

Houses of (Re-)production on the Thurgauerstrasse

Yeshi Wang

Diplomarbeit HS 2020

Thema B Thurgauerstrasse

Professor Adam Caruso

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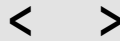
This is an interactive pdf,
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introduction

architecture

impressum

introduction

The great density and the great emptiness

Thurgauerstrasse is an important axis between city Zurich and Airport Kloten. Both sides of the street are densely packed with houses - one side big office buildings, the other side residential settlements. But the high density does not bring great liveness to the street. The two monofunctional worlds run parallel to each other, leave the street space in between untouched, unperceived and un-lived. Click the picture to see the function distribution on the street.

Who needs the space and brings life to the neighborhood?

No longer valued by their original users, the rent of these office buildings is also sinking. This can be a chance for the people who normally cannot afford to stay in the city. According to the statistics of the city Zurich, the manufacturing sector is driven more and more out of the city in the last decades. The close relationship between small manufacturer and inhabitants has become rare since long, although it is still vivid in the memory of some people. Click the picture to see the statistics.

Reuse the postmodern palaces with reused material

Not only the space, the representative post modern shell is also part of the story. Soon they will have nothing to represent any more as their original owners leave. But they are still speaking the old language which scares people off from alternative use. Is there also a way to 'reuse' them, to live with them and love them? In this project, small and light structure out of reused material is approaching the big stony blocks in a subtle way, injecting new character into them, converting them into space of (re)production, living and interaction. Click the picture to see a possible future scenario of the street.

The empty spaces in the office buildings

Now the emptiness extends also into the office buildings. The grand atrium, once celebrated by the big international company is now underused; thousands square meters of offices is left by the users; the parking garages, range from five-storey underground and seven above, don't find so many cars to fill up their space and will not find them in the future as well. The climate change is gradually shifting our ways of living, and it must also change the way the spaces are used. Click the picture to see the empty spaces with reuse potential.

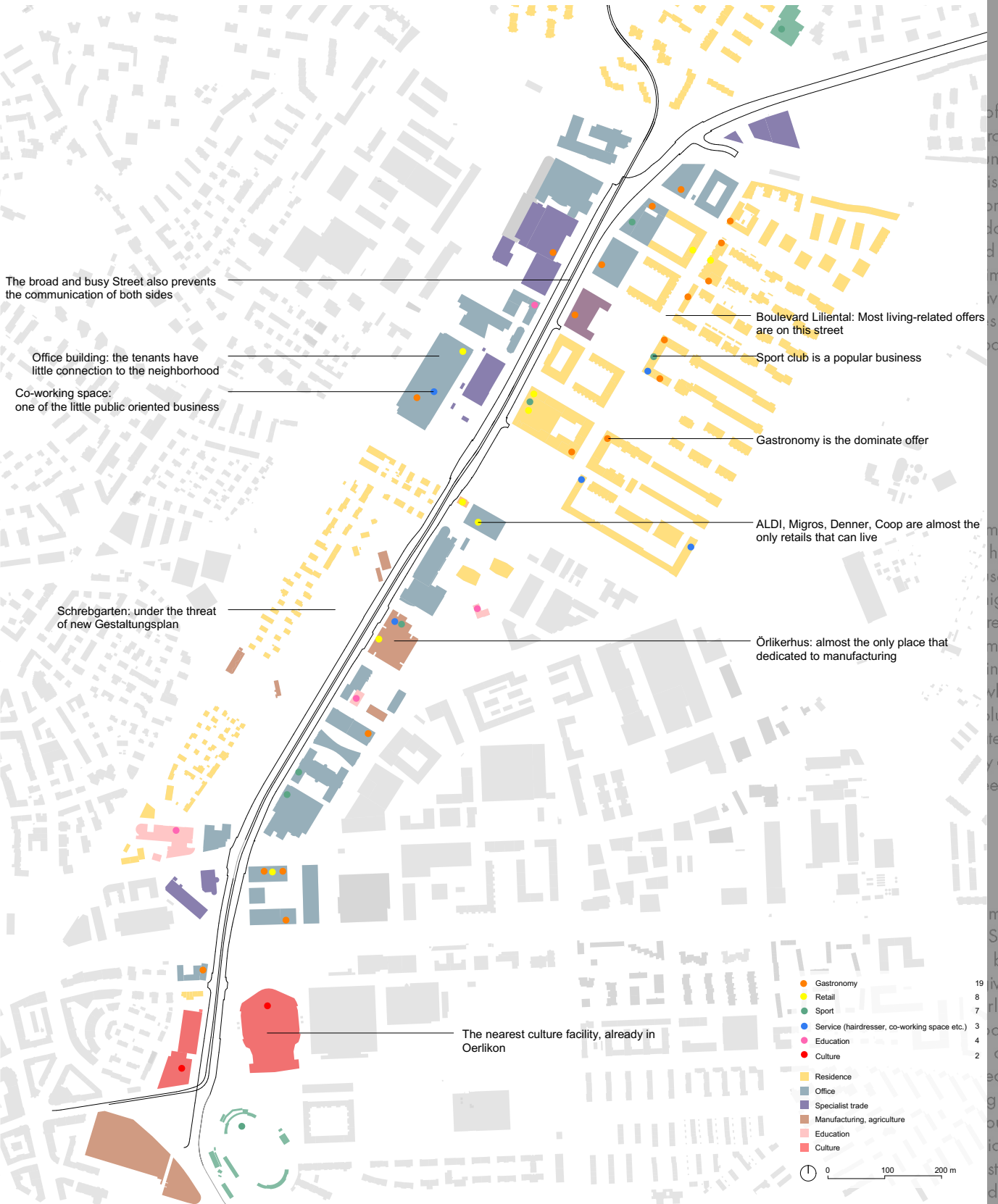
The future of production is reproduction

The need of shifting to a circular economy is never so urgent. The manufacture would have to deal with the challenge of material reuse in the near future. Although the wastes are highly recycled in Switzerland, the potential of reuse is extremely underdeveloped because of many different factors. The space for production in the future should provide space and facilities which reduce the obstacles of reuse. The huge volume of parking garage can be adapted to a material hub, where the discrepancy between supply and demand is balanced. Click the picture to see the situation of material reuse in Switzerland.

House of reproduction

One building - The Galleria is taken as example to show how such intervention could be. Steel structure from demounted factory hall is built into the atrium, providing circulation and giving the space a new appearance that overlaps the old. The atrium becomes space of production as well as celebration. The circulation also connects the park house which is converted to a facility of material reclamation, providing the source for reproduction by ateliers in the house. Open workshops give possibilities of individual reuse, education program and promotes start-ups with innovative reuse ideas, which leads to future development in the whole street. Click to go to the main page of the architecture project.

Function Distribution of the Thurgauerstrasse



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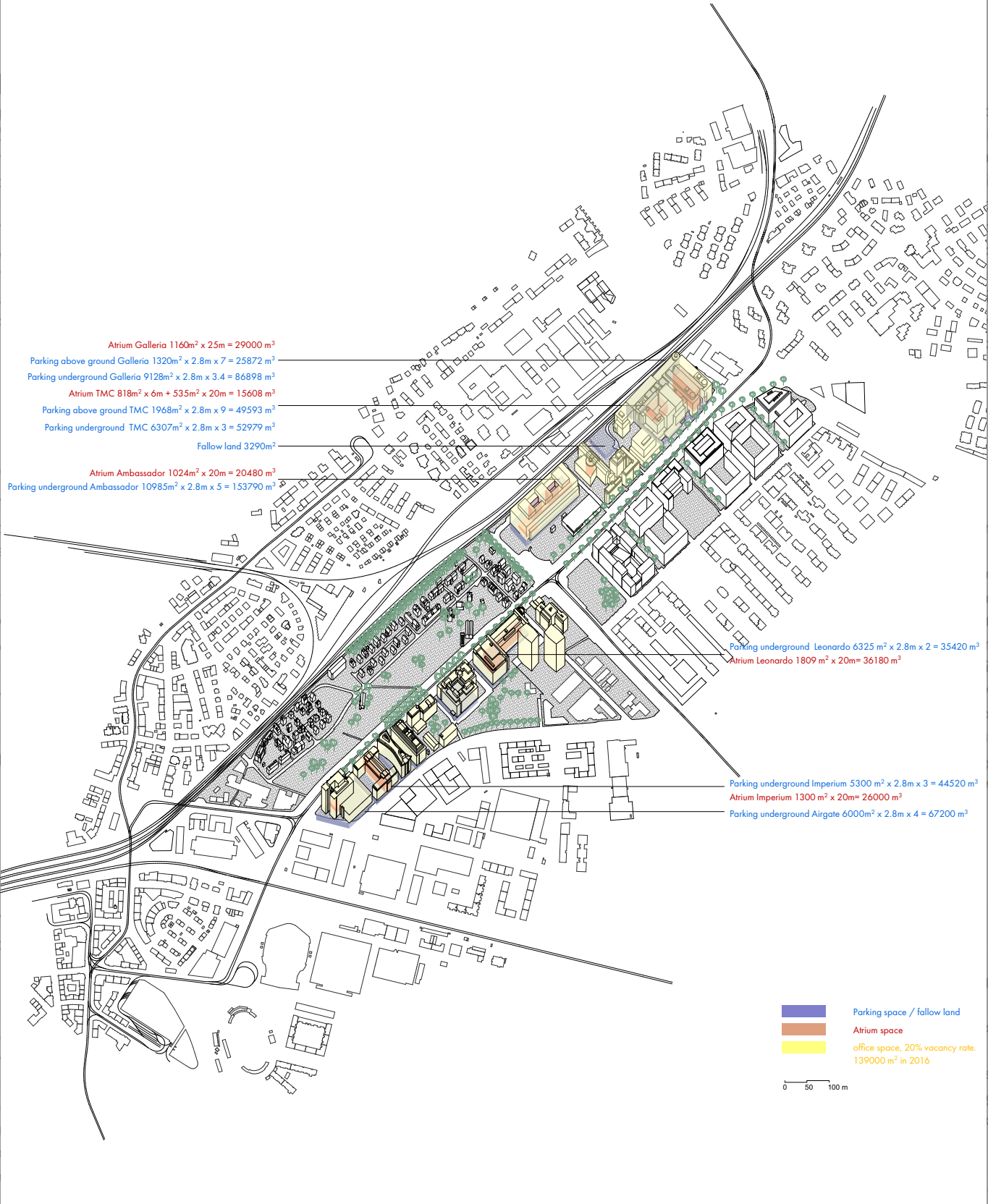
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Empty spaces with reuse potential



