

Versowood new Head Office CARBON FOOTPRINT REPORT

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REVISION: -



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RESULTS

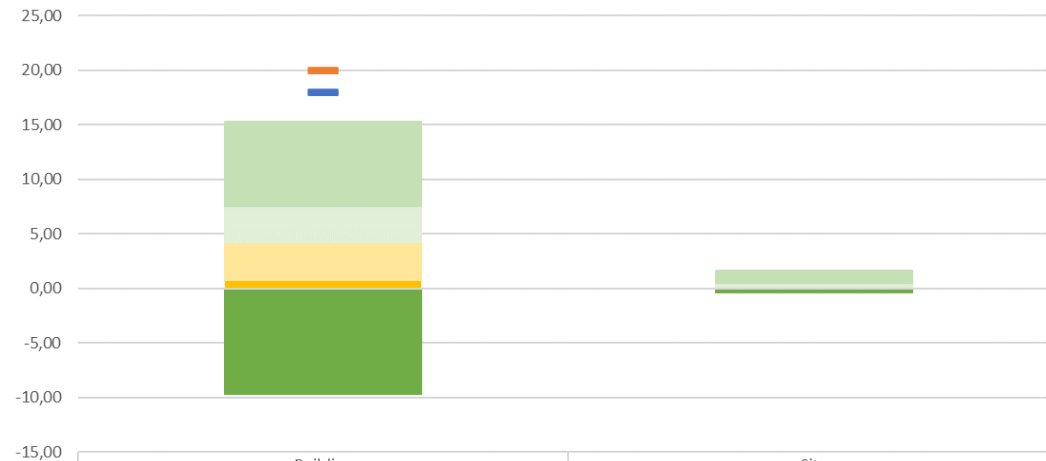


SUMMARY

RESULTS IN BRIEF

	Building	Construction site	In total	In total
	kgCO ₂ e/m ² ,a			tCO ₂ e
Carbon footprint A-C	15.27	1.63	16.90	2,460
Carbon footprint D	-9.69	-0.33	-10.02	-1,459

Carbon footprint, handprint of the building, and of the site by life-cycle stage
(kgCO₂e/m²/a)



	Building	Site
A1-A5	7,70	1,13
B4	3,31	0,39
B6	3,52	0,00
C1-C4	0,74	0,11
D	-9,69	-0,33
Limit value 2026-2027	20	
Limit value 2028->	18	

- Versowood's new head office is clearly below carbon footprint limit value that will come into effect in 2026 (for years 2026-2027), being approximately 5 kg CO₂ e/m² (approx. 24%) lower than the limit value.
- The main structures of the building are made of wood, which means that the carbon footprint is small and the carbon footprint (positive environmental impacts) is considerably large, approximately 10 kg CO₂ e/m²,a .
- The building's energy efficiency is also at a good level, considering the generally lower U-value of solid wood exterior walls. Solar panels are taken into account in the E-number, and their material-related emissions are included in the calculation.
- Compared to the stricter limit value that will come into effect in 2028 (18 kg CO₂ e/m²,a), the new head office is still clearly better (approx. 3 kg CO₂ e/m²,a / 15%)

INITIAL DATA AND LIMITATIONS

Versowood's new head office

Address	Asematie 9, 19110 Vierumäki
Project type	New building
Main use category	Office building
Net heated area, m ²	2 911
Construction site area, m ²	12 880
Year of completion (estimated)	2025
The planned service life of the building	100 years
Above-ground floors	2
Underground floors	0
Civil protection	No
Other structures on the plot	Garden canopies
Plot stabilization	No
Garage	No



Materials for building components

Foundation	Slab-on grade
Frame	Glulam-column-beam frame
Exterior walls	Glulam construction
Roofing	Machine-seamed sheet metal roof, NR trusses
Roof	Glulam construction
Base floor	Ground-based load-bearing concrete slab
Floors	Glulam construction

Energy use

Forms of energy production	District heating, grid electricity and solar panels
Energy class	A
E-value, kWh/m ² /a	75
Energy consumption, kWh	
District heating	173 785
Electric	154 409
District cooling	-
Renewable energy	10 000
Where does renewable energy come from	Solar panels, taken into account in the calculation
Energy emission factors, kgCO ₂ e/kWh	
District heating	0,0316
Electric	0,0309
District cooling	0,0085



