation tools

Deselect all Save Cancel

- Life-cycle cost (ISO 15686-5 and EN 16627) - CML Life-cycle cost for a fixed asset based on ISO 15686-5 and EN 16627 linked to LCA inputs.
- Life-cycle cost (PD 156865:2008) Life-cycle cost for a fixed asset based on Standardised method of life cycle costing for constructio [See all](#)
- Carbon Strategy Tool The life-cycle assessment is carried out with One Click LCA, a life-cycle assessment cloud software. [See all](#)
- BREEAM UK LCA for BREEAM Int'VES/NOR/SE This is officially approved LCA in compliance with BREEAM International NC 2013 and 2016 and latest [See all](#)
- BREEAM LCA for BREEAM UK This is an official BRE-approved LCA in compliance with ALL BREEAM UK versions, including BREEAM UK [See all](#)
- Whole life carbon assessment, RICS (Unsupported) This tool meets the RICS professional standards and guidance, whole life carbon assessment for the b [See all](#)
- BREEAM LCA, Milieuprestatie Gebouwen - NMD 3.0 BREEAM NL & Bepalingsmethode Milieuprestatie Gebouwen en GWW-werken 2.0. One Click LCA maakt gebruik [See all](#)
-  LCA for DGNB (DE) ENV1.1, and ENV2.1. Life-cycle assessment in compliance with DGNB's German version 2018 and 2012-201 [See all](#)
-  LCA for DGNB (DK 2014) ENV1.1, and ENV2.1. Life-cycle assessment in compliance with DGNB-DK 2014 requirements. This LCA sof [See all](#)
-  LCA for DGNB (Intl 2012-2015) ENV1.1, and ENV2.1. Life-cycle assessment in compliance with DGNB International 2012-15 requirements [See all](#)
-  LCA for BREEAM UK IMPACT-compliant This is an IMPACT-compliant LCA application according to IMPACT v5, intended for use for with BREEAM [See all](#)
- Biodiversity stress from supply chain This tool can be used to calculate indirect impacts on biodiversity, which may occur outside of the [See all](#)
-  Level(s) life-cycle carbon (EN15804 +A1) Carbon footprinting for Level(s) - macro-objective 1: Greenhouse gas emissions along a buildings lif [See all](#)
-  Level(s) life-cycle carbon (EN15804 +A1+A2) Carbon footprinting for Level(s) - macro-objective 1: Greenhouse gas emissions along a buildings lif [See all](#)
- Whole life carbon assessment, GLA / RICS / Green Mark This tool meets the RICS professional statement and guidance (Whole life carbon assessment for the b [See all](#)
- Whole life carbon assessment, GLA / RICS / Green Mark including EN15804 +A2 data Supports EPDs according to both EN15804 amendments, A1 and A2. This tool meets the RICS professional [See all](#)
- Whole life carbon assessment, RICS - 2nd Edition
- Building Circularity, Greater London Authority Material efficiency and circular economy - for BREEAM MAT 06, GLA and GRI G4 reporting as well as ot [See all](#)
- Net Zero Carbon Tool Use this tool to assess your project for net zero carbon using the defined scope.

2.5.1 Adding the Tool to an existing assessment

If the LCA was originally undertaken using a different tool, e.g. 'LCA for BREEAM UK', the tool above can be added by following the process below:

1. Select the 'Tools' dropdown
2. Check the box for 'Whole life carbon assessment, RICS – 2nd edition'

This will copy the information entered originally into the correct tool, as shown below. It is important to note that additional information is required to complete the assessment after this step.

- Check that all elements have been assigned a 'RICS category' – refer to Section 3
- Check that Construction site emissions have been added – refer to Section 2.6.5

2.6 Data entry

2.6.1 Building materials

All building material information shall be collated from the Contractor. This shall be done using the BIM model for the Project and checked against information in the cost plan. The BIM models may not be perfectly accurate, and information may be missing. Therefore, a BIM Model Checklist is provided in the SEGRO LCA Results spreadsheet as outlined in Section 4.1.3 to aid the LCA Assessor in getting accurate information from the models.

