

A STUDY INTO SCAFFOLDING

BINDER 1
DIPLOMA BRIEF
AND DRAWINGS

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AHO, Diploma, Fall 2021

TITLE

A Study into Scaffolding

PARAMETERS AND ASSUMPTIONS

This diploma began with the intention of broadly exploring maintenance of the built environment, and is based on two premises:

- » It is currently the norm that the responsibility of architecture in production of the built environment begins with design / form-making and ends when it is built and starts to be used. Keeping the built environment in use falls outside of the field of architecture - in other words, building existence (architect's role) and building operation (inhabitant / stakeholder / someone else's role) are treated as two separate categories.
- » Maintenance and construction work relies on the use of scaffolding and other temporary structures (as opposed to relying on fixed / permanent structures).

The diploma proposes that the relationship between architecture and maintenance can be improved if the architecture anticipates the necessity of scaffolding for maintenance or change in the future. The consequences of modifying this existing relationship is explored, leading to the research question...

RESEARCH QUESTION

Can scaffolding, a support structure, be on equal terms with architecture?

ABSTRACT

The diploma examines the relationship between scaffolding and architecture, in particular, its role in facilitating maintenance, presenting both studies and speculations on the consequences of having scaffolding in the built environment.

More specifically, ideas around scaffolding and the consequences of our reliance on it for maintenance are explored - partly through value assessments based on

existing frameworks used today in architectural preservation, and partly through studies and small-scale proposals that test scaffolding's qualities by taking them to extremes.

Unlike buildings and monuments, which only become what they are when they are built - scaffolding refers to both the unbuilt components and built structures. This lack of distinction reinforces the idea that scaffolds are temporary and secondary to buildings / monuments. And yet, scaffolding is also indispensable: we rely on temporary structures to keep the built environment operational.

The diploma suggests that this reliance makes scaffolding worthy of architectural investigation. Scaffolding's relevance in most types of building transformation becomes a way to explore problems of preservation (whether for heritage or sustainability reasons) and presents alternative and new uses of scaffolding in order to show how architecture can address and approach the challenges present in maintenance.

The diploma book in Binder 2 is organised into chapters by values and provides research and context for the design work. This is a brief summary:

- » Usefulness value - Our reliance on scaffolding as a pragmatic system to facilitate maintenance / construction. Explored in [Putlog Plugin](#), a scaffolding anchor component that anticipates future and regular maintenance cycles.
- » Fixed lifespan value: Temporariness - The finite lifespan of scaffolding related to its cycles of use. Explored in [YIOBY! \(Yes, In My Back Yard!\)](#), a series of non-maintenance scaffolding typologies.
- » Fixed lifespan value: Recurrence - The necessity and frequency of scaffolding in maintaining a building / monument. Explored in [Out of Order](#), a series of scenarios exploring the mutually supportive relationship between the 'permanent' building structure and the supplementary scaffold.
- » Universality value - The ubiquity and standardisation of scaffolding for all types of maintenance work around the world. Explored in [Re-plugin](#), which aims to test the apparent flexibility of scaffolding to suit any situation.
- » Experience value - The ephemeral experience of inhabiting / seeing scaffolding. Not directly explored but used to help develop design work.

Supplementing the research and design work is a scaffolding survey documenting instances of scaffolding in / outside Oslo and historical examples. The many kinds of scaffolding documented provide examples of the range of functions and qualities possible.

PREDIPLOMA / FURTHER CONTEXT

The pre-diploma was called [Repairology](#), exploring - more broadly - ideas of repair in architecture. The scope was narrowed in the diploma to focus on scaffolding. Some parts of the pre-diploma have been recontextualised to suit the diploma book.

Though not essential for understanding, four [Repairology](#) issues produced for pre-diploma, and previous iterations of the brief is included for reference in how the organisation and thinking of the diploma developed.

SITE

To manage the scope of the diploma, a sampling approach is used both in the scaffold survey and in the selection of test sites. This is suitable as the material impact of scaffolding is generally limited to whatever it is supporting.

Three sites have been selected in [Grønland, Oslo](#) as testing sites to explore the values of scaffolding. They are as follows:

- » [Street at Tøyenbekken 10 - 14](#) - site of test 1 and 4
- » [Annex and courtyard at Norbygata 49](#) - site of test 2
- » [Interior of Grønland kirke](#) - site of test 3

ARCHITECTURAL PROGRAM

A defined program is not relevant to this diploma project.

The function of scaffolding is generally pragmatic - as a result it has a compensational relationship to buildings / monuments (ie. scaffolding fulfils whatever functions the building / monument does not usually have). Therefore the program of each test (if relevant) varies and is partly dependent on the value explored.

APPROACH / WORKING METHOD

The diploma is about (architectural) value. The approach balances research with a speculative analysis of the consequences. Hypotheses of each value is drawn from

secondary research and studies of existing conditions, then tested in the design work - therefore the design work should be understood as a series of tests rather than as resolved proposals. Also, even though the project is open-ended, some reflections are made based on the results of the design work. I hope the positions I have are presented clearly in the diploma book.

It should also be said that the process and documentation in Binder 2 should be understood as being equally important as the design work in Binder 1.

DELIVERABLES

The digital deliverables have been sorted into the two binder submission format set by AHO.

- » [Binder 1: Program brief and drawing set](#)
 - » Program brief (this document)
 - » Drawing register
 - » Drawings for 4 projects testing 4 variables in relation to values identified in the diploma book
- » [Binder 2: Research and process of identified values / problems that contextualise the tests in Binder 1:](#)
 - » Diploma book
 - » Scaffolding survey
 - » Volumes #1, #2, #3, #7 of pre-diploma 'Repairology'

[Two 1:75 working models](#) are also submitted:

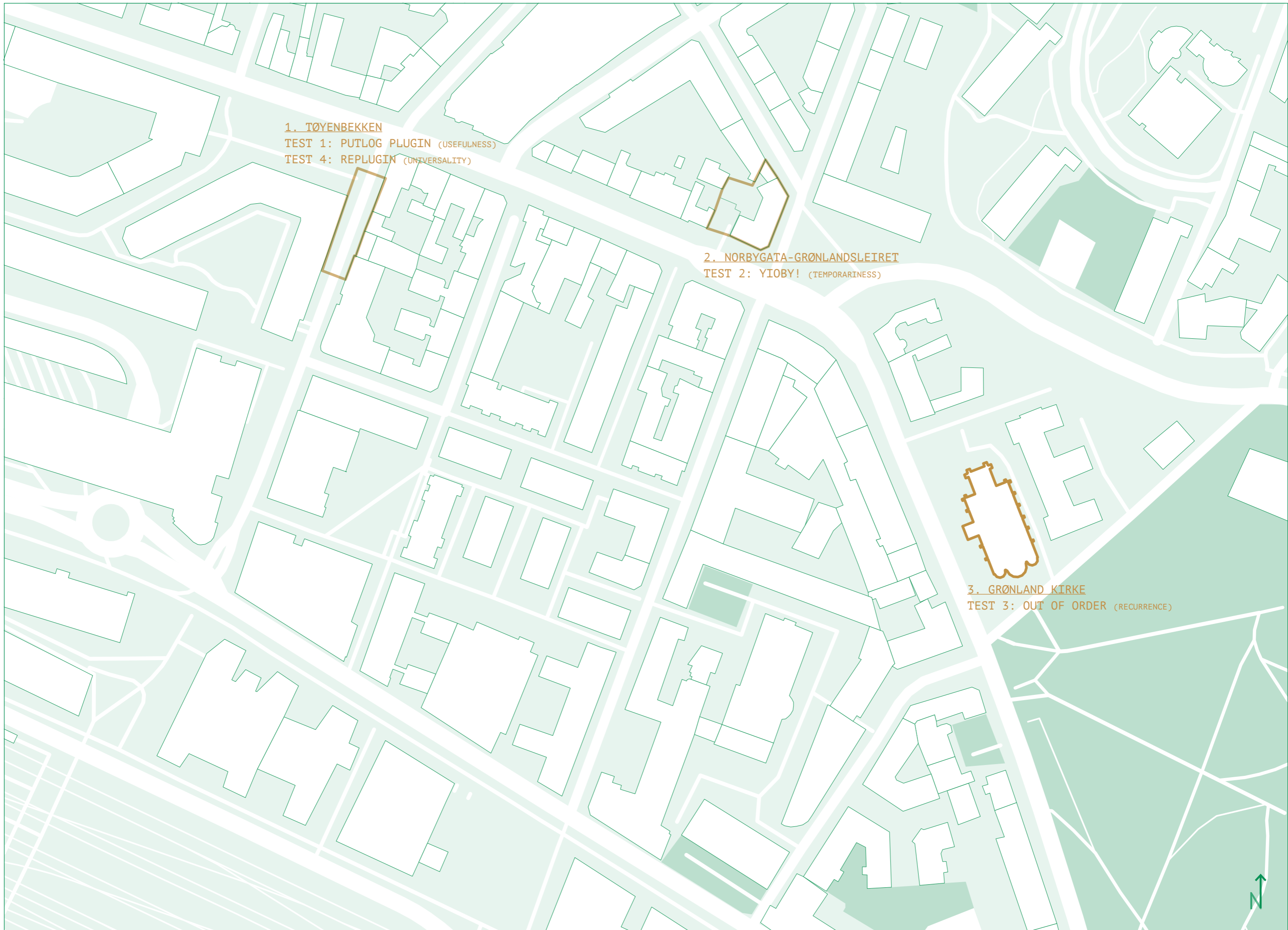
- » Interior of Grønland kirke (test 3)
- » Street at Tøyenbekken 10-14 (test 4)

BIBLIOGRAPHY / FURTHER READING

A list of key references can be found at the end of the diploma book. A bigger, interactive list of resources can be found online at: yk-a.github.io

The diploma presents one perspective on improving building maintenance - it is hoped that by putting it online it can become a resource for others interested in thinking about kinds of essential systems that hover at the edge of architecture, and alternative ways to think about architectural preservation.

