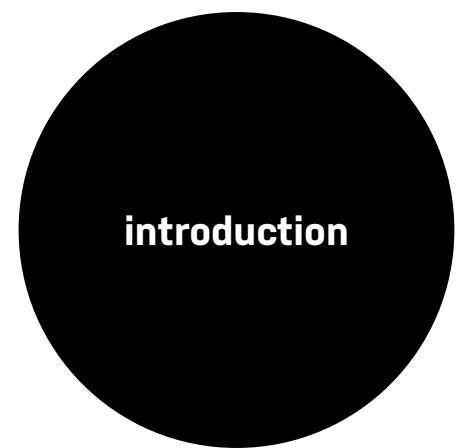




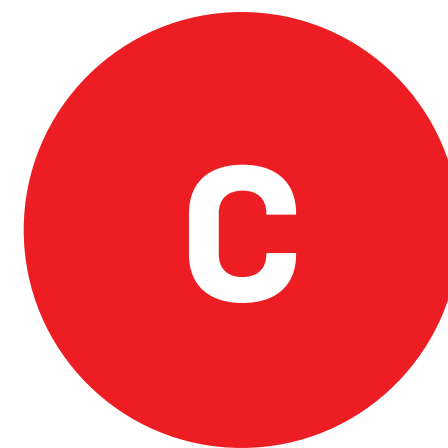
**architect-developer
house on a house**



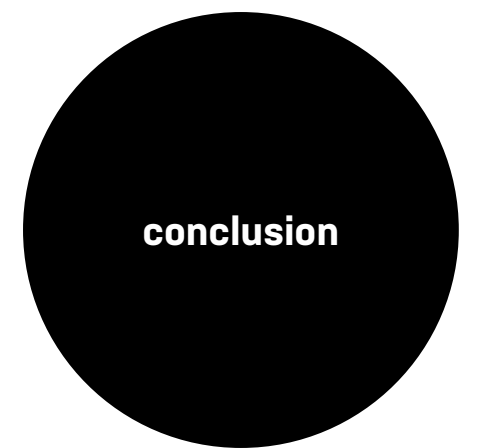
research



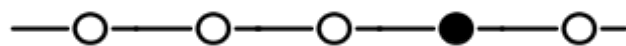
research by design



design









?







research



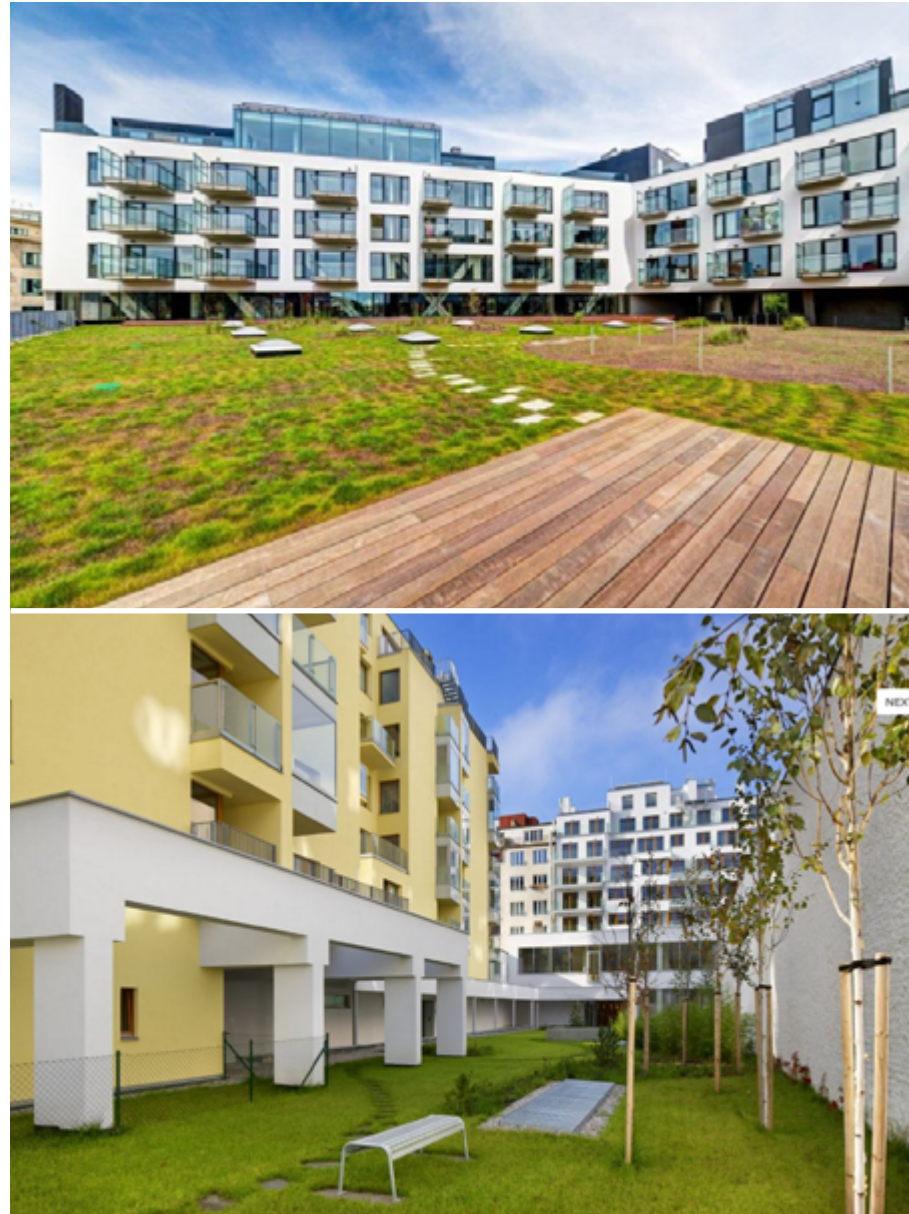


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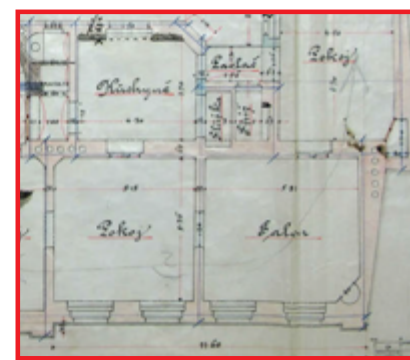
involvement of architect



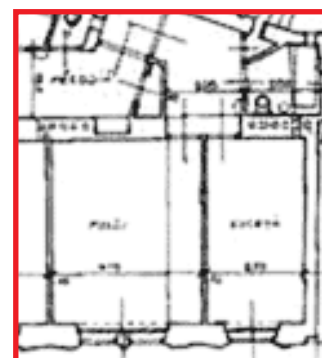
obsolete zoning law



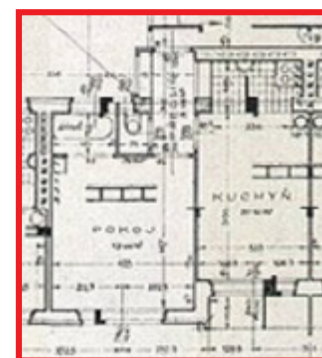
poor dweller's demands = poor common spaces



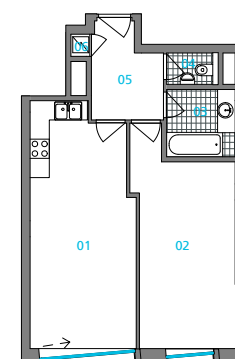
floorplan from 1887 | Václav Sigmund, Na Kocandě, Praha 1



floorplan from 1914 | Josef Chochol, rental apartments Hodek, Praha 2



floorplan from 1928 | Evžen Linhart, rental apartments, Praha 3



floorplan from 2016 | Jubileum House, Praha 7

no progress in typology



marketing x reality

■ ■ ■



architect-developer

How meaningful is the figure of the architect-developer in the building process in the Czech Republic?

Find out if and how is it possible to merge high quality architecture which can contribute to the built environment with the economical feasibility of such architectural project?

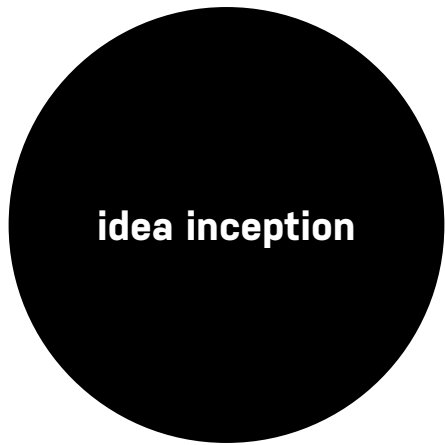
research question & design goal



research by design

initial building phase





◆ inception of the idea / location idea

◇ site acquisition

◇ site acquisition

site & market research	feasibility study	<i>function, program, volume</i>	design
------------------------	-------------------	----------------------------------	--------



◇ inception of the idea / location idea

◇ site acquisition

◇ site acquisition

site & market research	feasibility study	<i>function, program, volume</i>	design
------------------------	-------------------	----------------------------------	--------

- . constrains and challenges
 - . unexpected location (refurbishment, narrow gap, noise, ...)
 - . mix of functions
 - . mix of private/public ownership and interest
 - . potential for positive contribution of the building to the city life and environment
 - . potential to create a profit
- +
- . smallness of the development
 - . rather low financial resources

site selection specifics for the architect-developer



Prague, Czech Republic

supermarket | Letenské náměstí

metro hub | Florenc

former substation | Preslova

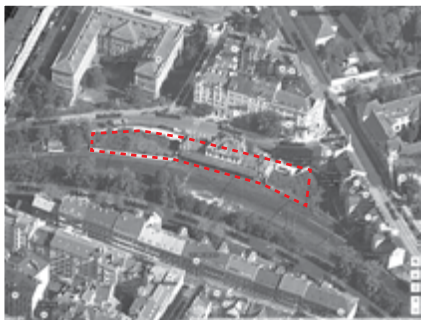
tram depot | Vinohrady

former train station | Vyšehrad

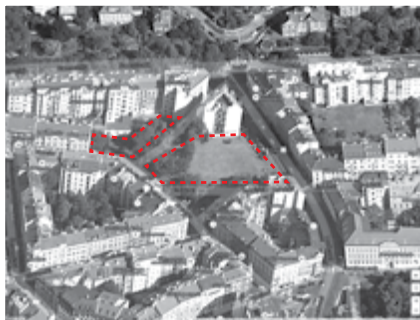
vacant lot | Kodaňská



former substation



former train station



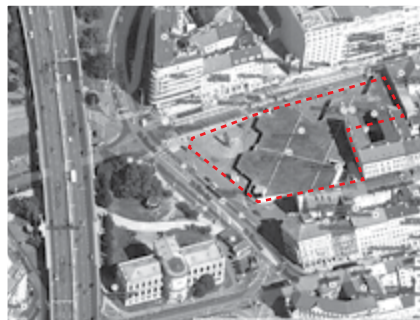
vacant lot



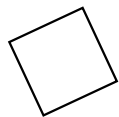
square which is
a supermarket



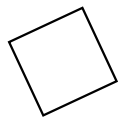
tram depot



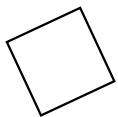
metro hub



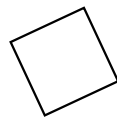
340 m^2



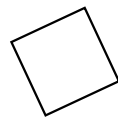
$2\,180\text{ m}^2$



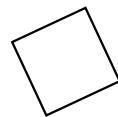
$3\,144\text{ m}^2$



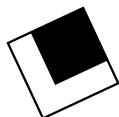
$1\,600\text{ m}^2$



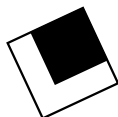
$8\,330\text{ m}^2$



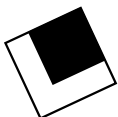
$6\,540\text{ m}^2$



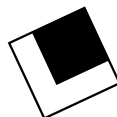
340 m^2



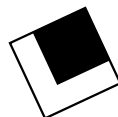
$1\,040\text{ m}^2$



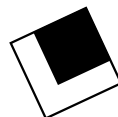
$1\,665\text{ m}^2$



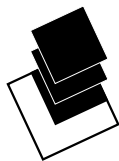
$1\,600\text{ m}^2$



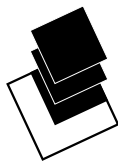
$5\,610\text{ m}^2$



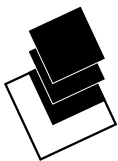
$4\,850\text{ m}^2$



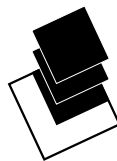
6



3



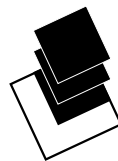
5



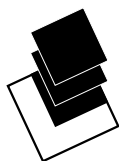
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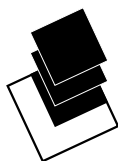
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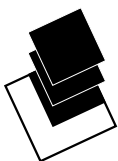
8



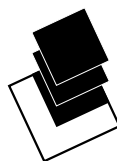
$2\,040\text{ m}^2$



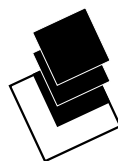
$3\,120\text{ m}^2$



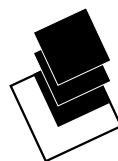
$8\,325\text{ m}^2$



$9\,600\text{ m}^2$



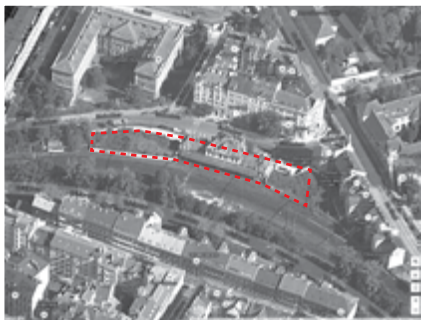
$16\,830\text{ m}^2$



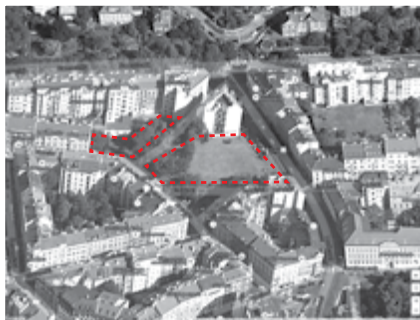
$38\,800\text{ m}^2$



former substation



former train station



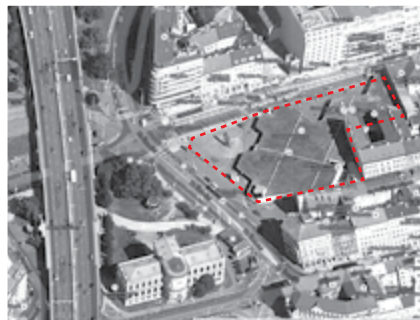
vacant lot



square with
a supermarket



tram depot



metro hub



2 689 000 €



12 437 000 €



24 194 000 €



18 933 000 €



54 060 000 €



115 290 000 €



3 489 000 €



9 778 000 €



29 595 000 €



24 439 000 €



59 830 000 €



101 694 000 €



800 000 €



- 2 659 000 €



5 401 000 €



5 506 000 €



5 770 000 €



- 13 594 000 €



30 %



- 21 %



22 %



29 %



11 %



-12 %

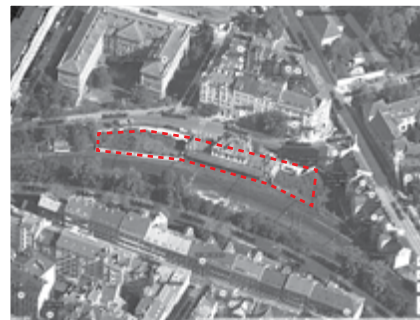


former substation

reasonable size

old x new

mix of functions



former train station

strong heritage

*not suitable
for dwelling*

*hard to
mix functions*

no revenue



vacant lot

still too big

*too little
challenging*



square with
a supermarket

too attractive site

ownership issues

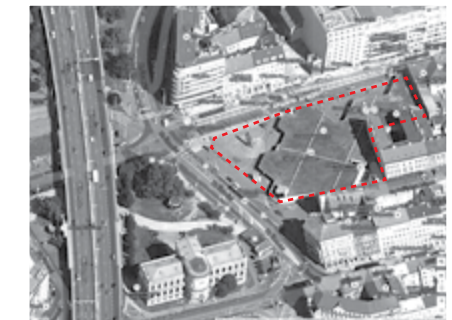


tram depot

too big

mostly dwelling

*hard to
mix function*



metro hub

too big

*office district
location*

no revenue





◆ inception of the idea / location idea

◇ site acquisition

◇ site acquisition

site, building & market research	feasibility study	<i>function, program, volume</i>	design
----------------------------------	-------------------	----------------------------------	--------

built: 1960's
owner: City of Prague



former substation

recent use [until 2012]: experimental theater



experimental theater group "Farm in the Cave"

- . the building needs renovation in order to host any program
- . desire to maintain the public [cultural] non-profitable use from the municipality and the users (the theater group and the public)
- . missing finances
- . possible higher running costs while in need to combine more functions under "one roof"

conflict

. mix **public [cultural] non-profitable use** [the theater] with **commercial, private or any other use** which would allow to finance the redevelopment of the property

