

Form fylgir framboði

Arnhildur Pálmadóttir

Lendagur

Form follows function

(Louis Sullivan arkitekt)

eða

Form follows availability

(Anders Lendager arkitekt)





DOWNCYCLING

Downcycling can be considered similar to recycling, but with the new materials or components holding a lower value than the original. 'Value' in this instance can be in reference to economic, service life, or subsequent recyclability.



RECYCLING

Recycling is when a material or component is first comminuted or reduced to its raw materials and recovered. The recovered materials can then be used in the manufacture of the same type of products as the original ones, or for completely different products.



UPCYCLING

Upcycling refers to when materials, components, or products are reprocessed, refined or transformed into new building materials and components with an increased value (economic, service life).



DIRECT REUSE

Reuse covers when a material, component, or product is used for the same function or shape after a cycle of use. Reuse includes both processes where materials are used again as is or undergo some lighter touch machining processes.



Warehouse 47 - Sustainability & LCA-results

• Total building weight	24.119 tons
• Weight of new construction (17 %)	4.165 tons
• Weight of preserved construction (83%)	19.954 tons
• Weight of waste from renovation send to landfill (6%)	1.194 tons
• Amount of reused waste from renovation (65%)	772 tons
• Weight of building pr. m2 (19.267 m2 gross area)	1,25 ton
• Weight of new materials pr. m2	0,22 ton

Svar

umhverfis- og auðlindaráðherra við fyrirspurn frá Karli Gauta Hjaltasyni um útflutning á úrgangi.

1. *Hversu mikið magn af úrgangi er flutt árlega frá landinu? Hversu mikið af þeim úrgangi er endurnýtanlegt?*

Árlegur útflutningur á úrgangi síðustu þrjú árin hefur samkvæmt upplýsingum frá tollakerfi Skattsins verið eftirfarandi:

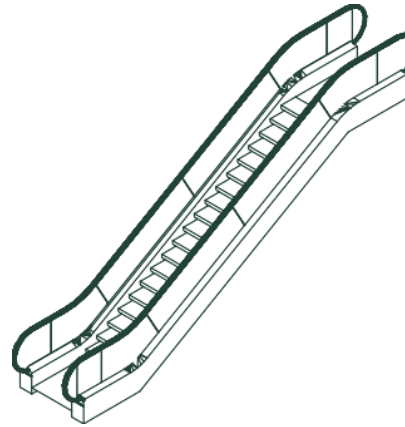
Ár	Tonn alls
2017	119.740.581
2018	121.620.939
2019	122.057.705

Endurnýtanlegur úrgangur til útflutnings á árunum 2017–2019 var 99,9985% af heildarútflutningi úrgangs. Almennt eru einungis spilliefni flutt út til förgunar. Spilliefni sem flutt voru út til förgunar á tímabilinu voru 0,0015% af heildarútflutningi úrgangs.

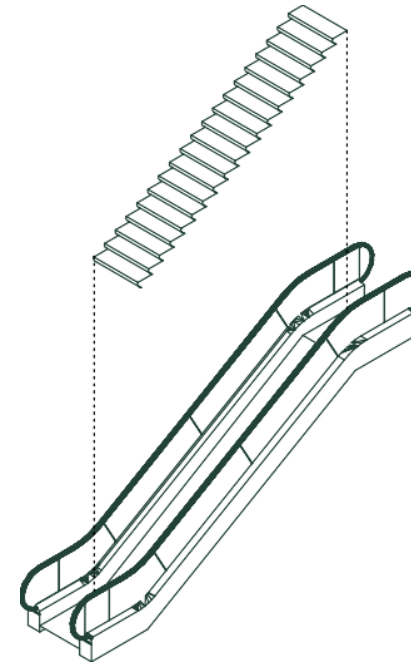


Escalator steps

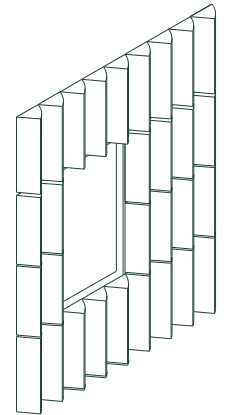
Available 1170 pieces (26 escalators / around 45 steps per escalator)



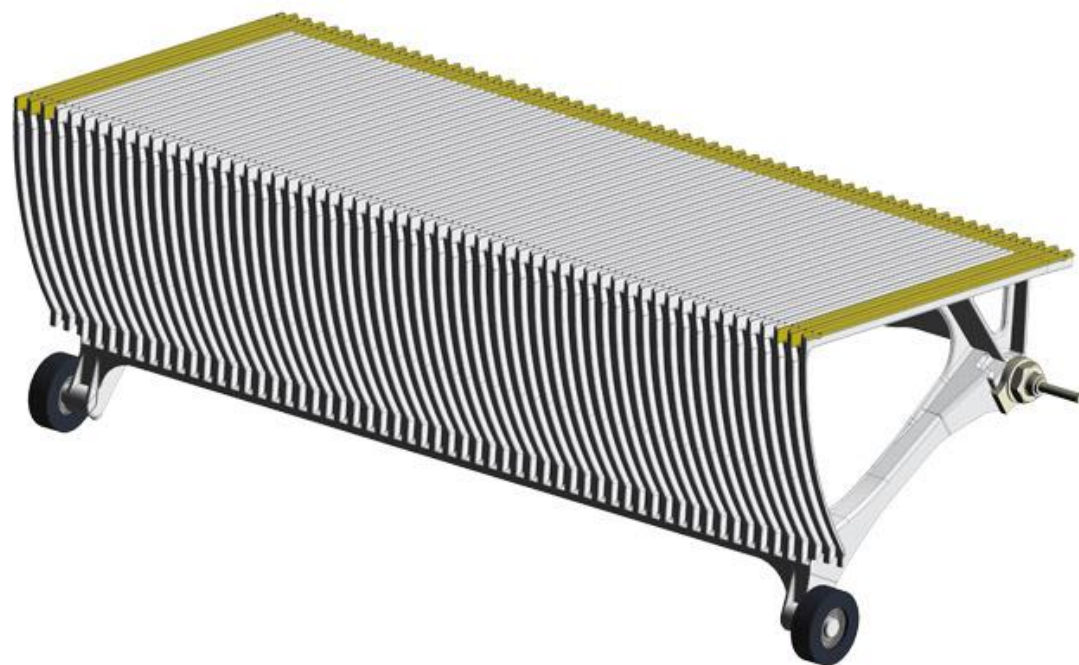
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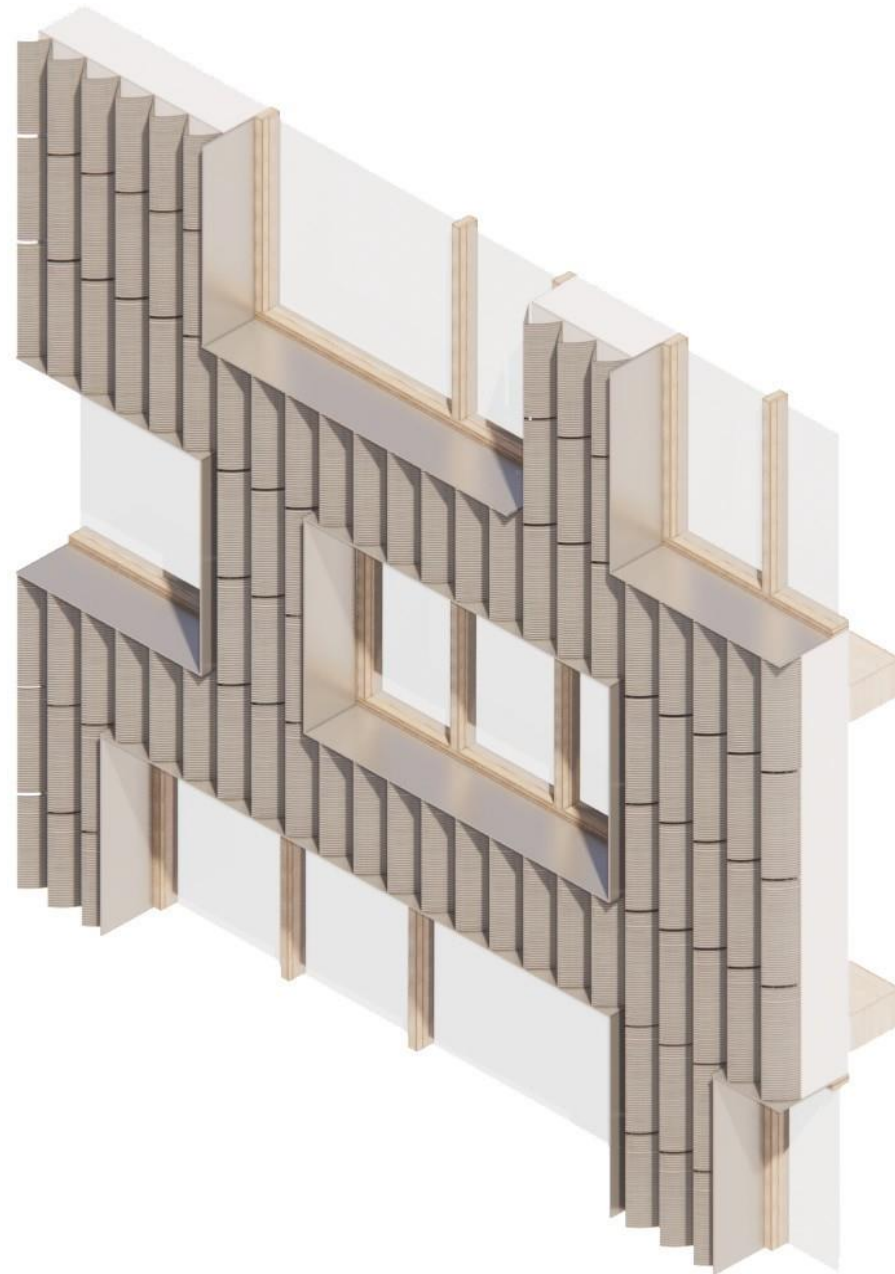
2