SERIES		ITEM			NOTES
	NUMBER	DRAWING TITLE	TYPE	SCALE	
B1	E-000	test site locations	situation	1:1500	
B1, B2	E-001	scaffold frequency timeline	schedule	N/A	
B1, B2	E-040	scaffolding typologies	axo	1:500	
B1	E-100	existing 1F	plan	1:150	
B1, B2	E-103	facade elements survey	elevation	1:150	
B1, B2	P-120	putlog plugin	axo/detail	1:10	
B1, B2	P-160	conditions 1: re-view	views	N/A	
B1, B2	P-161	conditions 2: re-cover	views	N/A	
B1, B2	P-162	conditions 3: re-veal	views	N/A	
B1	E-200	existing 1F	plan	1:100	
B1	E-201	existing section	section	1:50	
B1, B2	P-210	speculative 1F: programs	plan	1:100	
B1, B2	P-211	speculative section: depot	section	1:50	
B1, B2	P-230	speculative typologies	diagram	N/A	
B1	P-240	speculative: programs in action	axo	1:100	
B1	E-300	existing 1F: romanesque	plan	1:100	
B1	E-301	existing section: romanesque	section	1:100	
B1, B2	P-310	speculative 1F: support	plan	1:100	
B1	P-311	speculative section: support	section	1:100	
B1, B2	P-330	maintenance cycle	schedule	N/A	
B1, B2	P-350	views: from the pews	views	N/A	
B1, B2	P-360	conditions 1: separation	views	N/A	
B1, B2	P-361	conditions 2: reinforcement	views	N/A	
B1, B2	P-362	conditions 3: replacement	views	N/A	
B1	P-010	replugin (Tøyenbekken)	model	1:75	photos
B1	P-030	out of order (Grønland kirke)	model	1:75	photos
B1		program brief	brief		
B2		diploma book	diploma		
B2		scaffolding survey	survey		001-038, 100-113, 200-208
B2		Repairology #1: Value	prediploma		supplementary
B2		Repairology #2: Scaffolding	prediploma		supplementary
B2		Repairology #3: Cleaning	prediploma		supplementary
B2		Repairology #7: Barriers	prediploma		supplementary
*B1	binder 1	diploma brief + drawings			
*B2	binder 2	context + process			