opportunity

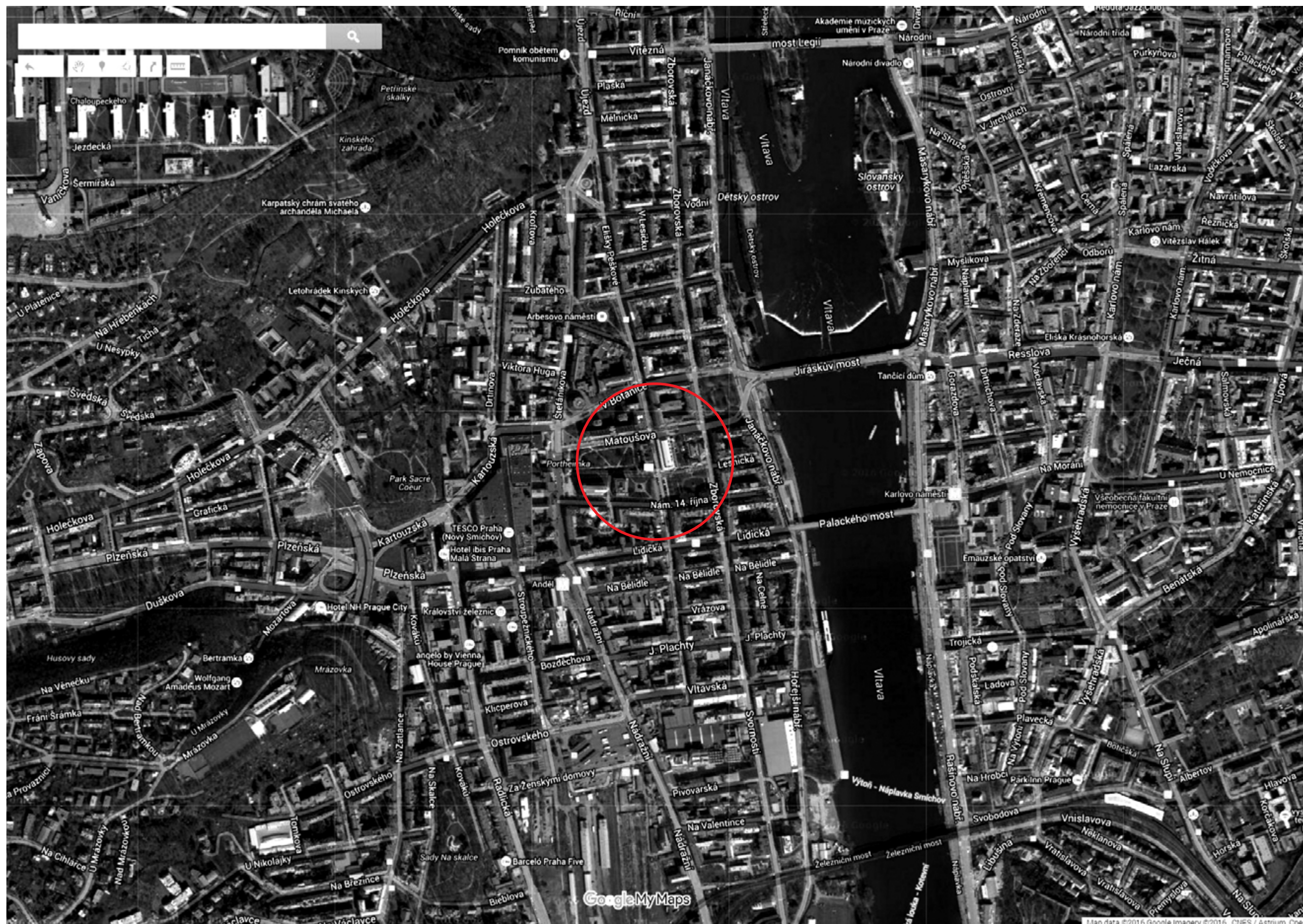


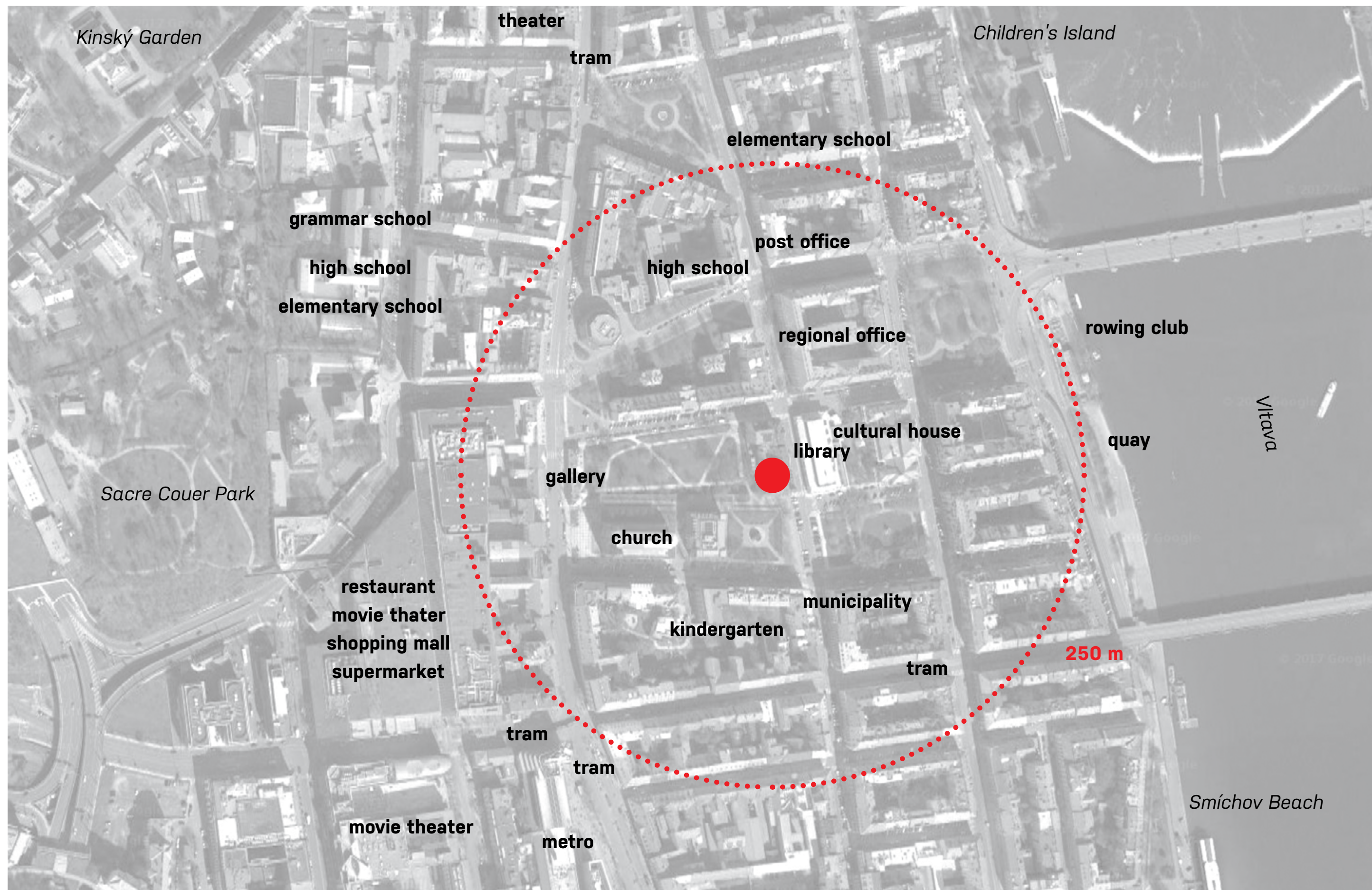
◇ inception of the idea / location idea

◇ site acquisition

◇ site acquisition

site & building research	feasibility study	<i>function, program, volume</i>	design
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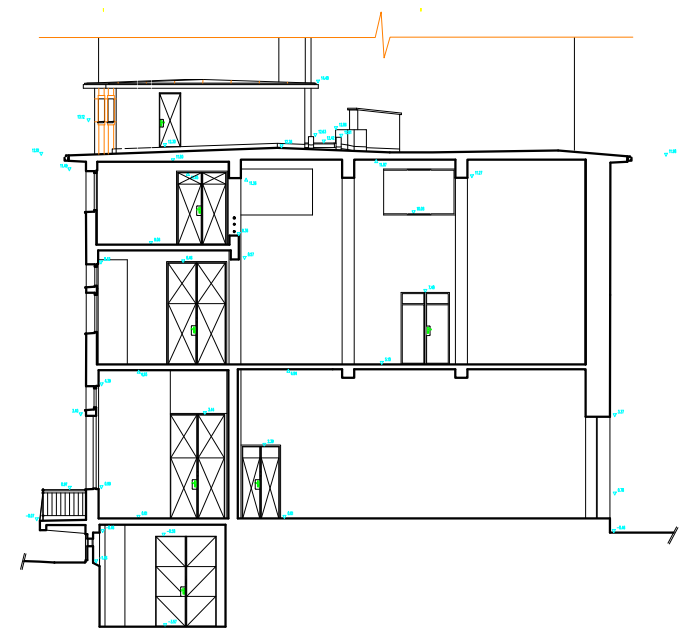
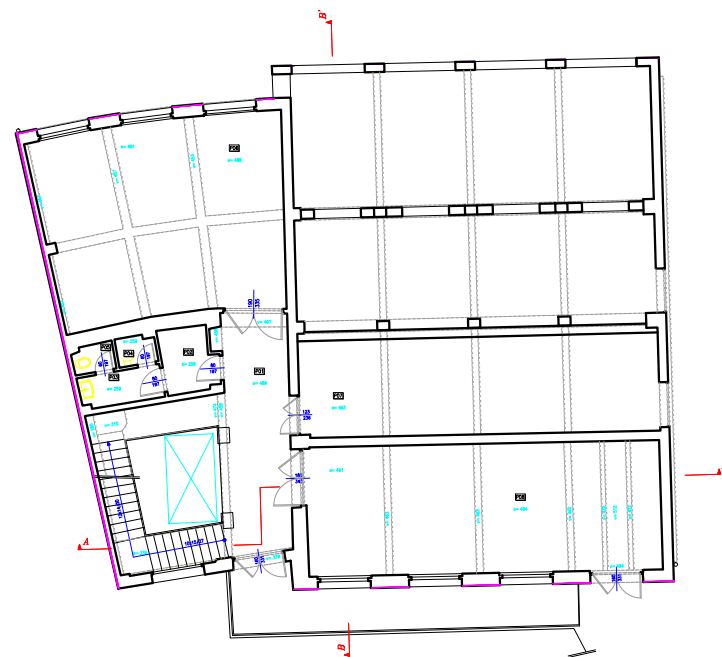
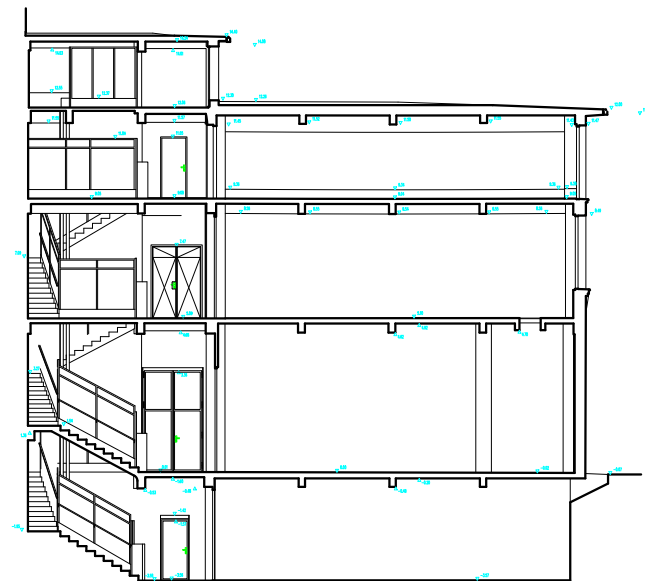




accessibility







substation



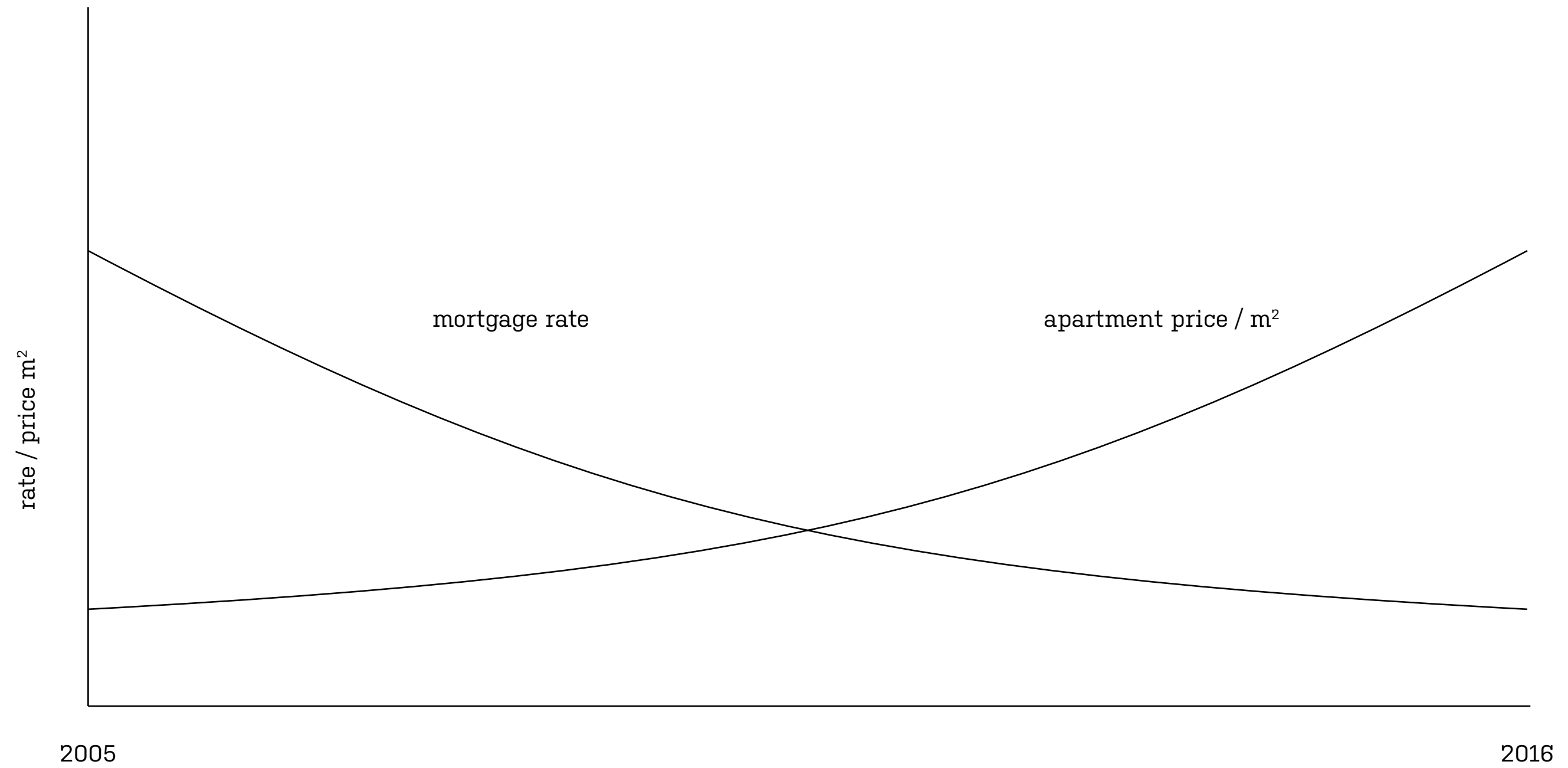


◇ inception of the idea / location idea

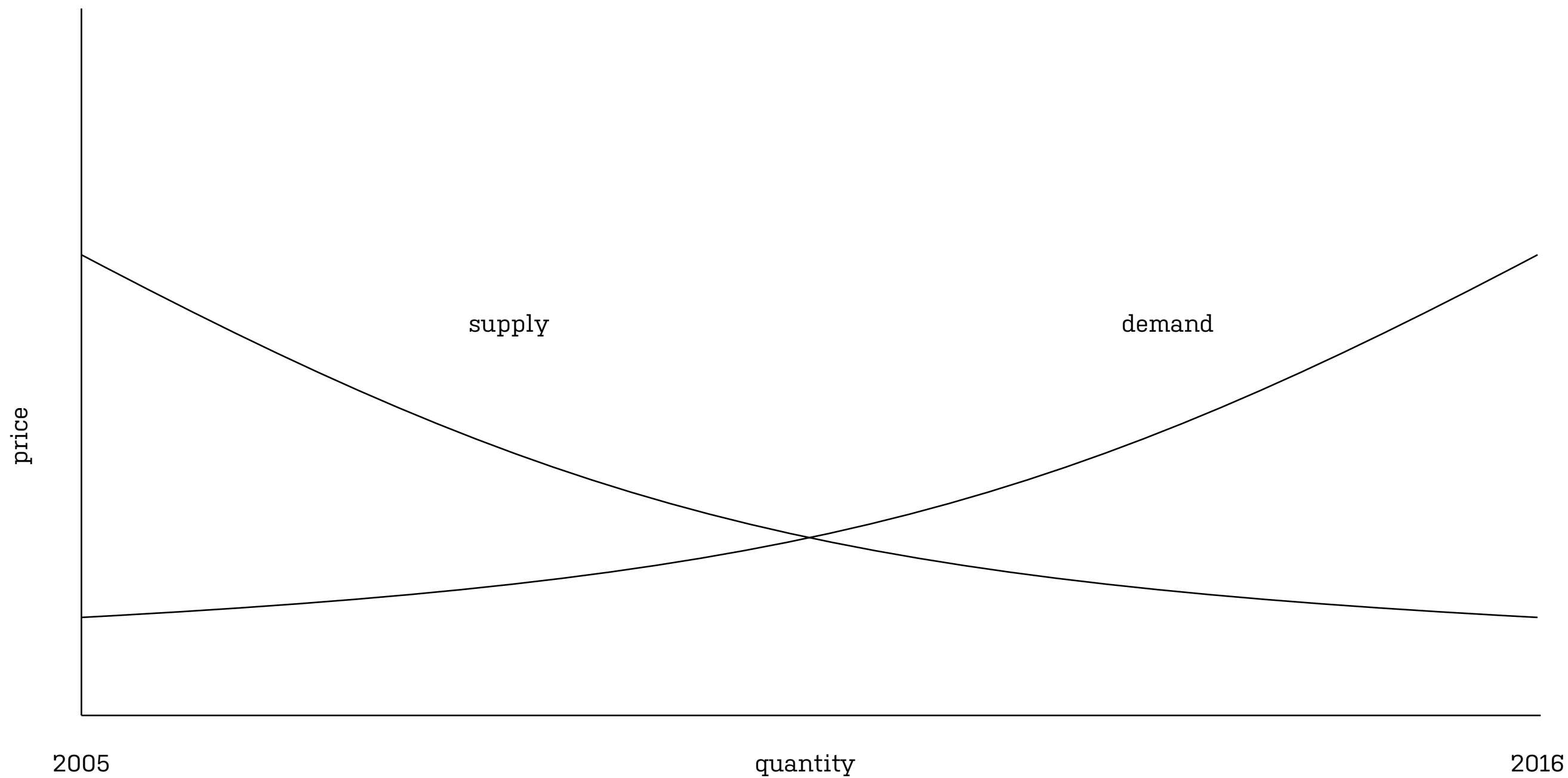
◇ site acquisition

◇ site acquisition

site, building & market research	feasibility study	function, program, volume	design
----------------------------------	-------------------	---------------------------	--------



residential real estate market: mortgage rates x apartment prices



residential real estate market: supply x demand

addition



dwelling

dwelling

dwelling

theater

cafe + foyer

existing structure

initial building program

municipality provides the site for development

+

theater + cafe participation on the running costs and maintenance

+

3 floors

720 m² NIA [UFA]

80 000,- Kč/m² [3 000,- €/m²]