3



Estimated 864 pieces



Comparison of CO2-Impact

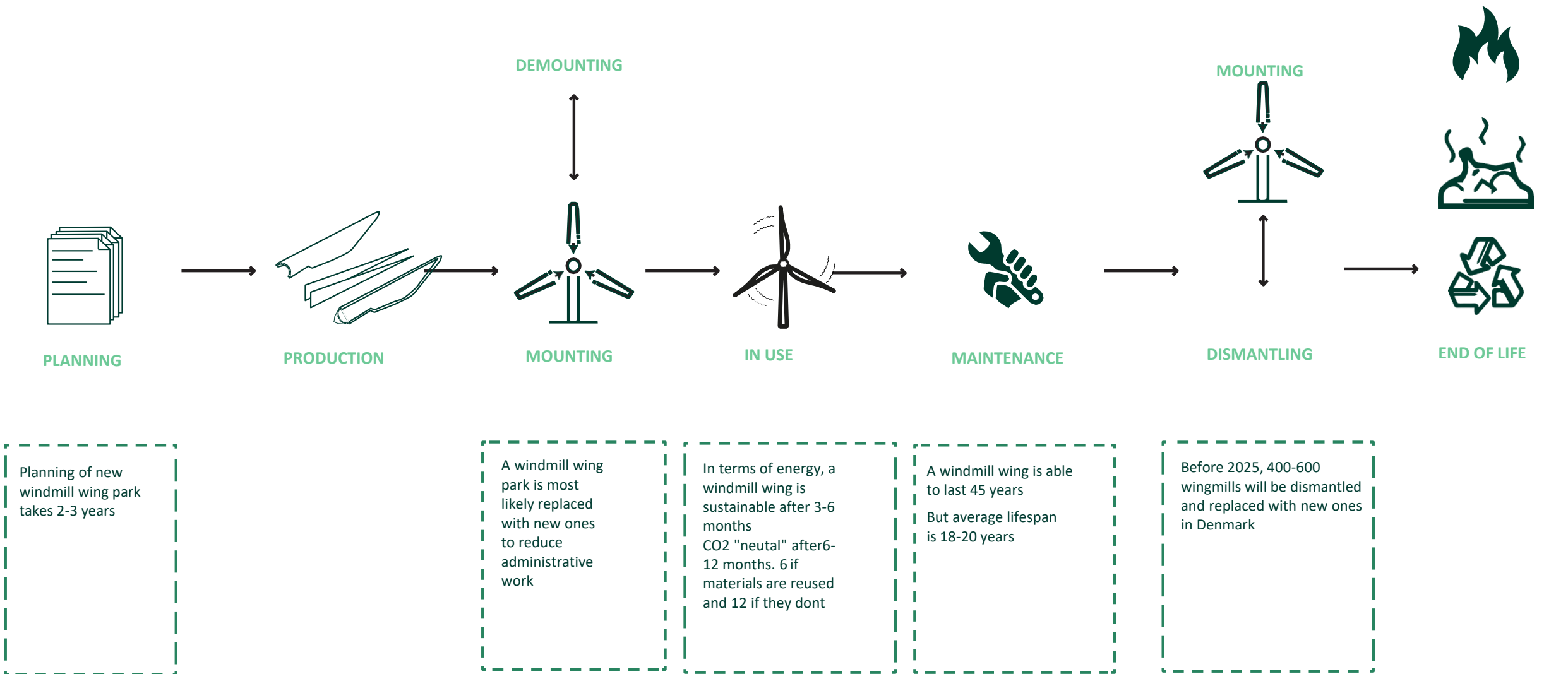




Áætlað er að 102.000 tonn af vindmylluvængjum verði teknir niður í Evrópu fyrir 2025



Life cycle for windmill wing



Process















FASADPLÁT 1

Ryggrodd 325 - ca. 745 m²
 Ryggrodd 331 - ca. 700 m²
 Ryggrodd 331 - ca. 3.000 m²
 Stålmål - ca. 2.000 m²



FASADPLÁT 2

Ryggrodd 325 - ca. 100 m²



FASADPLÁT 3

Ryggrodd 325 - 2.000 m²



FASADPLÁT DÖNN 1

ca. 330 m²
 Ryggrodd 327 - 2 st
 Ryggrodd 329 - 2 st



FASADPLÁT DÖNN 2

ca. 30 m²
 Ryggrodd 321 - 1 st



STÅLPÅL 1

175 x 80 x 12.000 mm
 Ryggrodd 321 - 24 st



STÅLPÅL 2

180 x -100 x 8.000 mm
 Ryggrodd 321 - 10 st



STÅLPÅL 3

232 x -150 x 6.000 mm
 Ryggrodd 321 - 10 st



STÅLPÅL 4

180 x -100 x 8.000 mm
 Ryggrodd 321 - 20 st



STÅLPÅL 5

ca. 80 x 80 x 10.000 mm
 Stålmål - 4 st



TRÄVERGSCALE 1

Ryggrodd 325 - 217.000 x 40 x 125 (2 st)
 Ryggrodd 321 - ca. 80.000 x 45 x 125 (2 st)



FACKEVERGSCALE 1

26.600 x 2.300 mm
 Ryggrodd 321 - 84 st



FACKEVERGSCALE 2

26.900 x 4.300 mm
 Stålmål - 20 st



STÅLBALE 1

-10.000 x 20 x 170 mm
 Ryggrodd 325 - 17 st



STÅLBALE 2

Ryggrodd 311 - ca. 17 st



TRÄVERGSCALE 2

ca. 217.000 x 500 x 800 mm
 Ryggrodd 321 - 217 st



TRÄVERGSCALE 3

ca. 217.000 x 300 x 600 mm
 Ryggrodd 325 - 217 st



FACKEVERGSCALE 3

26.600 x 2.300 mm
 Ryggrodd 321 - 14 st



FACKEVERGSCALE 4

ca. 10.000 x 130 x 400 mm
 Ryggrodd 321 - 8 st



TRÄVERGSCALE 4

Stålmål - ca. 130 st (2 st)



ARMERAD BETONGLOCK

Ryggrodd 321 - 90 st



LÄTTBETONGPLÅTAR

Ryggrodd 321 - 12.500 m²
 Ryggrodd 321 - 3.000 m²



ARMERAD BETONGGOLV

Ryggrodd 325 - 2.100 m²



BETONGGOLV

Ryggrodd 317 - ca. 400 m²
 Ryggrodd 321 - ca. 12.500 m²
 Ryggrodd 325 - ca. 2.000 m²



ASPHALT

Ochord kvantitet



GÄTSTEN

Stålmål - ca. 300 m²



CEMENTBETON

Ochord kvantitet



TRÄGOLV

Ryggrodd 311 - ca. 100 m²
 Ryggrodd 321 - ca. 400 m²



TRÄGOLV

Ryggrodd 311 - ca. 300 m²
 Ryggrodd 325 - ca. 500 m²
 Ryggrodd 325 - ca. 400 m²
 Ryggrodd 325 - ca. 400 m²



BÄCKENHÖR

Ryggrodd 325 - 40 st
 Stålmål - ca. 100 st



FÖNSTER

Ryggrodd 325 - ca. 228 m²



FACKEVERGSCALE 4

14.000 x -3.000 x 50 mm
 Ryggrodd 321 - 10 st



KRAN 1

Ryggrodd 325 - 25 st (8 st)