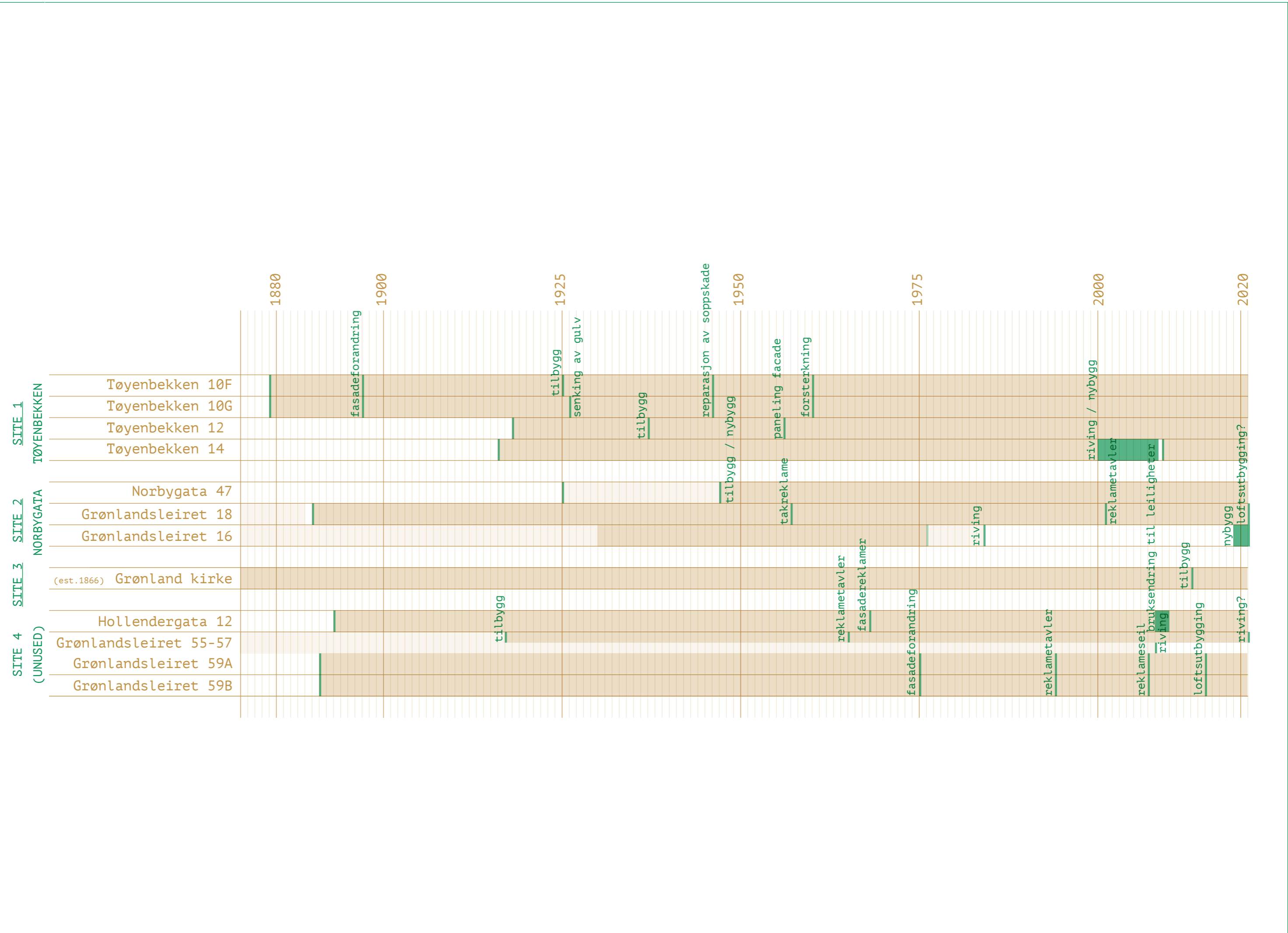


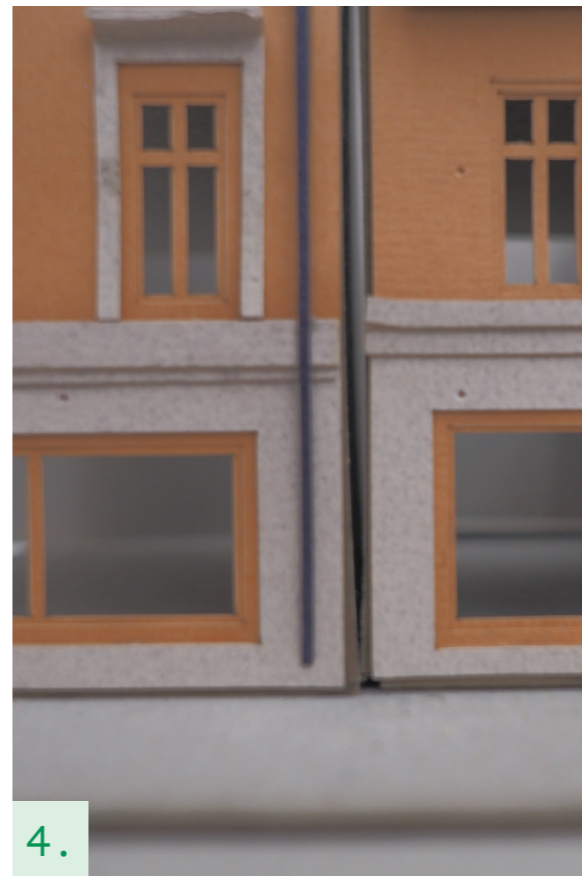
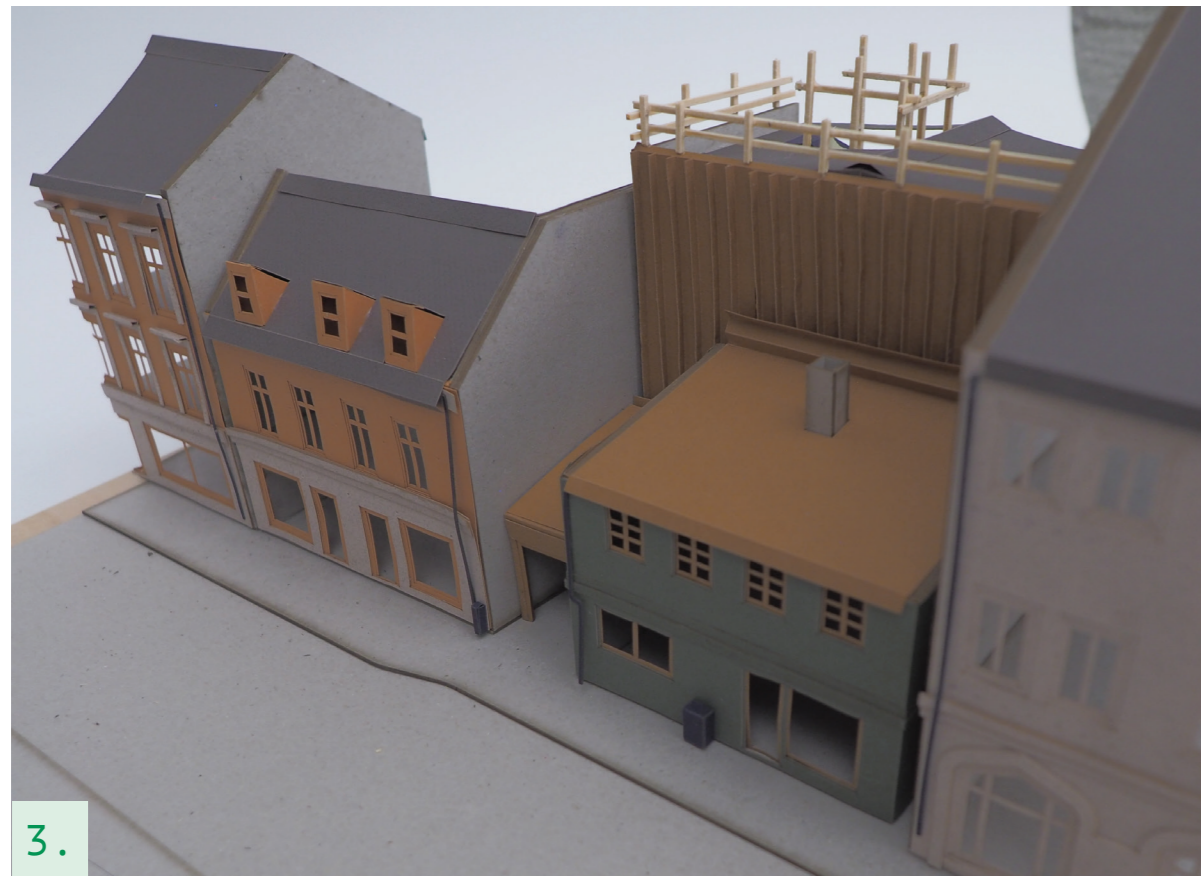
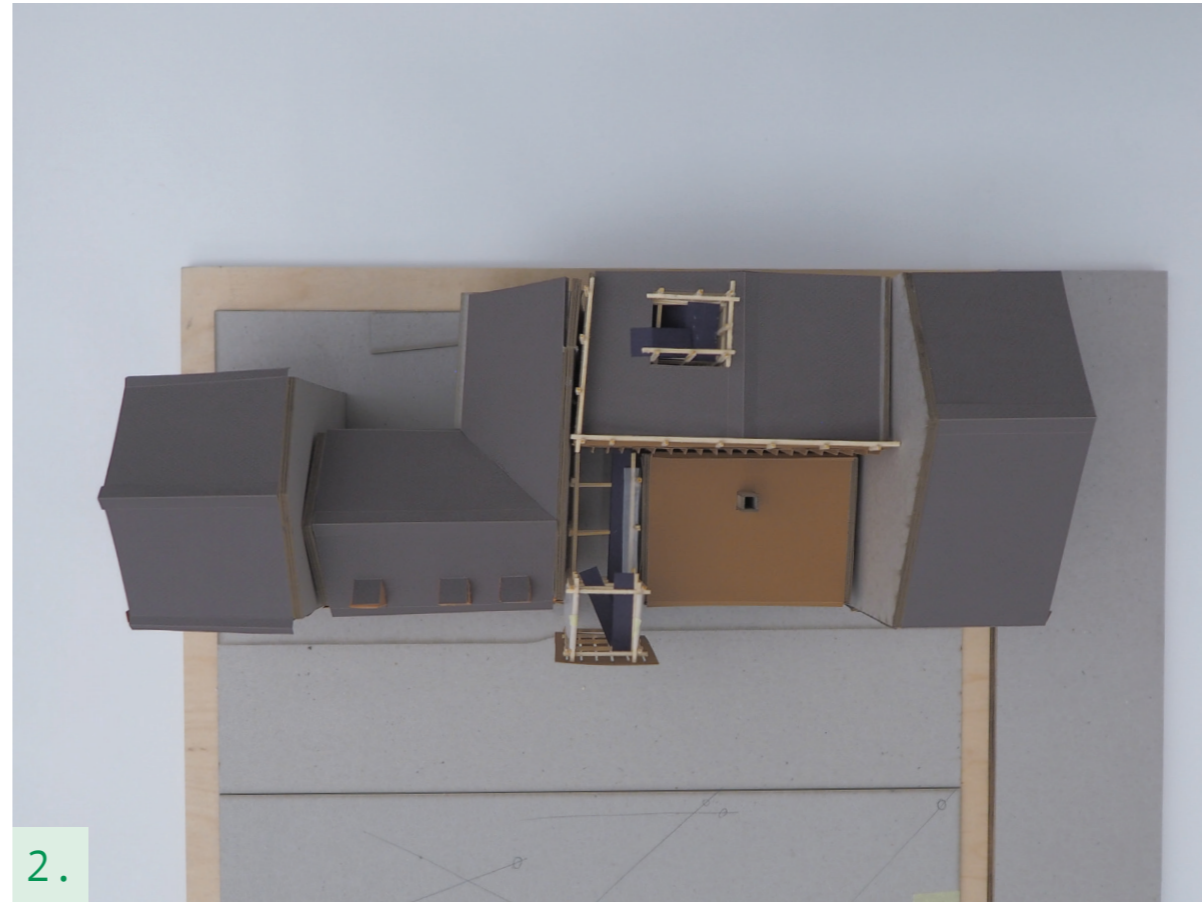
1. TØYENBEKKEN
TEST 1: PUTLOG PLUGIN (USEFULNESS)
TEST 4: REPLUGIN (UNIVERSALITY)

2. NORBYGATA-GRØNLANDSLEIRET
TEST 2: YIOBY! (TEMPORARINESS)

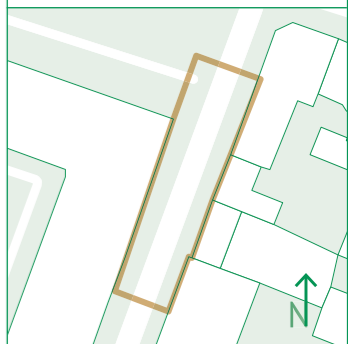
3. GRØNLAND KIRKE
TEST 3: OUT OF ORDER (RECURRENCE)







- views:
1. front
 2. top
 3. elevated SW
 4. detail 1
 5. detail 2





1.



2.

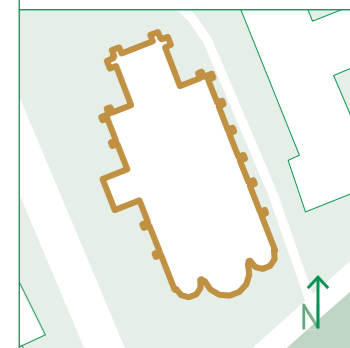


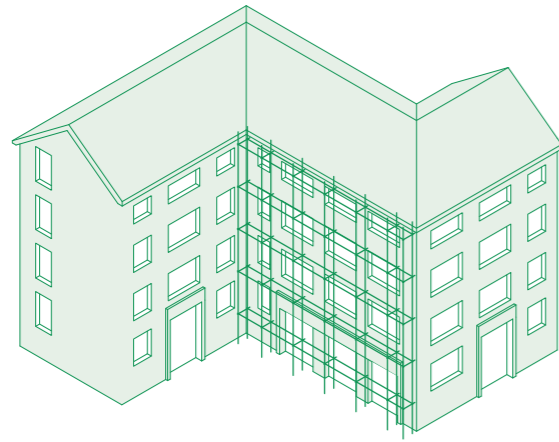
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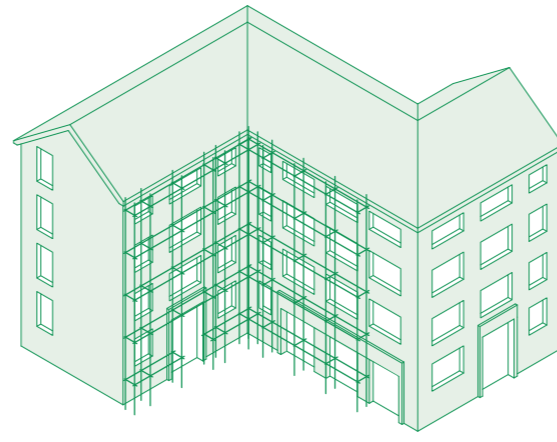
4.

- views:
- 1. west side
 - 2. north side
 - 3. east side
 - 4. south side

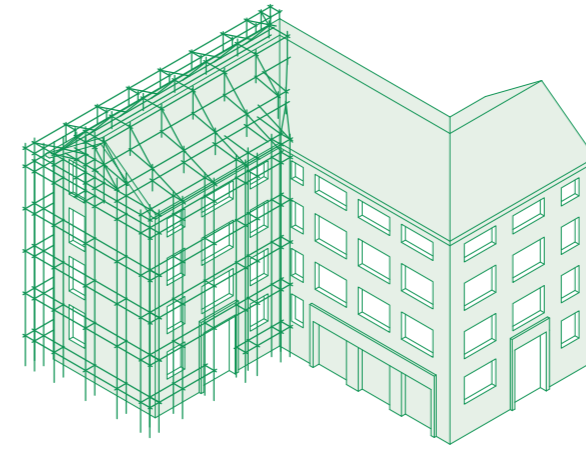




exterior 1: perimeter (surface)