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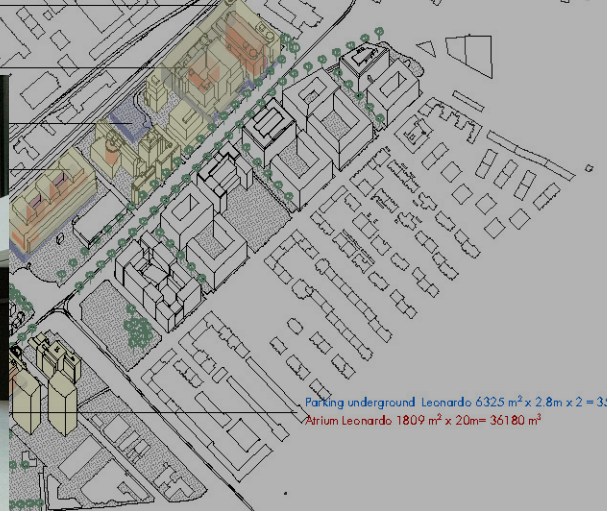


Parking garage, Galleria

Atrium Galleria 1160m² x 25m = 29000 m³
Parking above ground Galleria 1320m² x 2.8m x 7 = 25872 m³
Parking underground Galleria 9128m² x 2.8m x 3.4 = 86898 m³
Atrium TMC 818m² x 6m + 535m² x 20m = 15608 m³
Parking above ground TMC 1048m² x 2.8m x 9 = 40502 m³

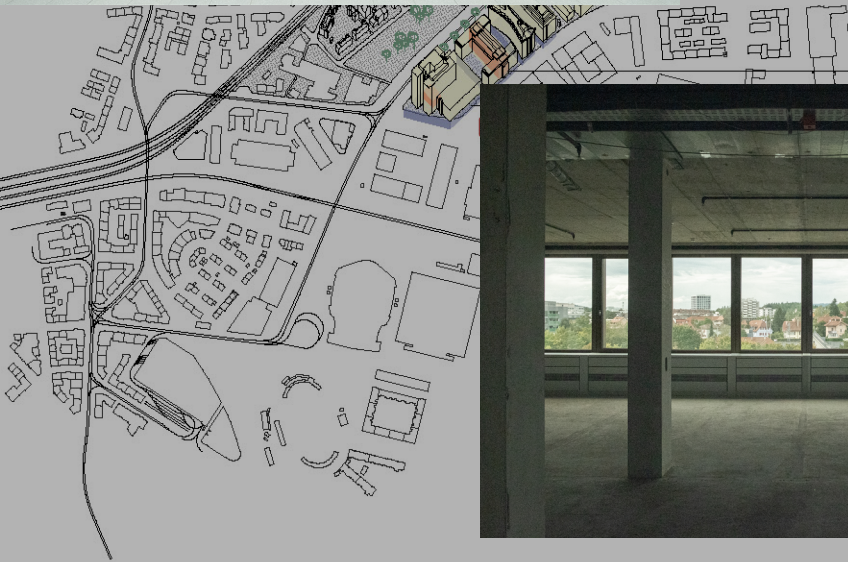


Atrium, Ambassador



Parking underground Leonardo 6325 m² x 2.8m x 2 = 35420 m³
Atrium Leonardo 1809 m² x 20m = 36180 m³

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Parking underground Imperium 5300 m² x 2.8m x 3 = 44520 m³
Atrium Imperium 1300 m² x 20m = 26000 m³
Parking space / fallow land Imperium 1000 m² x 2.8m x 4 = 67200 m³



Office, Airgate

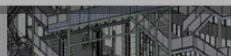
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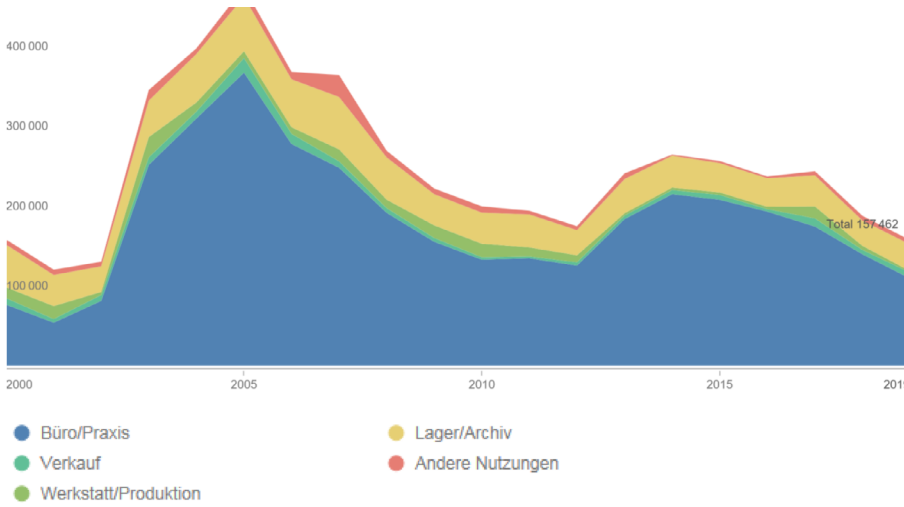
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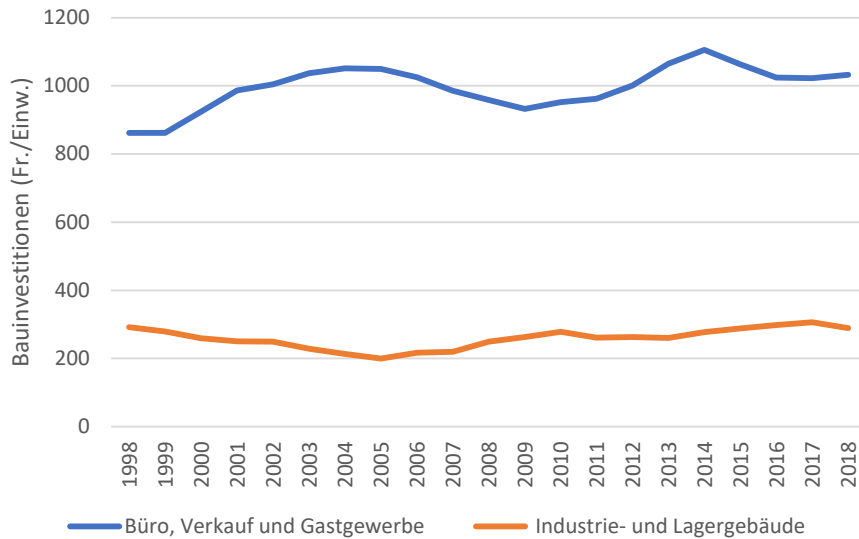
future development in the whole street. Click to go to the main page of the architecture project.



Statistics on the manufactory sector in Zurich

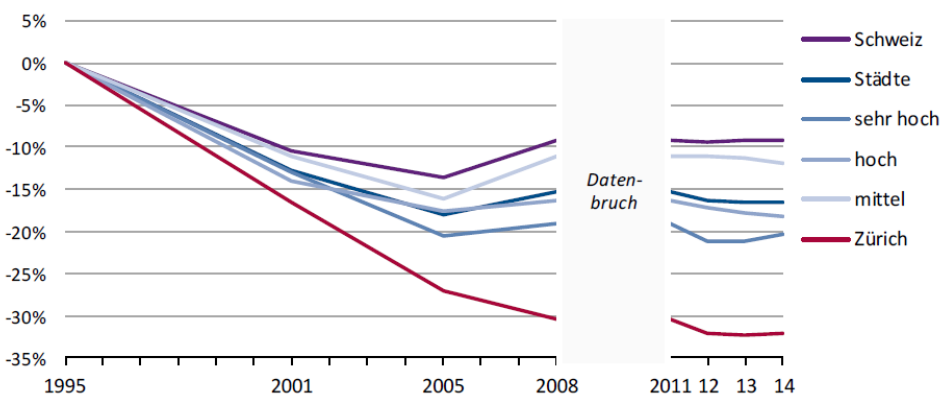


Existing empty space according to types of usage
Source: Stadt Zürich Statistik



Construction investment according to types in Canton Zurich
Source: Stadt Zürich Statistik

Entwicklung Anzahl VZÄ in %



Development of employment in manufactory sector according to employment density
Source: INFRAS, Quo vadis Werkplatz?

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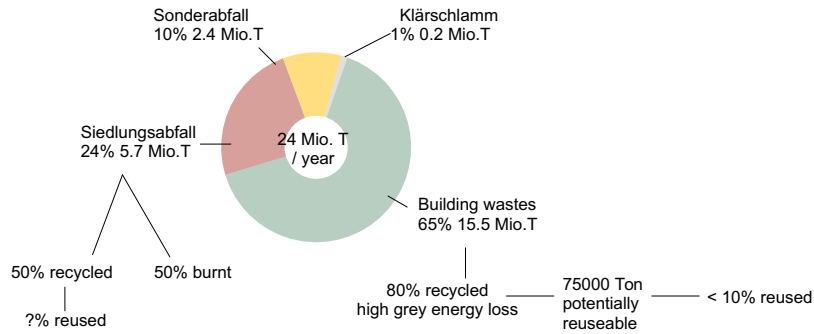
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future development in the whole street. Click to go to the main page of the architecture project.

Situation and difficulties of material reuse

The Wastes of Switzerland:

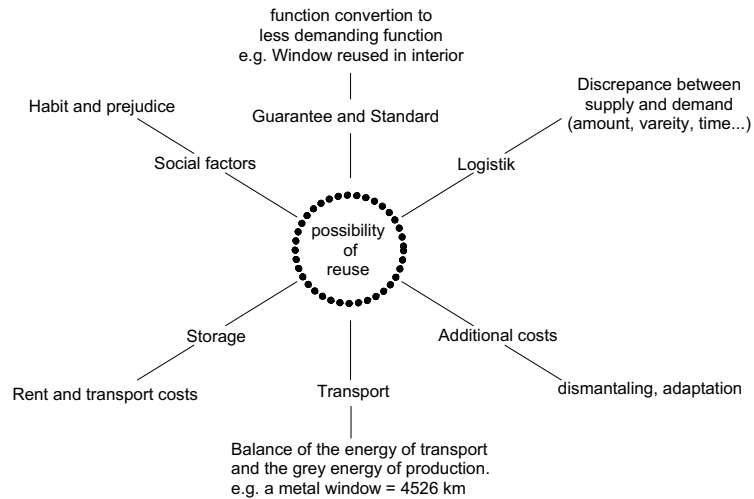
very big amount
high recycling rate
very little reuse



Source: Waltz C., Almeida J. 2016: Ent-Sorgen? Abfall in der Schweiz illustriert. Bundesamt für Umwelt, Bern, Umwelt-Zustand Nr. 1615: 46 S. Salza, Matériau, 2020: Wiederverwendung Bauen, Im Auftrag des Bundesamtes für Umwelt BAFU.