KRAN 2

Ryggrodd 325 - 1 st



INDUSTRIELAMPSTÄLLNING

Ryggrodd 321 - ca. 300 st
 Ryggrodd 325 - 272 st
 Ryggrodd 321 - ca. 60 st



STÅLPÅL 3

170 x 80 x -10.000 mm
 Stålmål - 7 st



STÅLPÅL 4

20-40 x 40 x -6.000 mm
 Stålmål - 14 st



HÖGÅR FÖNSTER

ca. 42 m² x 47 (30-40)
 Ryggrodd 325 - 1.000 m²



FÖNSTERHÖR

2.000 x 1.800 mm (2 st)
 Ryggrodd 321 - 16,2 m²



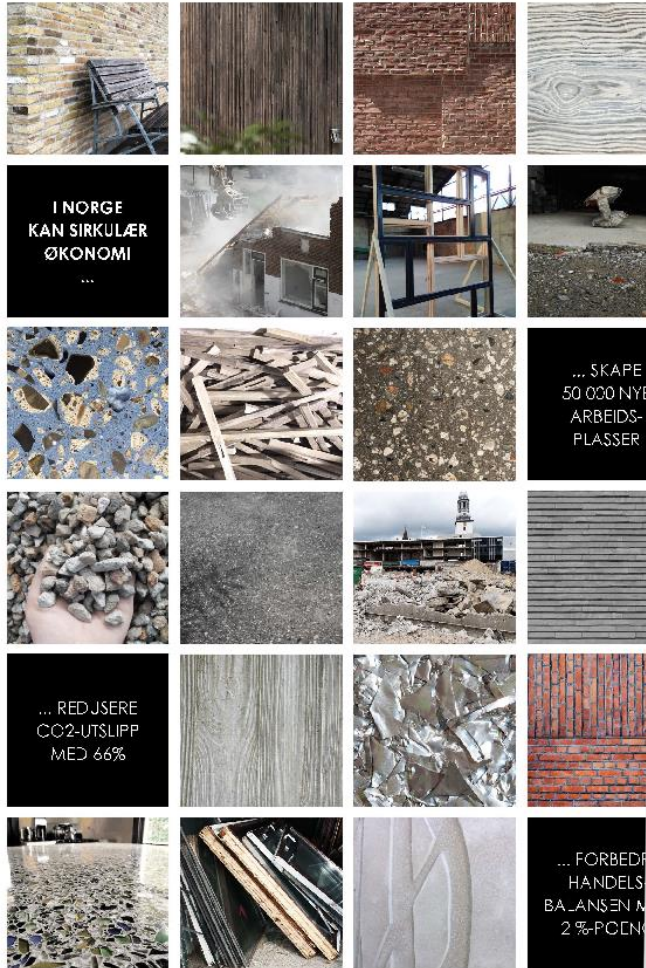
STÅLBALE 3



TRÄBALE 1



VENTILATIONSEINHEIT 1



BYGNING 36 - LILLEAKERVEIEN 2A

MATERIALEOVERSIKT



Adresse: Lilleakerveien 2A, 0283 Oslo, Norway
Byggeår: 1998
Totalt areal: 18.900 m²
Konstruksjon: Betong og stål

Materieler	ID	Element	Mengde	Enhet	Plassering	Notat
Betong	A.1.1	Concrete Slab	4040	m ³	Every floor	25 thickness
	A.1.2	Column	60	m ³	Every floor	
		subtotal	4040	m ³		
Glass	A.2.1	Glass 1	170	m ²	Courtyard	Energy glass, Trippel-glass, 1280x1780mm + 400x1600mm
	A.2.2	Glass 2	520	m ²	Lang fasade	Energy glass, Trippel-glass, glass, 1020x1750mm+660x1680mm
	A.2.3	Glass 3	130	m ²	Side fasade	Energy glass, Trippel-glass, 680x1440mm 2/0x1330mm
	A.2.4	Glass 4	80	m ²	Side of side fasade	Energy glass, Trippel-glass,
	A.2.5	Glass 5	130	m ²	top of side fasade	Energy glass, Trippel-glass,
Murslein		subtotal	1030	m ²		
	A.3.1	White Brick	500	m ²	on side fasade	210x63x100mm
	A.3.2	White Brick	1000	m ²	on side fasade	210-280x60x80x90mm
Konstruksjonstål		subtotal	1520	m ²		
	A.4.1	column	3	m ³	inside the wall except basement	
	A.4.2	IPE220 /150 Pillar	3	m ³	inside the wall except basement	
	A.4.3	190x240 beam	8	m ³	inside the wall except basement	
Interier	A.4.4	HE beam	3	m ³	inside the wall except basement	
		subtotal	19	m ³		
	A.5	Ceramic tile			Office floor	
	A.6	Slate tile			Entrance	
	A.7	Ceiling Panel			Almost every floor	
	A.8	Tregulv			Office floor, front desk	
	A.9	Carpet			Office floor, front desk	

Potensialer:

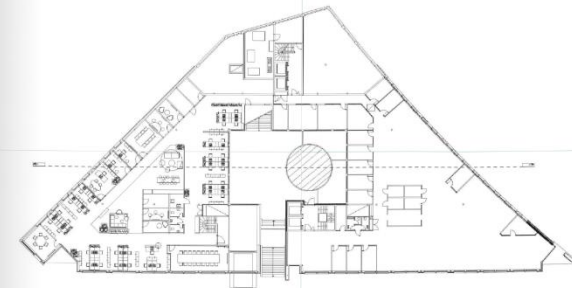
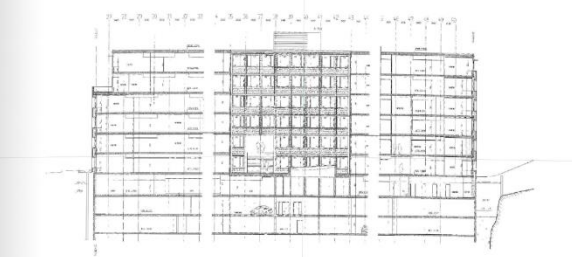
- Ung bygning med unge materialer (1998)
- Store mengder hvitt teglfasade
- Store mengder vinduer i ersattede støttester

Videre undersøkelser:

- Forskjelligartet gulvbekledning
- Mange små vinduer

BYGNING 36 - LILLEAKERVEIEN 2A

TEGNINGER



MUSTAD GROUP	Lilleakerveien 2A
Dato	13-09-2018
Skala	1:300
Format	A4



Hér áður fyrr vorum við duglegri að nýta hluti aftur
Torfærinna, byggt við breytt og fluttur





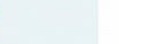
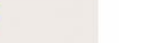








A MATERIAL PASSPORT FOR A HOME:

	MATERIAL	QUANTITY	REUSE/RECYCLE/ DOWNCYCLE	SUSTAINABILITY
FOUNDATION	 Concrete piles	60,000 kg	  	 
	Concrete foundation	14,000 kg	  	 
FACADE	 Stained glass	15 kg	  	 
	Glass	1,500 kg	  	 
	Meranti window frames	350 kg	  	 
	Barn wood	2,000 kg	  	  
FLOORING	 Concrete ground floor	21,000 kg	  	 
	Concrete system floor	105,000 kg	  	 
ROOFING	 Wooden roof structure and facade	2,500 kg	  	  
	Roof tiles	4,000 kg	  	  
INTERIOR WALLS	 Sand-lime brick	56,000 kg	  	 