exterior 2: perimeter



exterior 3: enclosure

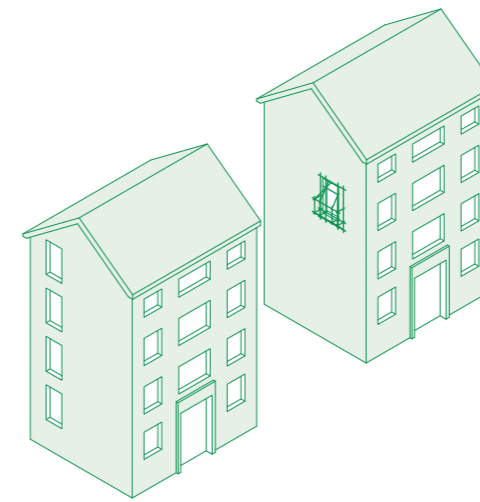
EXTERIOR SCAFFOLDING



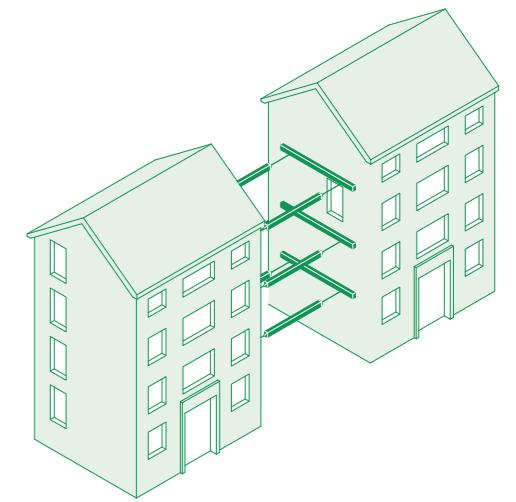
exterior 4 1: boarding



exterior 5: free-standing

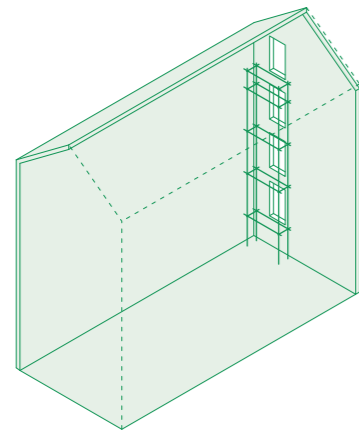


exterior 6: parasitic

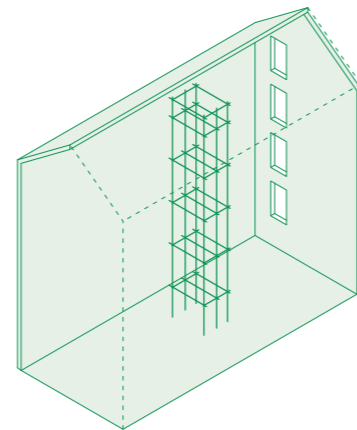


exterior 7: structural

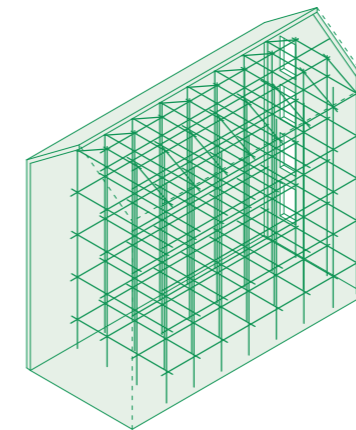
INTERIOR SCAFFOLDING



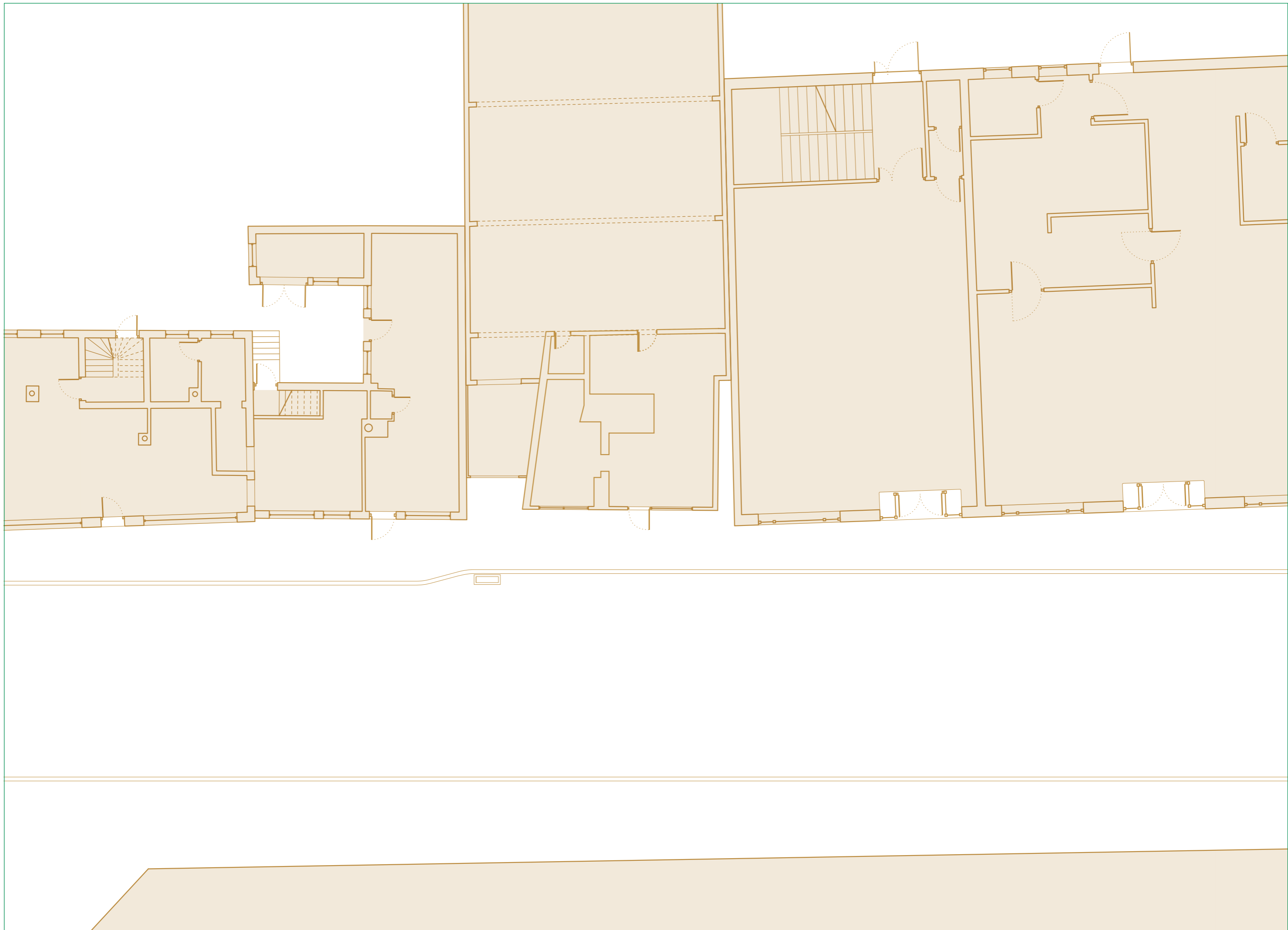
interior 1: perimeter

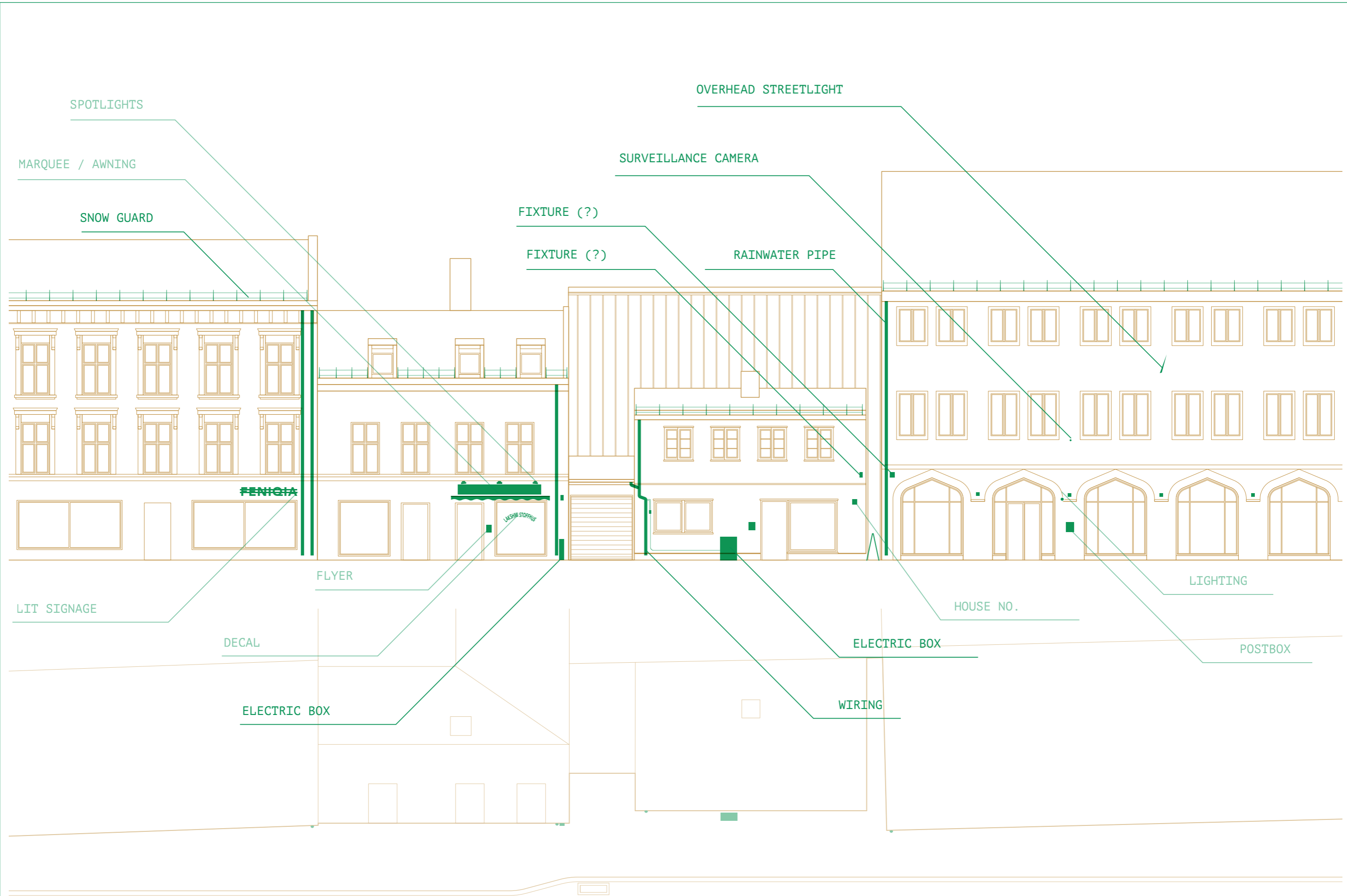


interior 2: free-standing

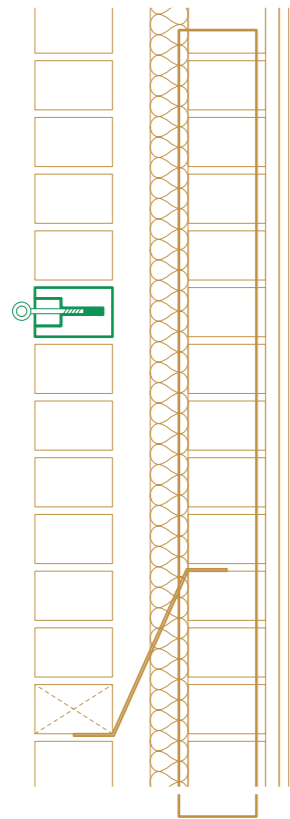


interior 3: volume (structural)