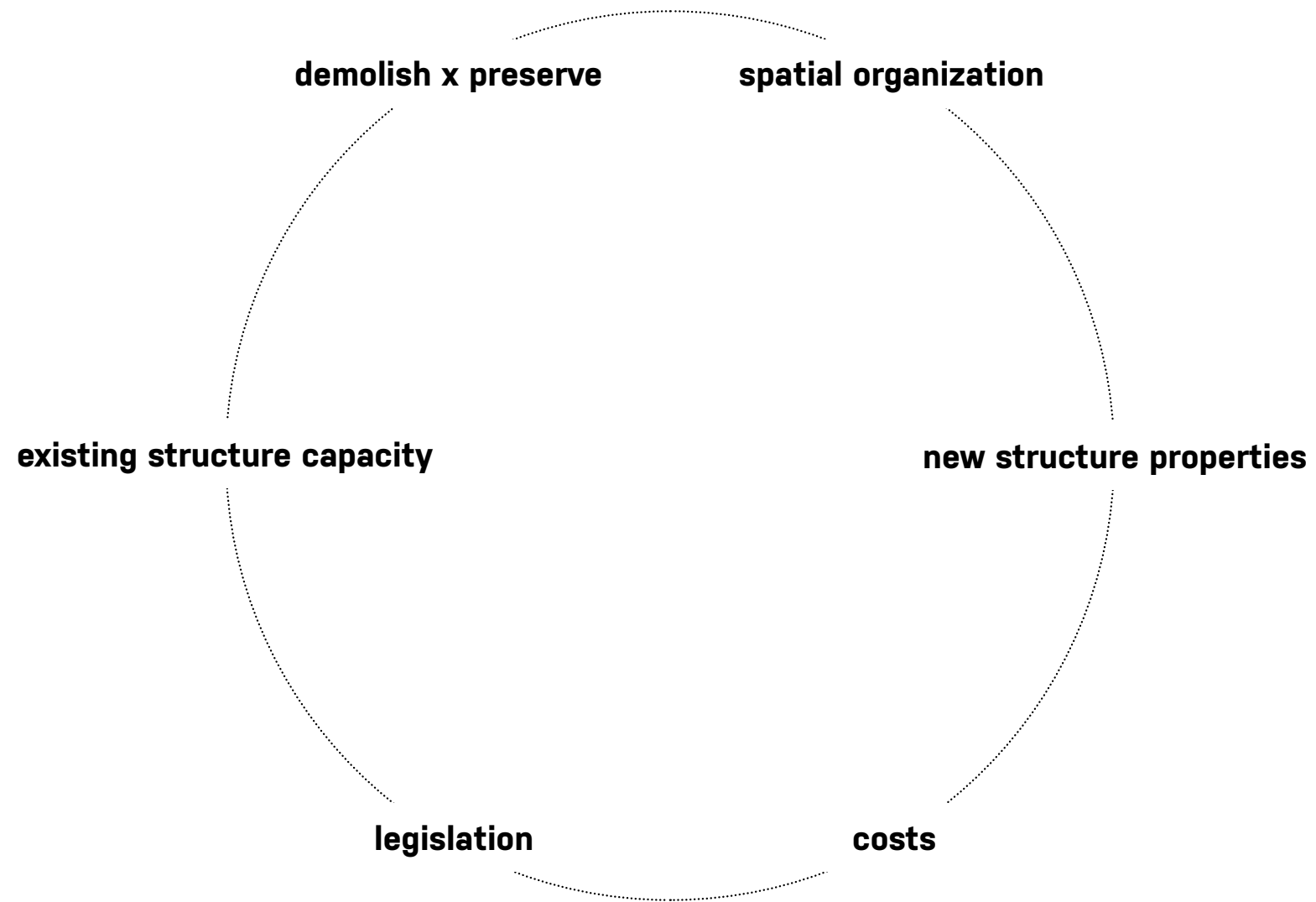
+

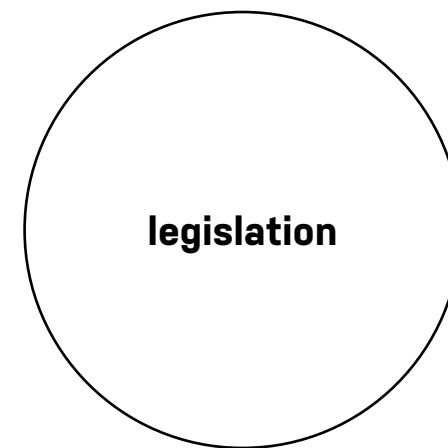
renovation of the existing building

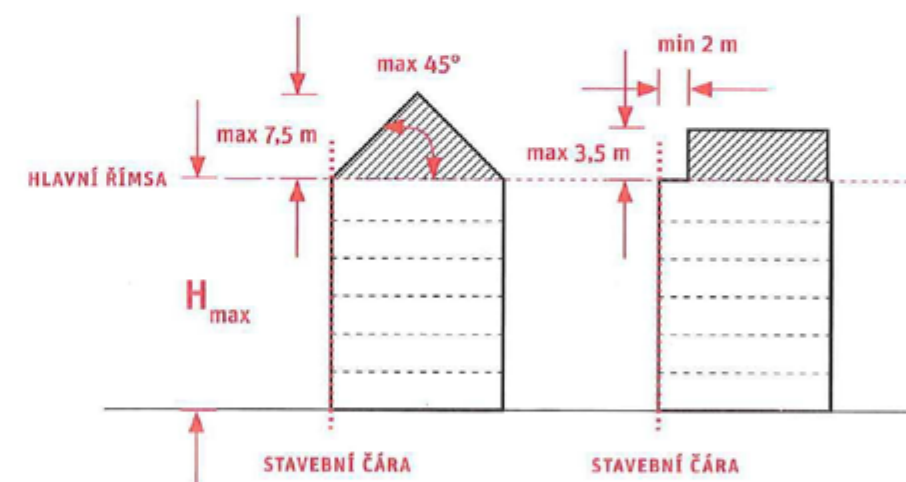
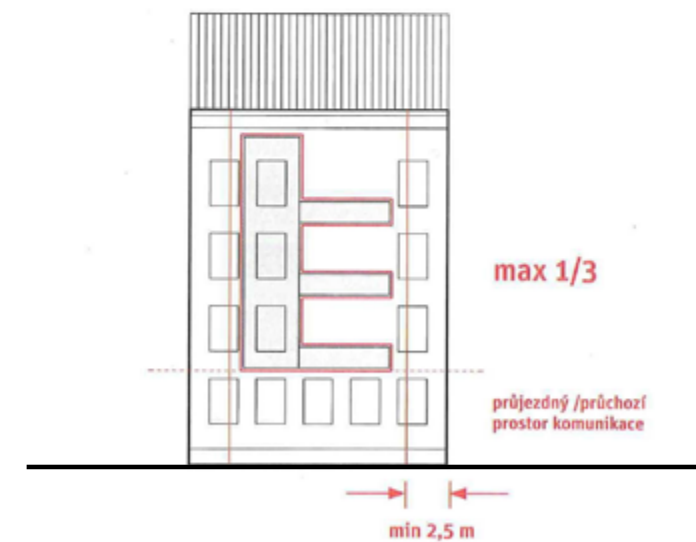
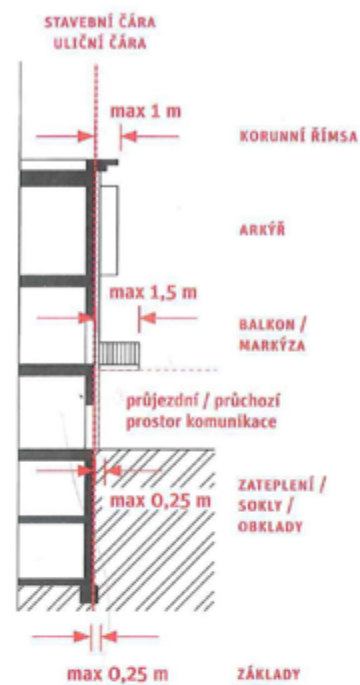
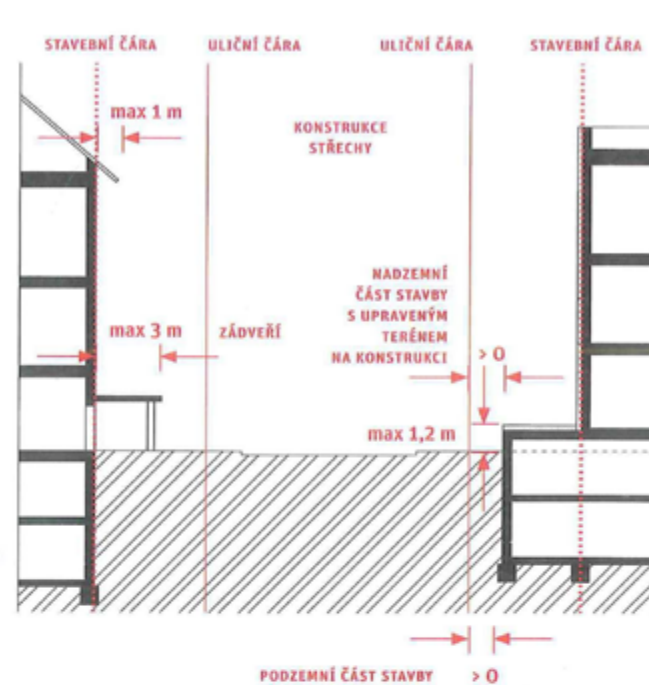
and adaptation into theater, cafe and foyer

19 % revenue

initial financial feasibility check

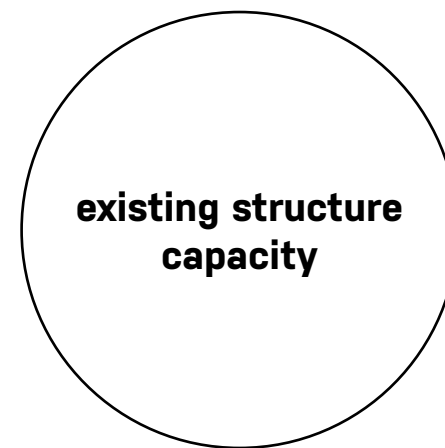






building line x street line x property line, height regulation [Pražské stavební předpisy]

How to maximize the volume [profit] of the building and remain within the building code boundaries?



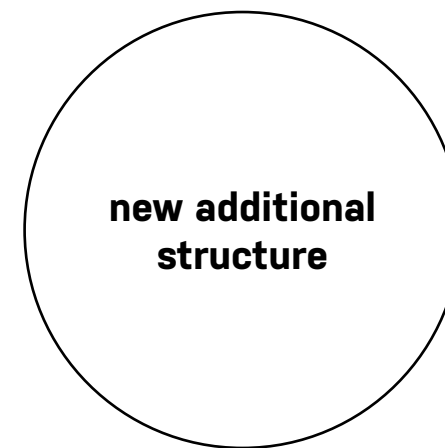
addition



MAX + 1 1/2 floor

existing structure

carrying capacity of the existing load bearing structure



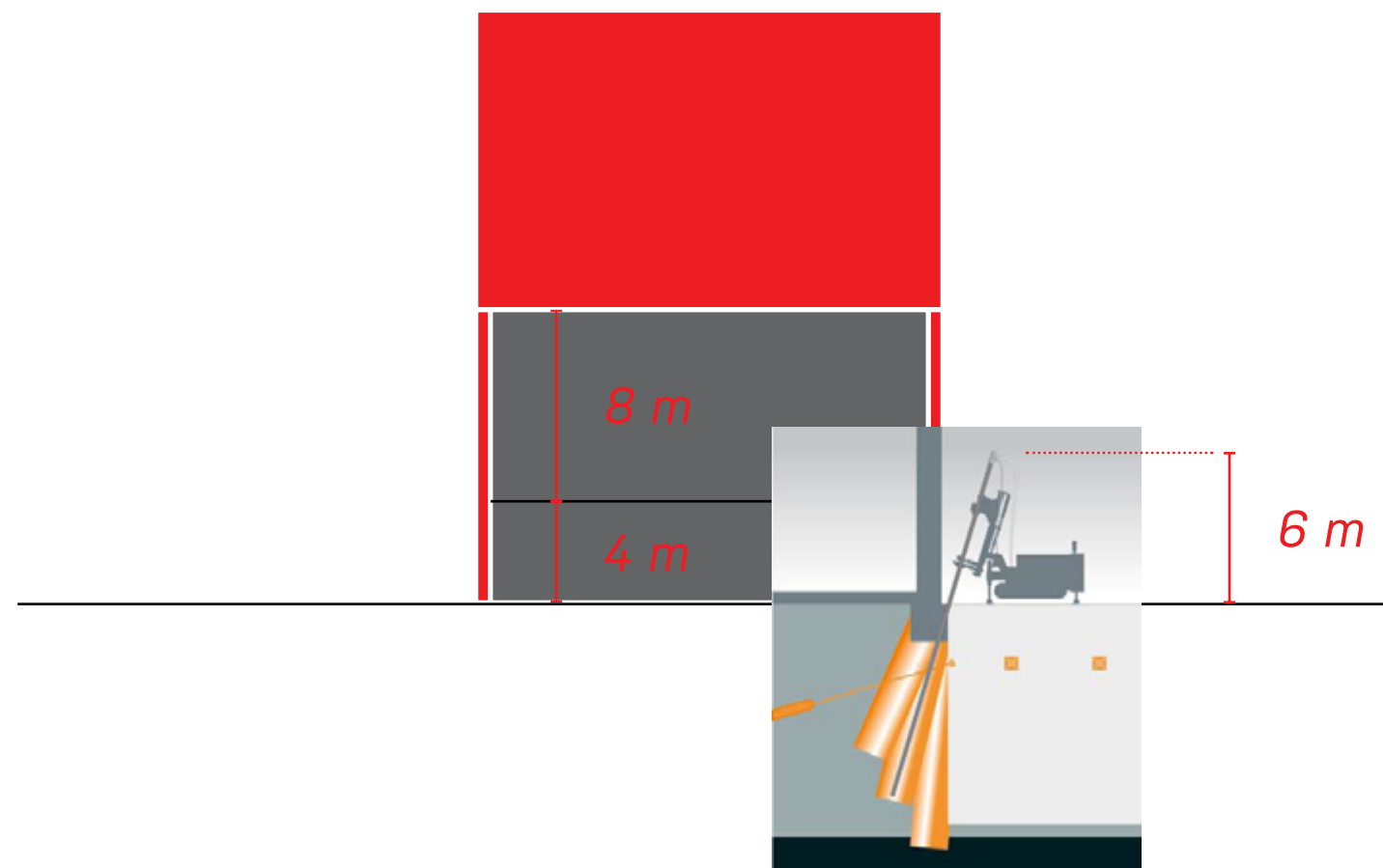
addition



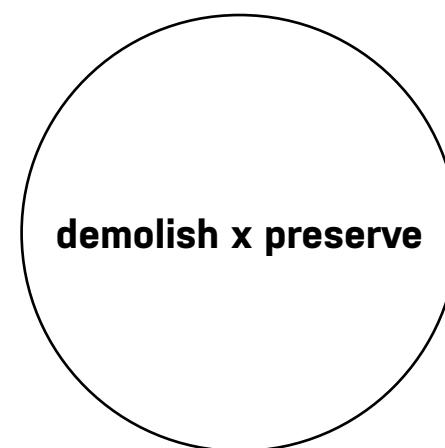
existing structure

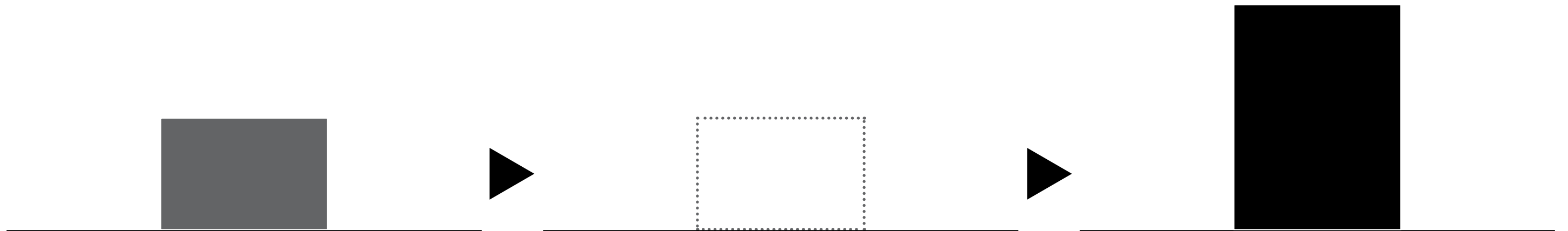


new load bearing structure outside of the existing building



new load bearing structure outside of the existing building





A. demolish + build all new building = 3 065 000 €



B. preserve + build new addition = 2 717 000 €



◇ inception of the idea / location idea

◆ site acquisition

◇ site acquisition

site, building & market research	feasibility study	<i>function, program, volume</i>	design
----------------------------------	-------------------	----------------------------------	--------

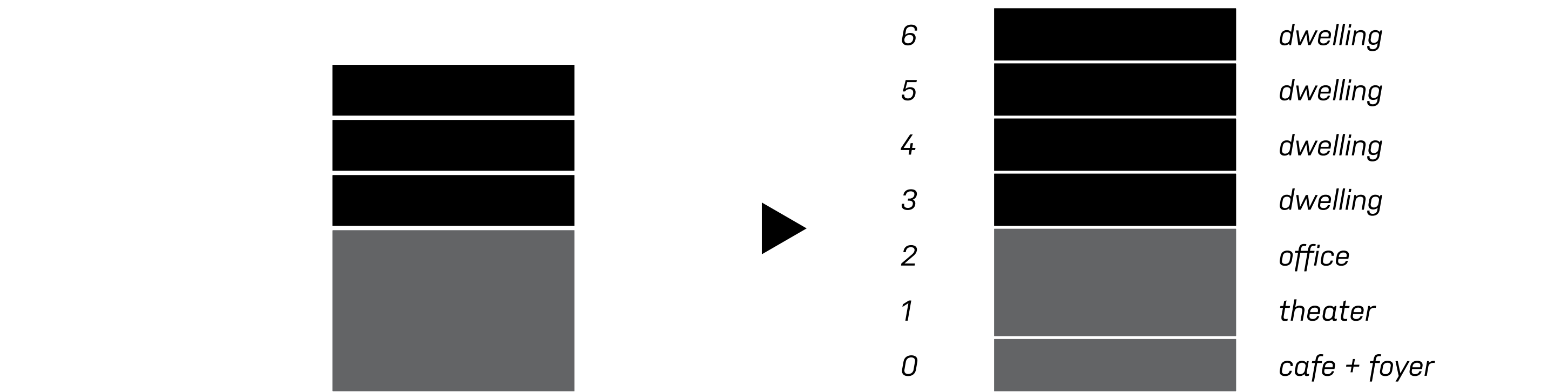
1 room: 18 %
2 room: 36 %
3 room: 28 %
4 room: 12 %

dwelling's profile

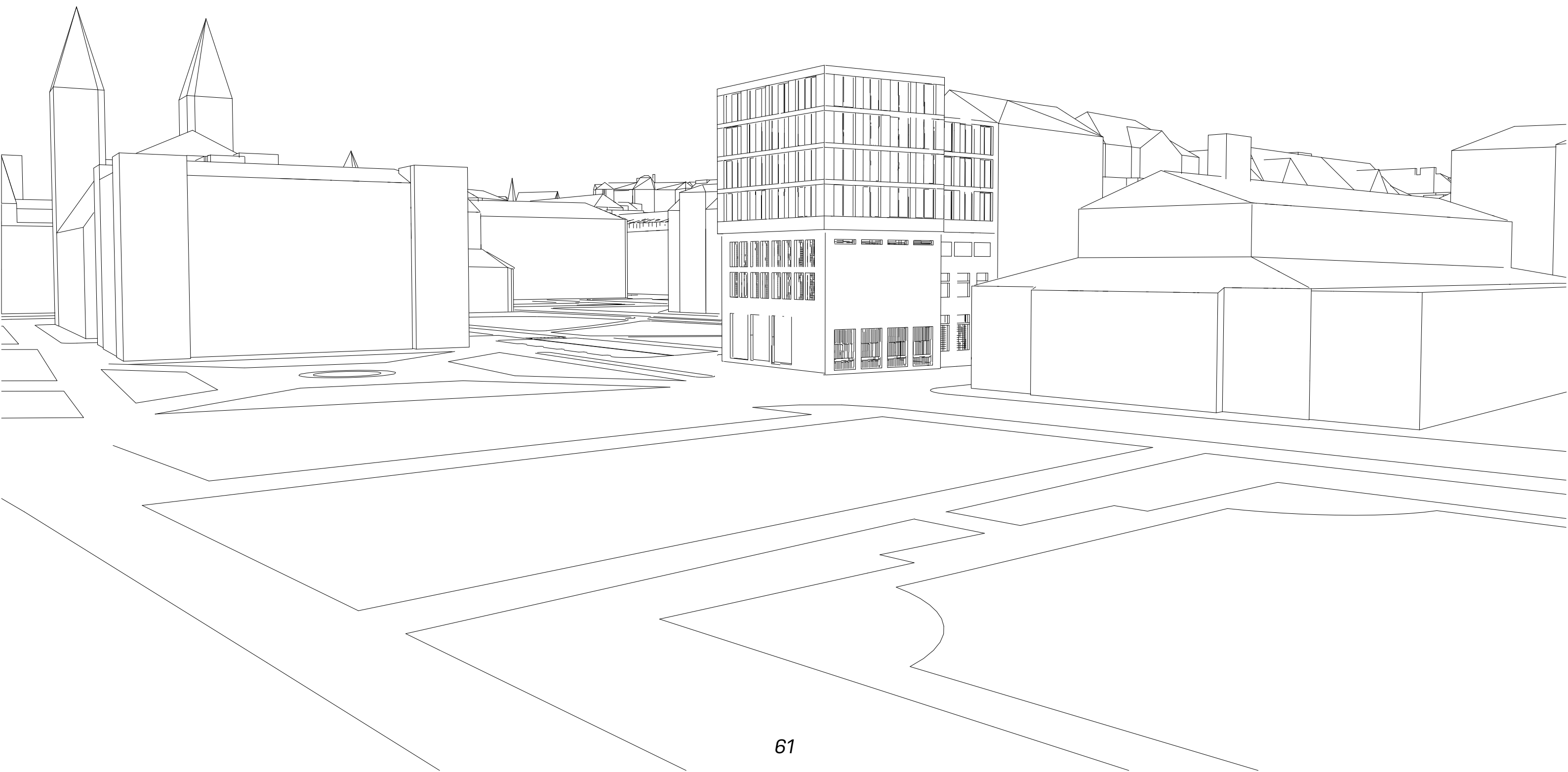
1 room: 35 m²
2 room: 58 m²
3 room: 85 m²
4 room: 107 m²

dwelling's size

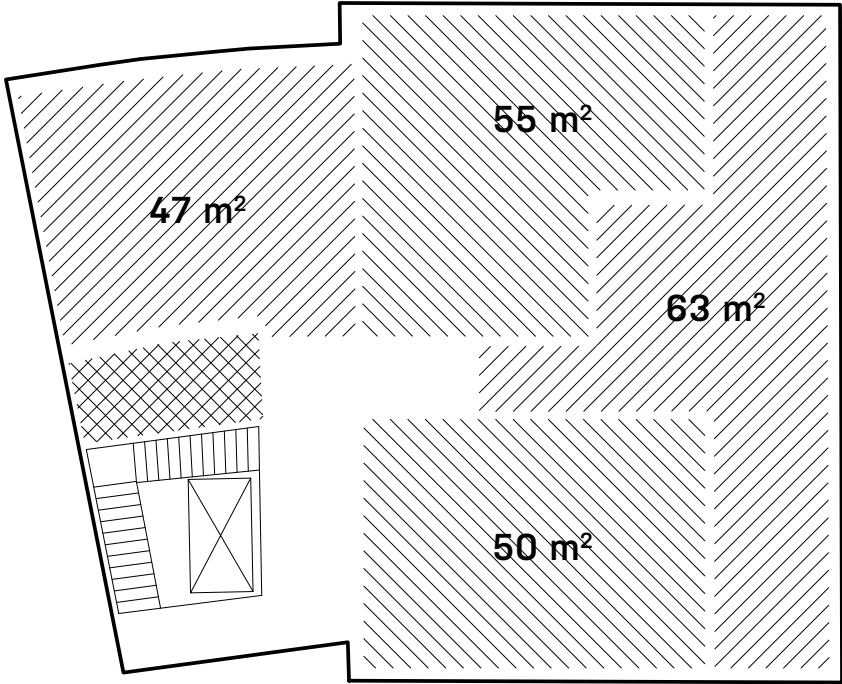
Additional structure around the building requires another floor of apartments.