The following list summarises key considerations when extracting and entering material quantities:

- Check all elements have been included as itemised in Section 3.1.
- Ensure corrections are made for profiled or hollow elements in models (volumes and areas for these may be incorrect if they have been modelled incorrectly)
- Ensure allowances are made for all metalwork associated with connections and fixings, this is often not modelled
- Ensure reinforcement information has been added for all concrete elements, this should be provided by the Contractor. An information request form to obtain this information is provided in Appendix A

2.6.3 Environmental Product Declarations (EPDs)

Environmental product declarations (EPDs) provide the carbon data to inform the LCAs. It is important to request and obtain EPDs for as many products used on site as possible. To do this, an EPD request form has been provided in Appendix A.

The following list summarises key considerations when selected EPDs in One-Click LCA:

- ALL EPDs shall be in date (less than five years old)
- Check EPDs used for composite materials match the specification used on site – a typical error is using sandwich panel EPDs where the thickness of the outer metal layer and insulation in the EPD is different to that used on site
- For metal EPDs, ensure the recycled content matches what has been procured, or otherwise that industry average values are used
- Ensure precast concrete EPDs match the design of the elements used, if necessary, add reinforcement separately
- Ensure in-situ concrete EPDs match the specification and mix used on site

2.6.4 Transport and Waste

Assumptions for transport and waste are automatically included in the assessment when building elements are entered based on the EPD and building location. Projects in the UK should assume default transport distance in line with RICS PS. All projects should assume default waste rates in line with RICS PS where detailed information is not available. However, these should all be reviewed and updated if specific information is available. In particular:

- Transport distances should be updated for any materials or products known to be sourced from significant distances > 500km from site
- Waste rates should be updated based on information collected by the Contractor. A project waste rate for the following materials shall be provided by the Contractor and applied to the necessary elements:
 - Steelwork
 - In-situ concrete
 - Reinforcement
 - Façade and roof panels
 - Insulation
 - Plasterboard
 - Asphalt

2.6.5 Construction site operations (module A5)

Construction site operations data shall be added to the 'Construction Site Operations' tab in the One-Click LCA file. This can be entered in one of two ways, with a preference for Method 1.

Method 1

The contractor shall provide the following data using the request form provided in Section 4.1.2:

- Site electricity consumption (kWh) – this can be added in Part 3 of the One-Click LCA tab
- Site fuel (diesel) consumption (litres) – this can be added in Part 3 of the One-Click LCA tab
- Water consumption (litres) – this can be added in Part 6 of the One-Click LCA tab
- Waste generation in addition to material waste e.g. materials used for packaging (kg) – this can be added in Part 7 of the One-Click LCA tab

This must include all works undertaken by the main contractor and all subcontractors. Evidence should be collected to demonstrate the values used are complete and accurate.

Method 2

If no data is available, please leave the construction site emissions blank. This will be picked up in the SEGRO LCA results spreadsheet and replaced with appropriate benchmark data.

2.6.6 Energy Consumption, annual

Building energy consumption is not in the scope of the embodied carbon assessment as this relates to operational carbon.

However, a value must be entered in the 'energy consumption, annual' tab of One-Click LCA to complete the calculation. We recommend entering a value of '0 kWh'.

2.6.7 Calculation period

All projects must use a 60-year calculation period (also referred to as LCA study period and predicted building lifecycle).

2.6.8 Building area

The floor area shall be entered using the 'Gross Internal Floor Area (IPMS/RICS)' option in the 'Building Area' tab. The floor area must align with the Net Lettable Area in the SEGRO MRI database.

2.6.9 Top-up factors

Building level contingency and Data quality uncertainty shall be entered as 'Post-completion' and 'Disabled' respectively to ensure no factors are applied to the results at this stage (Figure 1).

Data uncertainty factors will be applied in the SEGRO LCA Results template as outlined in Section 4.1.5.