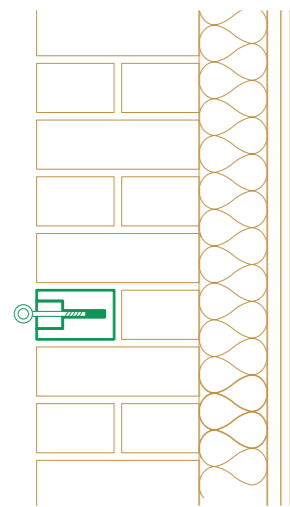




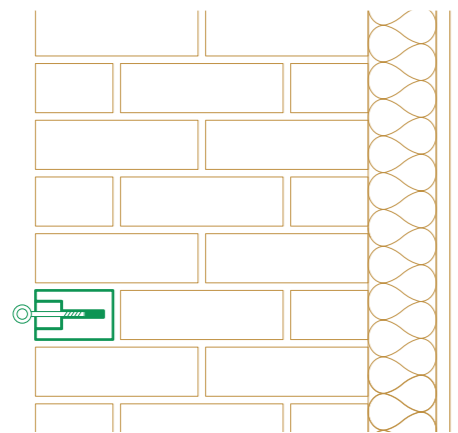
*INTENDED TO BE SEEN
 *NOT INTENDED TO BE SEEN