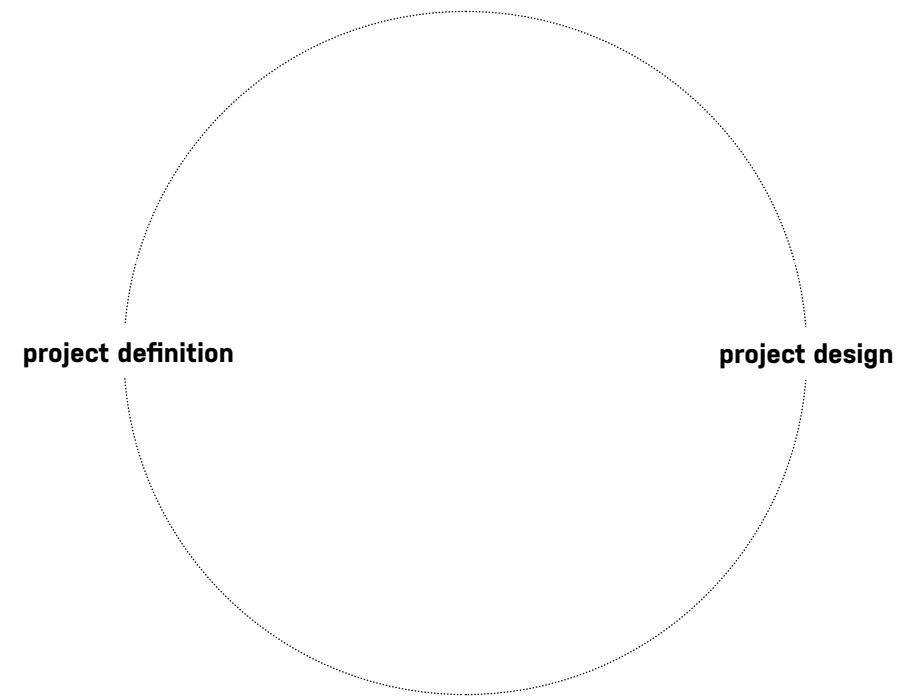
program



apartments total usable floor area [4 floors]: 813 m²



apartments initial estimate

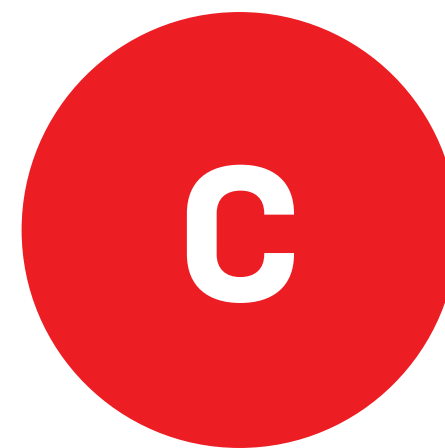


- . location of functions within the building
- . volume based on an legislation, aesthetics, economics and program
- . idea of the appearance of the building and its typologies

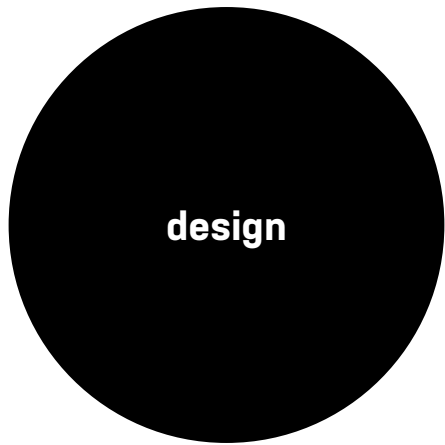
target group:

[because of the type of mix use, size of the building, central location]

young professionals, young families, culture and city life lovers



design



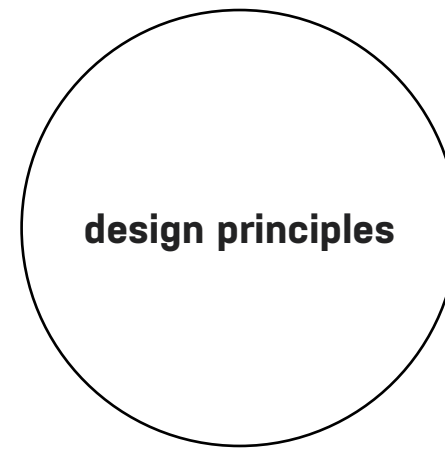
◇ inception of the idea / location idea

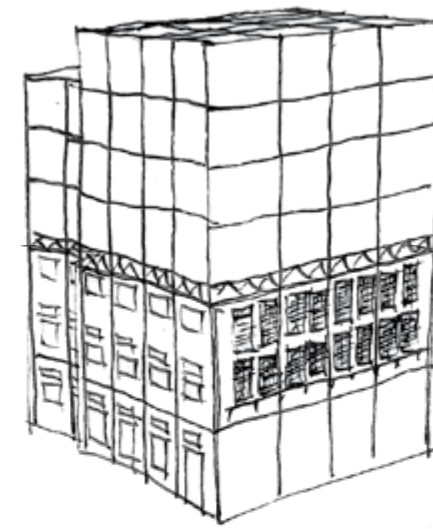
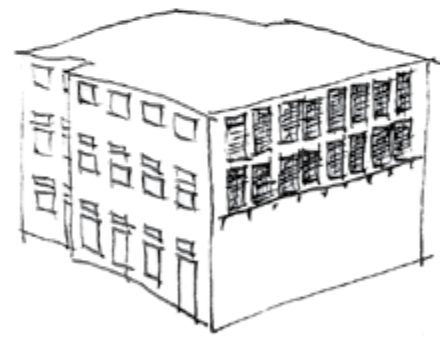
◇ site acquisition

◇ site acquisition

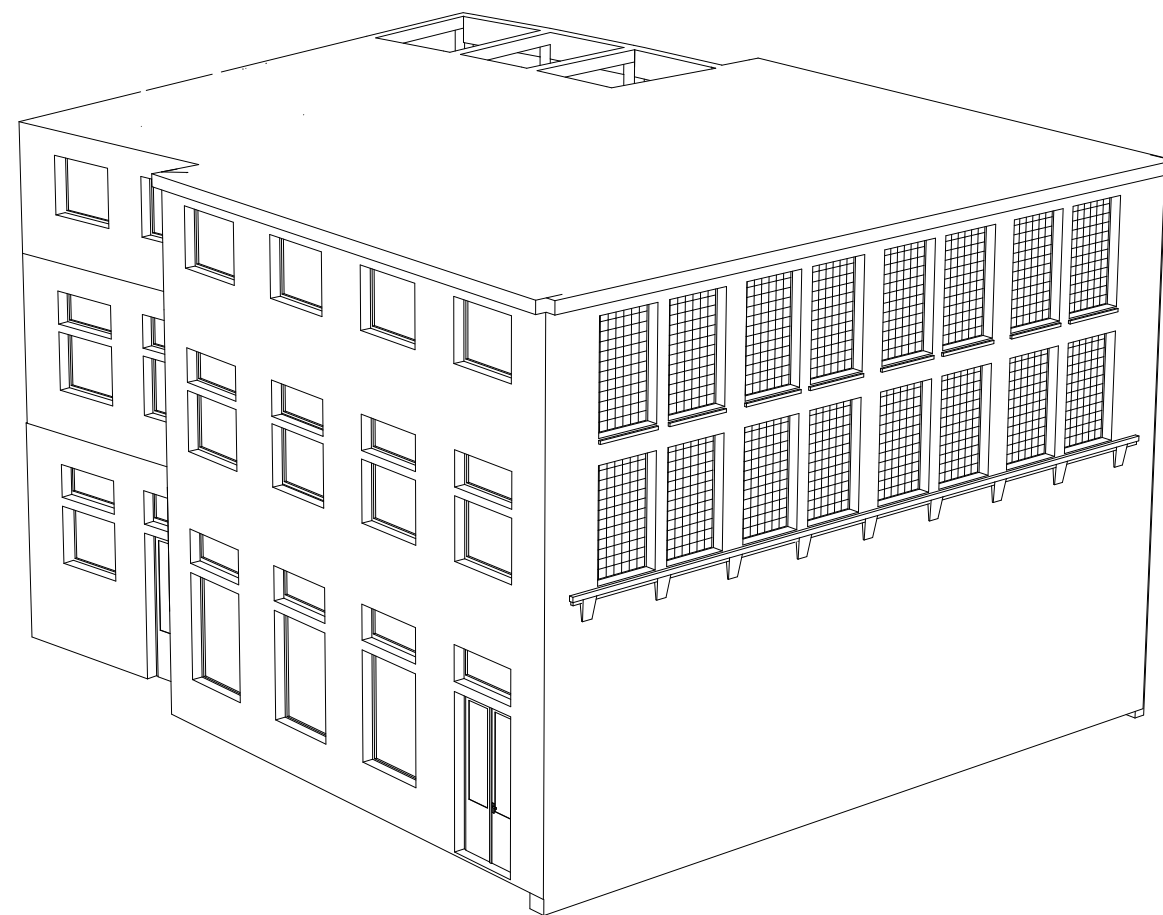
site, building & market research	feasibility study	<i>function, program, volume</i>	design
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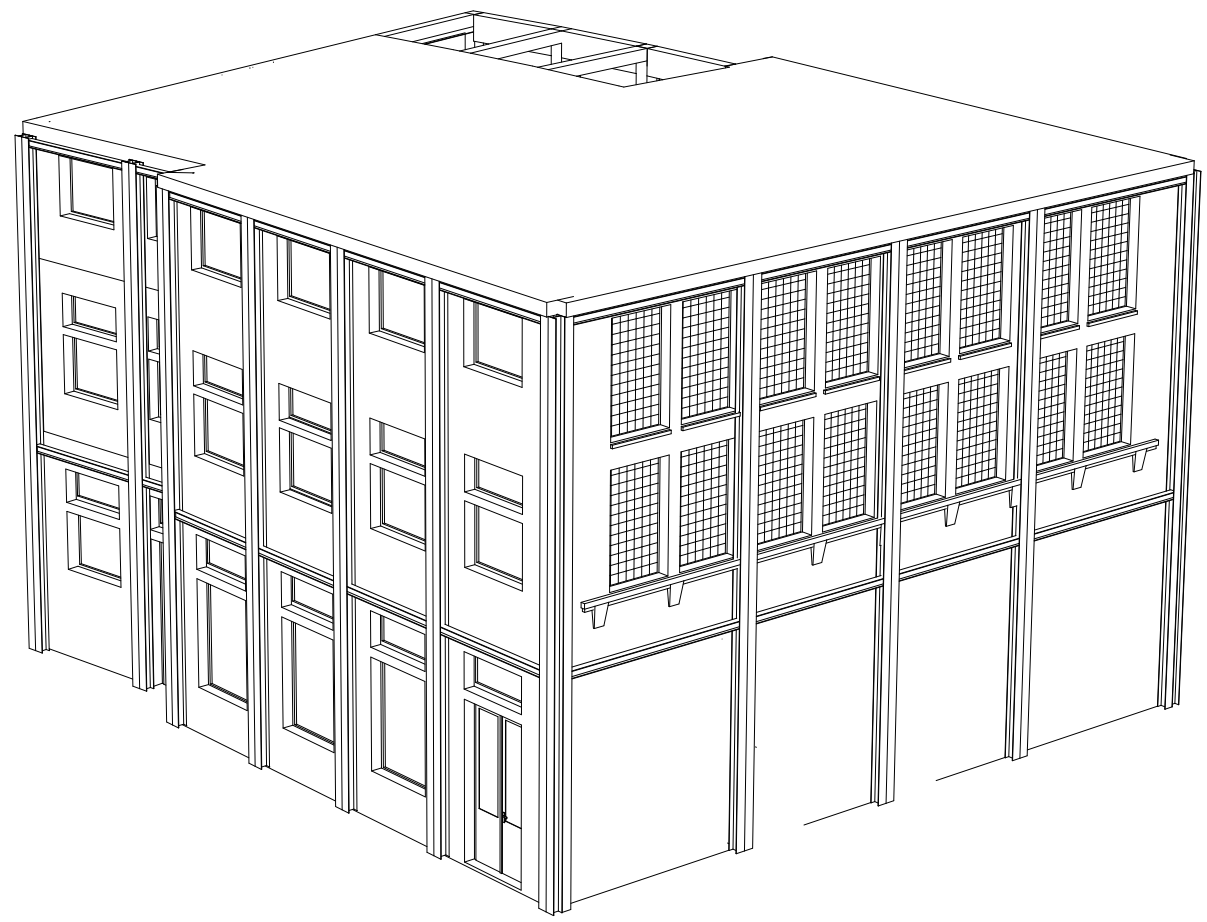