Parameters that influence reuse

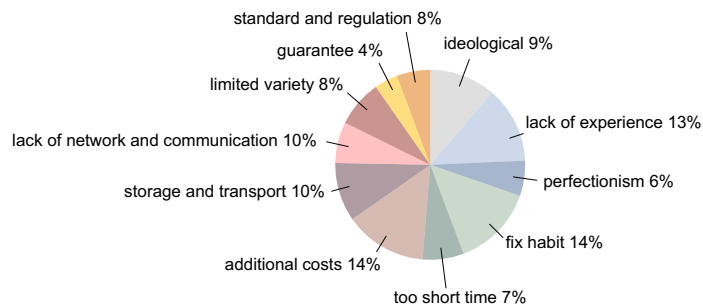
(example building components)



Source: Salza, Matériau, 2020: Wiederverwendung Bauen, Im Auftrag des Bundesamtes für Umwelt BAFU. s18-20

Obscals to reuse

(building components)



According to a survey from Salza with more than 150 respondents Source: Salza, Matériau, 2020: Wiederverwendung Bauen, Im Auftrag des Bundesamtes für Umwelt BAFU. s33

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future development in the whole street. Click to go to the main page of the architecture project.

Possible future scenario with the intervention suggested in this project



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the architecture

program

details

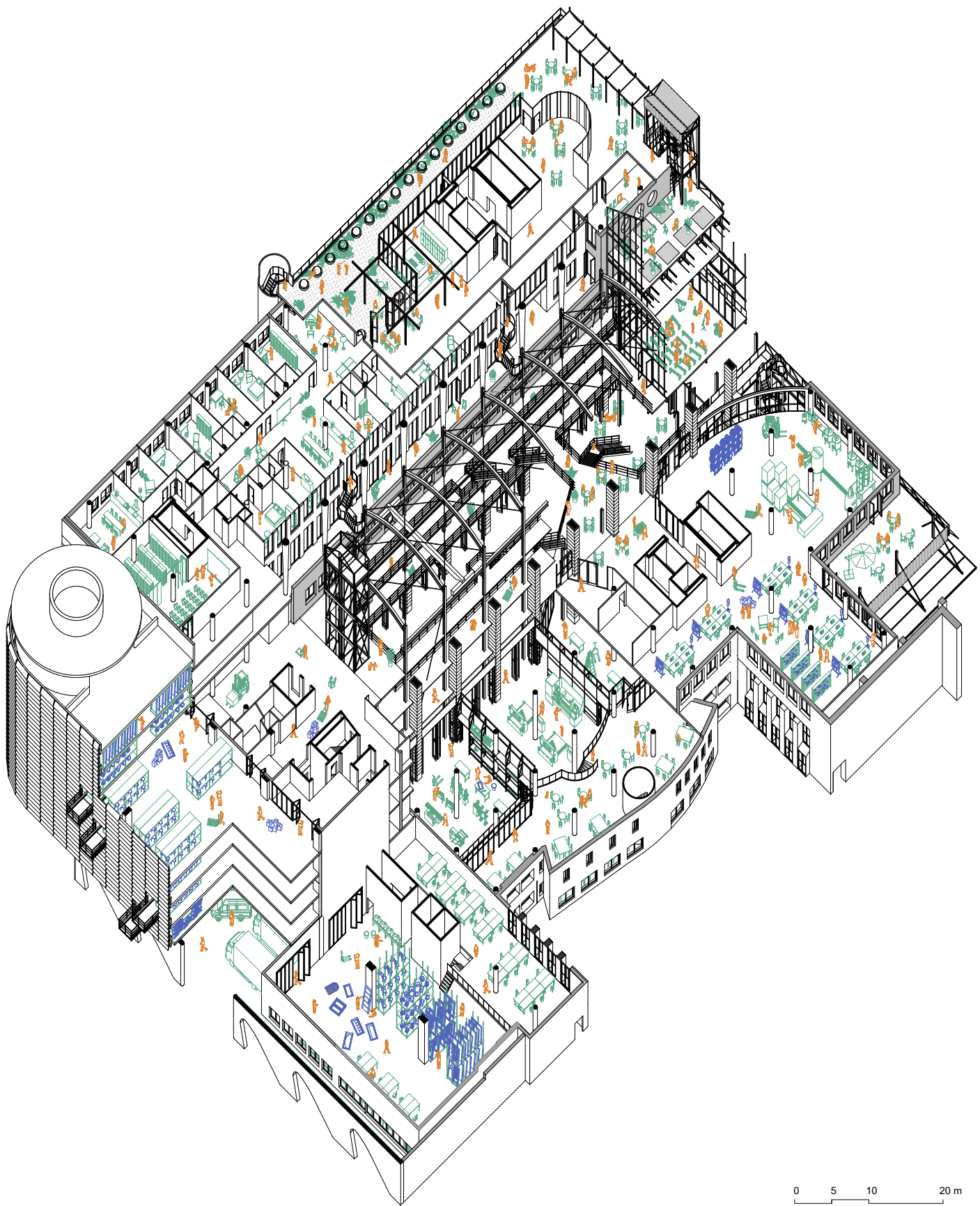
axonometric view

plans

