
architect-developer

architect-developer
graduation book B
research by design

Author
Dominik Saitl

Mentors
Marina Bos-de Vos
Nelson Mota
Jan van de Voort

Explore Lab
Elise van Dooren
John Heintz
Robert Nottrot

Delft University of Technology
Faculty of Architecture and the Built Environment
Explore Lab 22

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content

* Paragraphs aligned to the top of the page in regular type are the researched facts.

** Paragraphs aligned to the bottom of the page in italic type are author's remarks, comments acting as the architect-developer.*

a self-reflective report about developing a building as the architect-developer

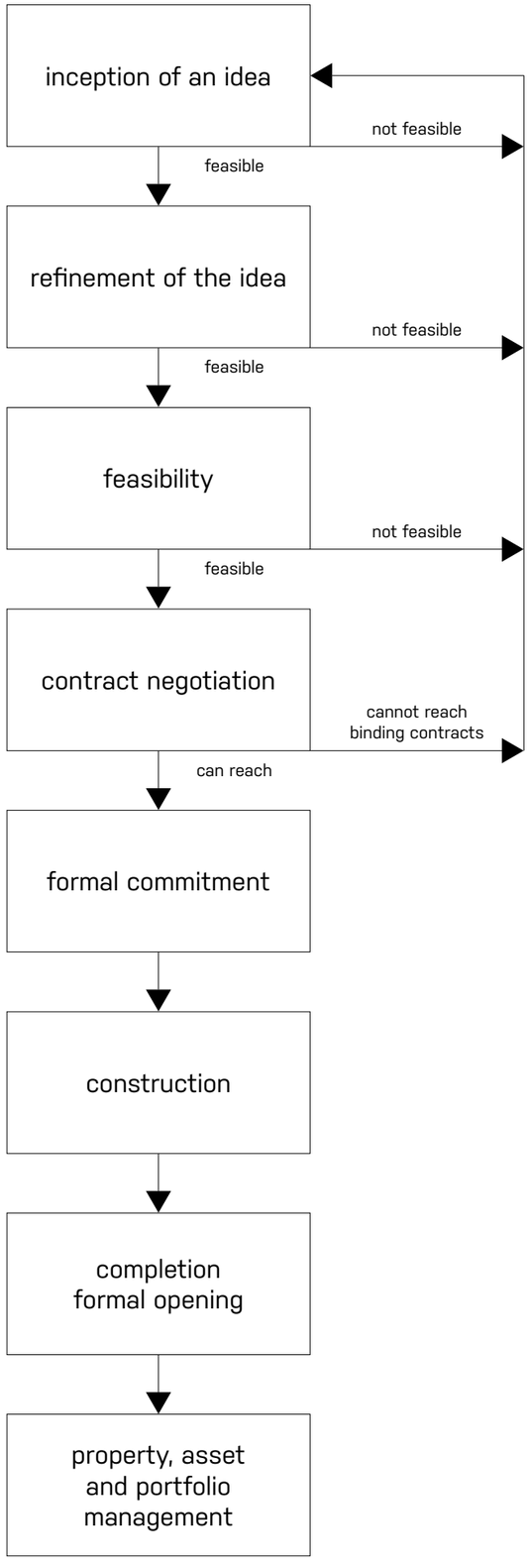
The next chapters will be describing my personal experience of the building process from the initial idea until the design (the phase during which the most important decisions about the building's location, function and appearance are decided) of the building from the perspective of the architect-developer.

architects' performace phases	%	building process (from architects point fo view)				building process		
[illegible]		B.Bielefeld, Project Management Architecture, 2013				J.W.F. Wamelink, Inleiding Bouwmanagement, 2009		
phase		**project period**	**project period**		**costs**	**cyclus**	**phase**	**specification**
						initiative	program	1 initiative ***location idea***
1 project preparation	1							2 feasibility study
								3 project definition ***function*** ***program*** ***volume*** ***technical framework*** ***financial framework***
					cost framework			
2 concept design	13	planning services	preliminary design			**preparation**	design	4 preliminary design
3 design for building placement permit **building placement permission** **planning permission**	15		design + planning aplication **planning permission**		*cost estimation* *calculation*			5 structure design 6 definitive design
4 design for building permit **building permission**	22					**execution**	elaboration	7 contracts
					budget			8 pricing / budgeting
5 design for building realization	**28**		realization planning				realization	9 work preparation *realization planning*
6 documentation for tendering	8		tendering / awards					
				realization period	*preparation*			
7 author on site inspection	13		site management warranty supervision		**building starts** shell construction façade finishing building technology concluding measures **completion**			**10 performance** ***construction*** **11 completion**
					final account			
						usage	use	12 operation possible conversion
								13 demolition

real estate development model		timeline for development		involvment		EX-L
Mike E. Miles et col., Real Estate Development, 2007		Richard B. Peiser, Professional Real Estate Development, 2012				
stage	**costs**	**period**		**a**	**d**	
1 inception of an idea *ideas* *possibilitites* *in head market research (background knowledge)* ***idea of a site looking for a use*** ***use looking for a site*** ***capital looking for investment*** *comparison of value and cost*	feasibility study	**predevelopment**	***site due diligence*** market feasibility studies			P1
2 refinement of an idea ***choosing & negotiating the site*** *initial design feasibility* *physical feasibility* *talking to possible customers?* *tentative / provisional / preliminary design*	feasibility study		premarketing			
site acquisition						
3 feasibility formal market study **preliminary drawings** initial construction and total cost building permits analysis	feasibility study					P2
site acquisition			preliminary design			
			mortgage package			
			tentative financing commitment			
			earnest money contract			P3
			working drawings			
4 contract negotiation						
5 formal commitment			**firm financing commitment**			P4
			public approvals			
			construction contracts			
			site acquisition			
			closing on land			P5
6 **construction**		**construction**				
		leasing	**operating**			
7 completion and formal opening						
8 property, asset and portfolio management		**opereation & management**				

To start developing a project it is important to know how to start. There is not one agreed chart marking steps of the building process. The phases and their content differ slightly from author to an author. The Eight-Stage Model of Real Estate Development is described more in detail on the next page.