CALCULATION INFORMATION

GENERAL

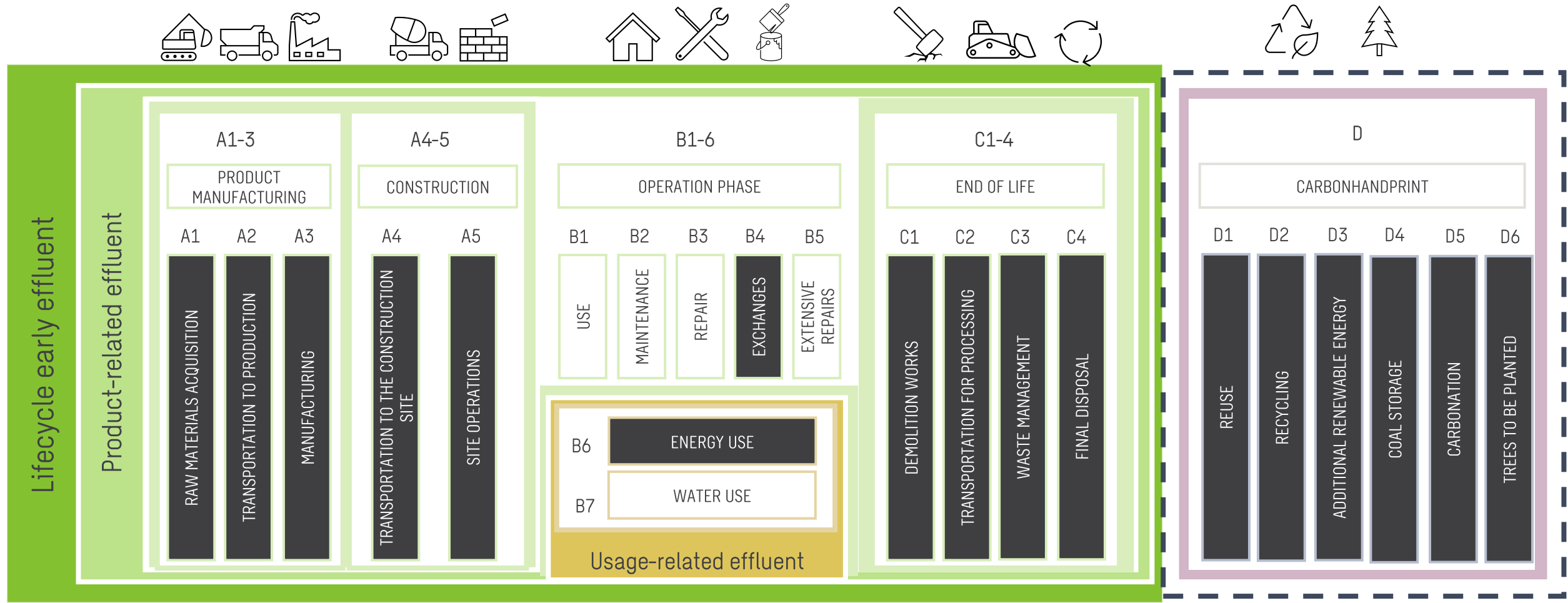
Project phase	Project planning / General design / Commissioning
Calculation program	One Click LCA
Length of the evaluation period	50 years
Calculation method	Ministry of Education and Science Assessment Method 2021, Ministry of Education and Science Regulation 1027/2024
Calculation date	28.5.2025
Author	Fanny Helin
Service life information	Based on RT cards (Product specific lifespan)
Priority order of material emission data	1. National emissions database 2. Product-specific emissions data (EPD) 3. Generic emissions data from the calculation program

Carbon footprint calculations are always estimates based on the best available information at the time of the assessment.



CALCULATION DATA

YM METHOD DESCRIPTION



Product-related emissions + Operation-related emissions = Life cycle emissions

CALCULATION DATA, DEVIATIONS AND SOURCES OF QUANTITATIVE DATA



Building			Calculation content	Exceptions	Source of quantity data
Construction site					
Regional parts	✗		1.1.1 Continents		RAK model
	✗		1.1.2 Supports		RAK model
	✗		1.1.3 Coatings		Yard plan
	✗		1.1.5 Structures of the area		RAK and ARK models
Building parts	✗	✗	1.2.1 Foundations		RAK and ARK models
			1.2.2 Subsoil		RAK and ARK models
			1.2.3 Frame		RAK and ARK models
			1.2.4 Facades, doors and windows		ARK model
			1.2.5 Outdoor decks and balconies		RAK and ARK models
			1.2.6 Roof structures		RAK and ARK models
Space parts		✗	1.3.1 Partitions (partitions, doors, stairs)		ARK model
		✗	1.3.2 Surfaces (floors, ceilings, walls) including surface		Ref.object, area-based
		✗	appliances)		Interior design plans
		✗	1.3.4.2 Chimneys and fireplaces	Not in the building	
		✗	1.3.5 Space elements (including bathroom modules)	Not in the building	
Building technology		✗	HVAC systems		Sub-basis SYKE
		✗	Main parts of a sprinkler system	Not in the building	
		✗	Elevators and escalators		ARK model
		✗	Geothermal system	Not in the building	
		✗	Solar panel system		Energy certificate