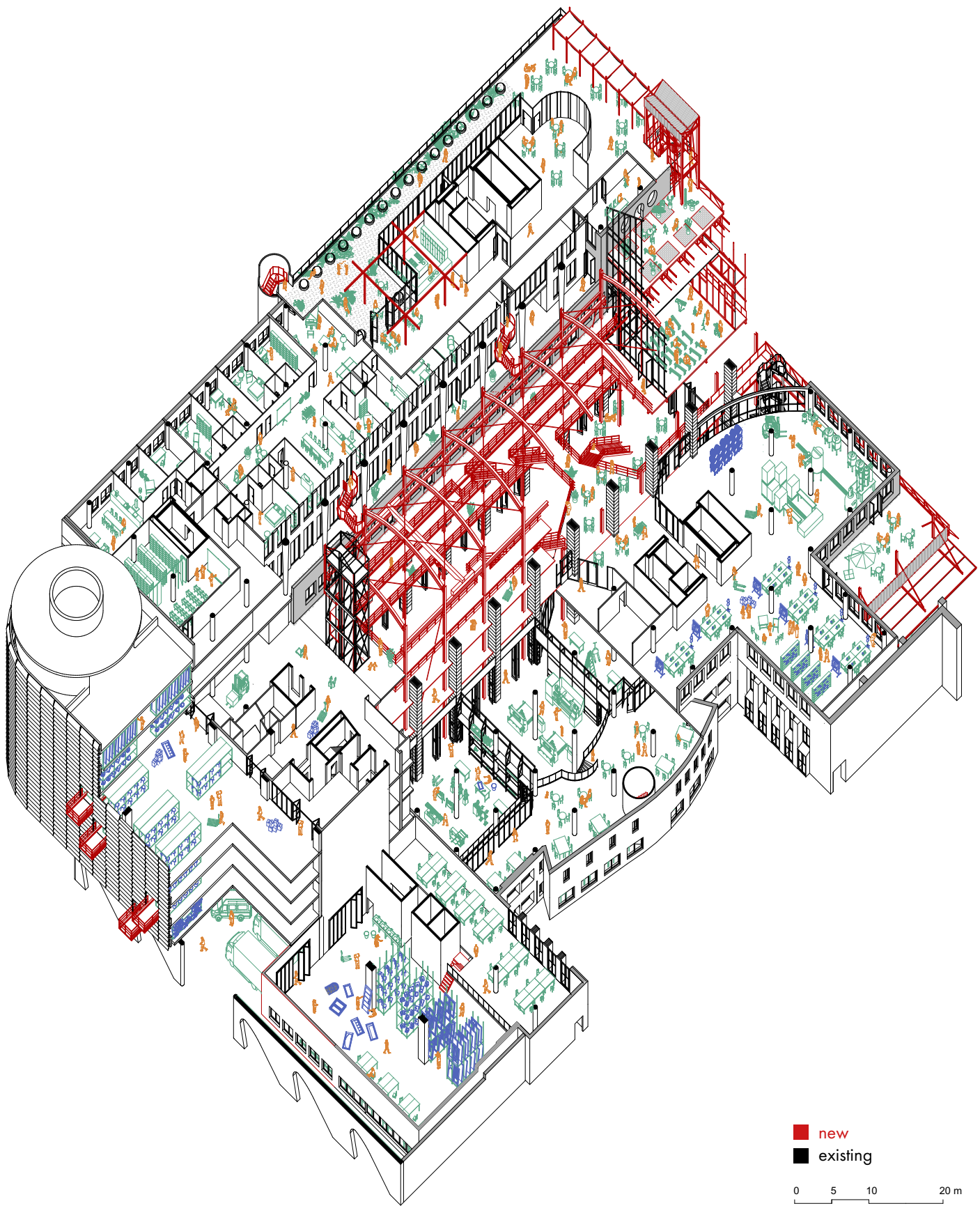
catalogue of reuse

elevation / section

images

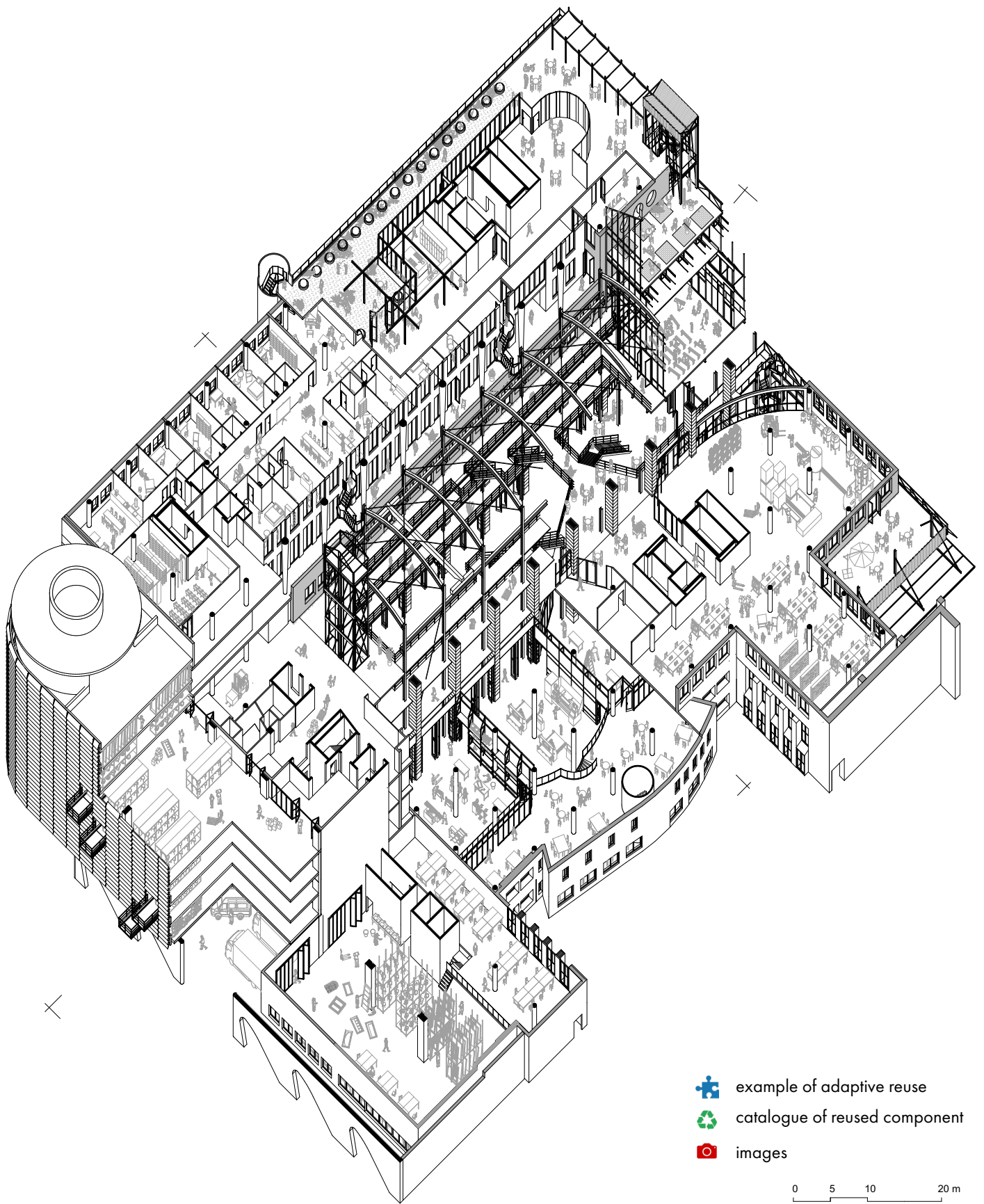





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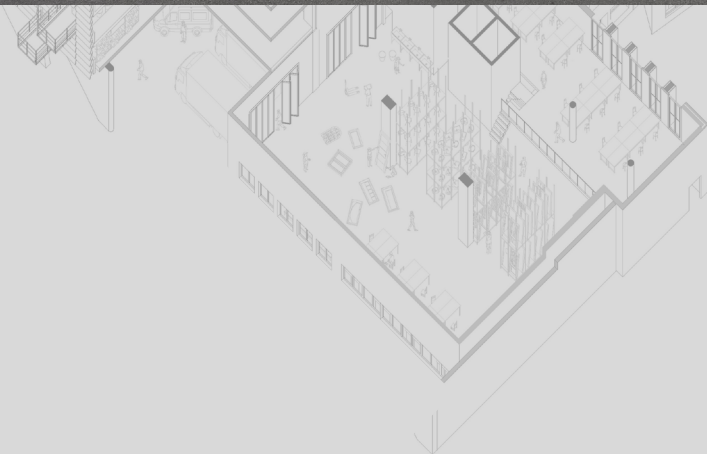
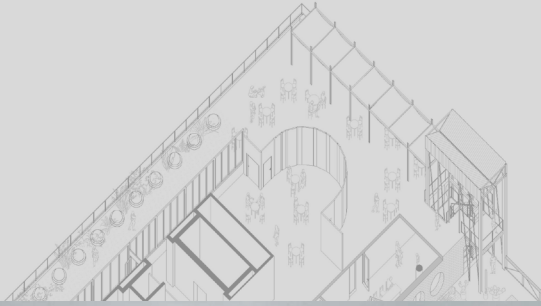
■ new
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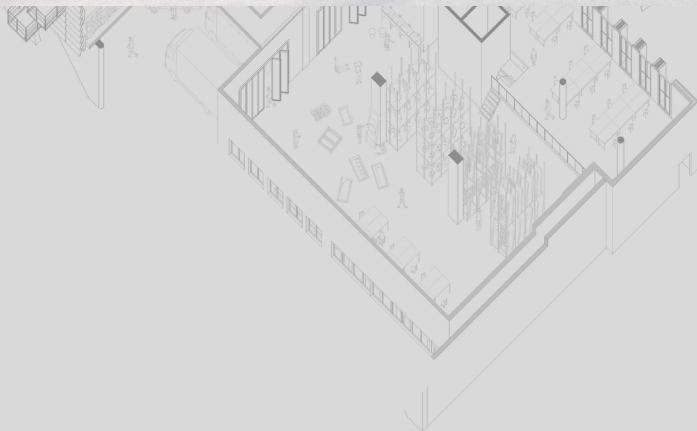
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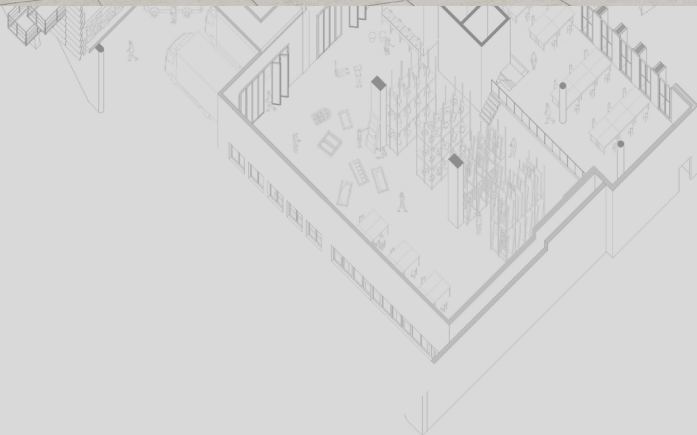
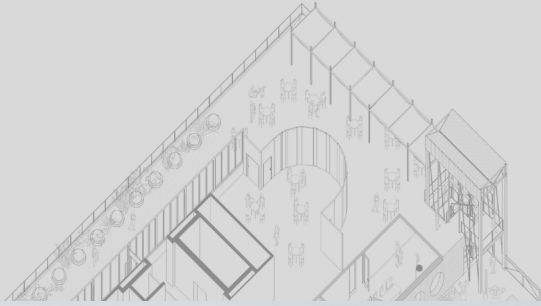


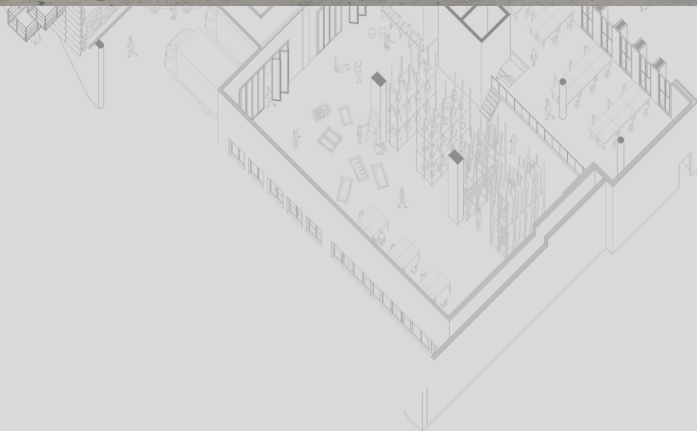
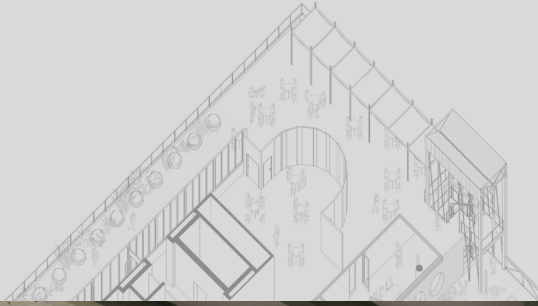
-  example of adaptive reuse
-  catalogue of reused component
-  images

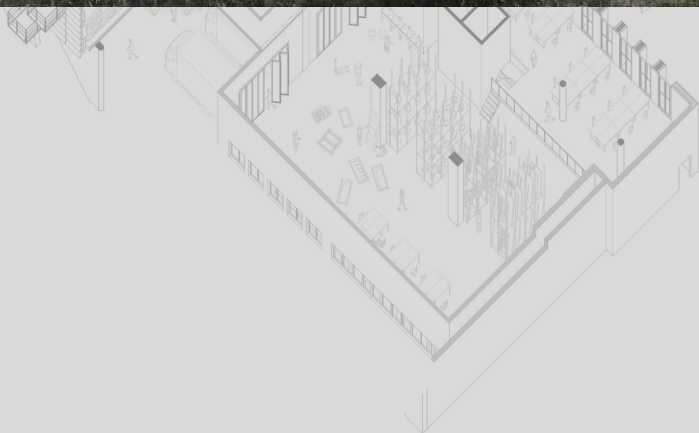
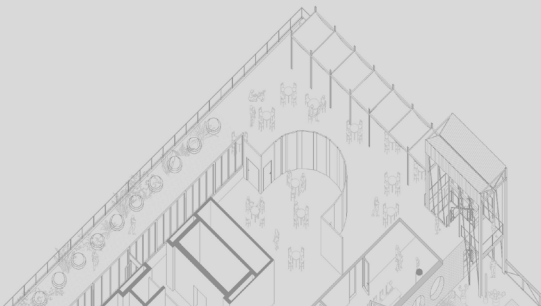
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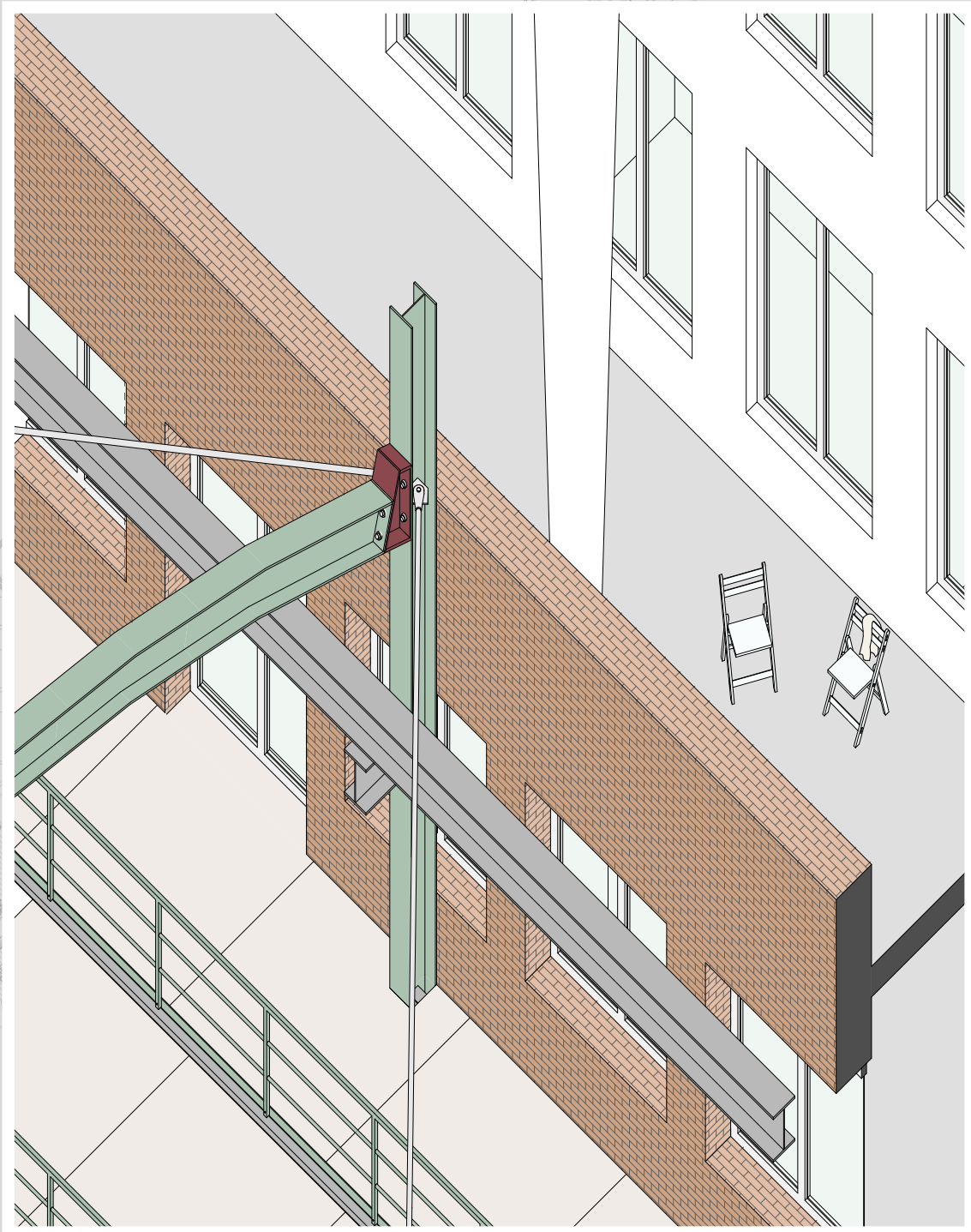