1. Building Level Contingency

Building Level Contingency

Contingency factor is applied to all modules A-D, excluding operational energy (B6) and operational water (B7) consumptions. The selected factor is applied to all elements and scenarios used in the calculations.

Post-completion (0%)

2. Data Quality Uncertainty

Use Data Quality Uncertainty Factor

Data quality uncertainty factor is calculated from the top 10 most contributing materials of the design. The factor consists of data quality metrics depending on the year, verification and standard the material is based on of each resource with the addition of technological and geographical representativeness answers in the building materials query. When the factor is disabled, no data quality ftopup is added in the calculations

Disabled

Figure 1: One Click Top-up factors

2.7 Acceptable data sources

All SEGRO LCAs must use third-party verified environmental product declarations (EPDs), which are valid at the time of project completion. An EPD provides an independently verified summary of the environmental impact of a product throughout its lifecycle, calculated via a lifecycle assessment (or LCA).

All EPDs used must comply with relevant international LCA and EPD standards and Product Category Rules (PCR), they also need to be verified in line with the international verification standard. For example, EPDs for products manufactured in Europe must comply with EN 15804, ISO 14040, ISO 14044 and ISO 14025.

EPDs used should be as specific to the used material or product as possible to ensure accuracy of the calculation. If a valid EPD does not exist within the One Click LCA database project teams should contact the product manufacturer. If an EPD cannot be issued in time it is acceptable to use generic, country-specific data, or an EPD for an equivalent product manufactured in the same country. All substitutions must be declared in the LCA report.

3. Assessment Scope

3.1 Building elements to be reported and within SEGRO target scope

The following building elements (where present) **must** be included within all SEGRO LCAs. Data must be entered in One Click LCA in such a way as to facilitate separate reporting of upfront carbon associated with each building element. To achieve this, the RICS Categories below shall be used **exclusively**:

Table 1: Elements to be reported and within SEGRO scope

RICS Category	Elements
1.1 Foundations and piling	<ul style="list-style-type: none"> • Piles • Pads • Pile Caps • Ground Beams
1.2.1 Lowest Slab	<ul style="list-style-type: none"> • Sub-Base • Insulation • Blinding • Vapour Control Membrane • Waterproofing / Damp Proof Membrane • Concrete Slab • Screed
2.1 Frame	<ul style="list-style-type: none"> • Primary structural columns/ stanchions • Primary structural beams/ rafters • Primary structural connections
2.2 Upper Floor	<ul style="list-style-type: none"> • Structural slab, to include metal decking, concrete, reinforcement • Screed
2.3 Roofs	<ul style="list-style-type: none"> • Secondary structural elements (purlins) • Sandwich Panel (input as a one material EPD) • Waterproofing membrane • Rooflights • Drainage systems e.g. pipework/ guttering • Green roof
2.4 Stairs and Ramps	<ul style="list-style-type: none"> • Internal stairs to include structural components • External/ servicing stairs and ladders to include structural components
2.5 External envelope	<ul style="list-style-type: none"> • Secondary structural elements (railings) • Sandwich Panel (input as a one material EPD) • Waterproofing membrane • Drainage systems e.g. pipework/ guttering • Green wall • Note: The new RICS guidance includes roof finishes in this category, however to ensure we can compare to previous years data, this methodology will continue to include in 2.3 Roofs
2.6 Windows and External Doors	<ul style="list-style-type: none"> • Windows, to include framing and fixings • Doors, to include framing and fixings • Loading Bay Doors, to include framing and fixings

2.7 Internal Walls and Partitions	<ul style="list-style-type: none"> • Plasterboard walls • Insulation • Studwork for walls • Glazed partitions and framing • Concrete walls e.g. for lifts
2.8 Internal Doors	<ul style="list-style-type: none"> • Doors, to include framing and fixings
3 Finishes	<ul style="list-style-type: none"> • Raised access floors • Carpets and other floor tiles • Metal or plasterboard ceiling panels • Suspended ceiling systems
8.1.1.Roads, paths, pavings, surfaces	<ul style="list-style-type: none"> • External Yard Slab • Sub-base for external slab • Asphalt topping for external slab • Paving slabs • Gravel and other landscaping fill material • Retaining walls
Other site construction or overall construction stage	<ul style="list-style-type: none"> • Construction site emissions (A5) shall use this category, as outlined in Section 2.6.5

NOTE: It is understood that the assigned RICS categories may not align with other calculation methodology requirements (e.g. BREEAM, RICS v2), however this process is implemented to allow for consistent comparison of upfront carbon within the SEGRO reporting scope across markets.