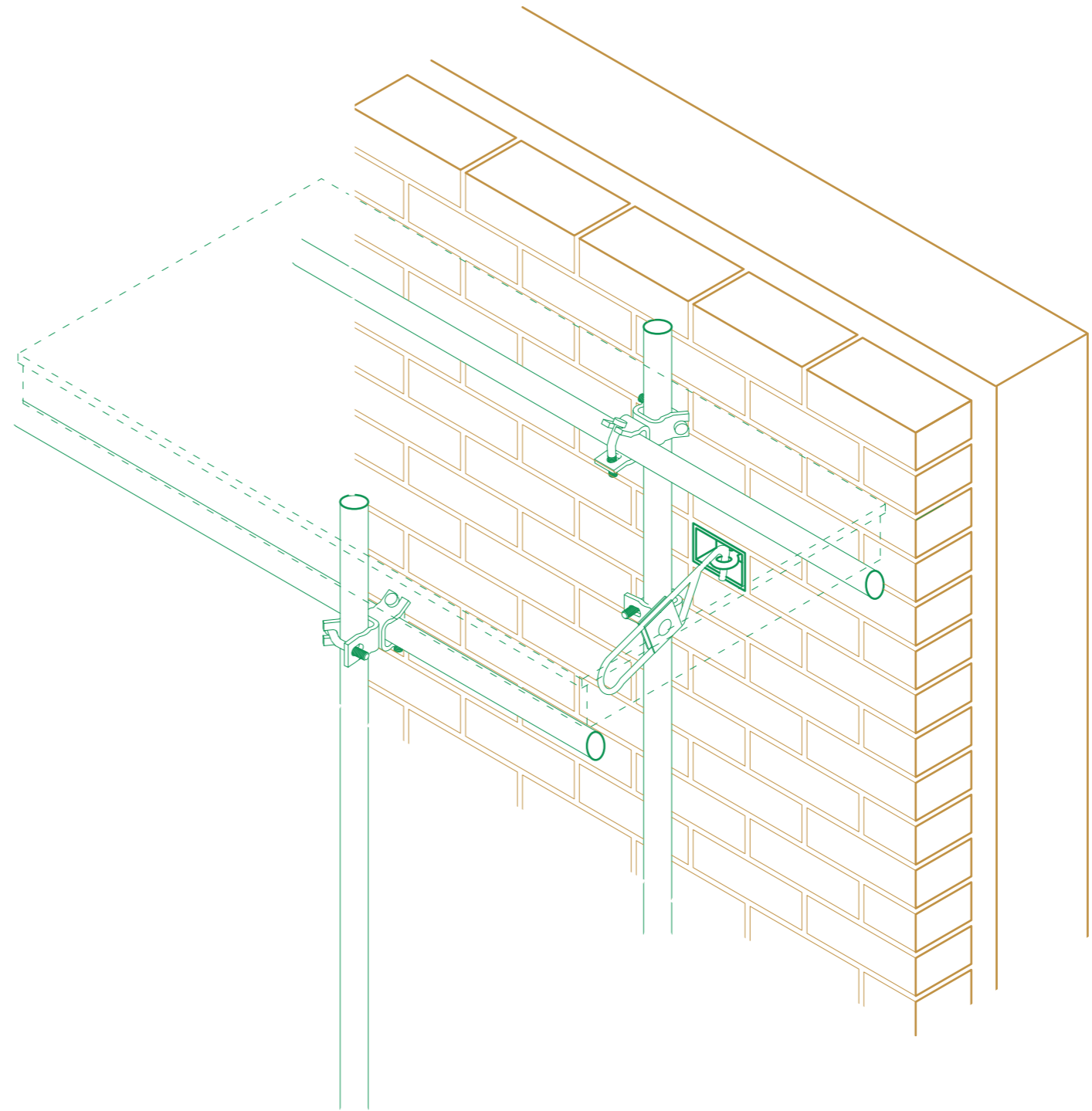
1:10 SECTION DETAIL
CAVITY WALL



1:10 SECTION DETAIL
SOLID MASONRY WALL



1:10 SECTION DETAIL
SOLID MASONRY WALL 2

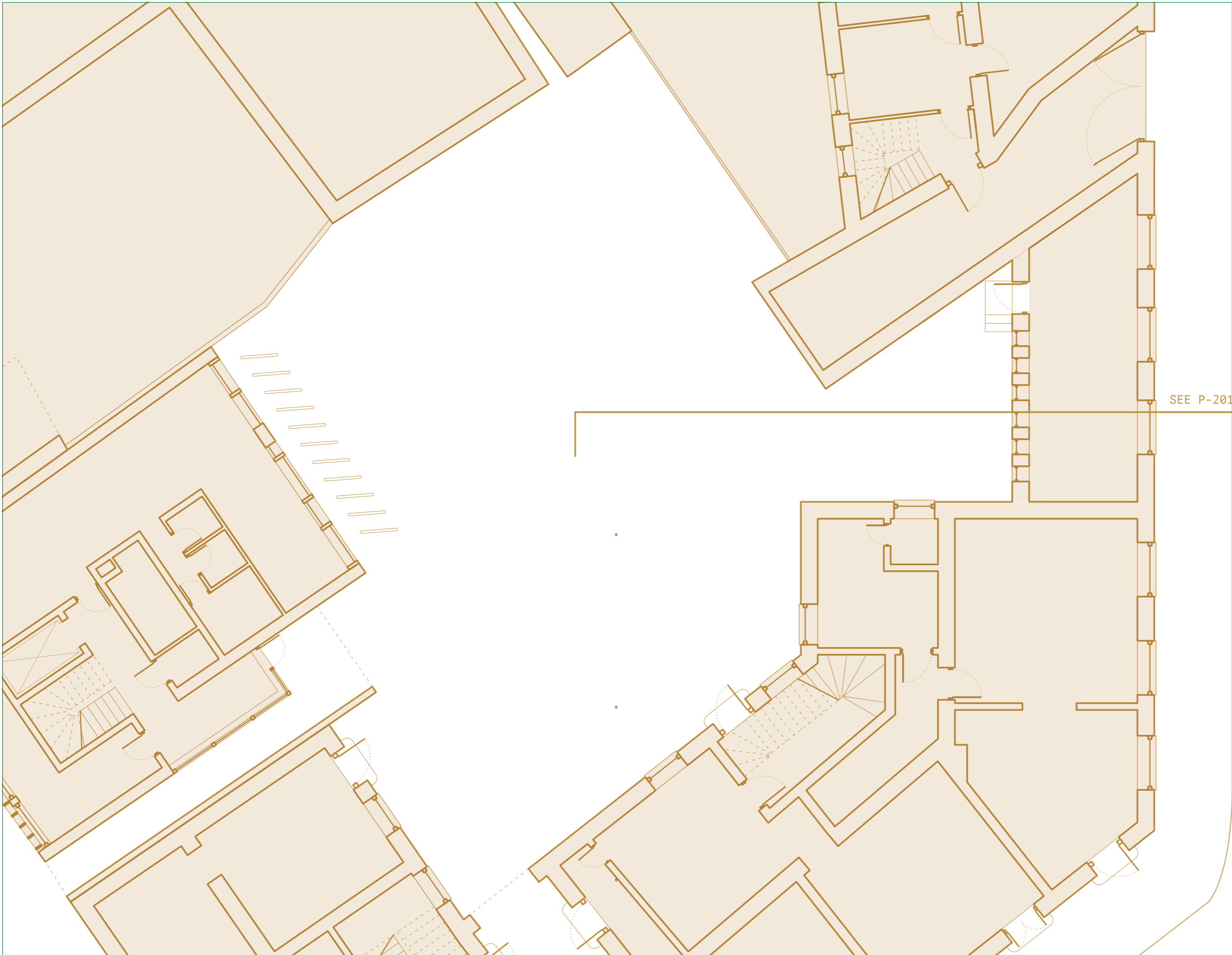


1:10 AXONOMETRIC - OPERATION



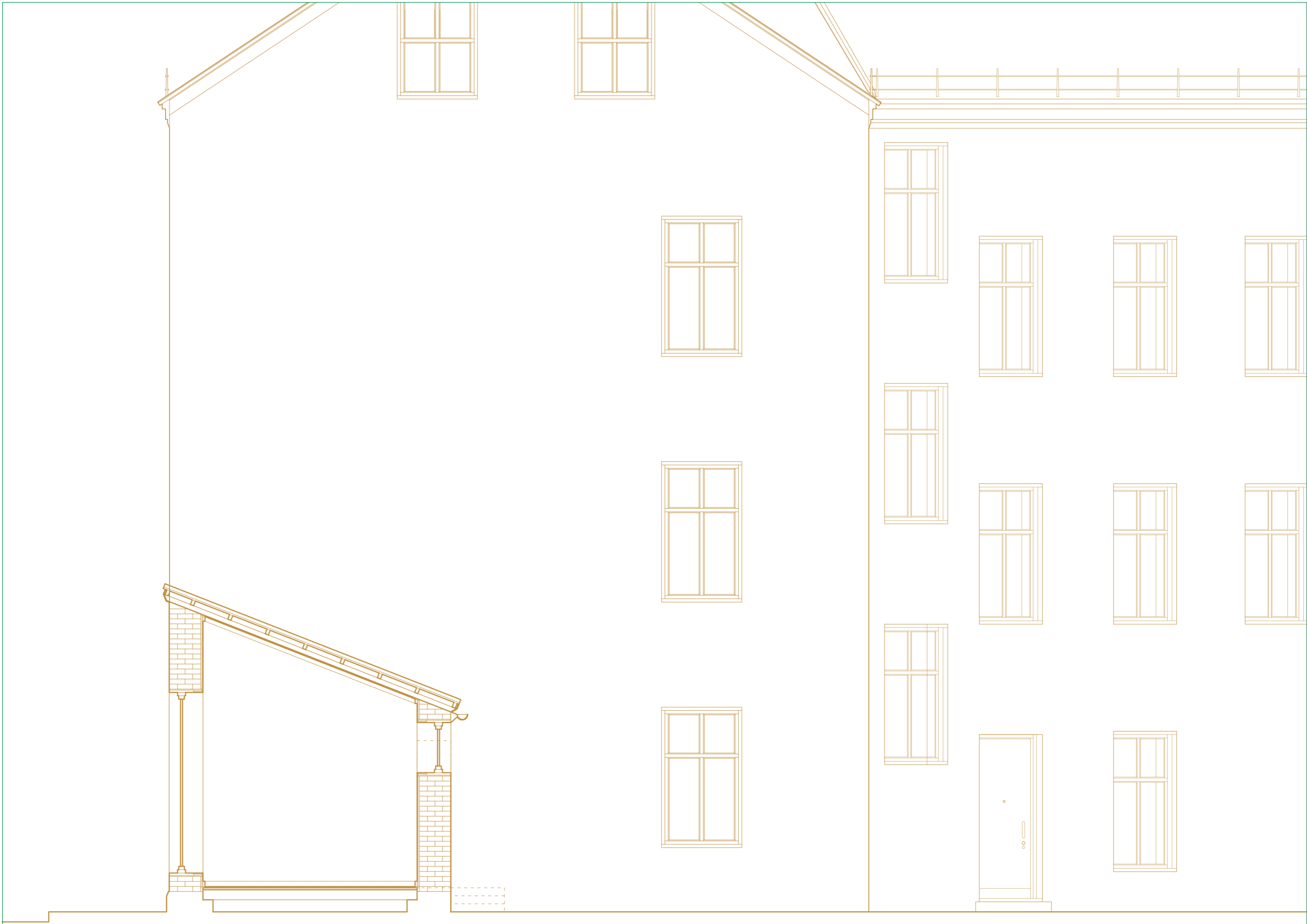


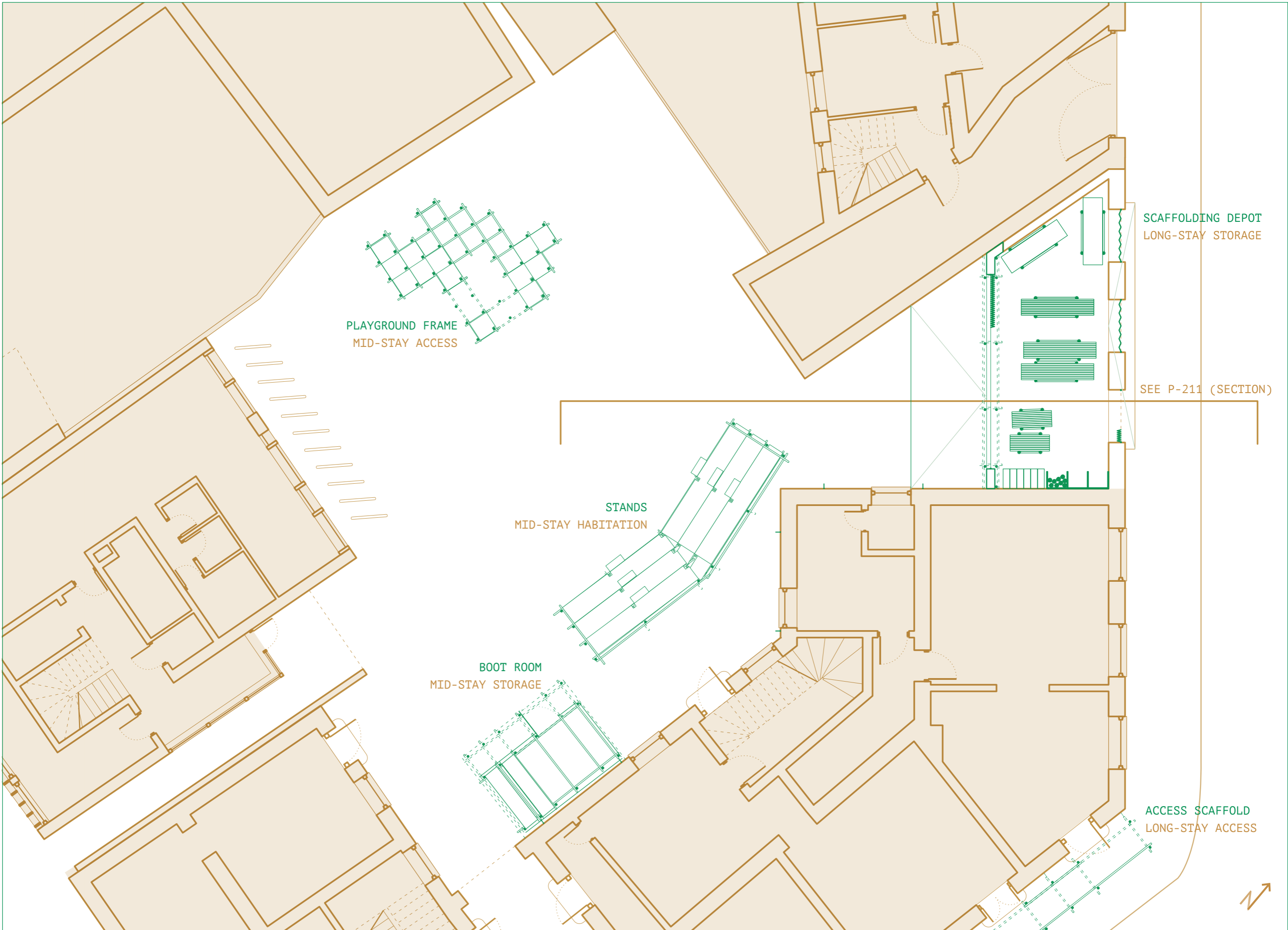




SEE P-201 (SECTION)







PLAYGROUND FRAME
MID-STAY ACCESS

STANDS
MID-STAY HABITATION

BOOT ROOM
MID-STAY STORAGE

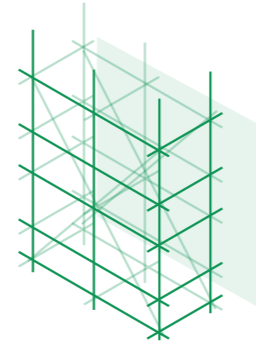
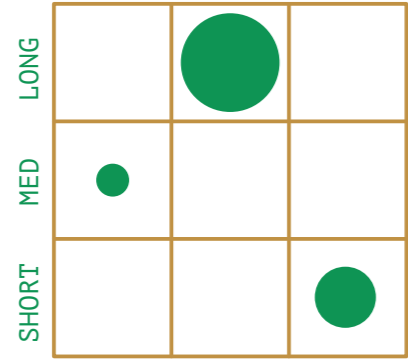
SCAFFOLDING DEPOT
LONG-STAY STORAGE

SEE P-211 (SECTION)

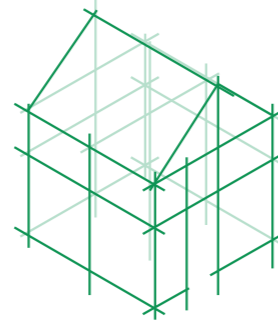
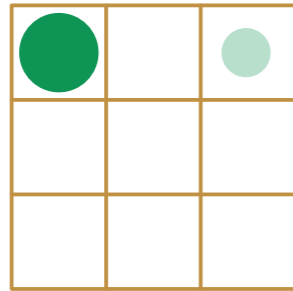
ACCESS SCAFFOLD
LONG-STAY ACCESS



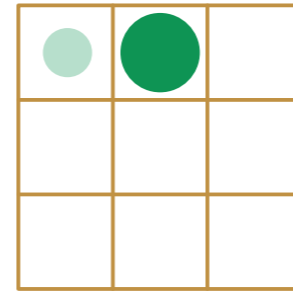
HABIT. ACCESS STORAGE



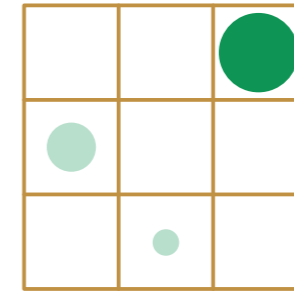
TYPICAL SCAFFOLDING
LONG-STAY ACCESS



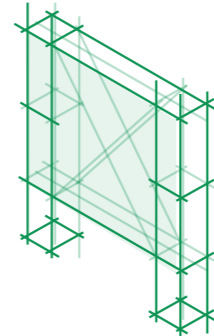
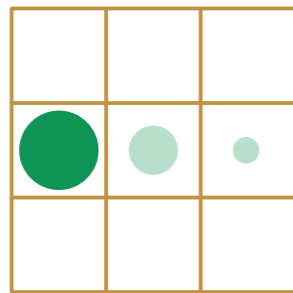
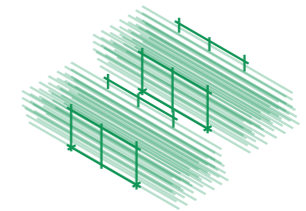
GLASSHOUSE
LONG-STAY HABIT.