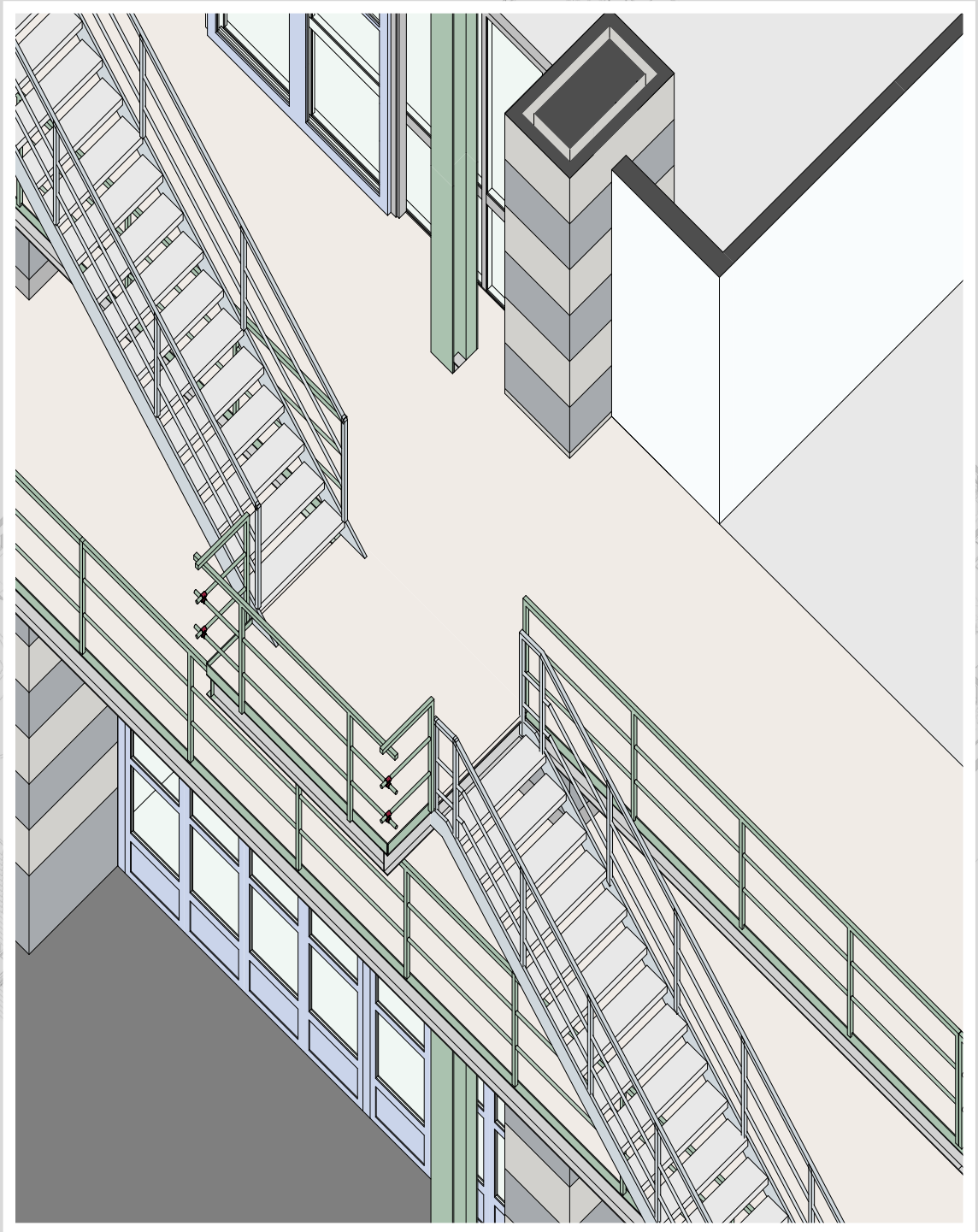


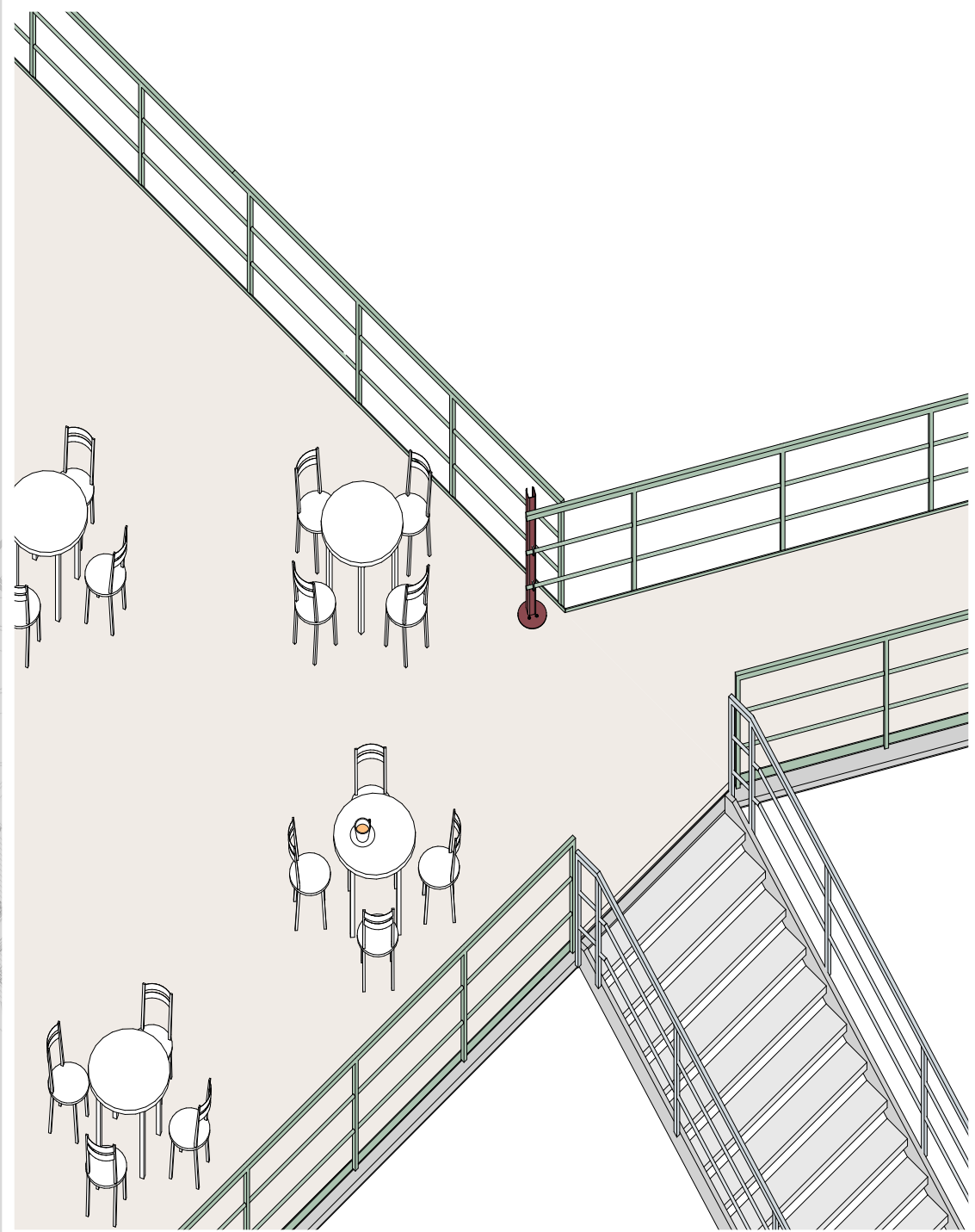


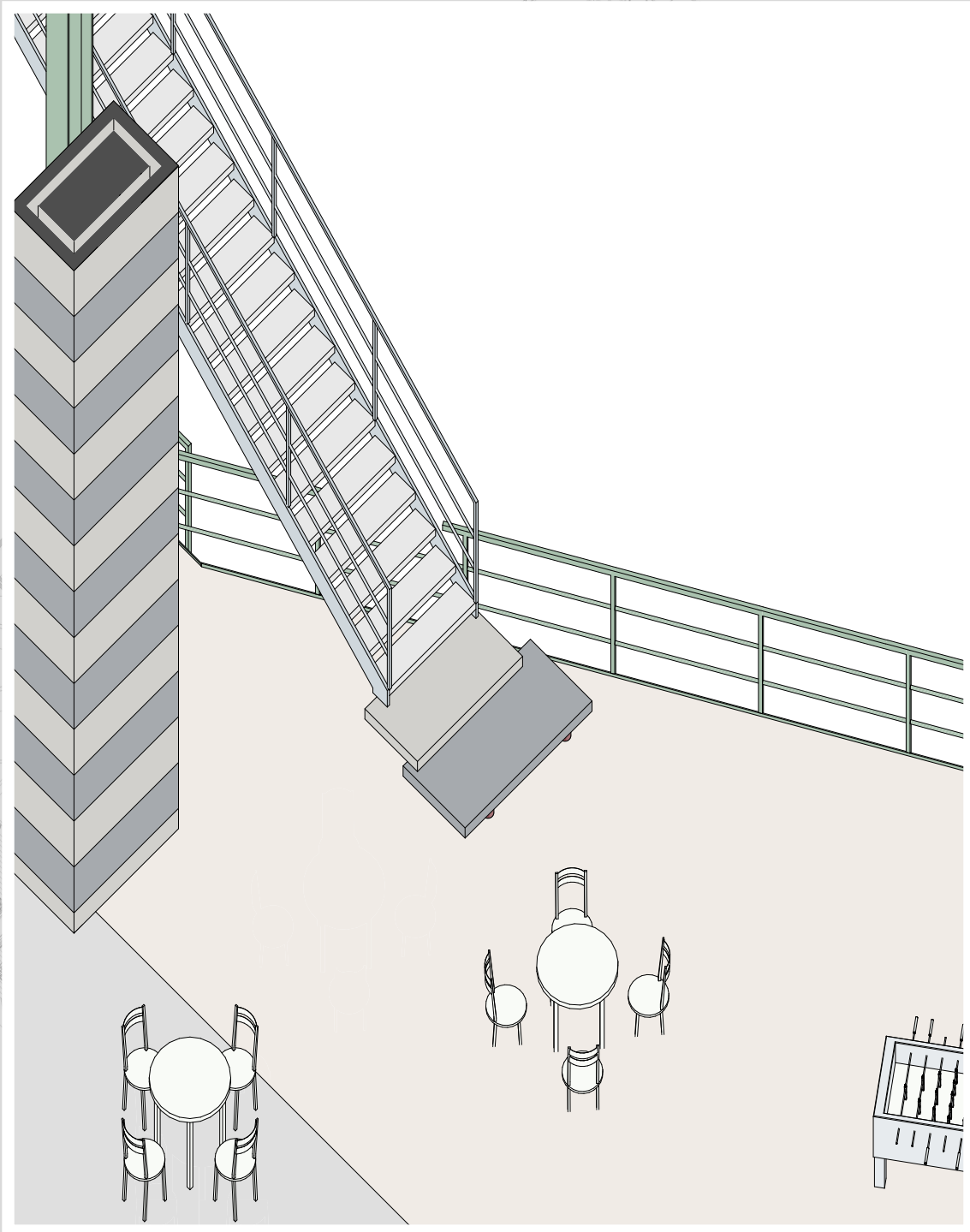




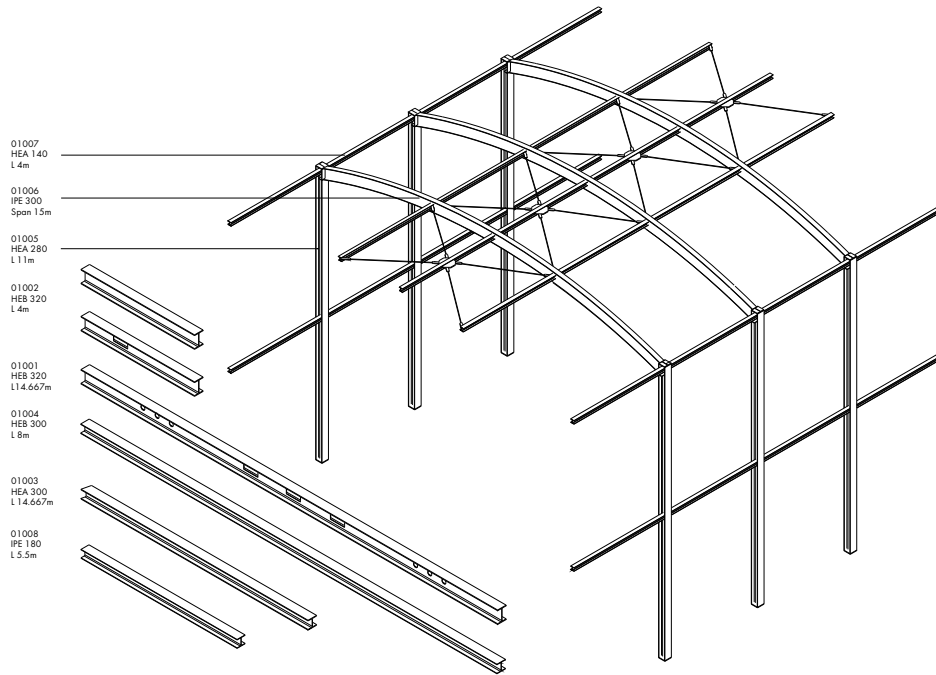






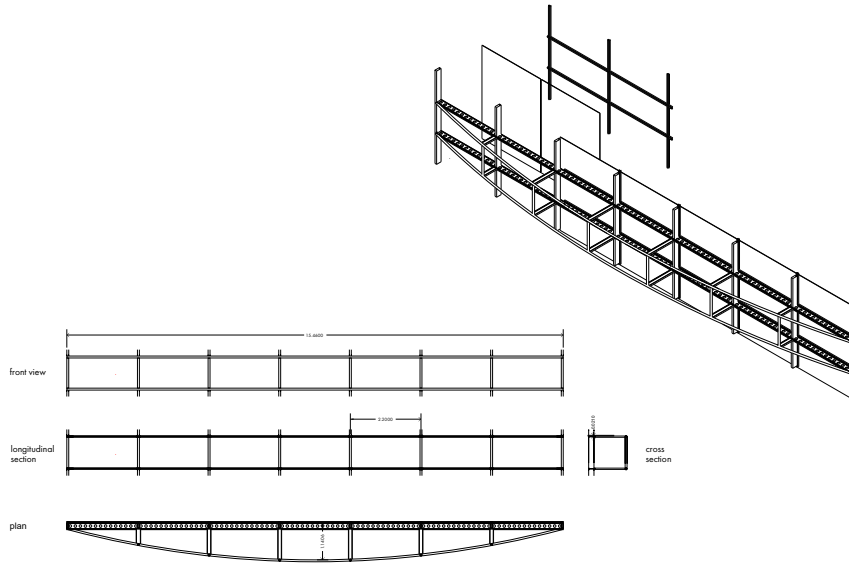


01001 - 01008
steel column / beam



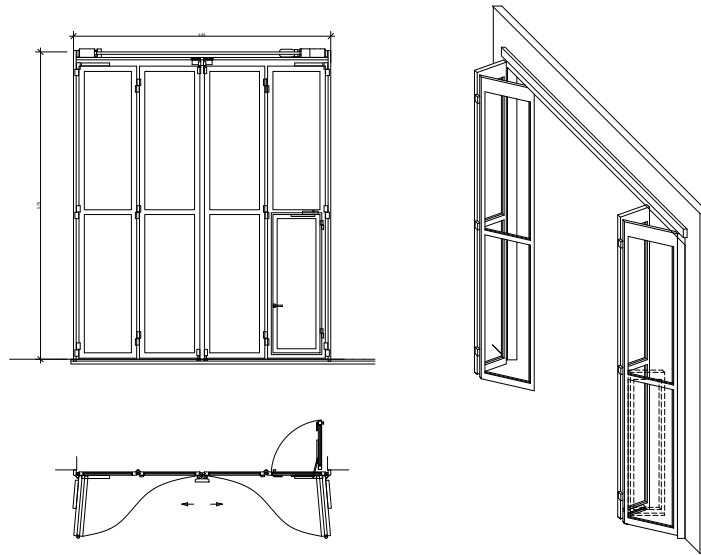
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
01001	Steel beam	Column Groundfloor & First Floor	HEB 320 L 14.667m	Steel S235	with opening for pipes	22	Dismantle industrial building in Bern
01002	Steel beam	Column Groundfloor & First Floor	HEB 320 L 4m	Steel S235	partially with opening for pipes	22	Dismantle industrial building Bern
01003	Steel column	Column Entrance	HEA 300 L 14.667m	Steel S235	red painted	2	Dismantle industrial building Bern
01004	Steel column	Column Entrance	HEB 300 L 8m	Steel S235	red painted	4	Dismantle industrial building Bern