3.2 Building elements to be reported but outside SEGRO target scope

The following building elements are out of scope for SEGRO targets. However, project teams shall endeavour to include as many of these items as possible within the LCA. These shall be reported separately as outlined in Table 2.

3.2.1 Tenant fit-out items

Some elements of the construction will be associated with tenant fit-out and are out of scope for SEGRO targets. This typically includes mezzanines areas and associated foundations and structure. These elements should be included in the LCA where possible under RICS classification '7 Work to existing building'. Tenant building elements will often be included in the Revit models and efforts should be made to separate these items where possible.

Table 2: Elements to be reported but outside SEGRO scope

RICS Category	Elements
0.1.2.6 Site preparation works	<ul style="list-style-type: none"> • Soil stabilisation
4 Fittings, Furnishings and Equipment	<ul style="list-style-type: none"> • Furniture (desks, chairs, etc.) • Signage • Plug-in equipment (monitors, TV screens, computers, white goods, etc.)
5 Services*	<ul style="list-style-type: none"> • PV array • Space heating and cooling plant • Hot water plant • Ventilation plant • Water and air distribution pipework and ductwork • Electricity Cabling • Air and ground source heat pumps • Generators

***We encourage assessors to accurately assign RICS categories for services in line with RICS v2**

-
- Water storage tanks
 - Lifts
 - Cubicles
 - Sanitaryware
-

0.1.2.3 Specialist groundworks

- All materials associated with roads within redline boundary
 - Soft landscaping
 - Barriers and guardrails
 - Irrigation systems
 - Below ground infrastructure e.g. external drainage and cabling
-

7 Work to existing building

Tenant fit-out, including:

- Mezzanine floors
 - Mezzanine framing
 - Mezzanine foundations
-

NOTE: It is understood that the assigned RICS categories may not align with other calculation methodology requirements (e.g. BREEAM, RICS v2), however this process is implemented to allow for consistent comparison of upfront carbon within the SEGRO reporting scope across markets.

For building elements not included in the SEGRO scope and not identified in the out-of-scope reporting table above, please include these in the assessment in the most appropriate RICS category in Table 2 and let us know.

4. Reporting Requirements

All projects must complete the excel template 'SEGRO LCA Results_[insert project name] v5.0.xlsx' and provide the following files:

- SEGRO LCA Results_[insert project name] v5.0.xlsx
- BIM Model

4.1 SEGRO LCA Results Spreadsheet

The SEGRO LCA Results spreadsheet must be completed with all relevant information. The sheets are colour-coded as follows:

- **Blue:** To be completed by the LCA assessor
- **Yellow:** One Click Detailed report must be copied into this sheet
- **Purple:** To be completed by Elliott Wood
- **Green:** Final results

Blue cells denote where input is required from the LCA assessor.

4.1.1 Project Information

Details of the project should be included in the Information tab :

Project Information - General	
Project Name	<Project Name>
Building ID	<Building ID>
Unit ID	<Unit ID>
Location	<Location>
LCA Assessor	<LCA assessor company name>
Lettable Floor Area	5,000 m2
Area of Mezzanine (Upper Floor Slabs) - m2	<Area>
Area of External Hard Landscaping	<Area>
Façade Area	<Area>
Typical Grid/ Column Spacing	<Grid>
Building Height - m	<Height>
Foundation System	<Foundation System>
Building type	<Building type>
Warehouse / data centre	<Warehouse / data centre>
Is there a BIM model for the development	<Yes/No>
Has there been demolition on site?	<Yes/No>
Information source for as-built LCA	<source>

In addition, commentary on the project location, site conditions, materiality, completion date, data extraction methods, and building elements should be provided in the relevant cells.