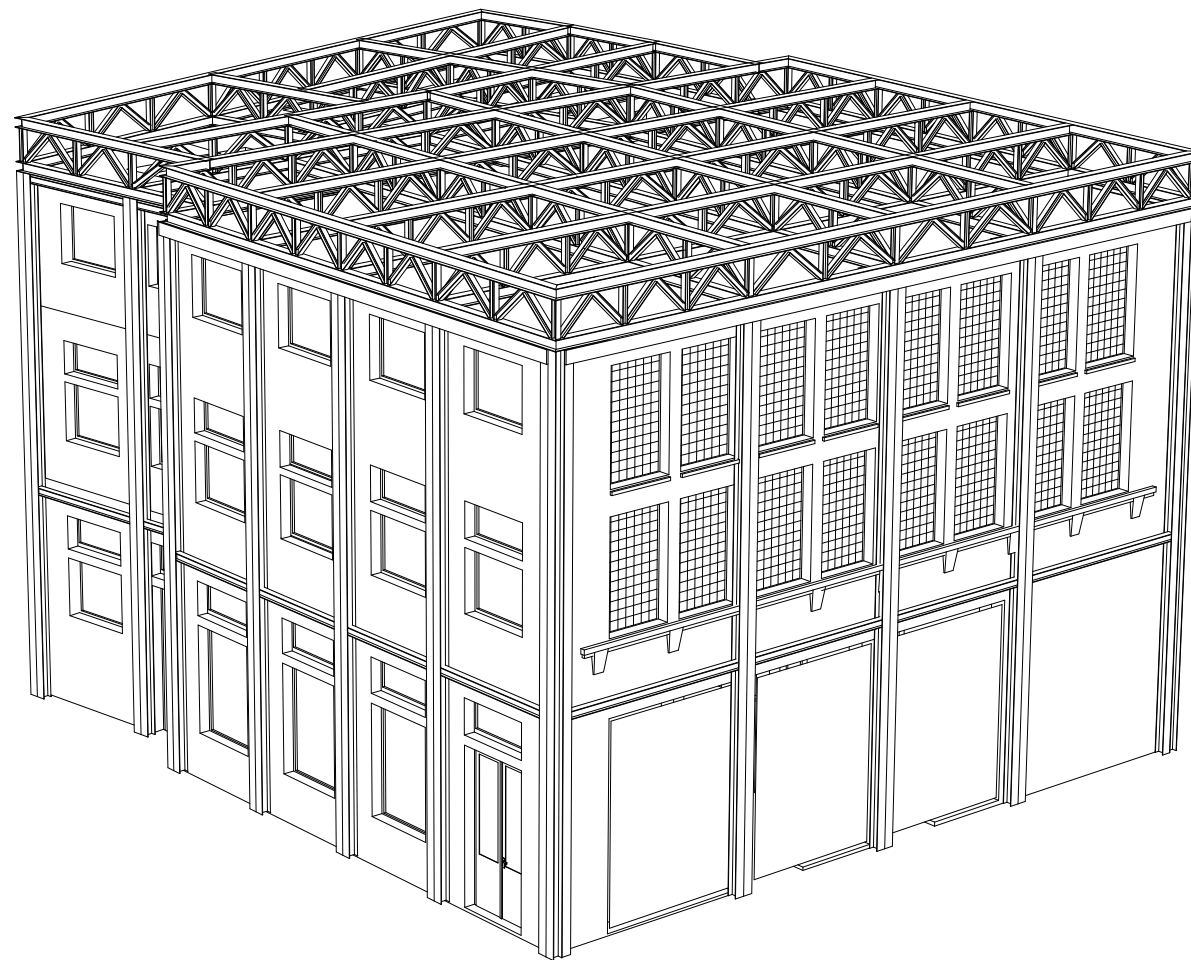


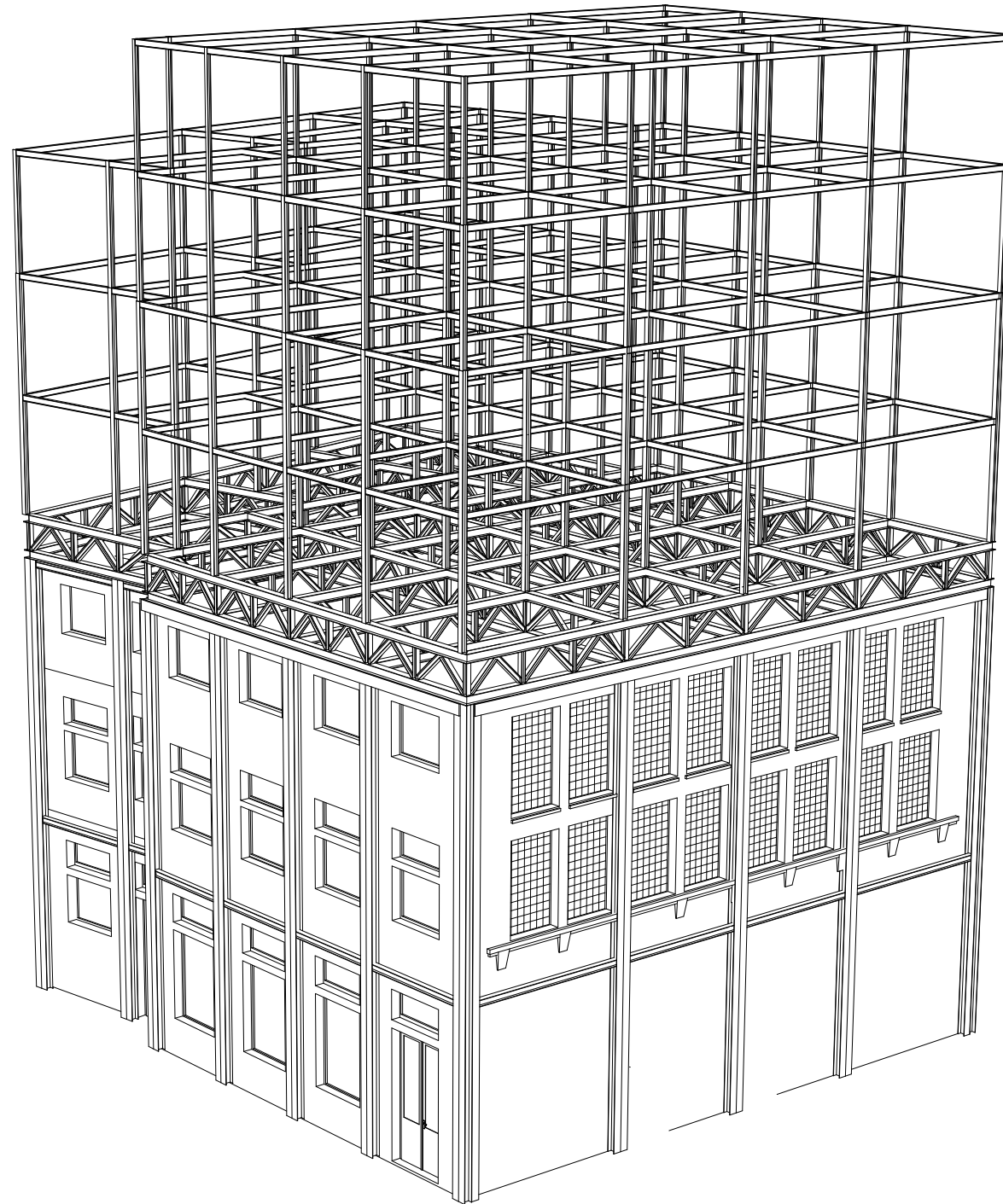


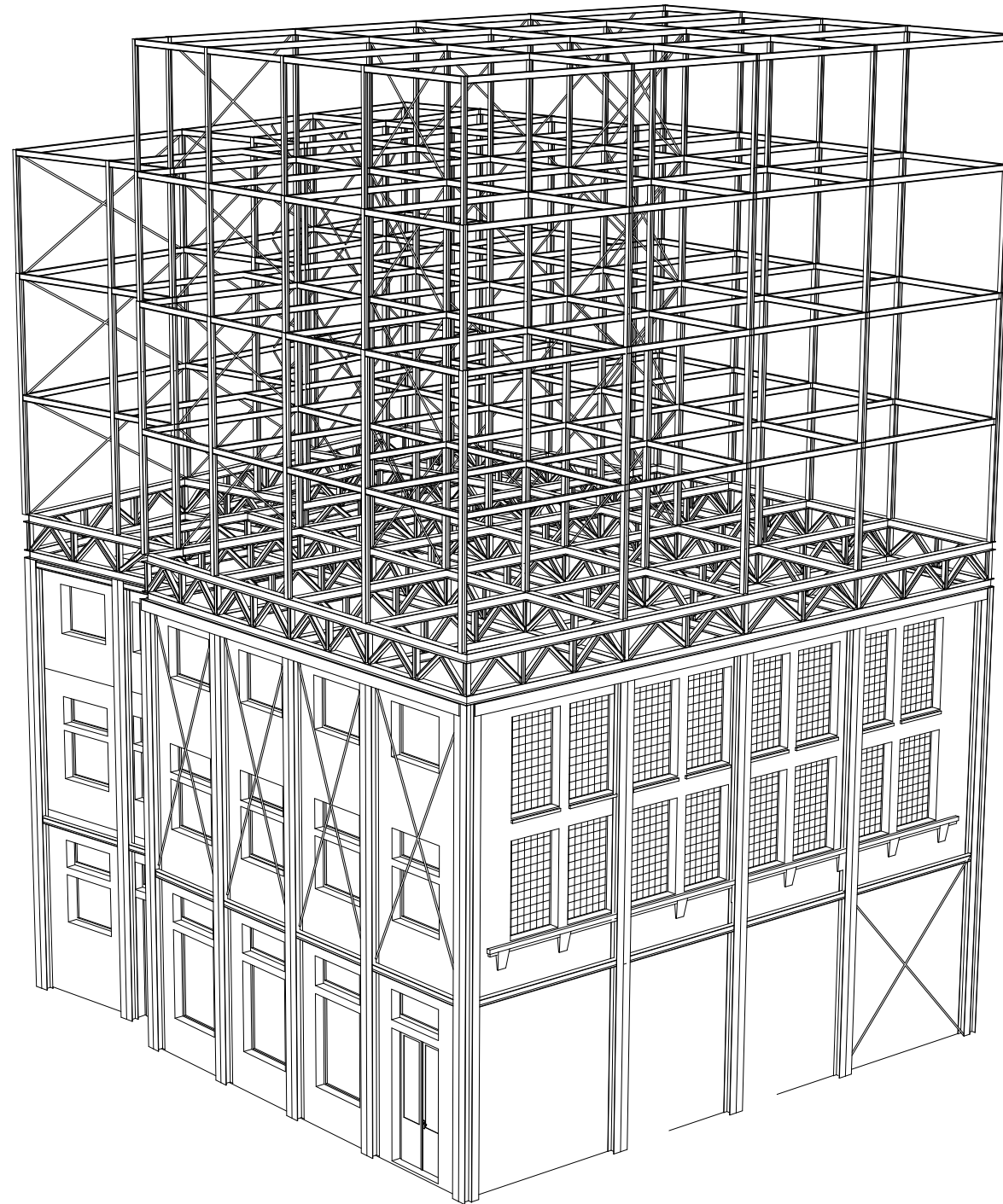
re-use

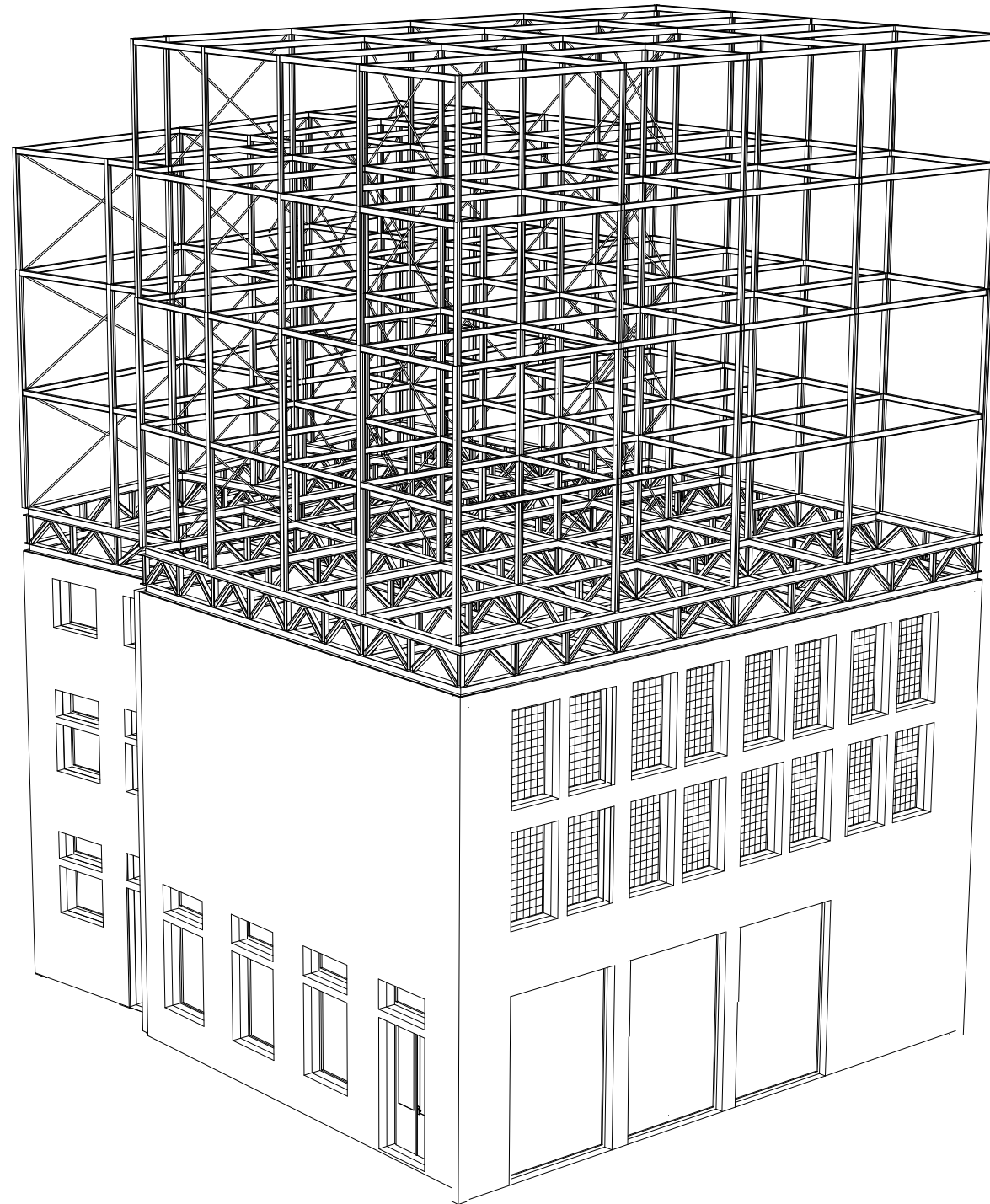


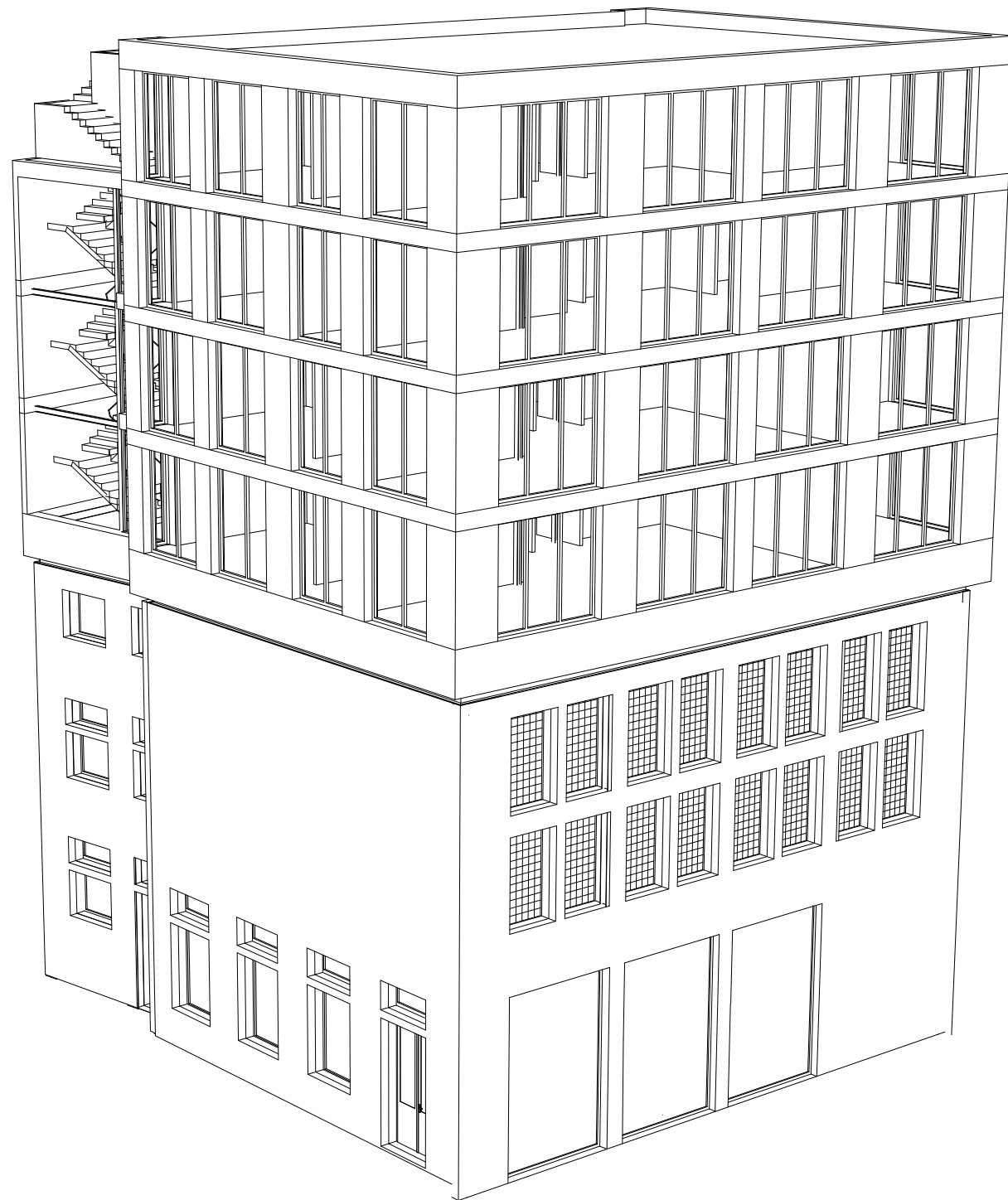


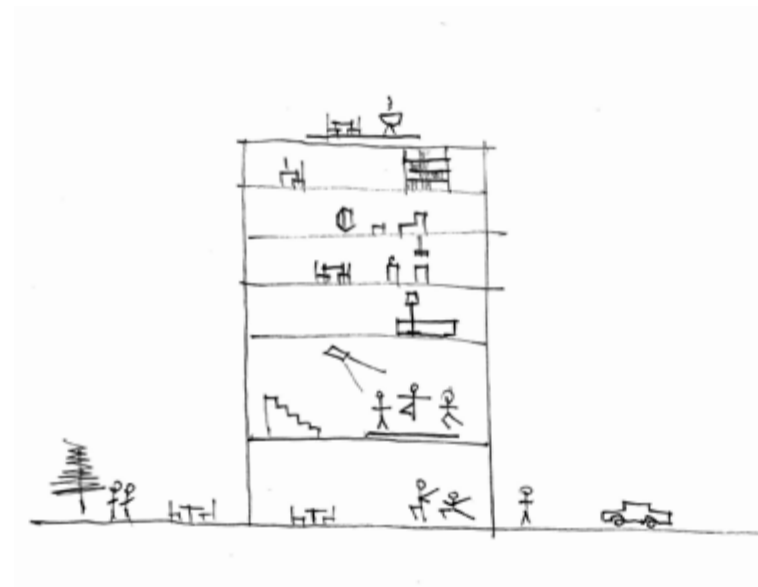












layering of functions

roof

6

5

4

3

2

1

0



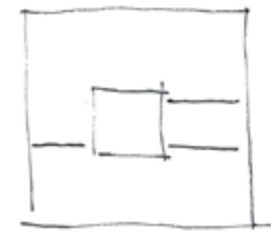
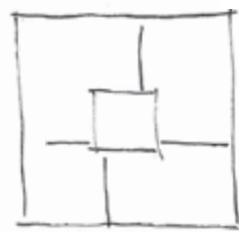
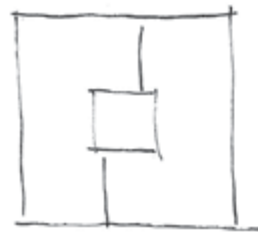
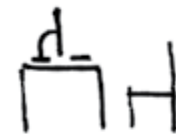
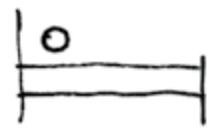
additional