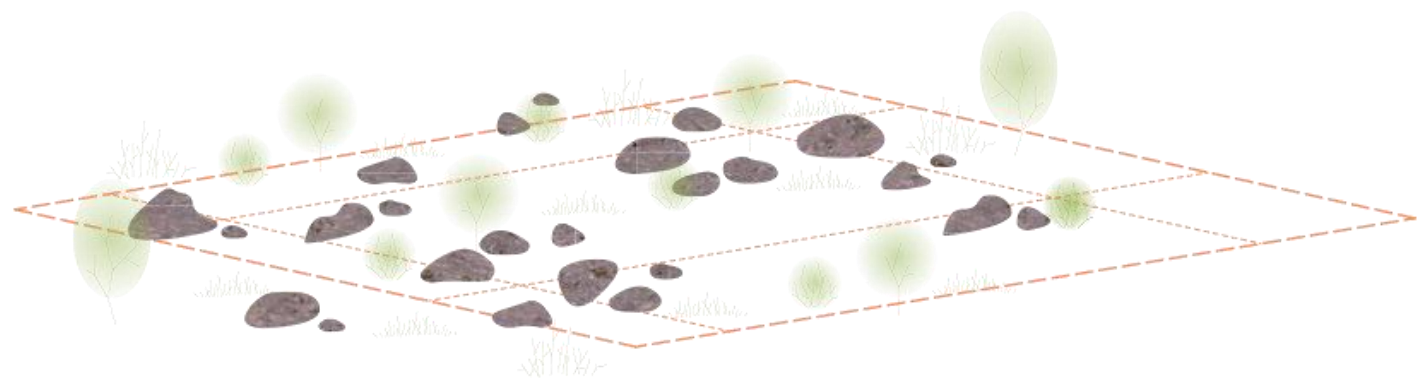


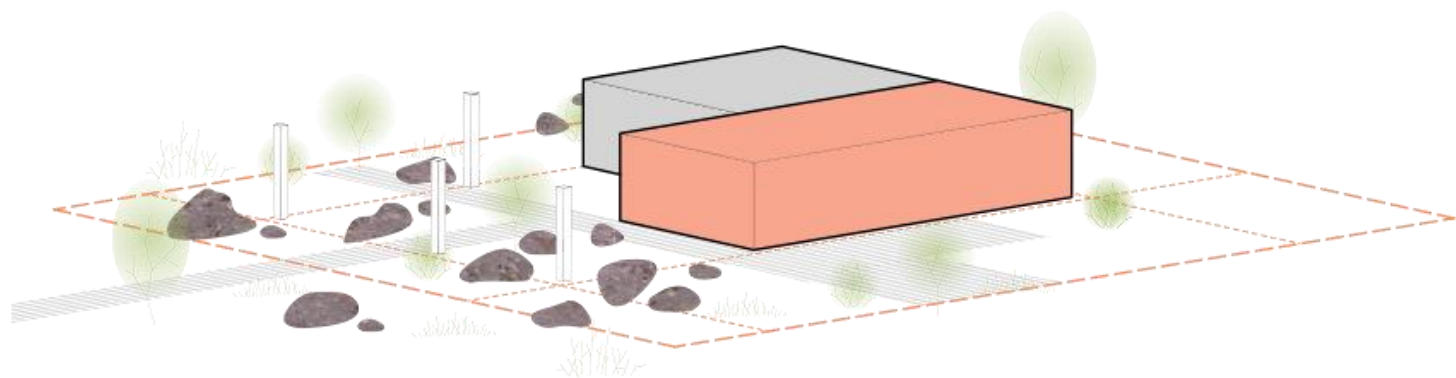
HÁTEIGSVEGUR

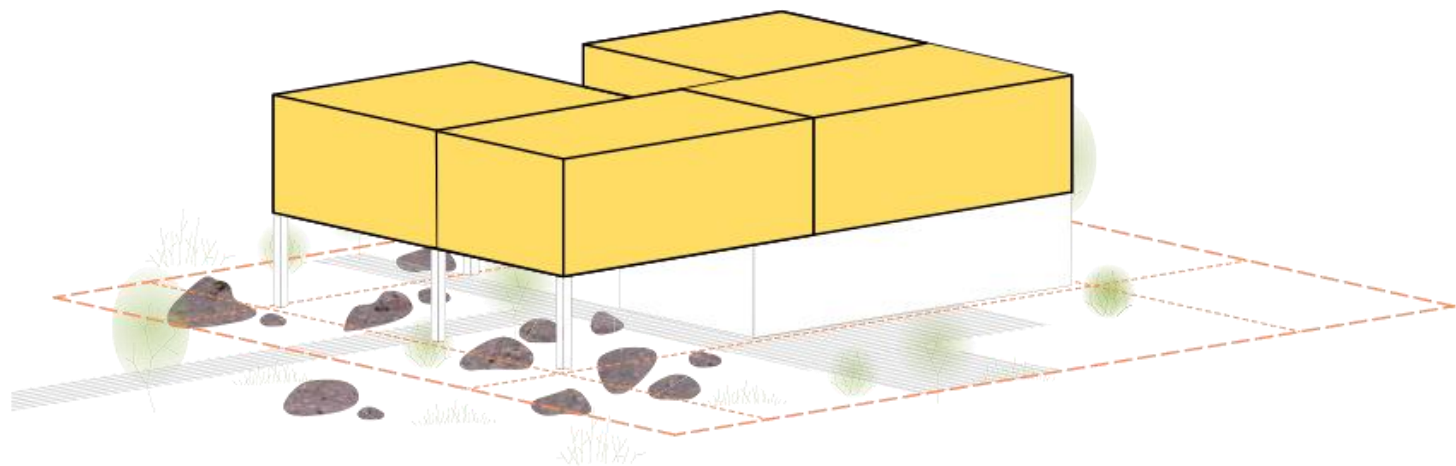
FJÖLBÝLISHÚS FYRIR FÉLAGSBÚSTAÐI

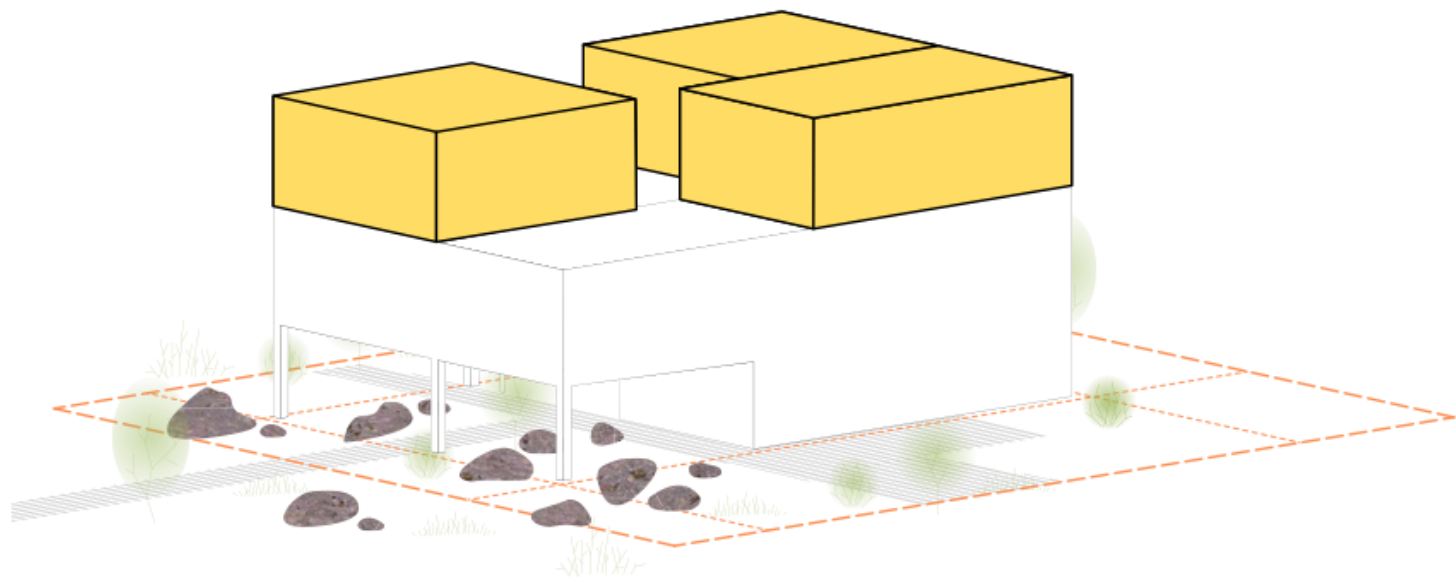


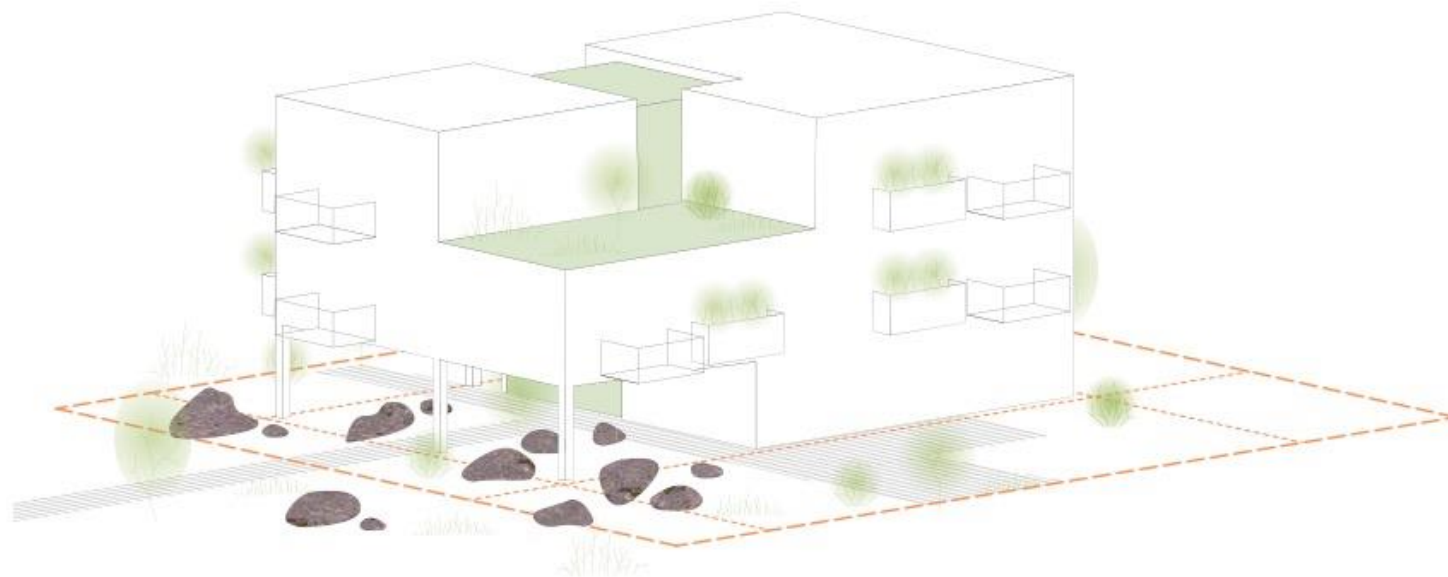


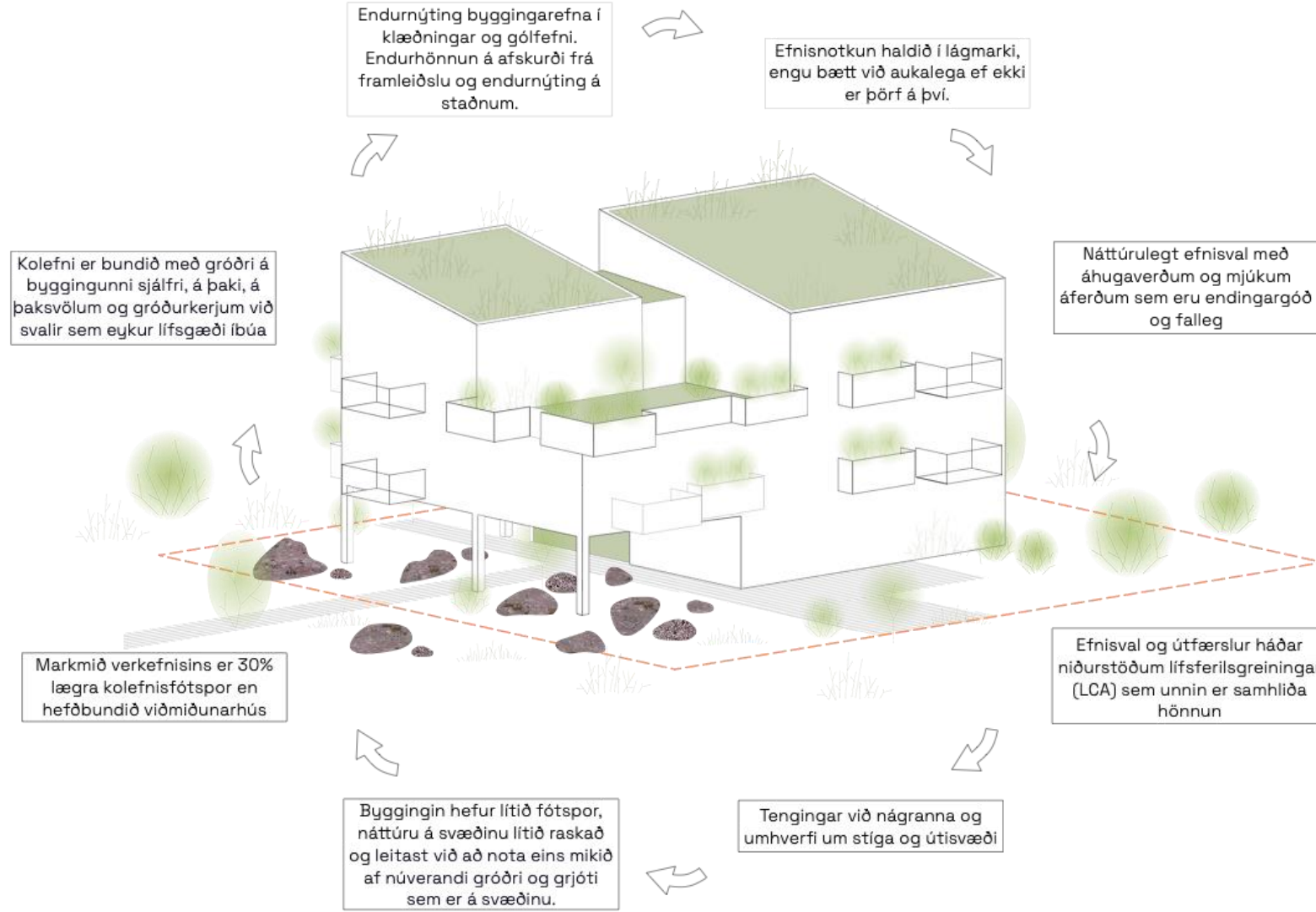












LCA - Samantekt		VSÓ RÁÐGJÖF		Unnið	HAD
				Samþykkt	LSÐ
				Dags.	16.1.2023
Samanburður með LCA greiningum					
		Hefðbundin hönnun	Betri hönnun	Sparnaður	%
Gólfefni	Lýsing	Gólfefni í sameign og geymslum eru flísar. Íbúðir með parketi og vinyldúk á baðherbergi	Gólfefni í sameign og geymslum er brot úr íslensku blágrýti/basalti . Íbúðir og baðherbergi með Terrazzo.		
	Global Warming Potential GWP	30,31	4,96	25,35 tonn CO ₂ -ig	84%
Innveggir	Lýsing	Innveggir almennt úr tvöföldu gipsi, stál rammar með einangrun á milli	Létt steypu blokkir, einungis gipsveggir m. stál grind og einangrun á takmörkuðum svæðum		
	Global Warming Potential GWP	7,43	1,52	5,91 tonn CO ₂ -ig	80%
Loftræsti kerfi	Lýsing	Ein loftræsti samstæða (1 stórt kerfi)	Dreift kerfi (8 lítil)		
	Global Warming Potential GWP	6,20	0,89	5,31 tonn CO ₂ -ig	86%