4.1.2 Project Data

In the Project Data tab, details of material specifications, quantities, and EPD's should be input for key materials, as well as construction site data including electricity, fuel, and water consumption and site packaging waste.

Reinforced concrete	Concrete Specification (Grade and % SCM)	EPD Name/Reference	Total Reinforcement (kg)
Internal ground slab			
External ground slab			
Jet grouting			
Ground stabilisation			
Piles			
Pile caps			
Pad footings			
Beams			
Columns			
Upper Floor Slab			
External Walls			
Internal Walls			
Retaining walls			
Other – please add as required			

Element	Specification	EPD Name/Reference
Roof sandwich panel systems		
Façade sandwich panel systems		
Precast wall system		
Precast slab system		
Insulation		
Rooflights		
Loading bay doors		
Other window products		
Other door products		
Steel (open sections)		
Steel (hollow sections)		
Masonry		
Other (please add rows as needed)		

Data Required	Quantity	Units
Site electricity consumption		
Site fuel consumption		
Site water consumption		
Site packaging waste		

4.1.3 BIM Checklist

The BIM Checklist sheet provides questions to be completed by the LCA assessor to ensure correct data extraction from the BIM models and provide context to the Elliott Wood team on the data extraction method:

Requirement	Notes	Yes/No	Comment (if applicable)
Have all models been checked for repetition and clashes?	Ensure elements are only modelled within in one model (for example, the ground floor slab <u>should not</u> be included within both the architectural and structural models).		
Are there hollow parts of slabs/walls which will provide incorrect volumes in models?	For example, precast hollowcore planks modelled as solid concrete.		
Are there any voids within walls which have been incorrectly modelled as materials?	For example, gaps between studwork. All voids should not be assigned to a material		
Are there profiled parts of slabs/walls/roofs which will provide incorrect volumes in models?	For example, a profiled metal deck may be modelled as a solid element with a much larger volume than in reality		
Are thicknesses of all materials correct, including ceiling panels, insulation, plasterboard?	Ensure all thicknesses have been correctly modelled, check volume / area of key elements		
Are there any elements which haven't been modelled (e.g. steel connections, stud wall framing, secondary steel, lintels)?	If any information is not included within the model, it must be calculated and added separately.		
Is the specification for each element clear through the material name and reference?	If elements are incorrectly referenced they will be mis-assigned, so it is important to check the model information is correct and cross check this with cost plan and specification information		

4.1.4 Input One Click Data

Providing all elements have been correctly assigned to the RICS categories stated in Section 3.1 the following process can be followed.

1. Download the One Click LCA result report from One-Click LCA
 - a. In the results section, select the 'more actions' dropdown
 - b. Select 'One Click LCA result report'
 - c. Select 'Download Excel'
2. When downloaded, open the excel file downloaded
 - a. Select all, and copy the data
 - b. Paste the data into tab 'Detailed Report' of the 'SEGRO LCA Results_[insert project name] v5.0.xlsx' file

4.1.5 Data uncertainty top-up factor

Update information in the Top up factors tab ensuring the One Click file follows guidance outlined in Section 2.6.9. The template should have extracted the top 10 most impactful materials from the data (excluding out-of-scope elements). These most contributing materials will be automatically extracted from the detailed report.