Sources in more detail	Date
(retrieved)	23.2.2024
ARK plans (retrieved)	May 26, 2025
RAK plans (retrieved)	May 26, 2025
Structure type list	May 13, 2024
structural components	2024
Energy calculations	8.12.2023

- Surface materials have been taken into account as an estimate based on reference projects.
- Building services have been calculated using the SYKE coefficient according to the method: Office building – average building services per m², which is based on the generic building services emissions of office buildings.
- The default waste factors used for the products are those from the OneClick LCA calculation program.
- For the carbon footprint, sections D1 Benefits from reuse and recycling and D4 Carbon stock impact have been calculated.
- The carbon handprint calculation is based on emissions data from One Click LCA . For the carbon handprint, sections D1 Benefits from reuse and recycling and D4 Carbon stock impact have been calculated. There is a lot of uncertainty in the results of the carbon handprint (D1-D5), as the related determination work is still ongoing.

RESULTS

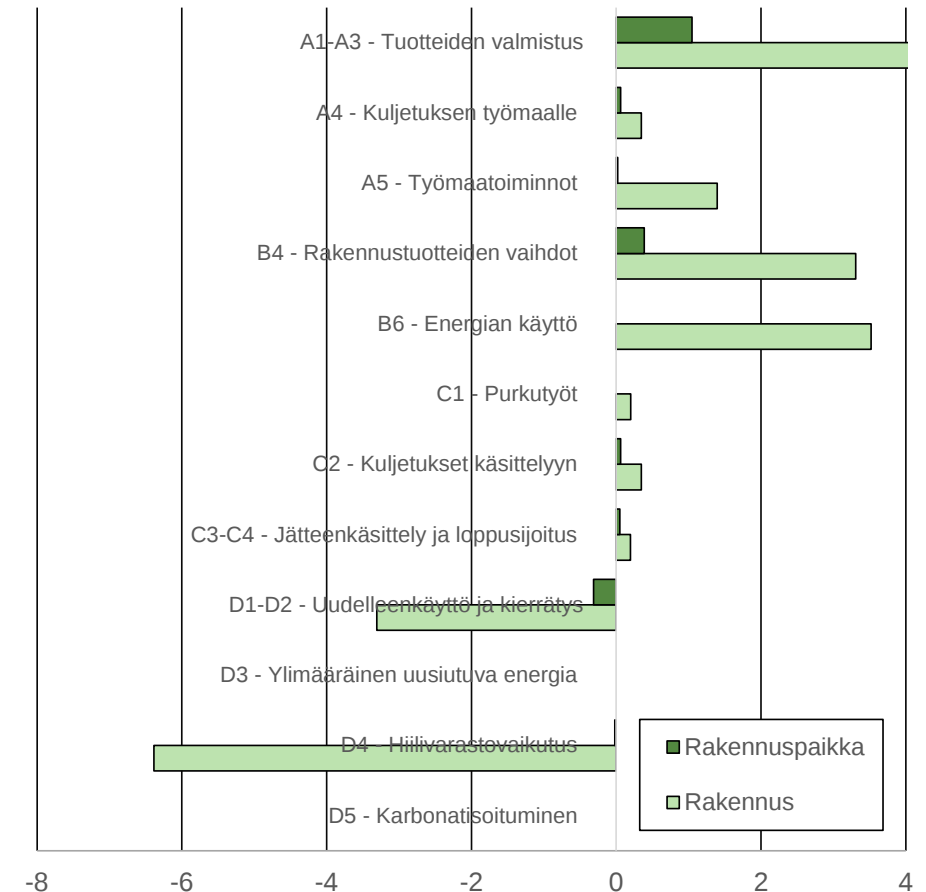
CARBON FOOTPRINT CALCULATION RESULTS