Gluggar og hurðir	Lýsing		Endurnýttir gluggar á sameignar svæði og endurnýttar hurðir		
	Global Warming Potential GWP	9,18	8,17	1,01 tonn CO ₂ -ig	11%
Klæðningar	Lýsing	Hefðbundin áíklæðning	Afgangs timbur brennt með japanskri aðferð		
	Global Warming Potential GWP	2,40	0,42	1,98 tonn CO ₂ -ig	83%
Steypa	Lýsing	Hefðbundin	Lægri steypustyrkur, umhverfisvænni steypa		
	Global Warming Potential GWP	112,29	77,89	34,40 tonn CO ₂ -ig	31%
Lækkun á kolefnisspori út frá efnissamanburð					
		167,81	93,85	73,95	44%
Heildarsamanburður					
Bygging	Lýsing	Hefðbundin	Betri hönnun		
	Global Warming Potential GWP	241,00	165,00	76,00 tonn CO ₂ -ig	32%
		7,61	5,22	2,39 kg CO ₂ -ig/m ² /ár	

LCA - Háteigsvegur 59		VSÓ RÁÐGJÖF		Unnið	HBJ
				Samþykkt	HAD
				Dags.	25.08.2022

LCA greiningin er gerð í OneClick í samræmi við EN 15978.

Líftími greiningar er 60 ár.

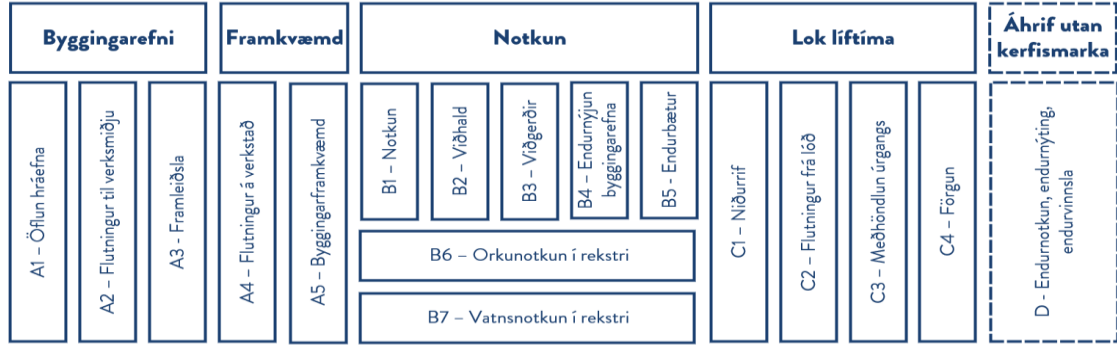
Gerður er samanburður á tveimur gerðum gólfefna.

Valkostur 1:

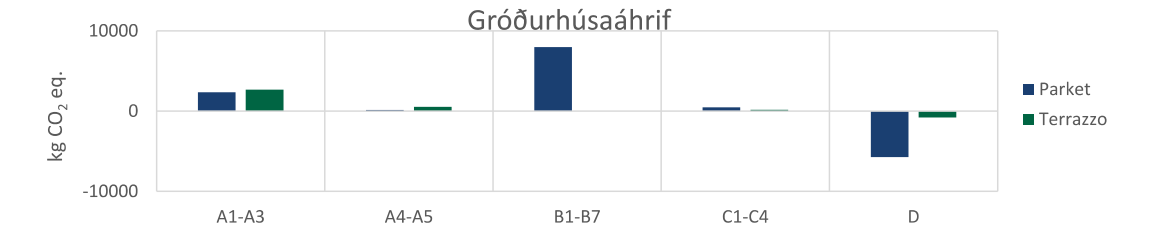
Parket	Plast parket með 5 mm XPS efni undir á 365 m ² flöt.	Efni Engineered wood flooring, biogenic XPS insulation with HBCD retardant
	EPD nr.	
	INIES_CMLD20211019_085845, 30458 EPD-EXI-20140154-IBE1-EN	

Valkostur 2:

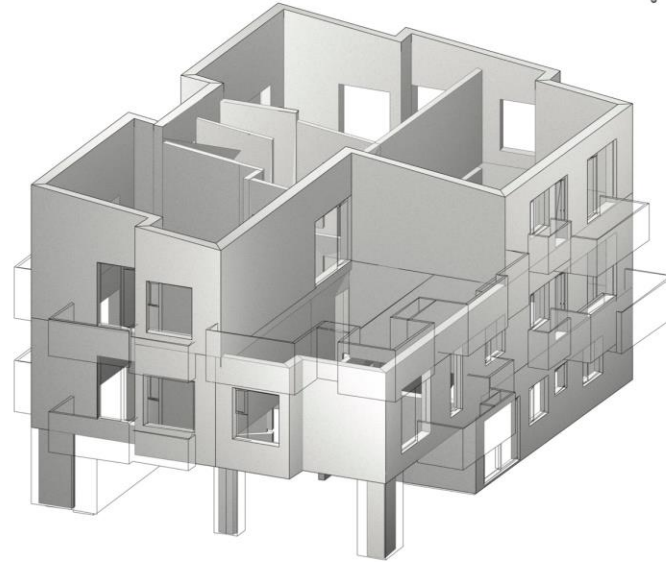
Terrazzo	30 mm flotefni og 50 mm terrazzo á 365 m ² flöt. Brot af íslensku blágrýti/basalti, vatnsskorið í flísar/hellur, fúgað á milli með steypu.	Efni Terrazzo Flotefni
	EPD nr.	
	NEPD-3153-1797-EN NEPD-1825-777-EN	



Niðurstöður LCA			
Gróðurhúsaáhrif (GWP)	Parket	Terrazzo	Eining
A1-A3	2,4E+03	2,7E+03	kg CO ₂ eq.
A4-A5	1,5E+02	5,2E+02	kg CO ₂ eq.
B1-B7	8,0E+03	0,0E+00	kg CO ₂ eq.
C1-C4	4,8E+02	1,7E+02	kg CO ₂ eq.
D	*út fyrir kerfismörk	-7,9E+02	kg CO ₂ eq.
Heildaráhrif yfir líftíma	1,1E+04	3,3E+03	kg CO ₂ eq.