private

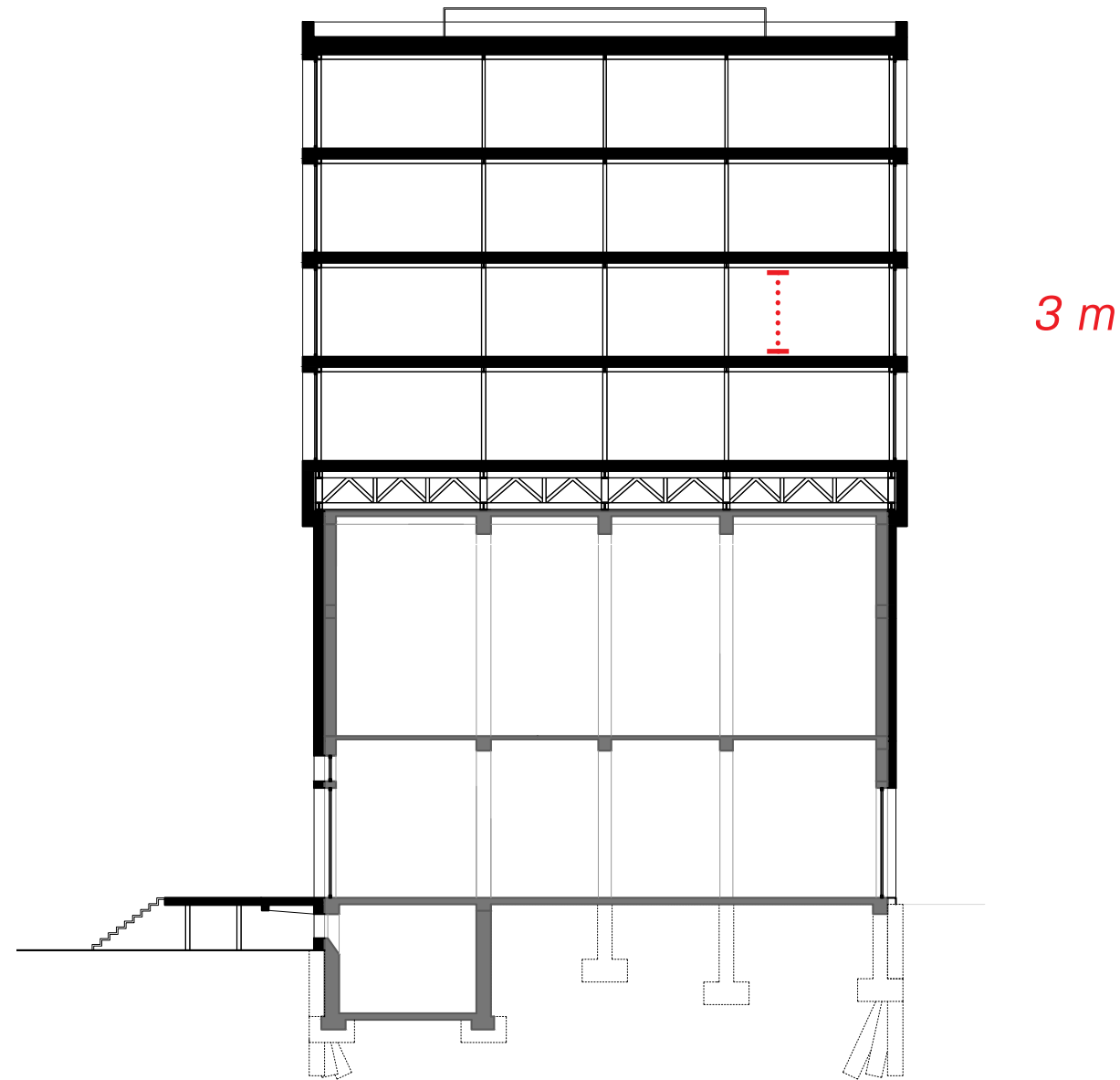
existing

public

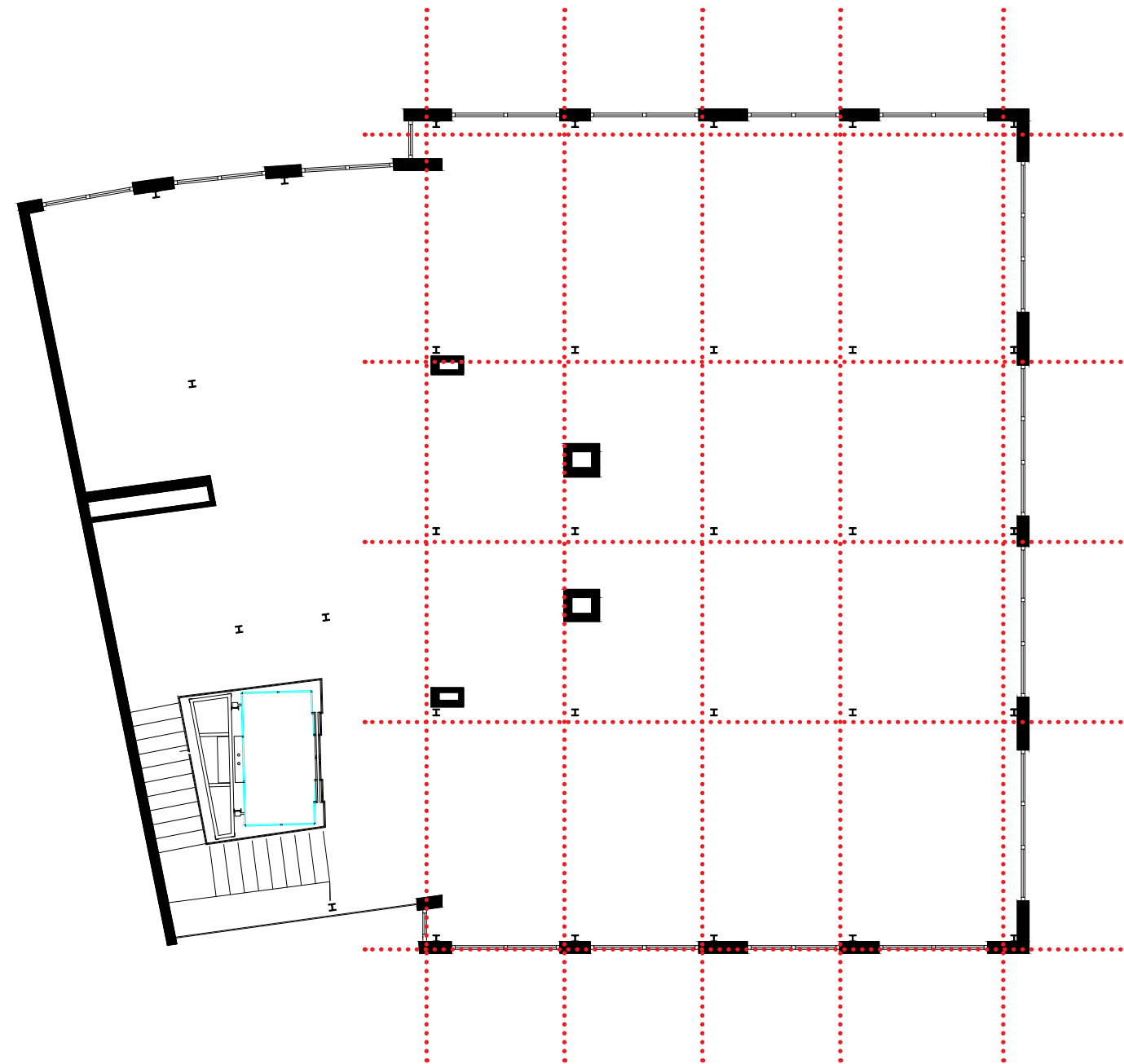




adaptability: functional & spatial

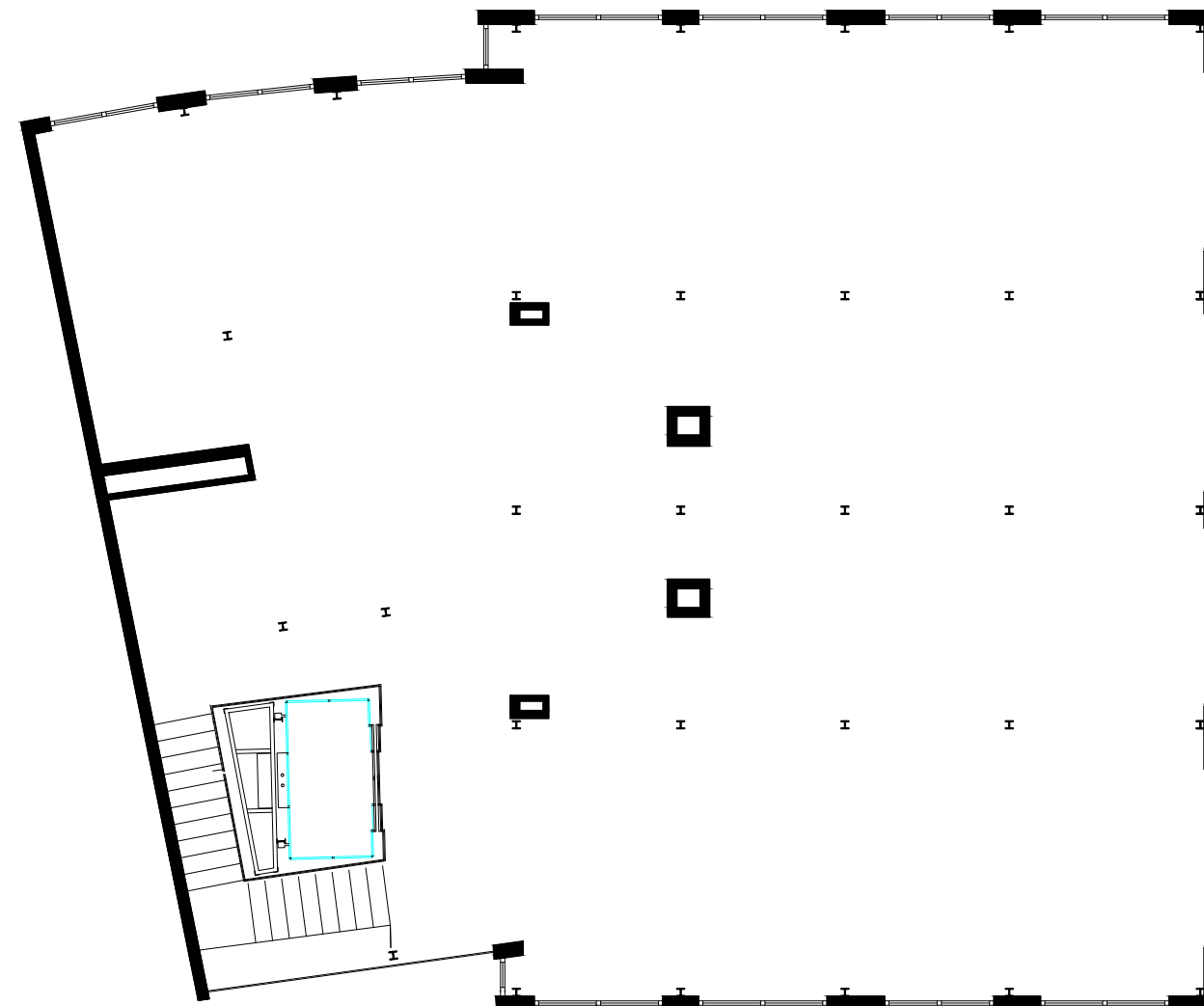


adaptability: functional & spatial



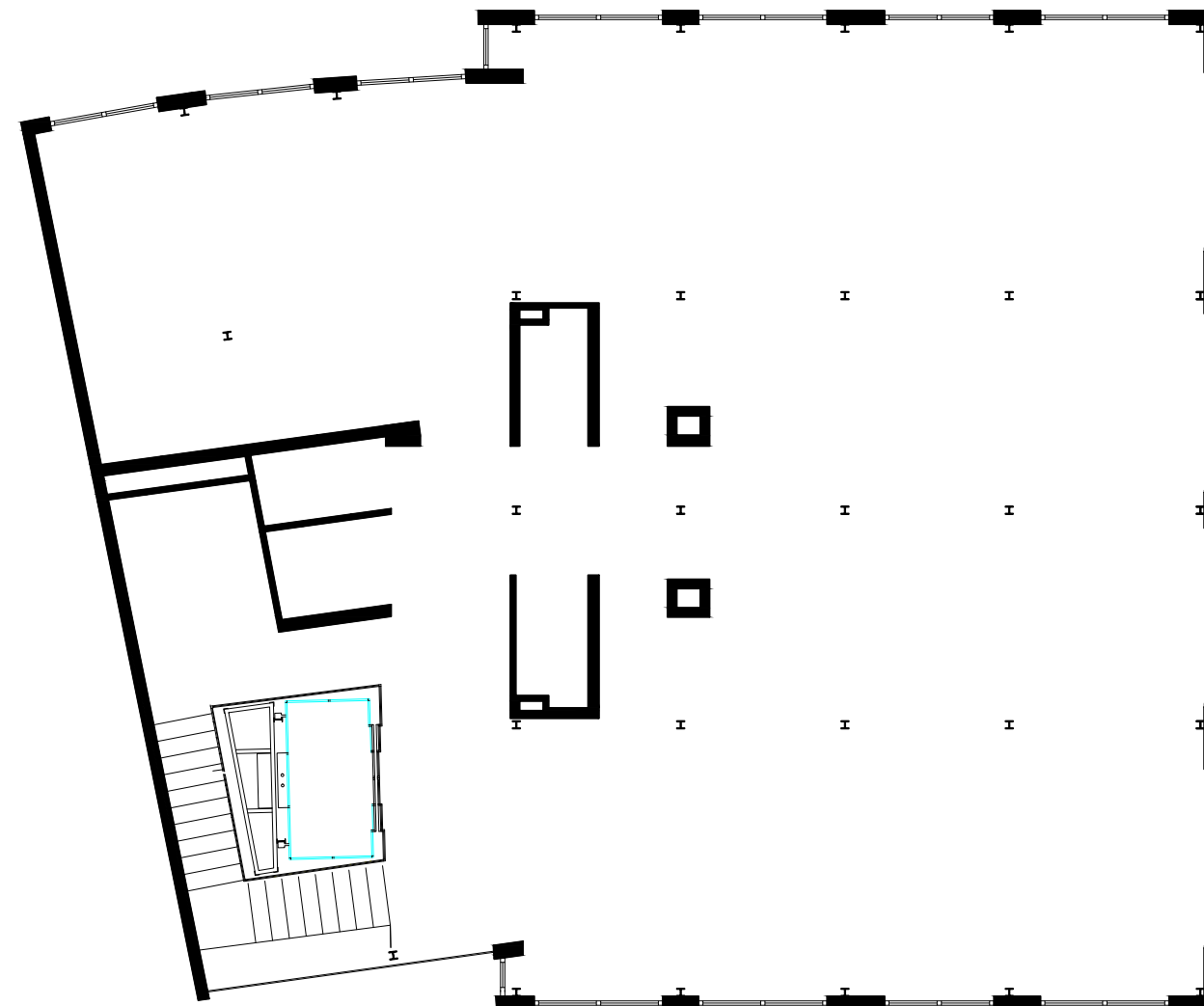
adaptability: functional & spatial

*dwelling*s



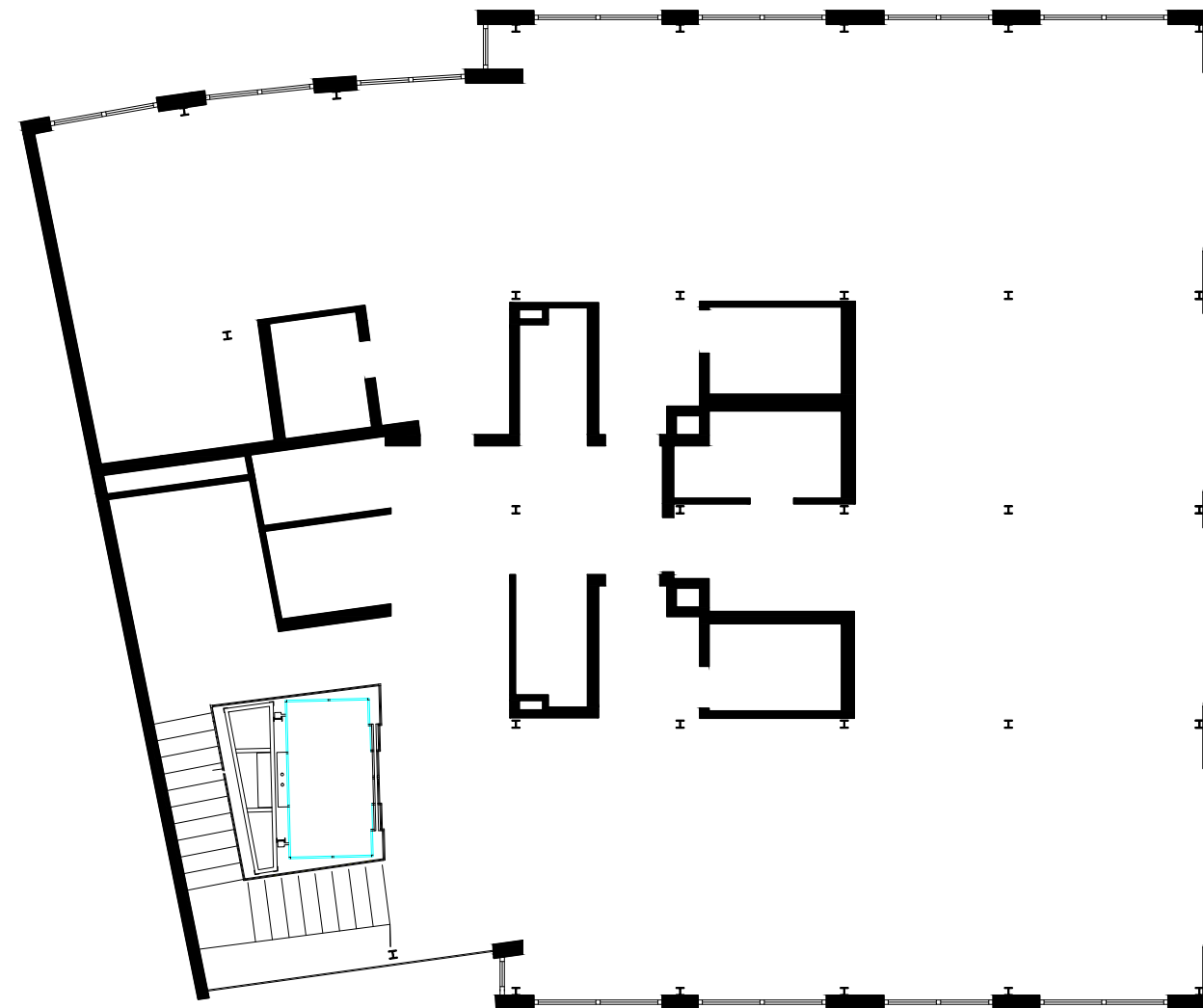
organization: vertical shafts

*dwelling*s



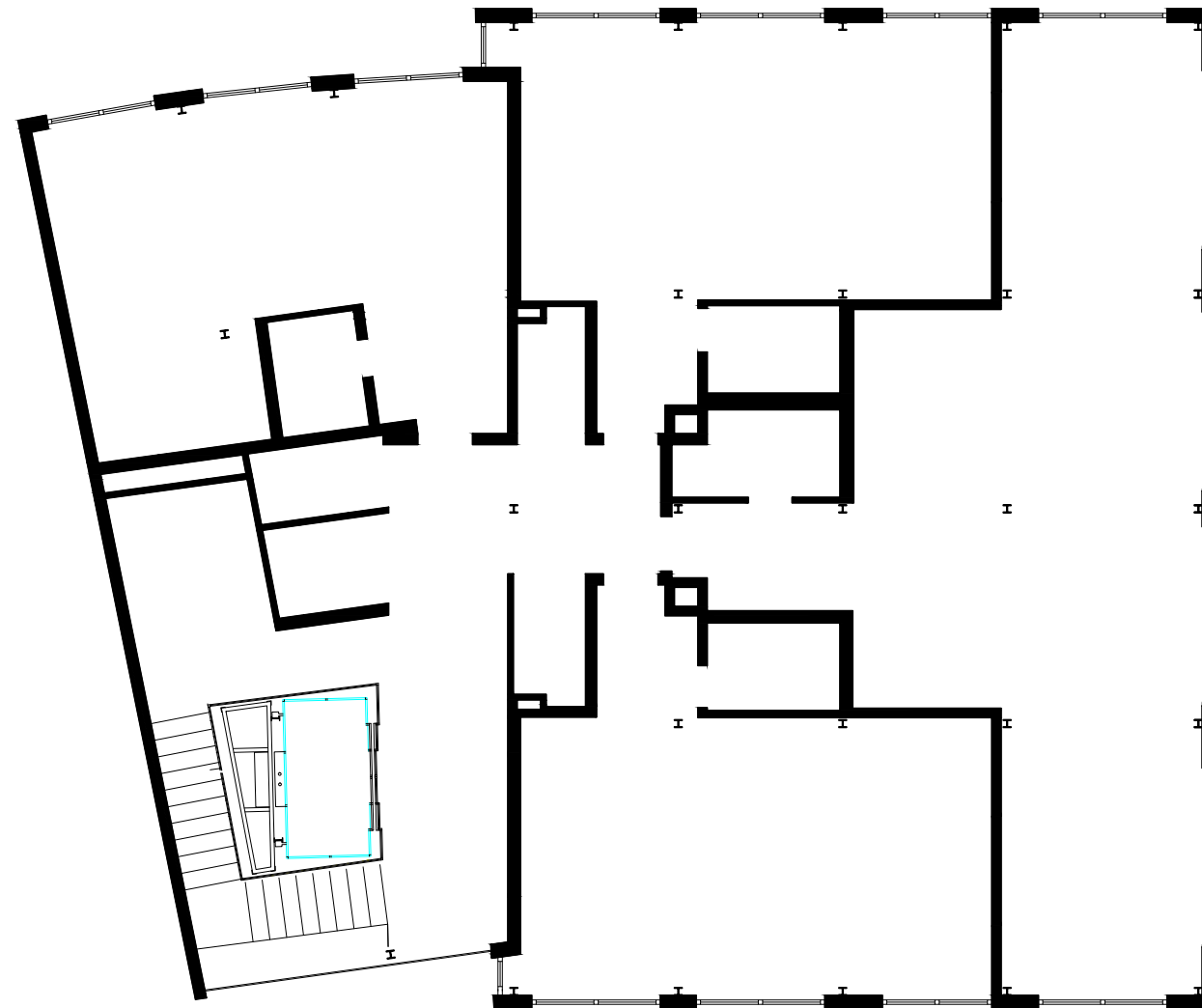
organization: vertical shafts + storage & common areas

*dwelling*s



organization: vertical shafts + storage & common areas + cores

*dwelling*s



organization: vertical shafts + storage & common areas + cores + apartment partitions

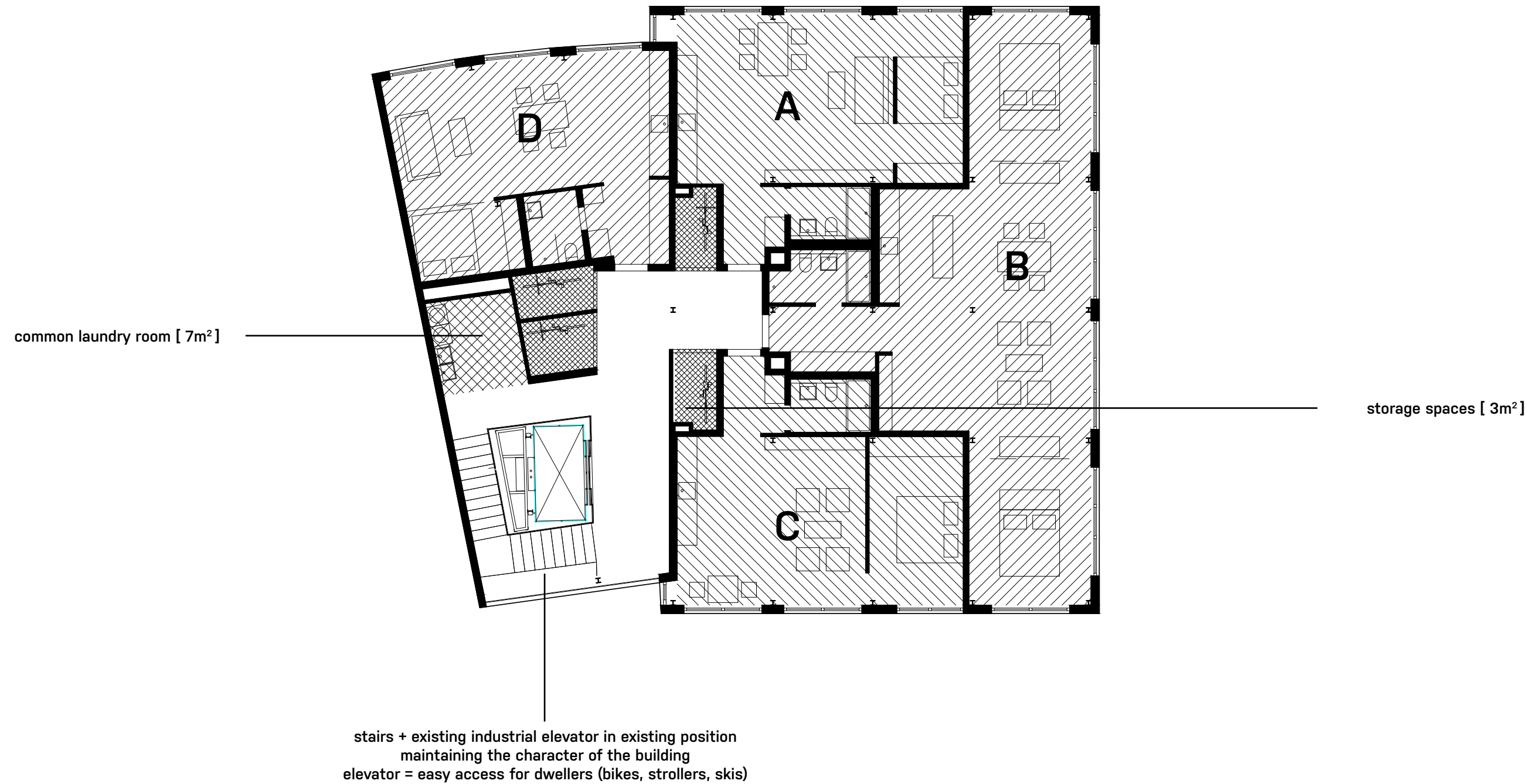
*dwelling*s



organization: vertical shafts + storage & common areas + cores + apartment partitions + interior elements