DESIGN SOLUTION

Elinkaaren vaihe	Rakennus kg CO ₂ e/m ² ,a	Rakennus- paikka kg CO ₂ e/m ² ,a	Yhteensä kgCO ₂ e/m ² ,a	Yhteensä tCO ₂ e
A1-A3 Rakennustuotteiden valmistus	5,96	1,05	7,00	1 020
*A1-A3 Eloperäinen hiili				0
A4 Kuljetukset työmaalle	0,35	0,06	0,41	59
A5 Työmaahävikki	0,22	0,02	0,24	34
A5 Työmaatoiminnot	1,18	0,00	1,18	172
Yhteensä A1-A5	7,70	1,13	8,83	1 285
B4 Rakennustuotteiden vaihdot	3,31	0,39	3,70	538
B6 Energian käyttö	3,52	0,00	3,52	512
Yhteensä B4, B6	6,83	0,39	7,22	1 050
C1 Purkutyöt	0,20	0,00	0,20	29
C2 Kuljetukset käsittelyyn	0,35	0,06	0,41	59
C3 Jätteenkäsittely	0,11	0,05	0,16	23
C4 Loppusijoitus	0,09	0,00	0,09	13
Yhteensä C1-C4	0,74	0,11	0,86	125
Hiilijalanjälki A-C	15,27	1,63	16,90	2 460
D1 Uudelleenkäyttö	-3,00	-0,31	-3,31	-482
D2 Kierrätys	-0,31	0,00	-0,31	-45
D3 Ylimääräinen uusiutuva energia	0,00	0,00	0,00	0
D4 Tuotteiden hiilivarastovaikutus	-6,39	-0,02	-6,40	-932
D5 Karbonatisoituminen	0,00	0,00	0,00	0
Hiilikädenjälki D	-9,69	-0,33	-10,02	-1459

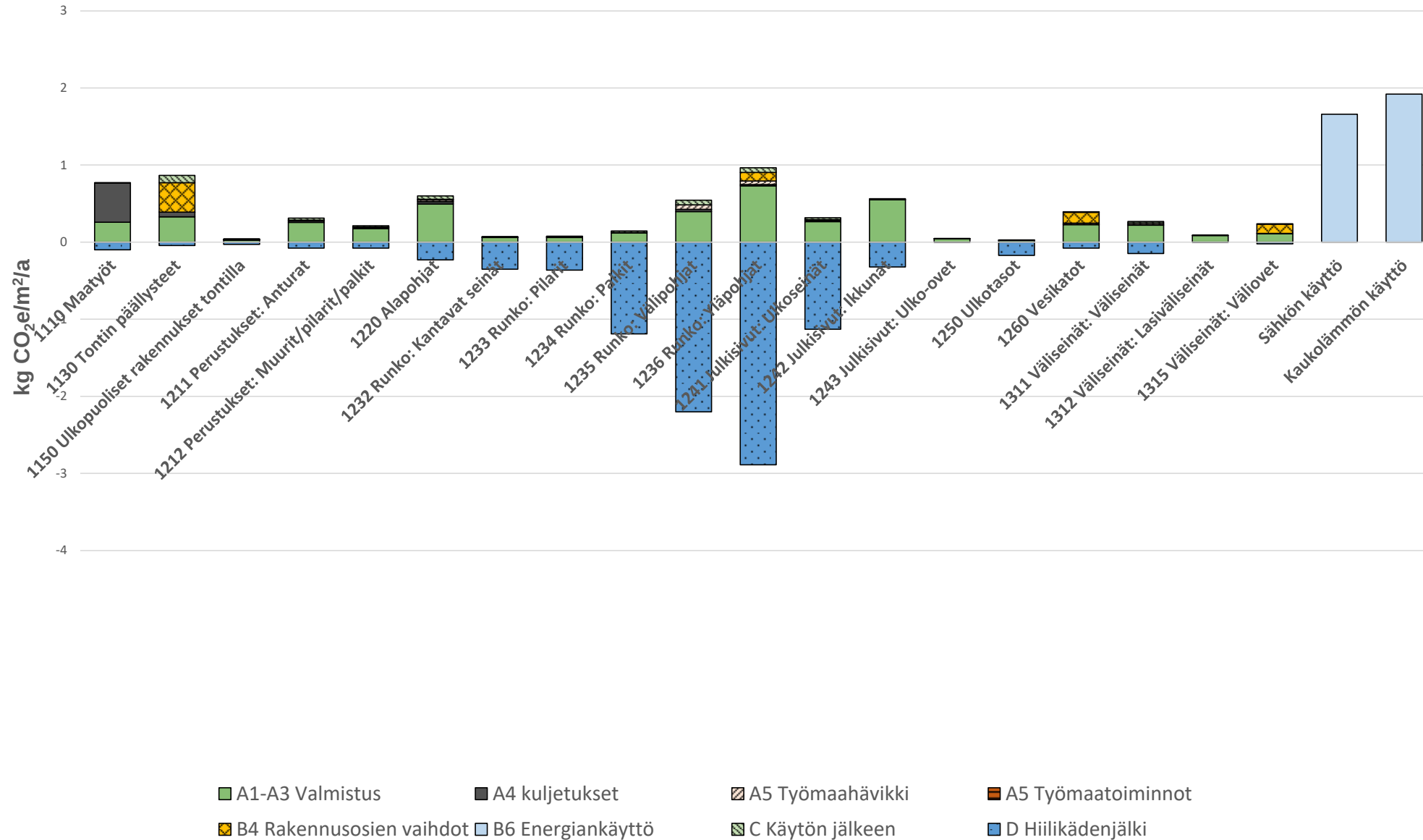
Lämmitetty nettoala	2 911 m ²
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Rakennuksen hiilijalan- ja -kädenjälki elinkaarivaiheittain (kgCO₂e/m²/a)