HÁTEIGSVEGUR 59 - STAÐSTEYPTIR VEGGIR



KOLEFNISLOSUN





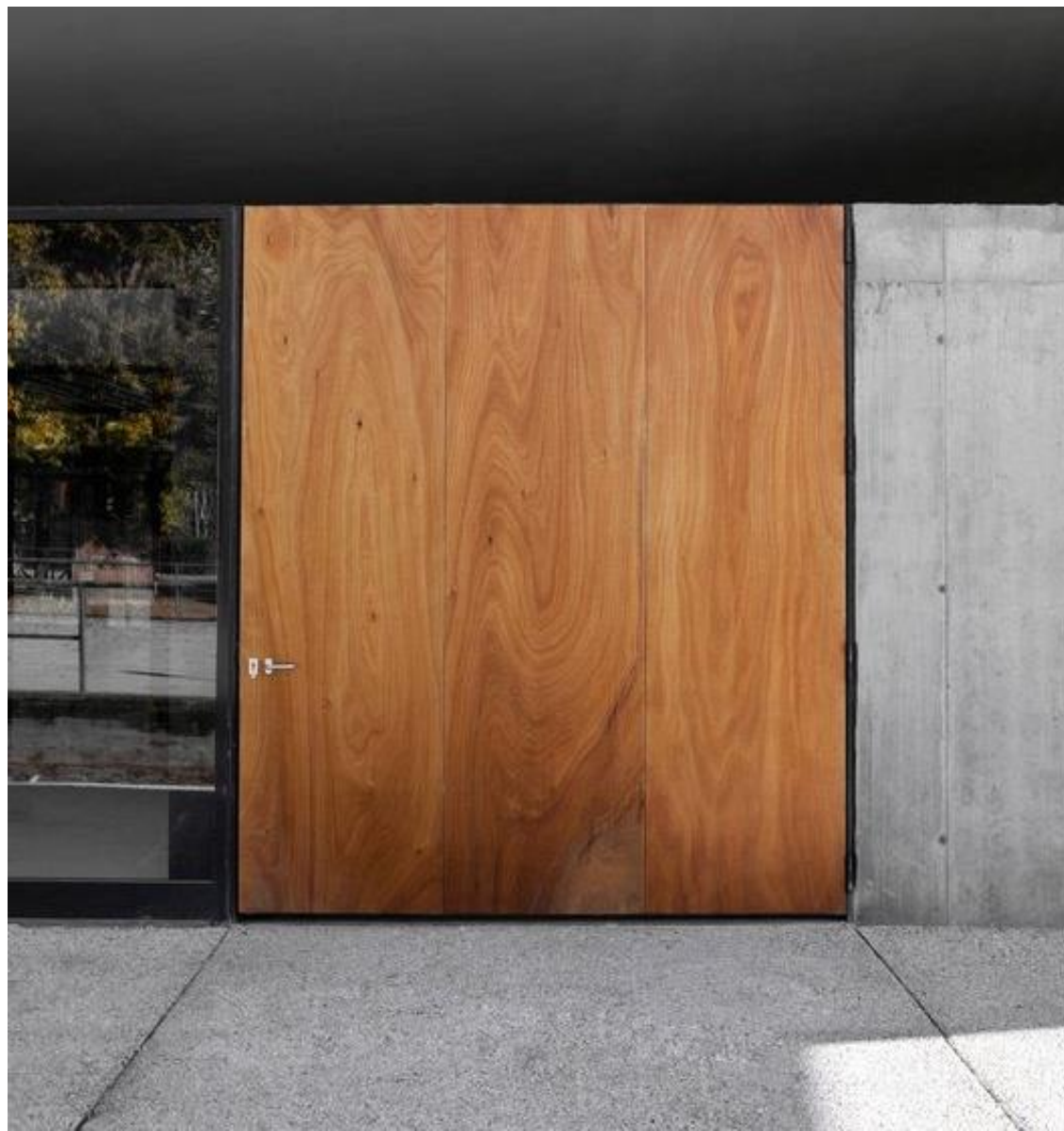


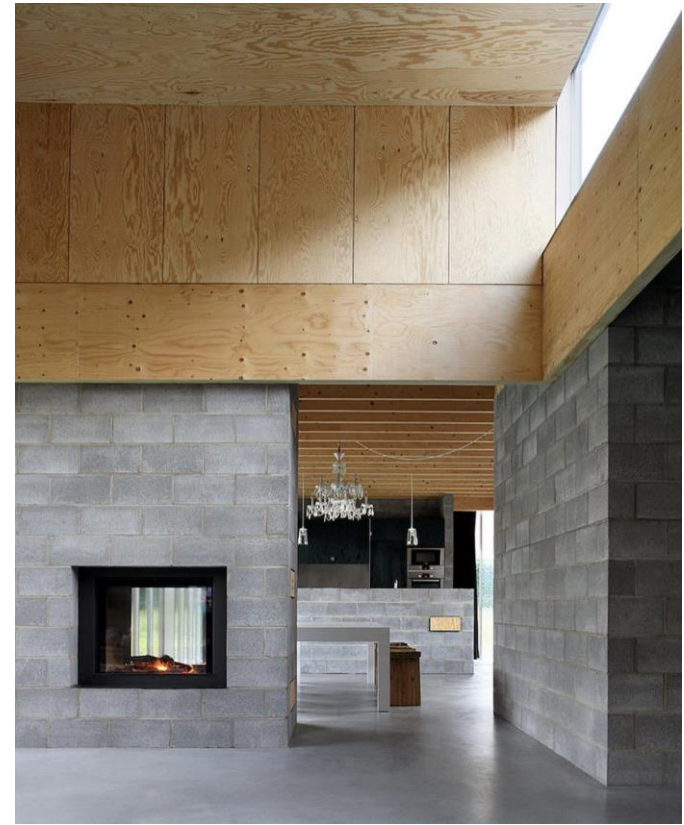




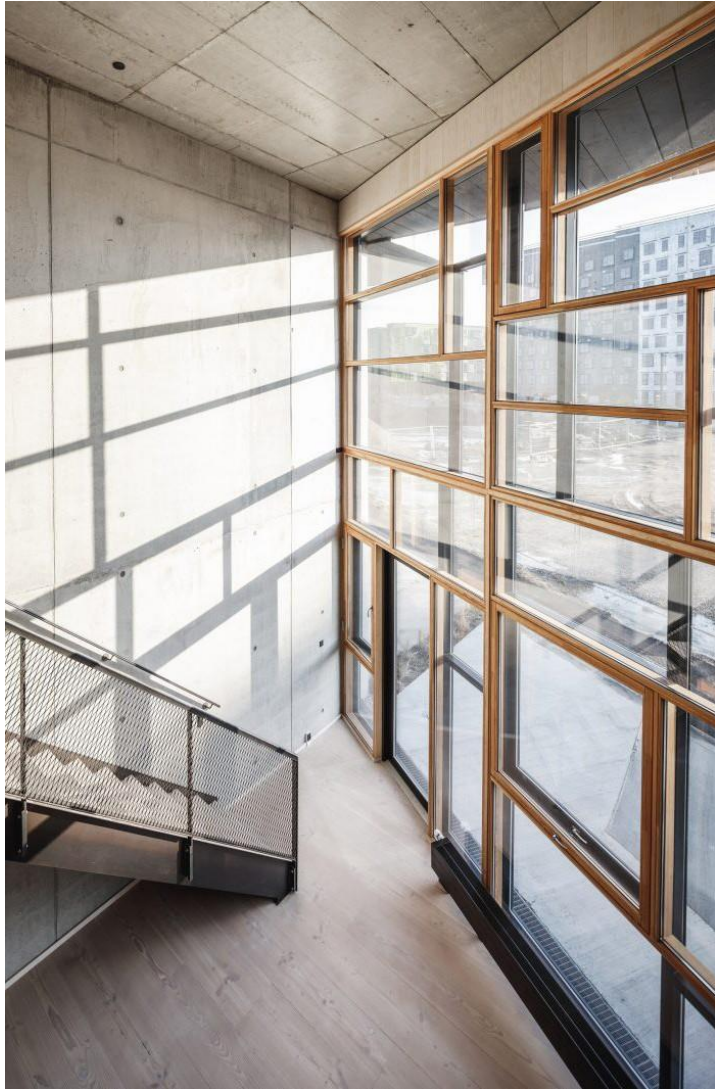










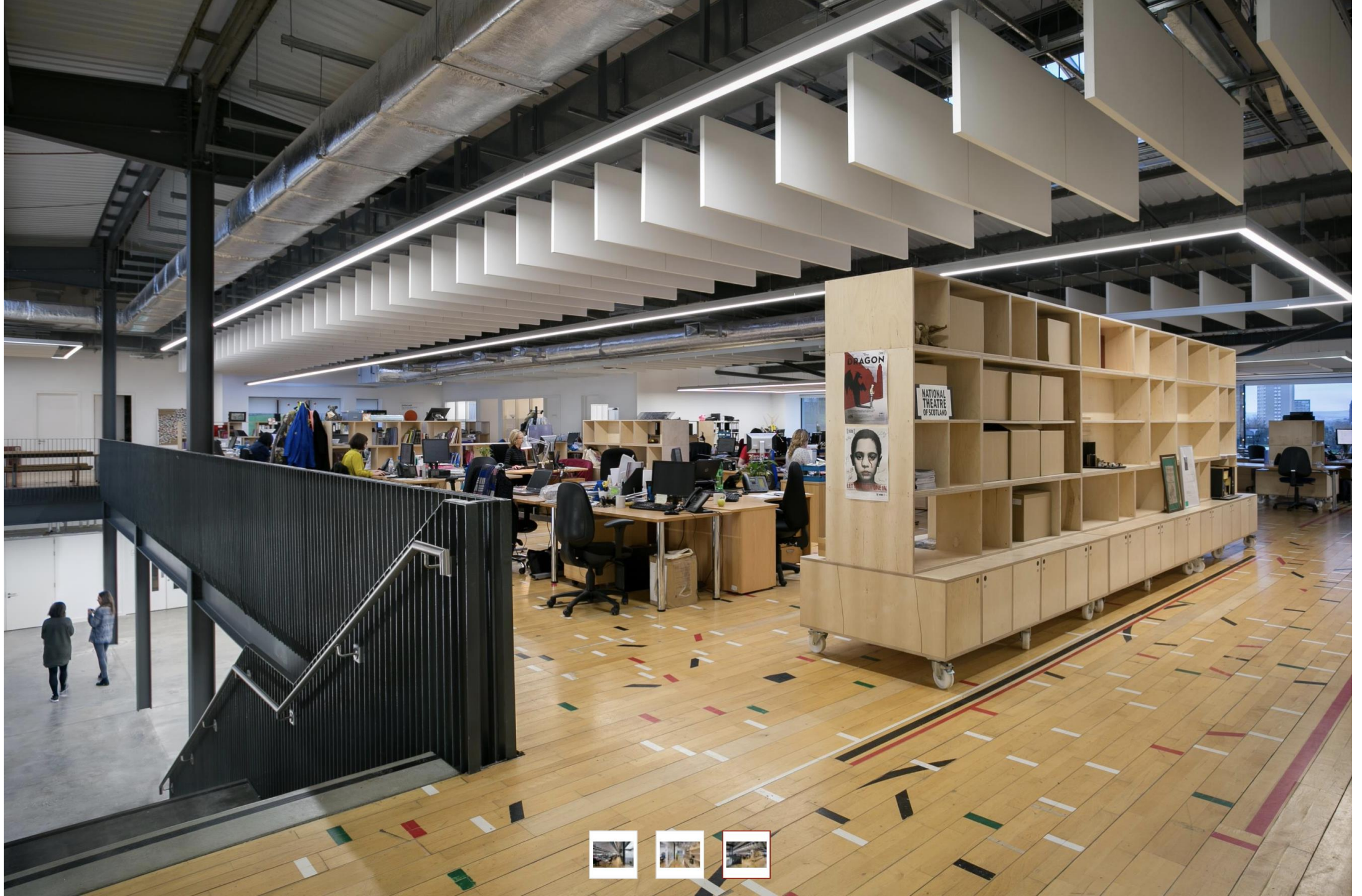


לנדנדר











SOURCING AND PROCESSING

Introduction

This document describes process of sourcing, handling and treating reclaimed timber for a use as a new facade material. It takes into consideration properties, condition and source of timber in order to determine the best possible treatment to increase the lifespan of material. At the same time a high emphasis is put on avoiding environment damaging chemicals and processes. The techniques for the entire process as well as built up will be described and will lean on traditional, well-known practices already used in the building industry in order to make the work flow as easy and as economically viable as possible.

Preferred wood types based on natural durability

1st priority

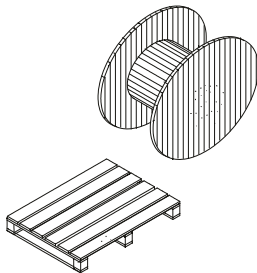
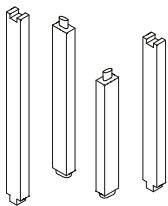
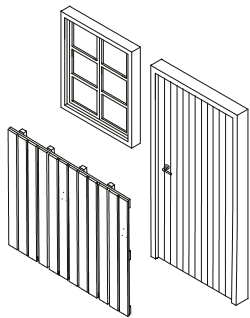
Western red cedar
Teak

2nd priority

Thuja
Oak

3rd priority

Douglas fir
Fir
Larch
Spruce

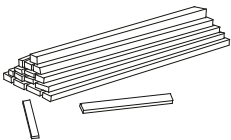


Sourcing

1. Windows, doors, flooring, terrace planks, wood facades and other elements sourced from demolition projects

Properties:

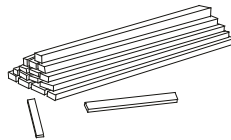
Elements will most likely be treated and in f.x. case of windows will be composite materials.
There will be with varying levels of damage.
Varying dimensions will fore come.



2. Production waste and offcuts from industry such as timber framing, window, door, floor producers.

Properties:

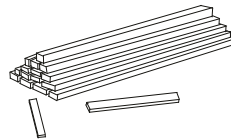
Clean, new untreated timber ready for treatment
Varying dimensions and lengths will forecome



2. Industrial wood waste such as cable reels, pallets

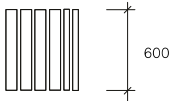
Properties:

Rough, untreated timber with varying levels of damage and patina.

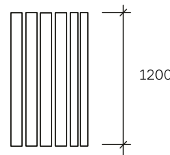


Processing

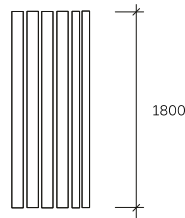
Breaking down to single elements and sorting by common dimensions.
Sorting out damaged elements.
Stripping of paint (only if damaged and if other than paint treatment is chosen later on).



Sorting by common dimensions.