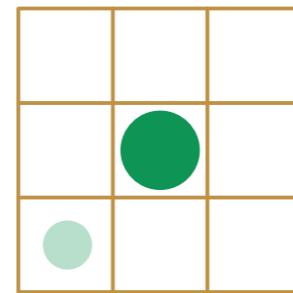
TERRACE
LONG-STAY ACCESS



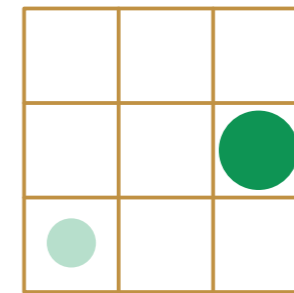
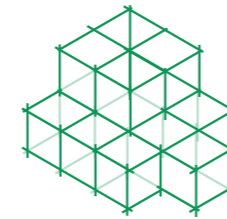
SCAFFOLDING DEPOT
LONG-STAY STORAGE



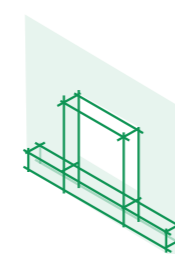
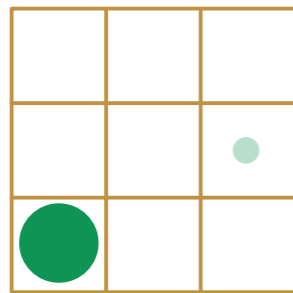
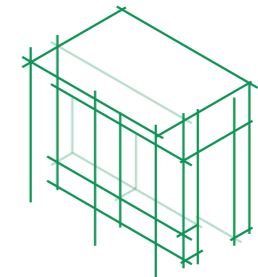
CINEMA
MID-STAY HABIT.



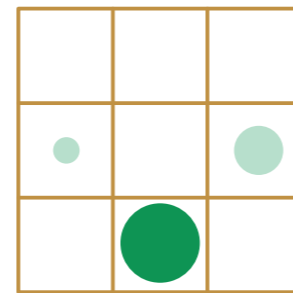
PLAYGROUND FRAME
MID-STAY ACCESS



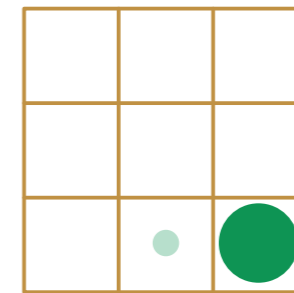
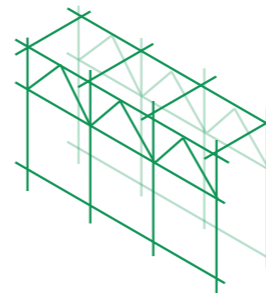
BOOT ROOM
MID-STAY STORAGE



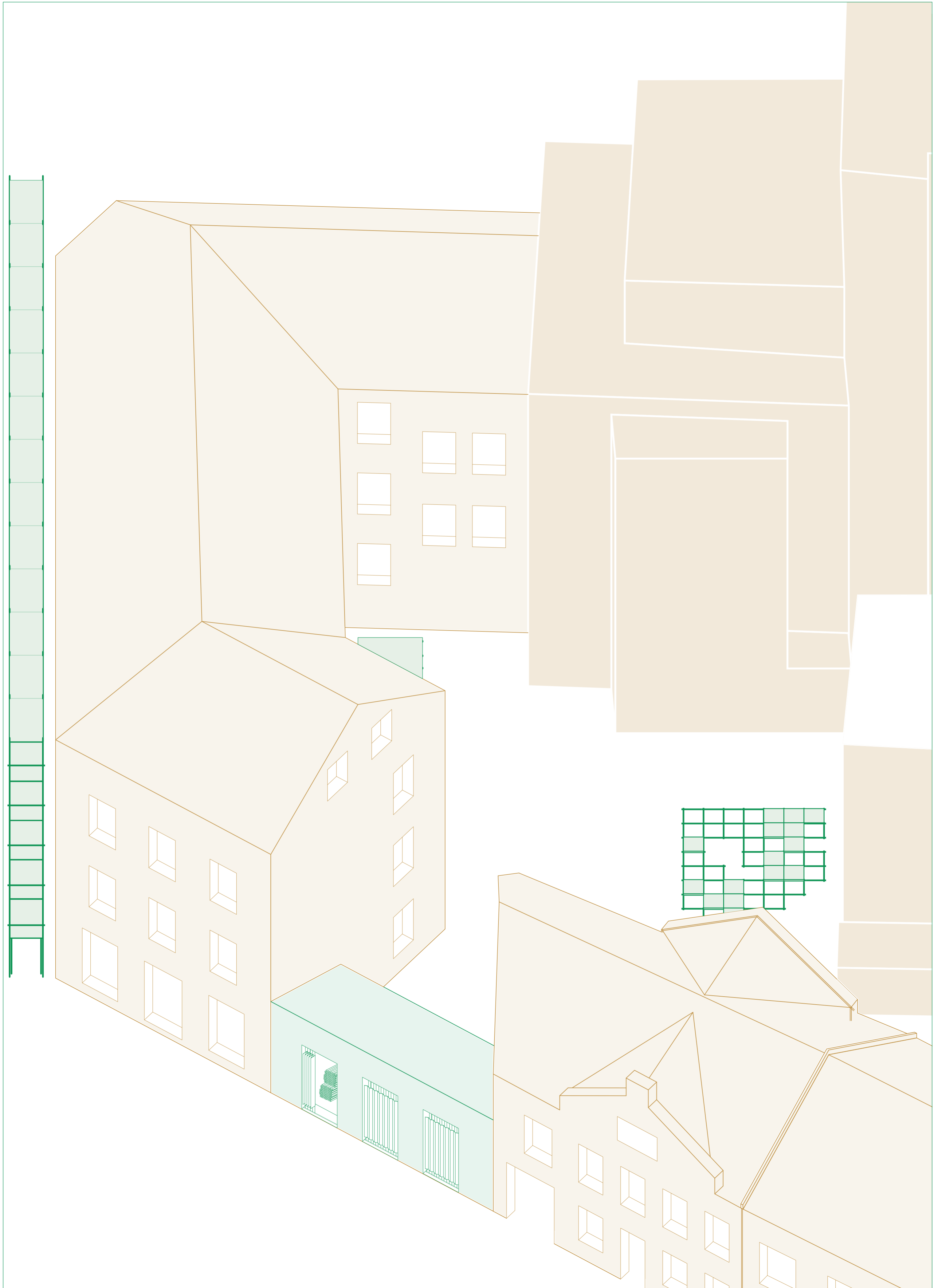
WINDOW RECESS
SHORT-STAY HABIT.