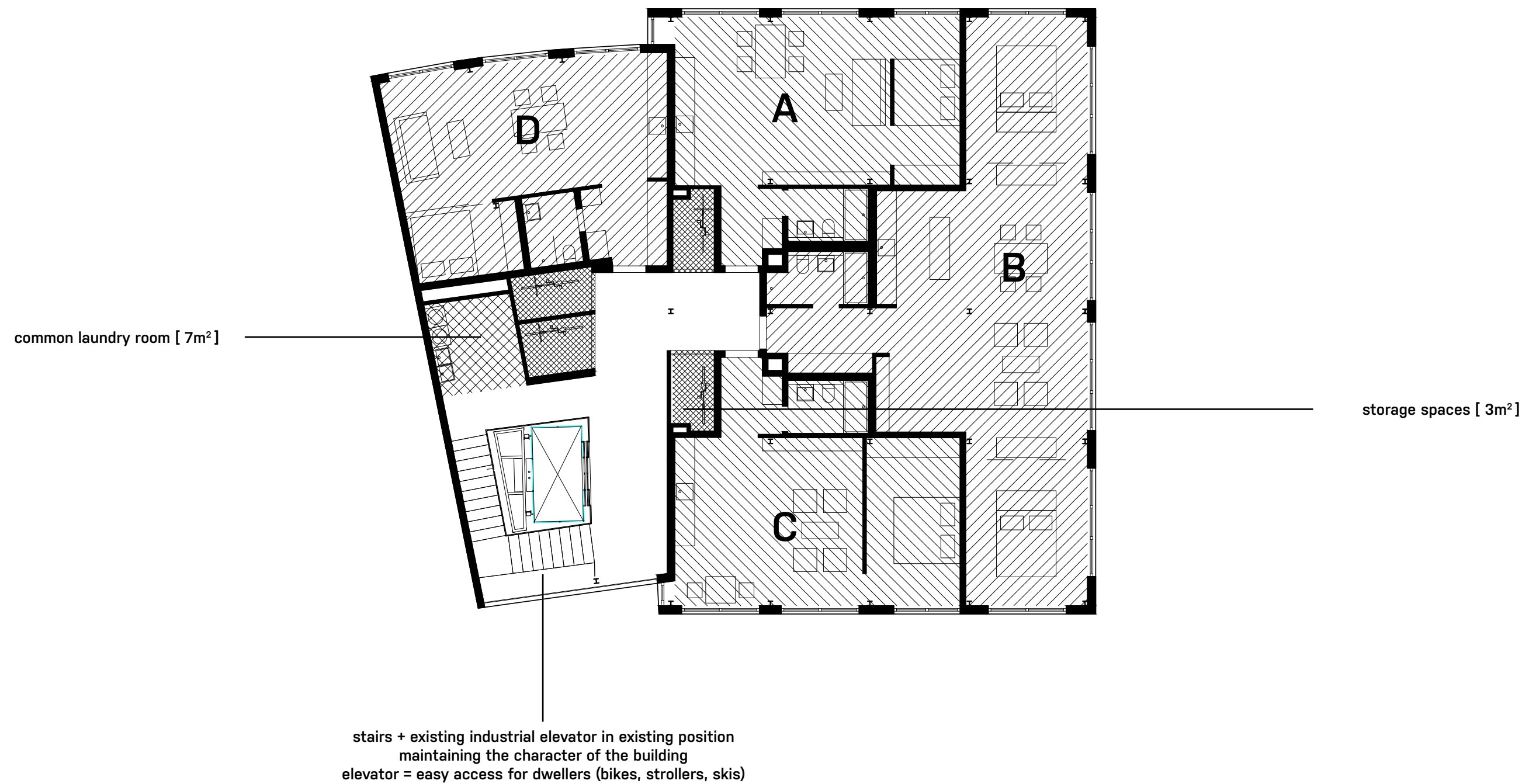
apartments
storage spaces [15 x 3 m²]
common areas [3 x 7 m²]
total usable floor area

1 011 m²
45 m²
27 m²
1038 m²

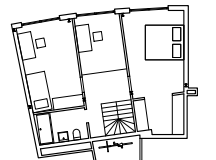
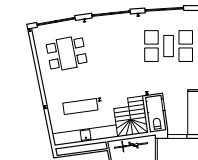
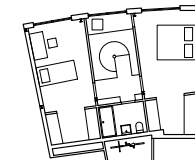
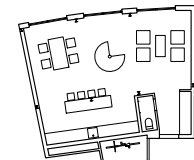
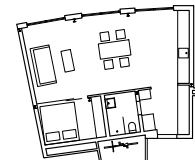
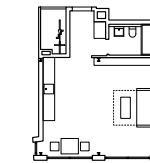
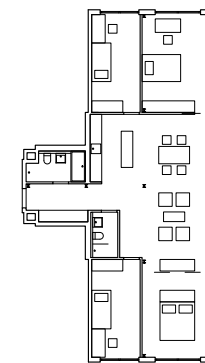
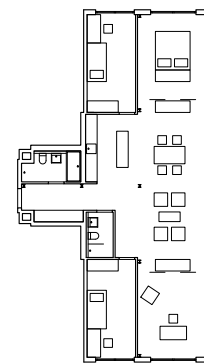
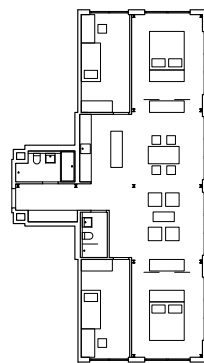
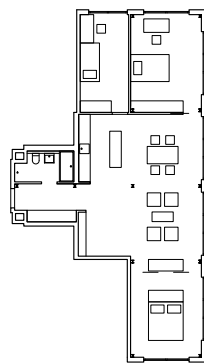
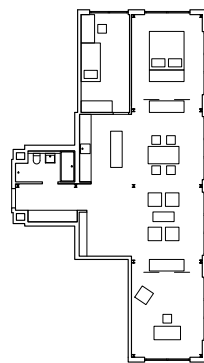
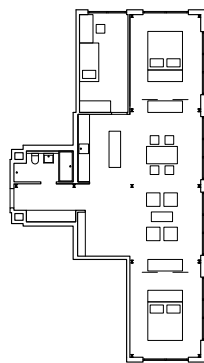
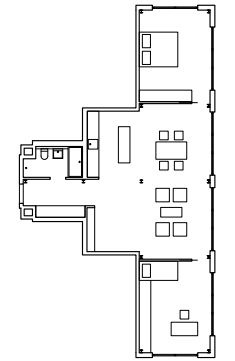
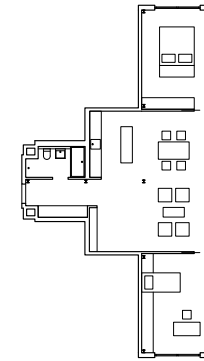
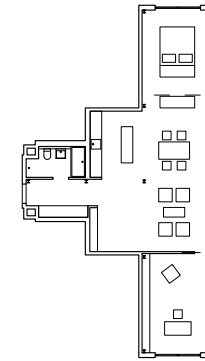
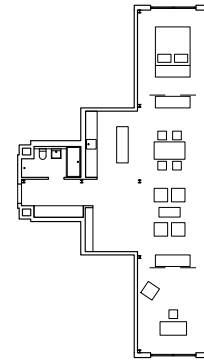
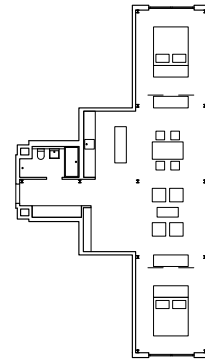
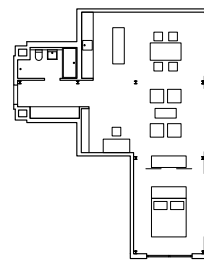
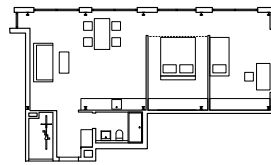
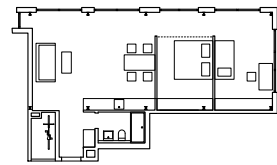
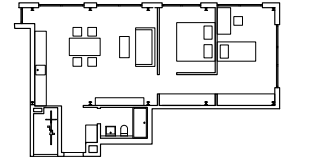
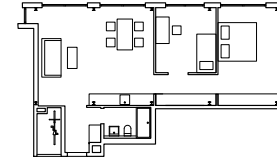
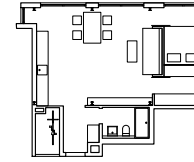
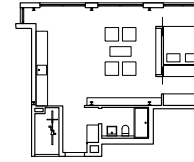
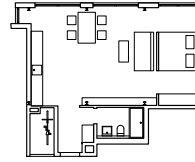
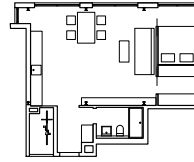
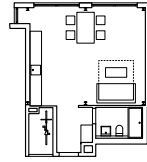


apartments floor areas variability

- A: 40, 52, 76 m²
- B: 76, 96, 110 m²
- C: 41, 52, 76 m²
- D: 51, 102 m²



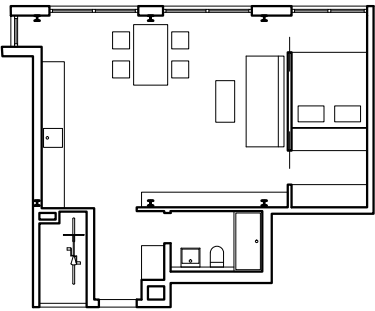
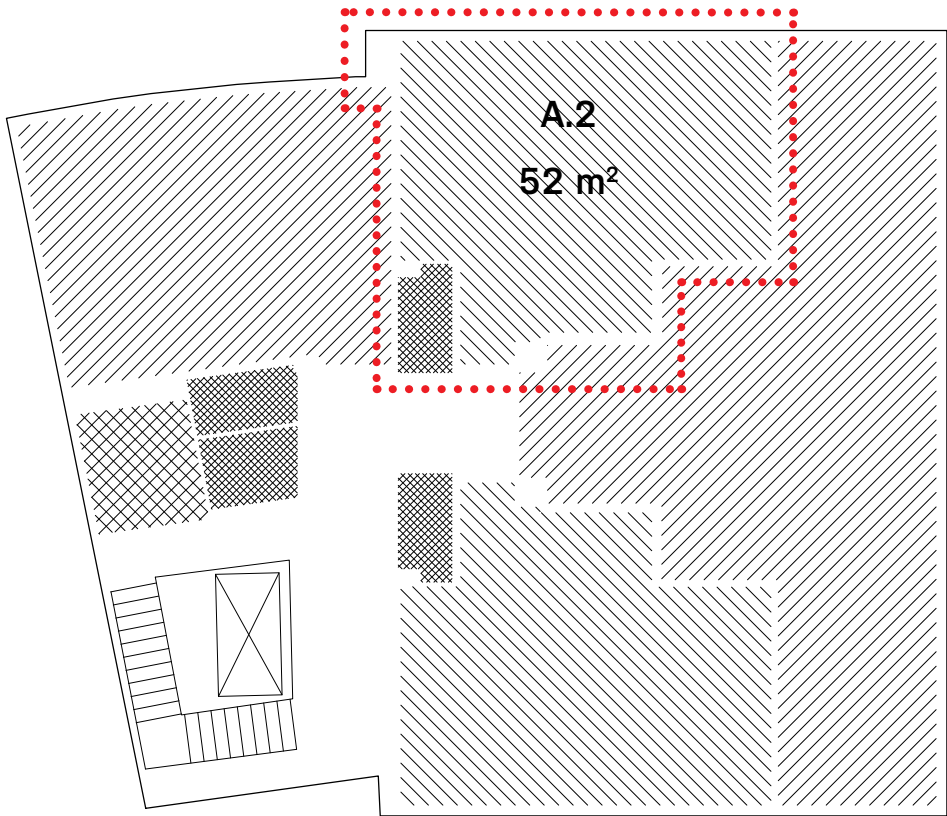
31+



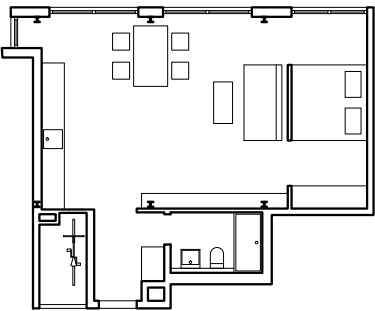
apartment types

apartment A.2

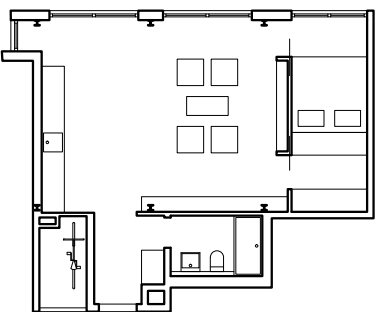
m²: 52
room: 2
bathroom: 1
floor: 3 4 5 6
light: N E



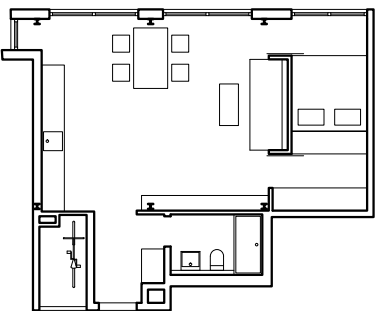
A.2.1



A.2.2

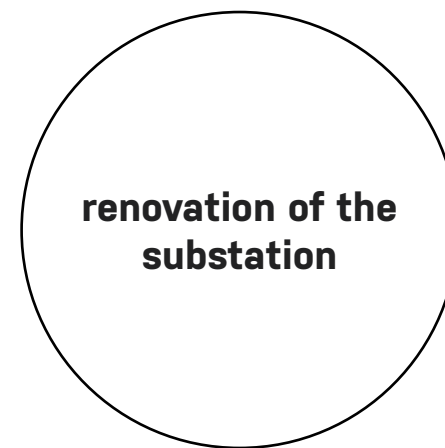


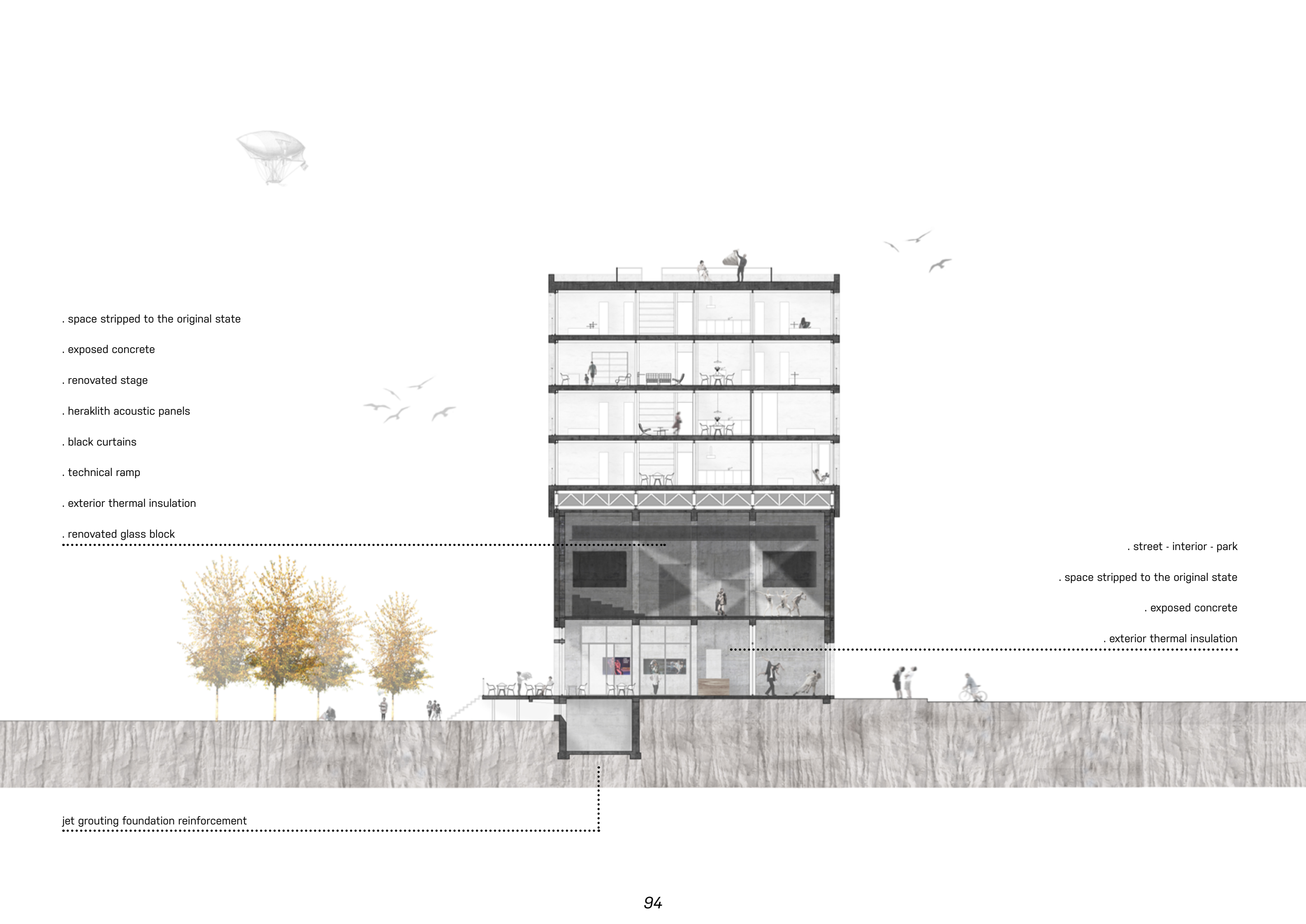
A.2.3



A.2.4







. space stripped to the original state

. exposed concrete

. renovated stage

. heraklith acoustic panels

. black curtains

. technical ramp

. exterior thermal insulation

. renovated glass block

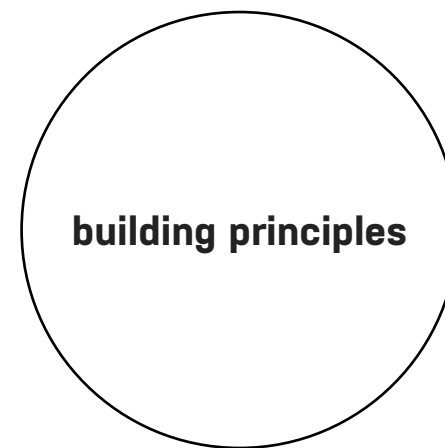
. street - interior - park

. space stripped to the original state

. exposed concrete

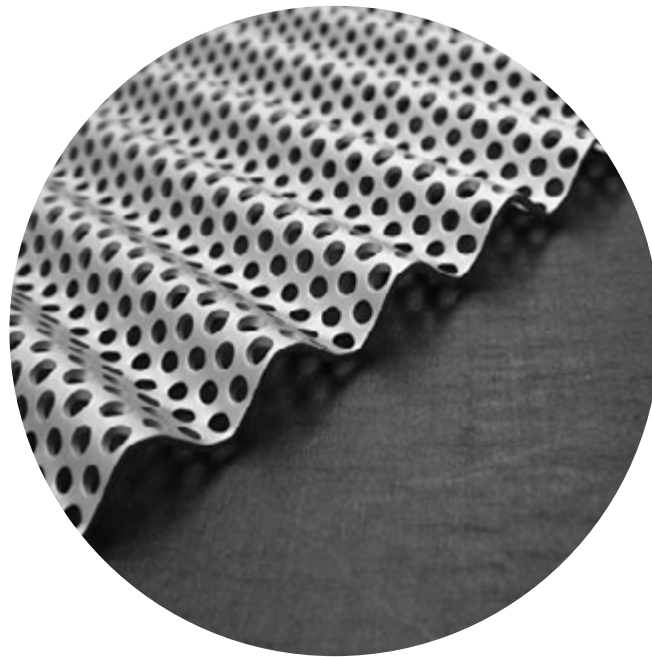
. exterior thermal insulation

jet grouting foundation reinforcement





facade



facade material



facade permeability



material durability



exposed materials

exposed steel

heraklith

..... concrete panels

..... concrete floor



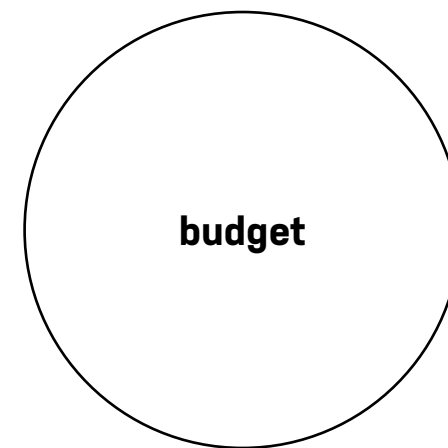
exposed materials



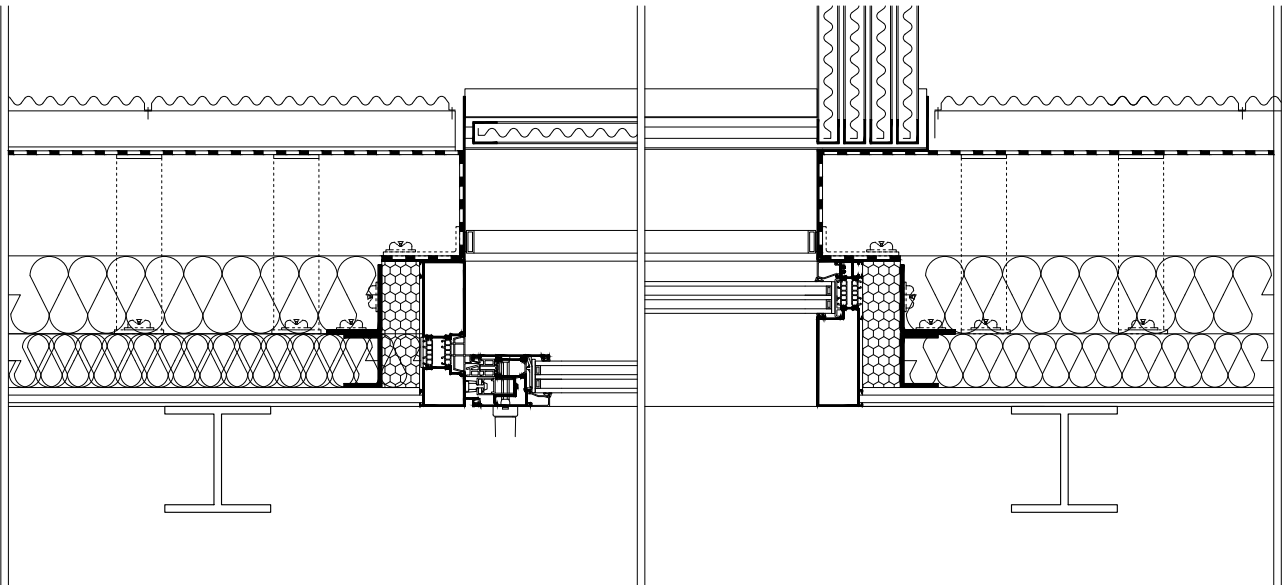
appropriation



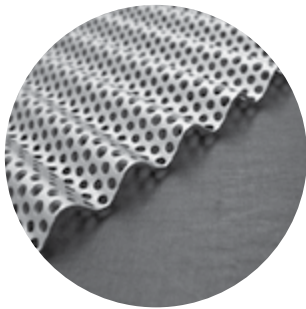
common spaces



EXT



INT



façade new	width [mm]	CZK/m2	€/m2
plaster	5	110	4
underlayer with weave net	5	180	7
Fermacell board with aluminium profiles 2x10 mm	20	755	28
thermal insulation mineral fibre	250	345	13
windstop - dekten fassade		175	6
façade grid	50	1170	43
perforated corrugated aluminium	20	480	18
scaffolding		120	4
		3335	124
fundermax board		1800	67
glassfibre concrete polycon board		1500	56
cement fibre board		460	17
polycarbonate		300	11