For each of these materials, the accuracy of the geography and technology, the date, the granularity of the data point, and the verification status of the EPD used must be input into the table:

No.	Top 10 Products	kgCO2e / m2 (unfactored)	Geography	Technology	Temporal	Data Granularity	Data Verification	Data Source
1	Steel hot rolled, I, H, U, L, T and wide flats, S235-S960 (bauforumstahl)	91.3						
2	Stainless steel sheets or plates, 7900 kg/m3 (Outokumpu Oyj)	70.7						
3	Ready-mix concrete, RC 32/40 (32/40 MPa), 25% Cement replacement with blast furnace slag (GGBS)	60.0						
4	PIR insulation boards, low emissivity foil faced, 66 mm, L = 0.022 W/mK, R = 3 m2K/W, 2.05 kg/m2, 31 kg/m3, TP10, TF70, Therma Duct, TW50, TW55 (Kingspan (2021))	26.9						
5	Ready-mix concrete, C28/C35 (35 MPa), 2000-2600 kg/m3 (Hanson UK (2021))	17.9						
6	Carbon steel reinforcing bar (secondary production route – scrap) (UK Cares)	8.1						
7	Industrial and garage sectional door with wicket door, 25.64 kg/m2, std dim.: 3800 x 3500 mm, Lambda=0.0786 W/(m.K), Alpha ISO 60 with wicket door (Novoferm Nederland B.V.)	5.6						
8	Ready-mix concrete, RC 25/30 (25/30 MPa), 25% Cement replacement with blast furnace slag (GGBS)	5.0						
9	Galvanized profiled steel decking, for composite floor slabs/decks, 1 mm sheet thickness, 11.62 kg/m2, ComFlor® 60 1.0mm (Tata Steel Europe, Tata Steel International (2021))	3.4						
10	Paint, acrylic emulsion, indoor and outdoor use, 1180-1380 kg/m3, 16 m2/l, Johnstone's Trade Acrylic Durable Matt Base L, Base M, Base D, Base Z, Base Z2 (PPG Architectural Coatings UK (2020))	2.6						

Based on these inputs, an uncertainty factor will be determined and applied to the results provided the blue cells in the table below are input as 'Calculated':

Data uncertainty	Calculated	7%
Quantity uncertainty	Calculated	4%
	TOTAL:	11%

Alternatively, you may use the default uncertainty factors. This will apply the worst-case factors to the assessment and is therefore not recommended.

4.2 Verification Process

All LCAs must be verified before being included in SEGROs LCA database. The LCA verifications are undertaken by Elliott Wood. The verifications require the following:

LCA Assessor

1. The LCA assessor must notify Elliott Wood that the LCA is complete and ready for verification by email, addressed to
 - a. Ian Poole – i.poole@elliottwood.co.uk
 - b. Louisa Treadwell – l.treadwell@elliottwood.co.uk
 - c. Vincent Cutler – v.cutler@elliottwood.co.uk

2. All users of the LCA file, as specified in Section 2.2, shall be cc'd to the email
3. The email must include as a minimum the following information:
 - a. Completed SEGRO LCA Results spreadsheet
 - b. Architectural BIM Model
 - c. Drawings (if available)
 - d. Cost plan (if available)

LCA Verifier (Elliott Wood)

4. The LCA verifier shall review the information received and provide comments back to the LCA assessor using the relevant tabs in the summary report template.

LCA Assessor

5. The LCA assessor shall update the assessment and return the following to Elliott Wood and SEGRO:
 - a. Updated SEGRO LCA Results spreadsheet

ElliottWood

Appendices

Appendix A: Data Information Request Form

Reinforced concrete	Concrete Specification (Grade and % SCM)	EPD Name/Reference	Total Reinforcement (kg)
Internal ground slab			
External ground slab			
Jet grouting			
Ground stabilisation			
Piles			
Pile caps			
Pad footings			
Beams			
Columns			
Upper Floor Slab			
External Walls			
Internal Walls			
Retaining walls			
Other – please add as required			

Element	Specification	EPD Name/Reference
Roof sandwich panel systems		
Façade sandwich panel systems		
Precast wall system		
Precast slab system		
Insulation		
Rooflights		
Loading bay doors		
Other window products		
Other door products		
Steel (open sections)		
Steel (hollow sections)		
Masonry		
Other (please add rows as needed)		

Data Required	Quantity	Units
Site electricity consumption		
Site fuel consumption		
Site water consumption		
Site packaging waste		

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