01005	Steel column	Column 2-6 Floor	HEA 280 L 11m	Steel S235	red painted	22	Dismantled warehouse in Luzern
01006	Steel arch	Arch Atrium	IPE 300 Curved Span 15m	Steel S235	curvature radius 22m	9	Dismantled warehouse in Luzern
01007	Steel beam	Purlin Atrium	HEA 140 L 4m	Steel S235	red painted, diagonal reinforcement included	24	Dismantled warehouse in Luzern
01008	Steel beam	Beam Gallery	IPE 180 L 5.5m		grey painted	> 200	Bauteilbörse Basel

01009 steel truss arch



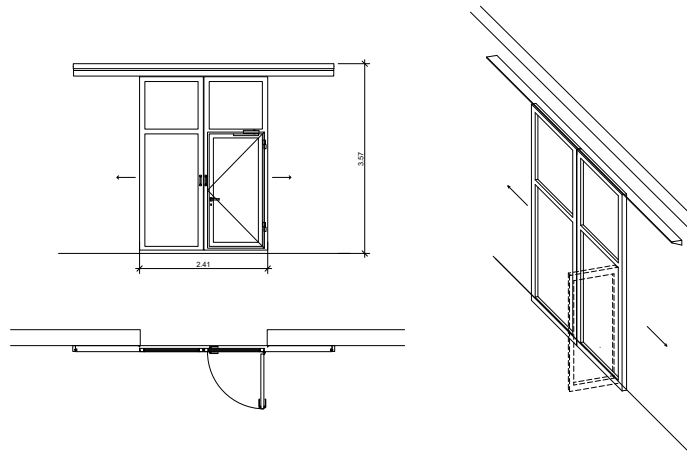
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
01009	Steel truss	Structure of roof terrace	various hollow profile Span 15m		grey painted, welded connection	3	in situ, east facade

02001
 folding gate with service door 2 x 2 Leaves



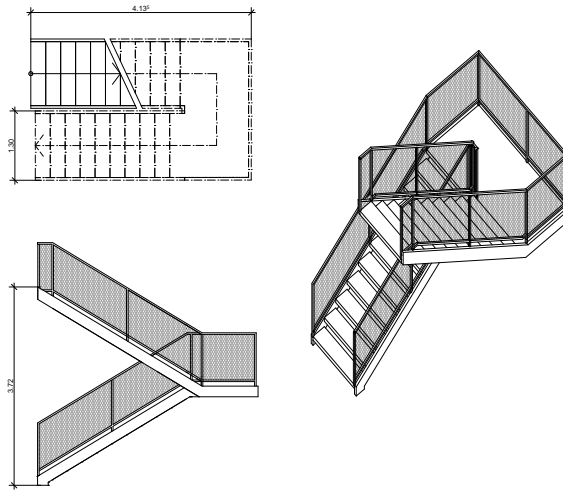
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
02001	Folding gate	open workshop and Atelier in Ground-floor	H 5.7m B 6m	galvanized Alu	2x2 leaves glazed	14	Winterthur