aluminium HS windows	width [mm]	CZK/m2	€/m2
fixed parts	8000	296	
sliding parts	12000	444	
sun shading	width [mm]	CZK/m2	€/m2
roller blinds	1200	44	
vertical louvers	1650	61	
perforated corrugated aluminium shutters	2100	78	
railing		CZK/m	€/m
railing	2000	74	

detail 06: window jambs new building [1:5]

		m2	CZK	€
facades		117	390195	14452
glass fix		51	510000	18889
glass openable		42	588000	21778
window shutters		51	107100	3967
floor		340	926500	34315
partitions between apartments		65	72475	2684
partitions bathroom		14	13622	505
partitions in apartment		30	29190	1081
roof 1/4		85	276250	10231
TOTAL			2913332	107901
	15%		3350332	124086
technologies			2913332	107901
	15%		3350332	124086
steel strucure			2327000	86185
TOTAL			9027664	334358

price / floor

addition



dwelling

dwelling

dwelling

dwelling

theater

cafe + foyer

existing structure

final building program

municipality provides the site for development

+

theater + cafe participation on the running costs and maintenance

+

4 floors

1040 m² NIA [UFA]

90 000,- Kč/m² [3 300,- €/m²]

+

renovation of the existing building

and adaptation into theater, cafe and foyer

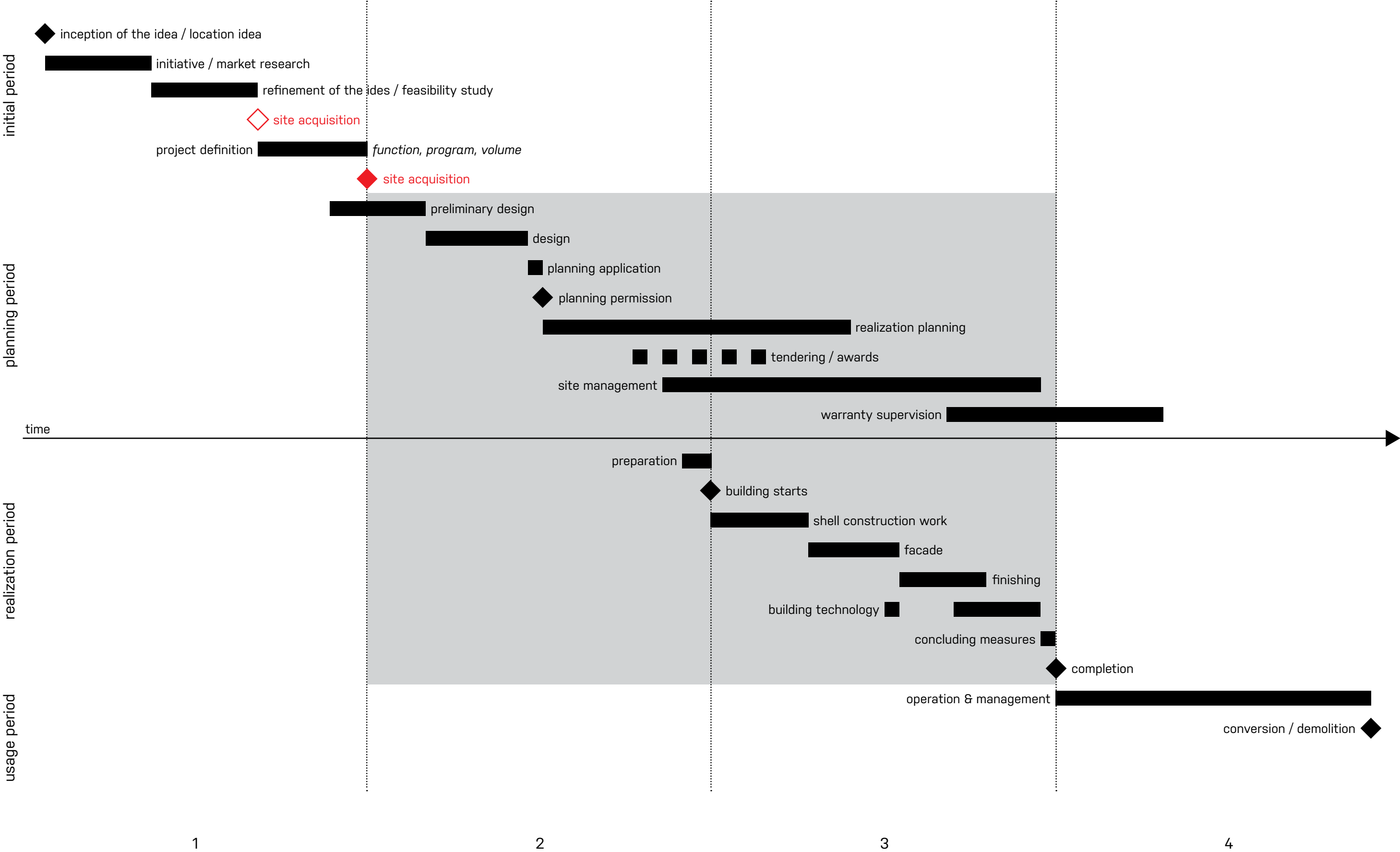
18 % revenue

project profitability

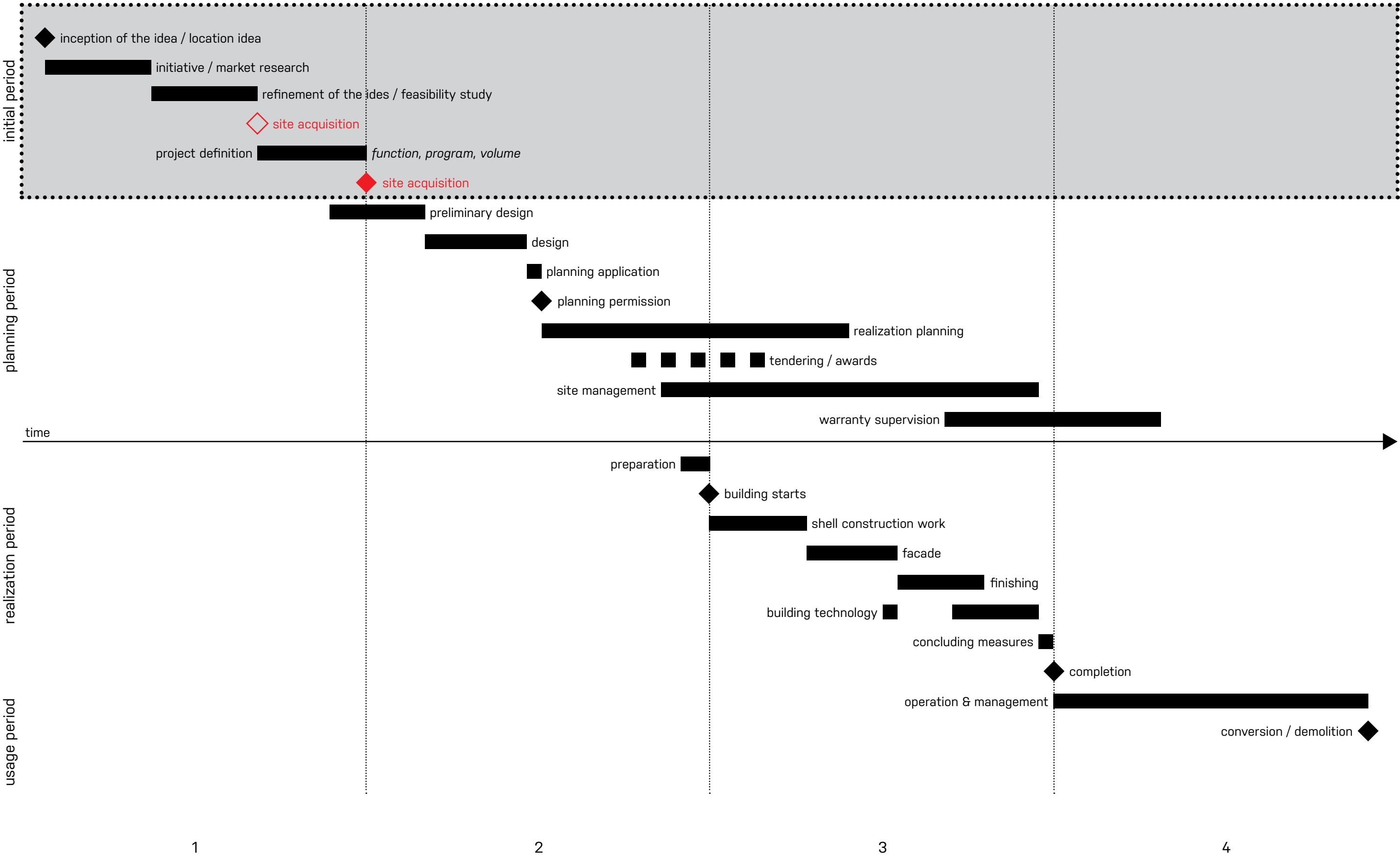


**architect-developer
conclusion**

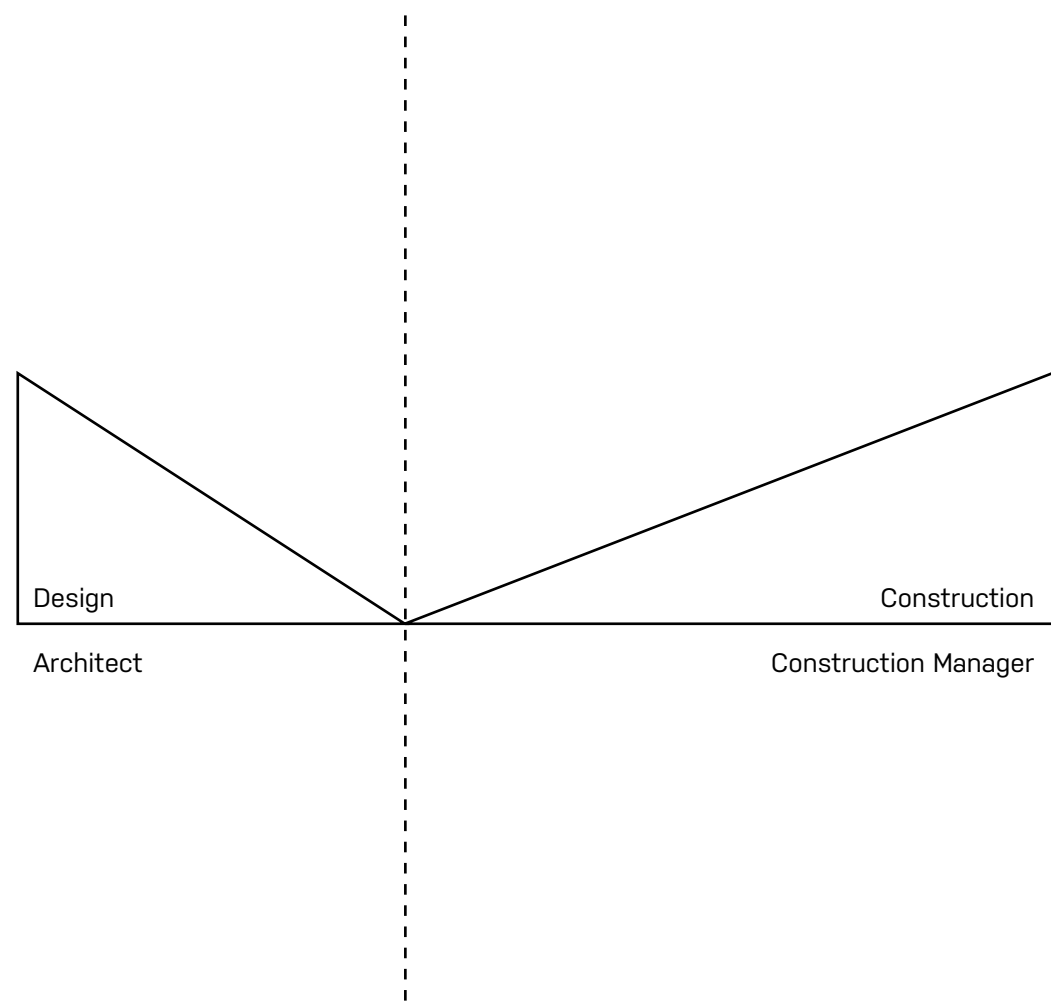
building process



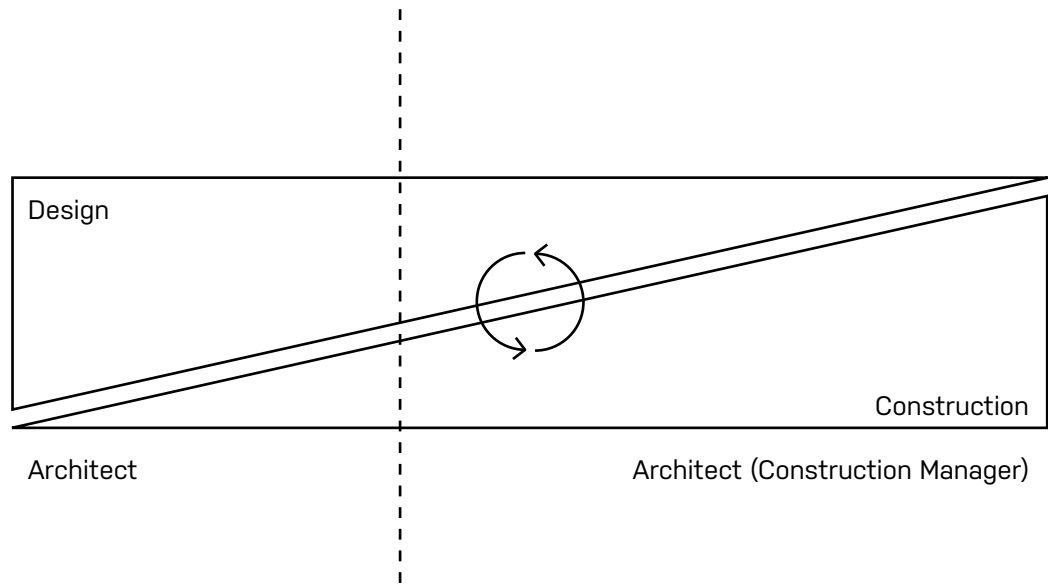
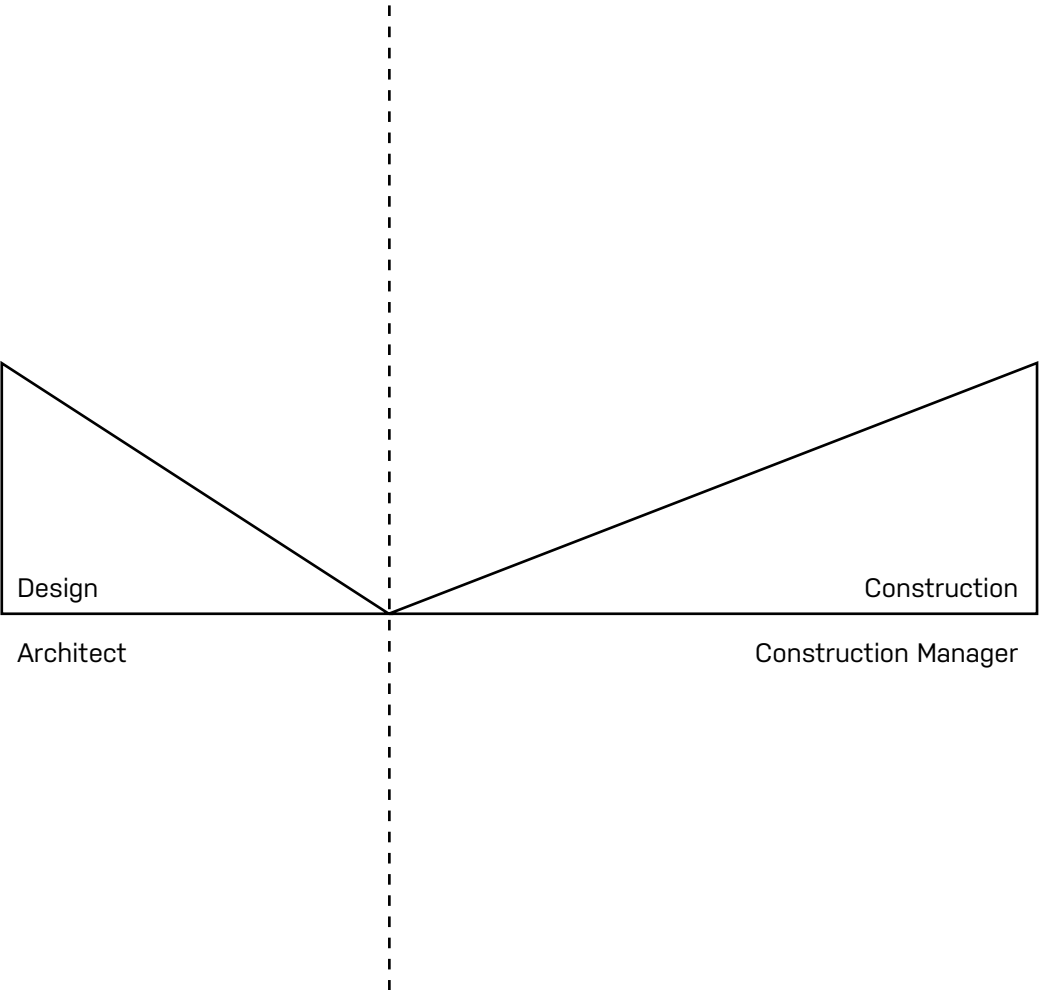
building process



traditional design-build scheme



traditional design-build scheme



architect-led design-build scheme

**house on a house
by
architect-developer**