CARBON FOOTPRINT FORMATION

DESIGN SOLUTION



MAJOR EMISSION SOURCES A1-A3

DESIGN SOLUTION

	Rakennusosa	A1-A3 kgCO ₂ e/m ² ,a	A1-A3 %	Selite
1	2110. Lämmitysjärjestelmät: Toimistorakennus - talotekniikan keskiarvo per m ² (2024)	2,080	29,7 %	Talotekniikan neliöpohjanen arvo
2	1242 Julkisivut: Ikkunat: Puu-alumiini-ikkuna kolminkertaisella lasilla, per m ²	0,550	7,9 %	Ikkunat
3	1236 Runko: Yläpohjat: Kivivillaeriste kattoihin, tiheys 63 kg/m ³	0,480	6,9 %	Yläpohjan eriste
4	1220 Alapohjat: Valmisbetoni	0,320	4,6 %	Alapohjan betoni
5	1130 Tontin päällysteet: Asfalttobetoni (AB)	0,250	3,6 %	Pihan asfaltointi
6	1235 Runko: Välipohjat: Liimapuu	0,220	3,1 %	Välipohjan runko
7	1211 Perustukset: Anturat: Valmisbetoni	0,200	2,9 %	Anturoiden betoni
8	1110 Maatyöt: Murske (0...100 mm), kuiva tilavuus	0,190	2,7 %	Maatöiden sepeli
9	1260 Vesikatot: Teräslevy katteisiin ja seiniin, kuumasinkitty, maalattu tai maalaamaton tai COF	0,170	2,4 %	Vesikate
10	1235 Runko: Välipohjat: Pumpable gypsum based floor leveling screed	0,150	2,1 %	Välipohjan tasoite
11	1241 Julkisivut: Ulkoseinät: Kivivillaeriste ulkoseiniin, tiheys 61 kg/m ³	0,150	2,1 %	Ulkoseinän eriste
12	1212 Perustukset: Muurit/pilarit/palkit: Valmisbetoni	0,140	2,0 %	Perustusten betoni
13	1234 Runko: Palkit: Liimapuu	0,120	1,7 %	Palkkien liimapuut
14	1311 Väliseinät: Väliseinät: Kalkkietekatiili, kalkkietekaharkko	0,120	1,7 %	Väliseinien Kahi-tiilet
15	1236 Runko: Yläpohjat: Liimapuu	0,118	1,7 %	Yläpohjan runko
16	1241 Julkisivut: Ulkoseinät: Liimapuu	0,111	1,6 %	Ulkoseinien liimapuurunko
17	1315 Väliseinät: Väliovet: Parvekkeen lasiovi, puu-alumiinikehys, U-arvo 0.84	0,100	1,4 %	Lasiväliovet
18	1320 Tilapinnat: DPL laminate flooring	0,094	1,3 %	Lattian pintamateriaali
19	1220 Alapohjat: Teräsrudoite betonirakenteisiin	0,087	1,2 %	Alapohjan rudoitus
20	1312 Väliseinät: Lasiväliseinät: Lasinen väliseinä alumiinikehyksellä, per m ²	0,086	1,2 %	Lasiväliseinät
21	1220 Alapohjat: EPS-eriste	0,081	1,2 %	Alapohjan eriste
22	2140. Jäähdytysjärjestelmät: Aurinkopaneeli	0,078	1,1 %	Aurinkopaneelit
23	1130 Tontin päällysteet: Betoninen päällystekivi	0,073	1,0 %	Pihan betonilaatoitus
24	1311 Väliseinät: Väliseinät: Kipsi-kartonkilevy, erikoiskova	0,071	1,0 %	Väliseinien kipsilevyt
25	2511. Hissit: Henkilöhissi	0,070	1,0 %	Hissit
	YHTEENSÄ	6,110	87 %	