02002
Sliding door 2 Leaves



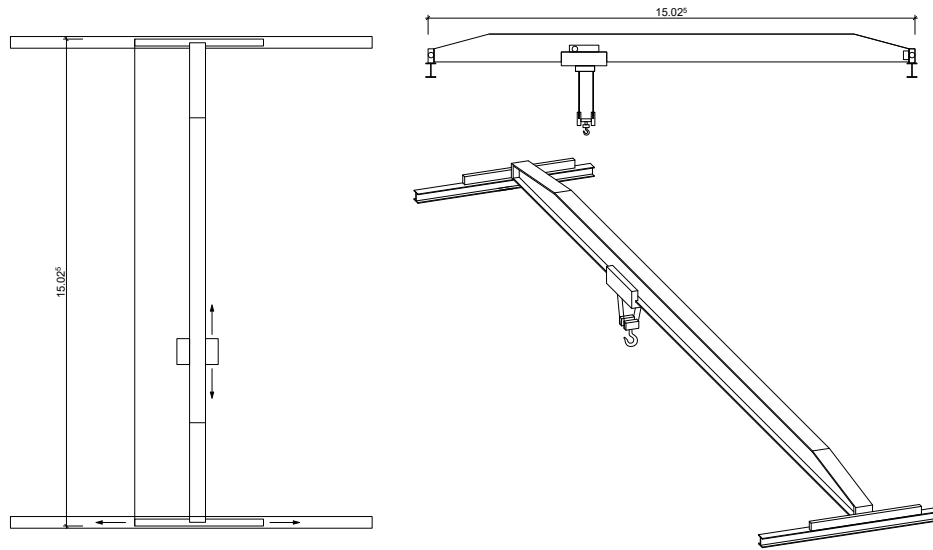
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
02002	Sliding door	Atelier first floor	H 3.2m B 3m	greypowder coated Alu	2 leaves glazed	12	Aargau

03002
Staircase outdoor



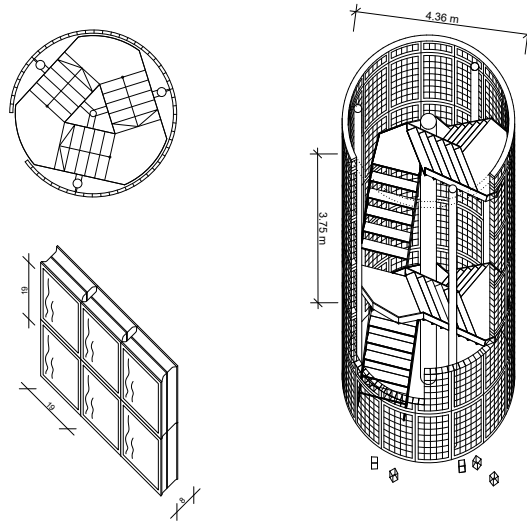
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
03002	Staircase	Stair at the entrance	H 3,75m x 7 floors B 1.2m	galvanized Steel	with metal net banister	1	Zurich

03002
 indoor crane
 5000kg

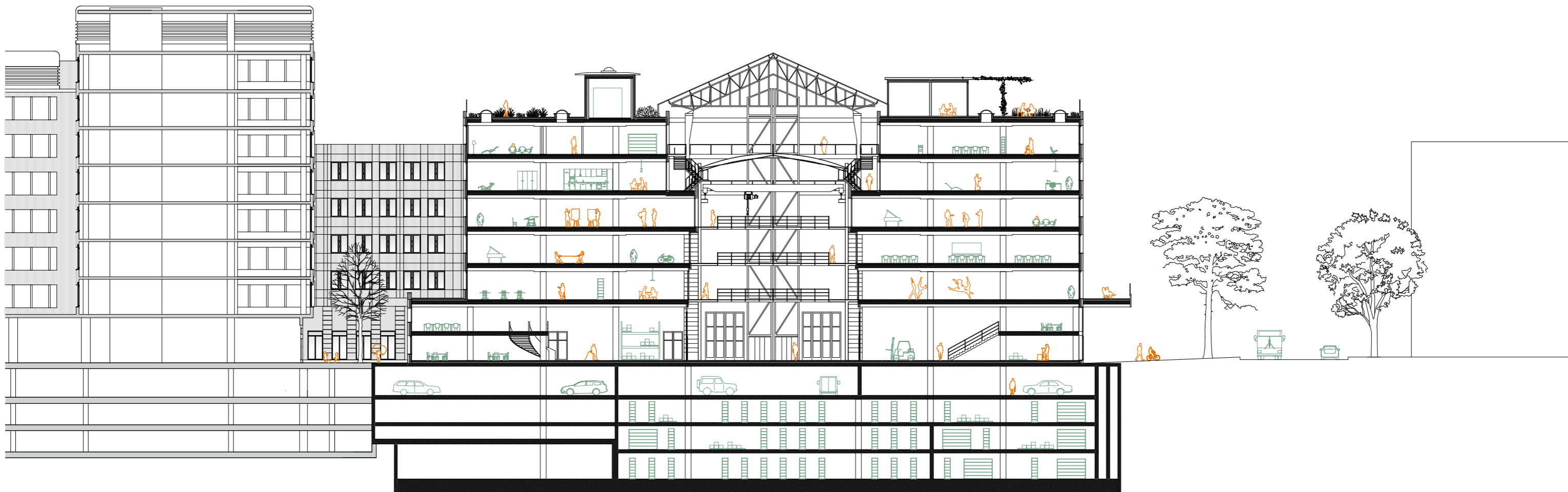


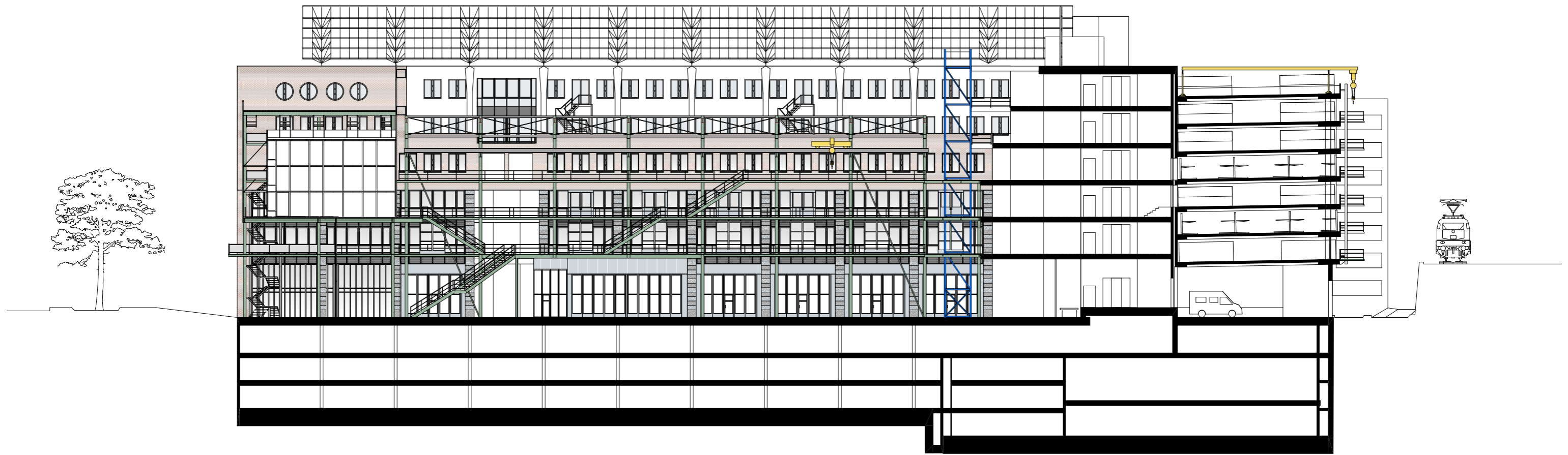
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
03001	Indoor Crane	Crane in Atrium	15m Span	Steel	5000kg capacity	1	Zurich

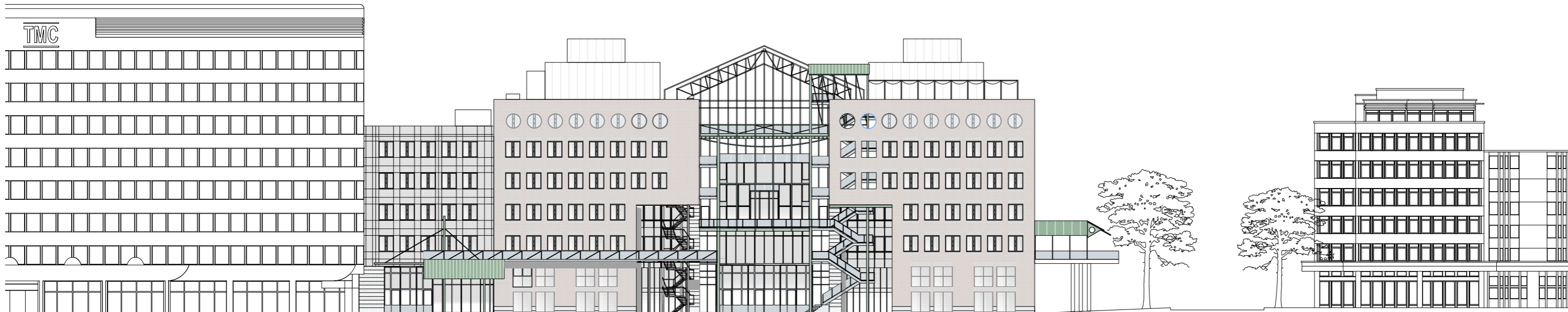
03003 spiral staircase
 03004 glass brick