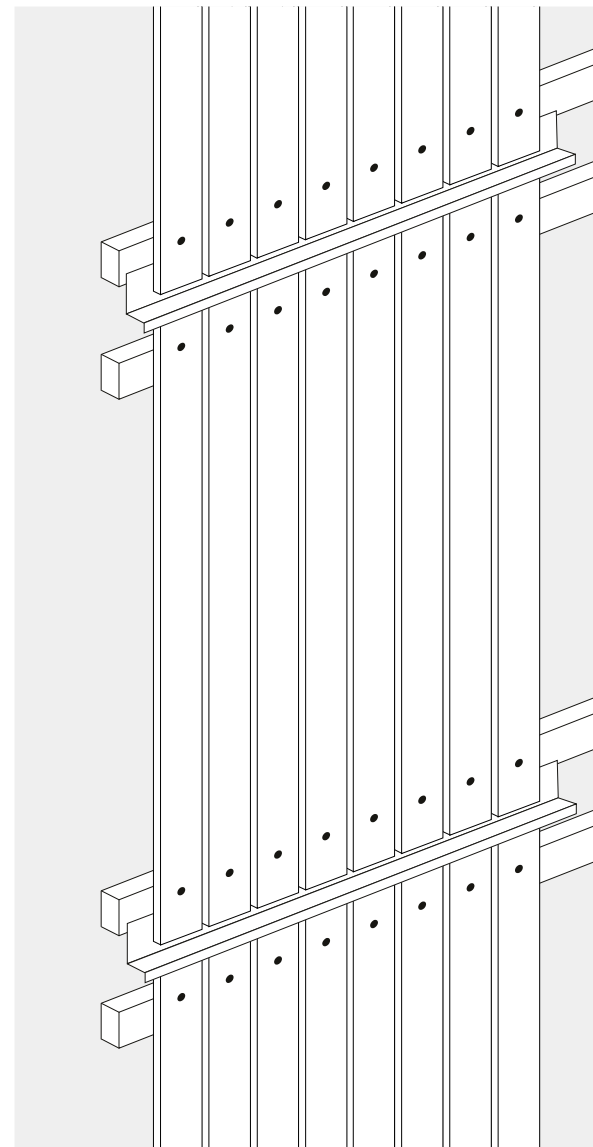
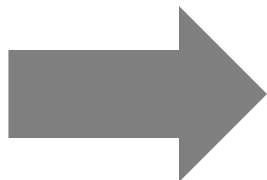
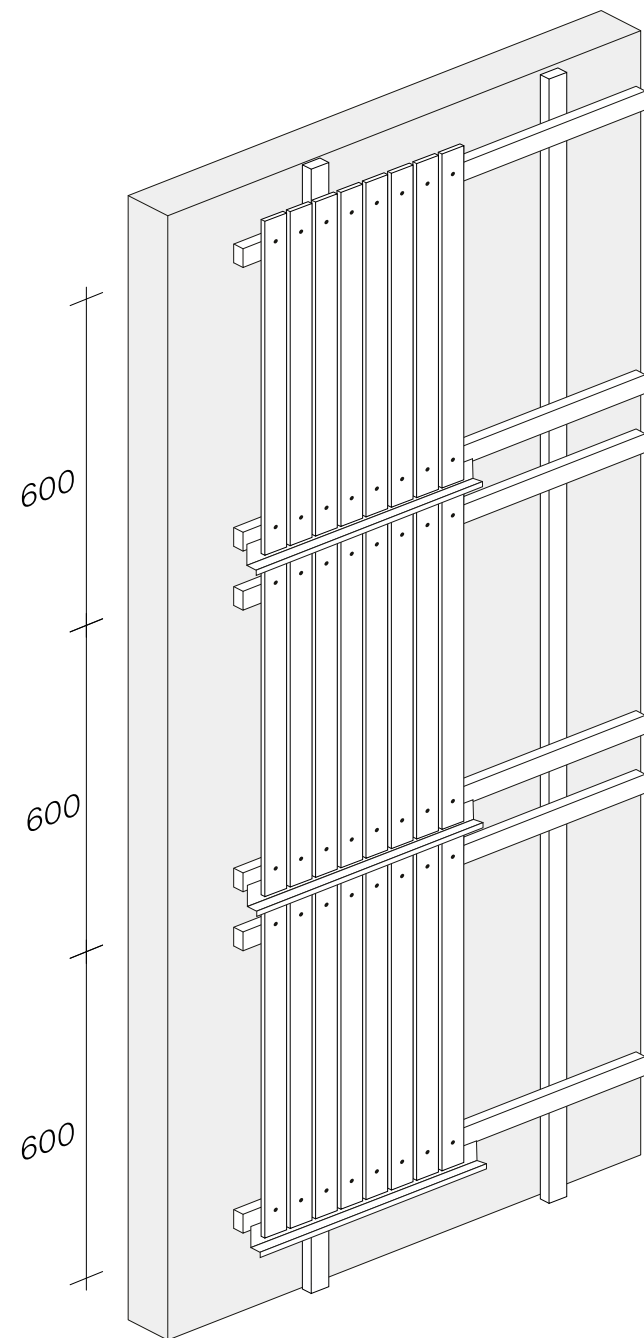
Breaking down to single elements and sorting by common dimensions.
Sorting out damaged elements.



Cutting

Cutting to standard dimensions corresponding to distances of the substructure.



















New green areas and vegetation promote biodiversity



A preview of the wind in the area shows that these areas are likely to be most affected by wind.



A preview shows that tree vegetation in these places can have a dampening effect on wind and is therefore part of our proposal.



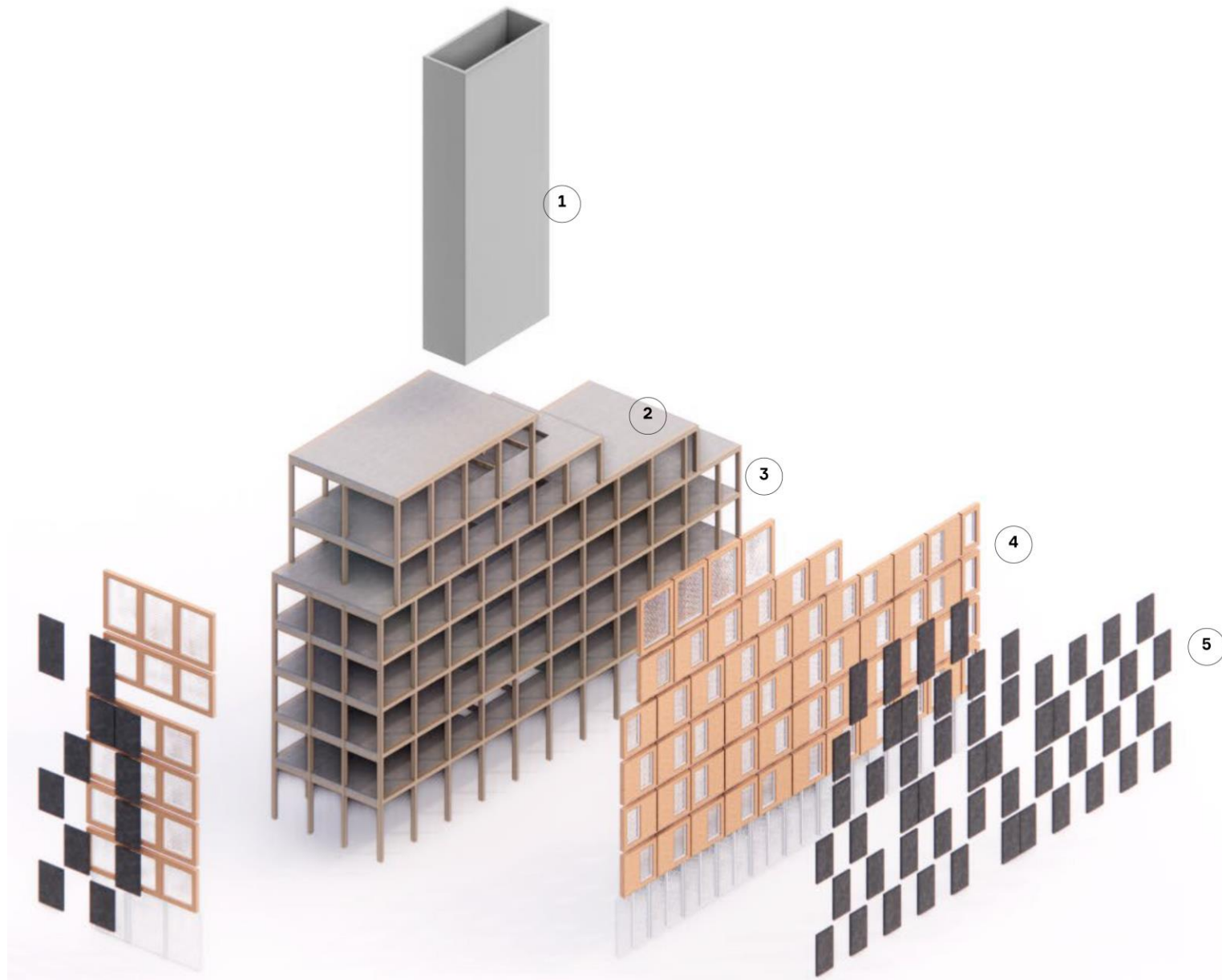
Access of all residents to the elevated courtyard



Easy access to the city by foot and bicycle promotes healthy lifestyle and healthy city environment.



Blue-green surface water solutions and rainwater collection



1



2



3



4



5



LENDNER



LENDNER

Það að bygging sé vottuð með einverri af þeim fjöldamörgum umhverfisvottunum sem hægt er að kaupa dregur ekki úr mengun í mannvirkjagerð

Við eigum eftir að byggja mjög mikið á næstu árum til að hýsa fjölgandi mannkyn.

Byggingarefni losa mest við mannvirkjagerð 45-60% meðan losun á verkstað er um 6-9 %.

Að endurnýta byggingarefni og hætta að rífa gæti sparað 80% af losun við byggingarefni í mannvirkjagerð.

Ef við ætlum að byggja þannig að við stöndum við markmið Parísar sáttmálans um að halda hnattrænni hlýnun innan við 1.5. gráðu hækkun fyrir þá verðum við nota byggingarefni sem hefur nú þegar losað kolefni, hætta að rífa og nota efni skynsamlega

לחברת