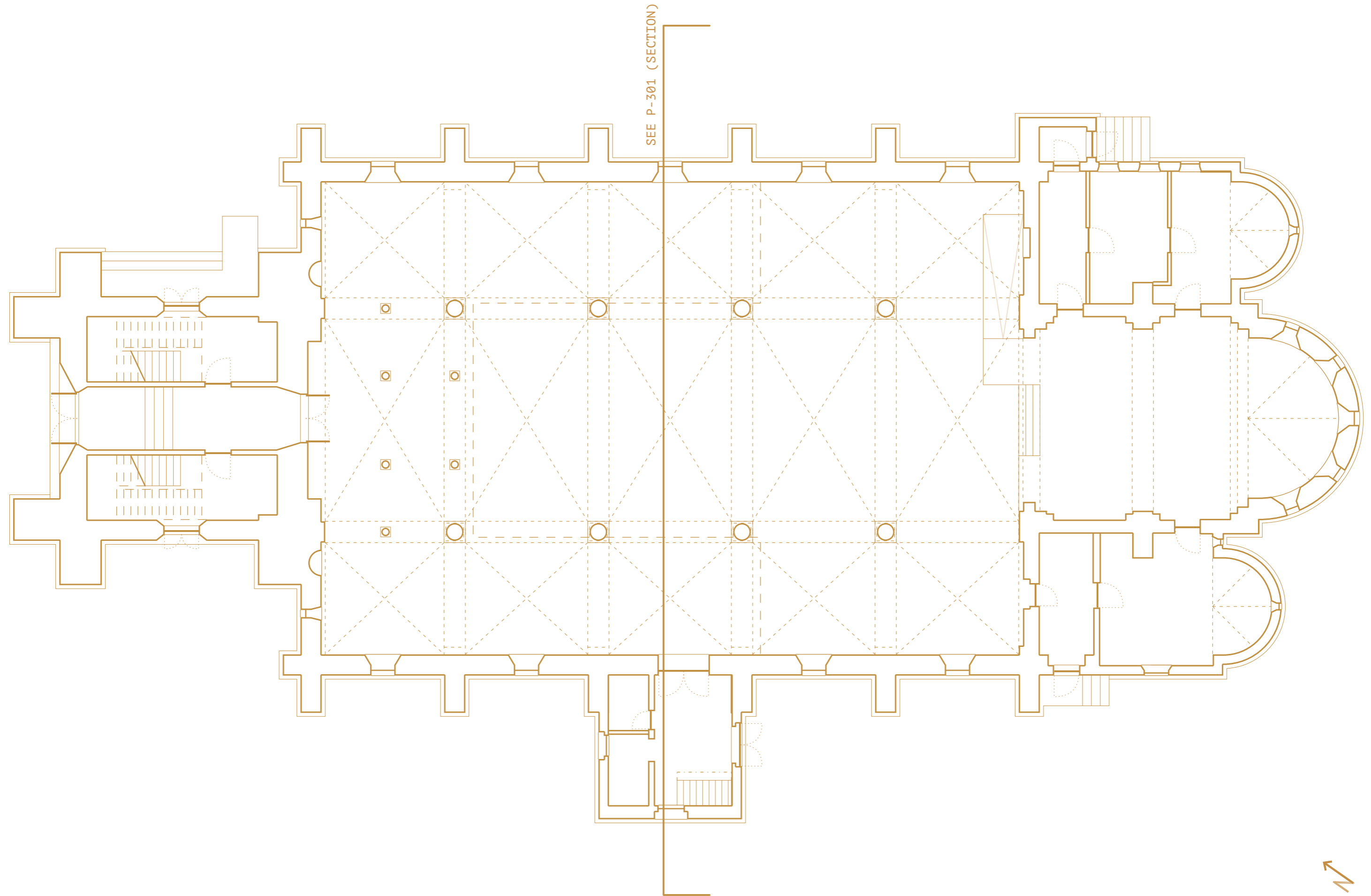


ARCADE
SHORT-STAY ACCESS

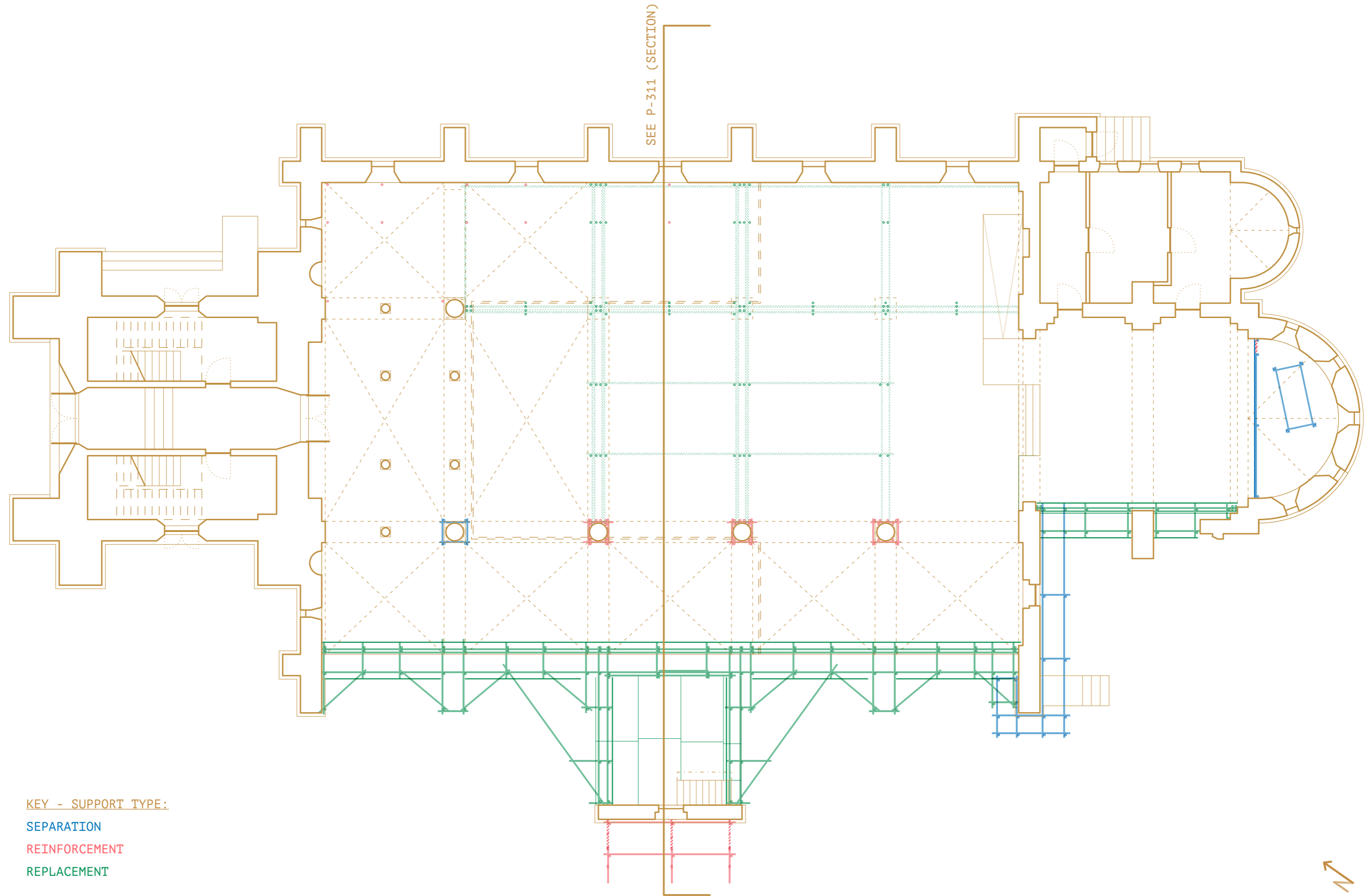


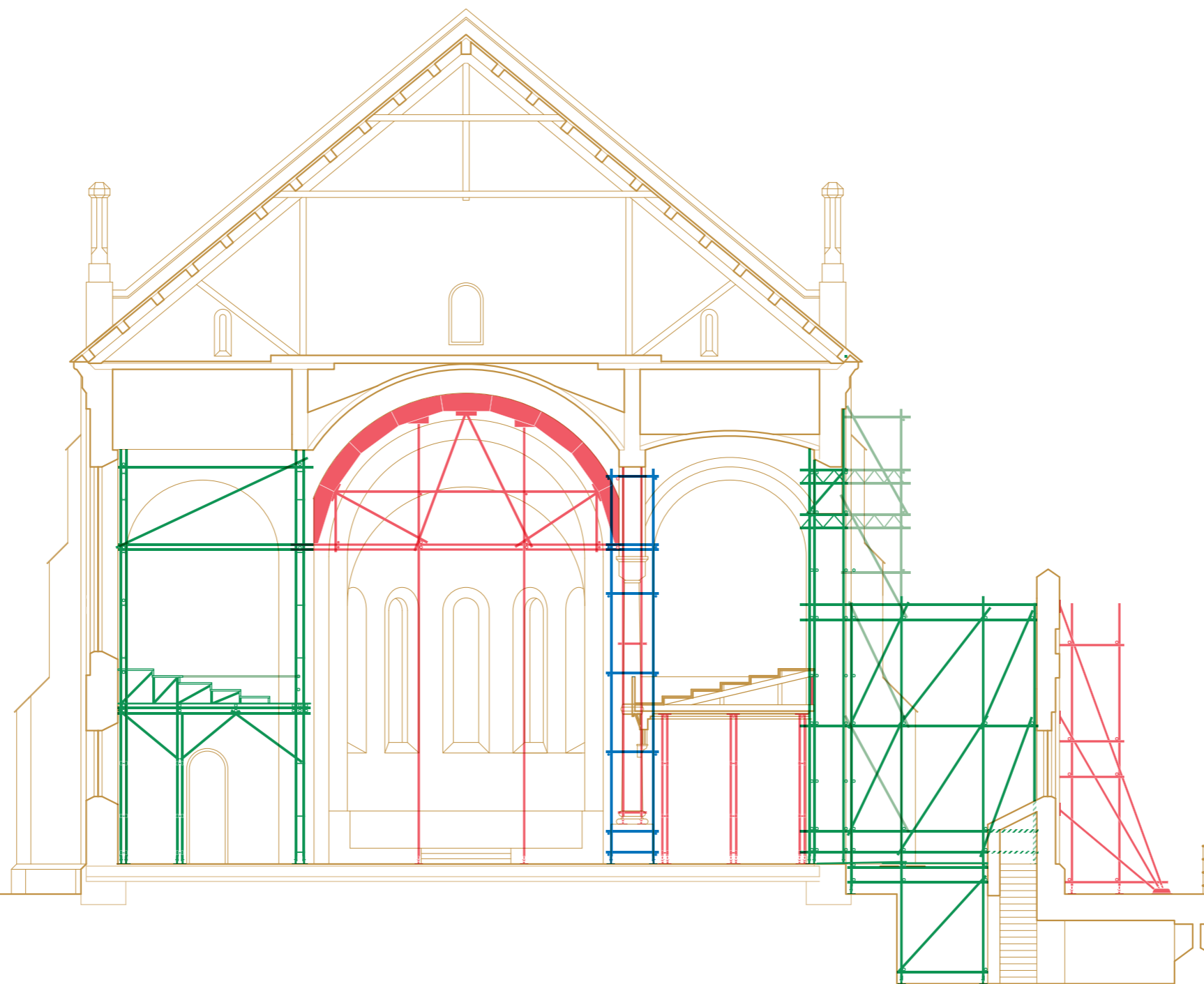
POSTBOX / POSTROOM
SHORT-STAY STORAGE











KEY - SUPPORT TYPE:

SEPARATION

REINFORCEMENT

REPLACEMENT