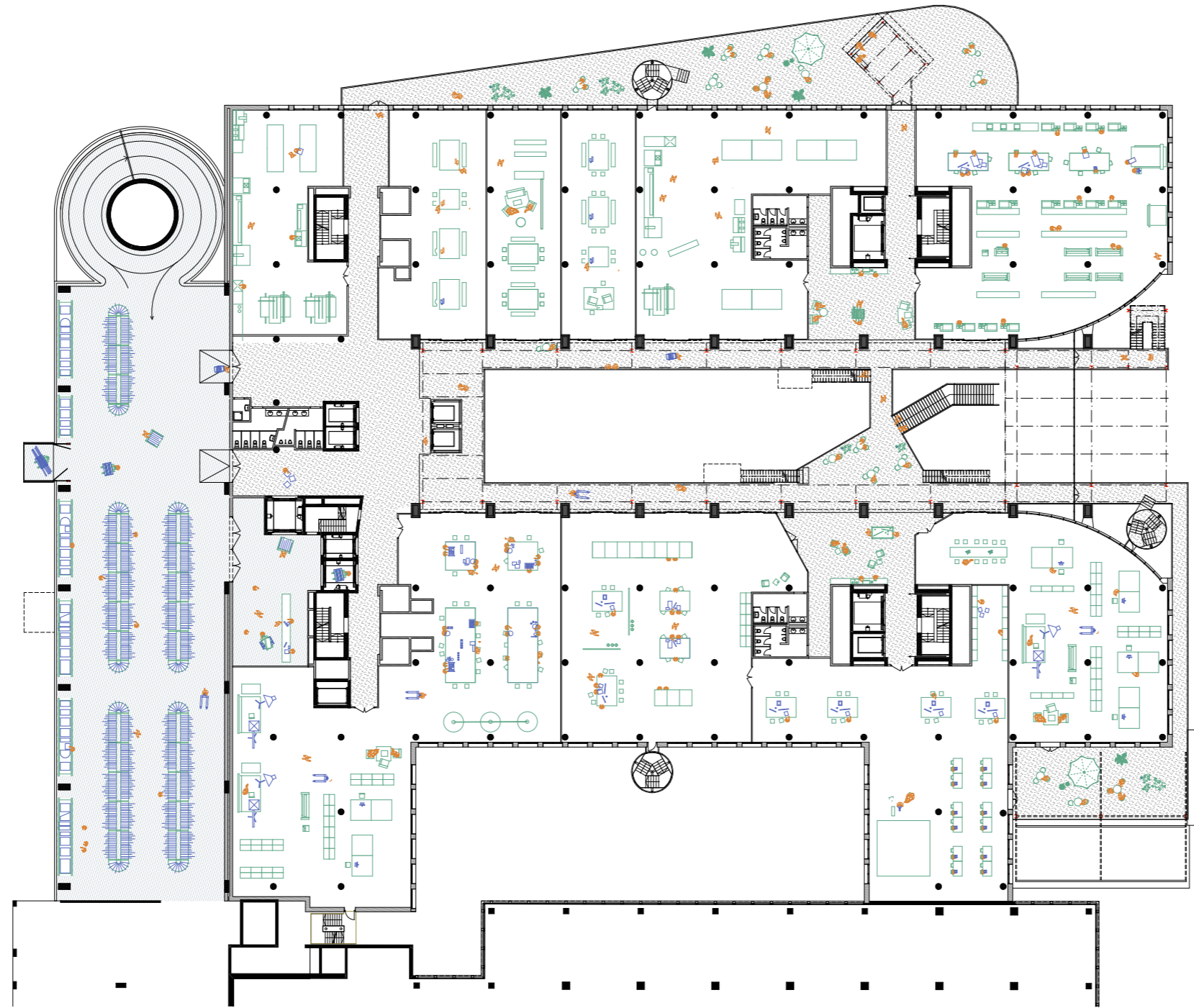
Catalog Number	Name	Function in new Building	Size	Material	Additional Information	Quantity	Source
03003	spiral staircase	staircase 5 to 6 floor	H 3.75m, D4.36m B 1.2m	Steel	need additional railing	4	in situ, east facade
03004	glass brick	balustrade east facade, roof terrace	H 0.19m L 0.19m B 0.08m	glass		100m ²	in situ, east facade







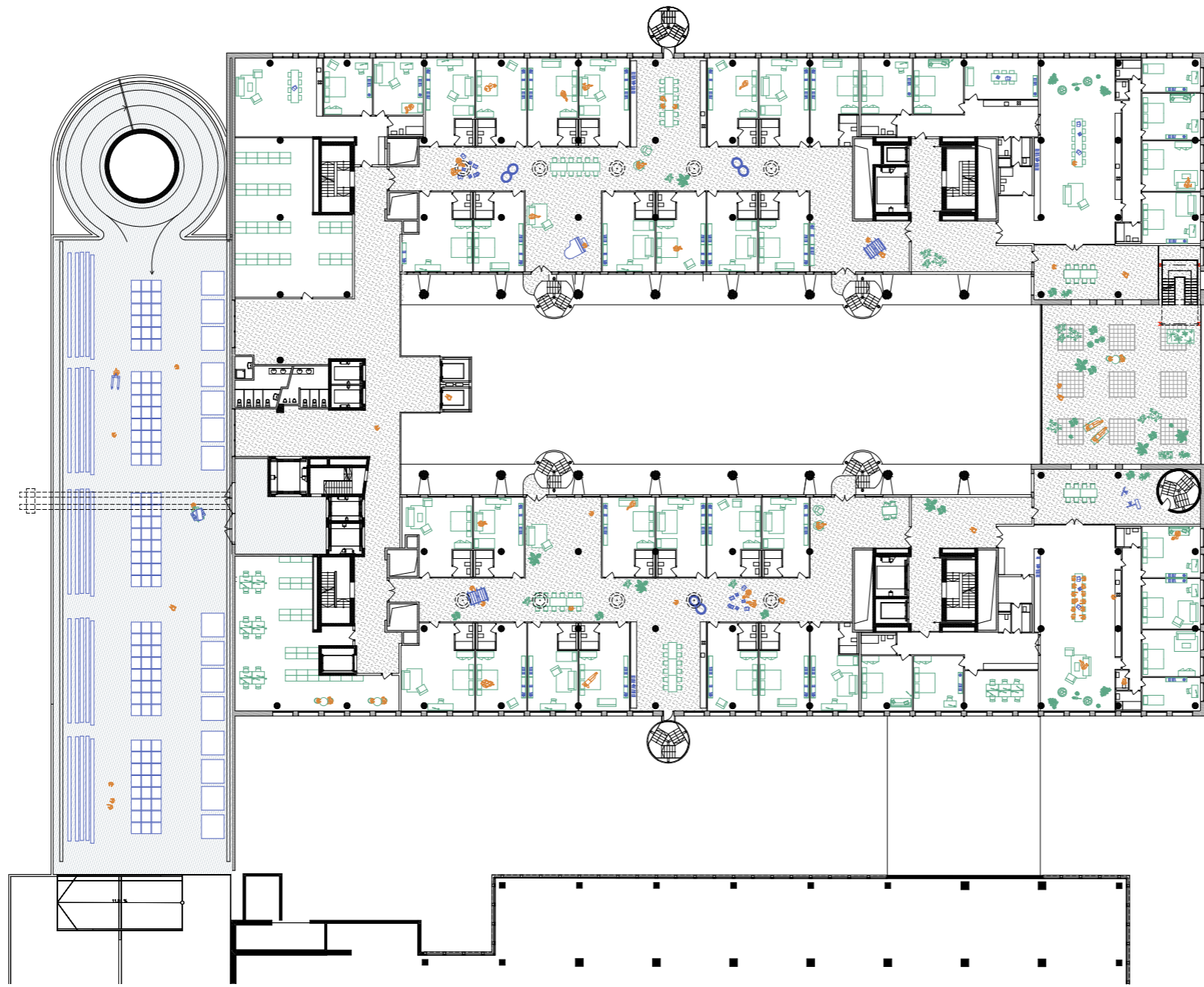


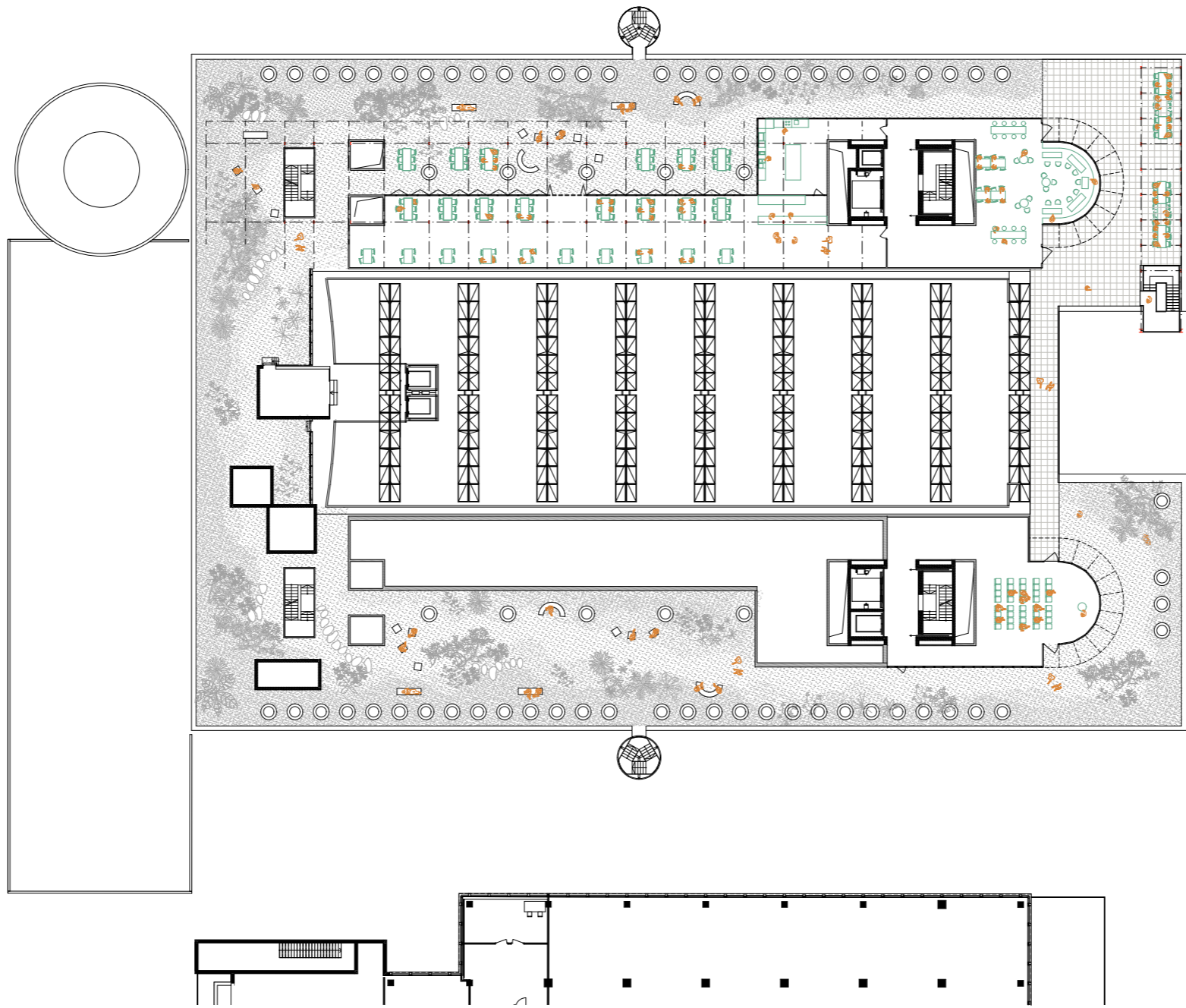












Impressum

Data source:

Salza, Matériuum, 2020: Wiederverwendung Bauen, Im Auftrag des Bundesamtes für Umwelt BAFU.

Wälti C., Almeida J. 2016: Ent-Sorgen? Abfall in der Schweiz illustriert.

Bundesamt für Umwelt, Bern. Umwelt-Zustand Nr. 1615: 46 S.

INFRAS, Quo vadis Werkplatz? Entwicklungen und Perspektiven von Industrie und Gewerbe in der Stadt Zürich. 2020

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Hoch Parterre Themenheft: Das neue Gewerbehaus, 2015

Bürohaus, leer, sucht . . ., NZZ, 03.01.2017, <https://www.nzz.ch/wirtschaft/viele-freie-flaechen-in-zuerich-buerohaus-leer-sucht--ld.135774>>

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Stadt Zürich Stadtentwicklung, Das Gewerbe in der Stadt Zürich. 2013

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Many thanks to all the people who very kindly answered my interview questions and gave me many inspirations. Without your help this work wouldn't be possible.