The Eight-Stage Model of Real Estate Development (Miles 2015)



developer with background knowledge and great deal with current market data
sees possibilities, has ideas, does quick feasibility tests in his head

developer finds a site for the idea, *physical* feasibility
talk with possible tenants, owners, lenders, partners
tentative design, *option* of the land

more formal market study to estimate market absorption and capture rates
feasibility study comparing estimated value of project with costs
processing of plans through government agencies
legal, physical and financial feasibility for all participants

developer decides on *final design* based on market study: what users want and will pay for
contracts are negotiated: loan commitment in writing
decides on general contractor, determines general rent / sales requirements
permit from local government

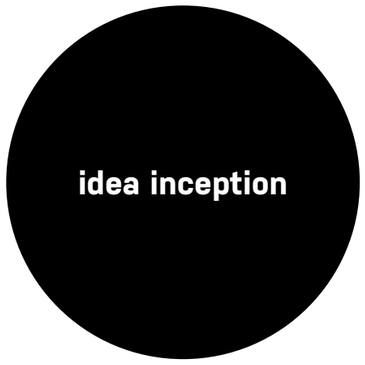
contracts are signed, contracts can be signed all at once:
joint venture agreement, construction loan agreement and permanent loan
commitment, construction contract, land purchase option,
purchase of insurance, pre-lease agreements

switch to formal accounting system (keep all costs within budget)
approves changes suggested by marketing professionals and development team
resolves construction disputes, signs checks
keeps work on schedule, brings in *operating staff* as needed

brings in full-time operating staff, increases advertising
city approves occupancy, utilities are connected, tenants move in
construction loan is paid off
permanent loan is closed

owner (new / developer) does property management
re-leasing, reconfiguring, remodeling, remaking space as necessary to extend
economic life and enhance performance of asset
management of fixed assets, considerations regarding investors' portfolios

To make thinks more clear I created a simple version of initial development stages of the initial building process (from idea inception until the design). The site acquisition is mentioned at two process stages because the acquirement time of the site does not specifically happen at a certain point of the process but it is dependent on the results of the feasibility study, situation on the market, negotiations about the site purchase and how sure the developer about the project is.



◆ inception of the idea / location idea

site & market research	feasibility study

◇ site acquisition

function, program, volume	design

◇ site acquisition

inception of an idea theory research

There is no magical formula for generating great ideas in real estate development.

"The best ideas result in products that serve the user well and add value to the community and do so at a profit."
Miles 2015, 45

Market research is a never-ending process with inputs from everywhere (news, conversations, observations). Regional economy, local population growth, employment figures, zoning provisions, traffic surveys, occupancy rates, consumer surveys are focus of a structured market research. A portion of ideas is is methodical and calculated.

"Developer frequently devotes 20 – 30 % of the time required for a project to idea inception."
Miles 2015, 45

Of a high importance is also the previous experience of the developer with the previous projects, as the direct contact with the client is the most valuable market research.

"With every new project I start from my previous experience: Who have been customers in the past? What did they expect? Was I able to deliver? What have I learned from those experiences? I always meet my clients in person to understand their needs, requirements and what they like."
Adamec 2016

Each real estate developer has different approach and no developer is alike. No chart can capture the instant repositioning of that occurs in developer's mind (Miles 2015). What for sure is in common is that all developers take big risks in the creation or renovation of real estate properties. As a reward for them is the greatest reward in the form of a profit made on a project (Peiser 2012).Though there are developers which which put reputation above profit and vice versa.

So the ideas behind projects of each developer are different, though all developers search for possibilities for niches to be filed in. As it was previously researched on part A for developers it is very important that any project is relatively easily developed in order to stay efficient and don't waste resources. Developers try to avoid any complications already during the idea inception process in order to ensure sound process since the preliminary phases and during the building process.

It has been also discovered that larger corporations are not as flexible as smaller developers and depending on the size of the developer the goals in the process differ.

inception of an idea: architect-developer

On the other hand my vision of the architect-developer approaches every project more carefully and gives importance to different elements in order to find a niche on the market and bring value to all involved stakeholders. The thinking about project idea of the architect-developer could differ from the thinking of regular real estate developer in these aspects (these aspects as found later match very much with the site selection factors and therefore are described later in the book):

. unexpected location

. constrains and challenges

. potential for positive contribution of the building to the city life and environment

. mix of functions

. mix of private ownership & public interest

. the project must have a potential to create a profit

◇ inception of the idea / location idea

site research & selection	feasibility study

◇ site acquisition

◇ site acquisition

function, program, volume	design

site selection theory research

Developer's challenge is to identify the highest and best use – the use that maximizes the property's land value.

It is often said that the success of a real estate project depends on three factors:

location,
location,
location.

The categorization of location is further divided into: macrolocation – proximity to major urban nodes, determines what part of the city offers the best long-term potential; and microlocation – property's immediate environs, determines how well a site is situated in its immediate neighborhood.

Of high importance is the ability of the developer to foresee changes in the urban fabric. To foresee these changes his predictions are based on

careful research,
intuition, and luck.

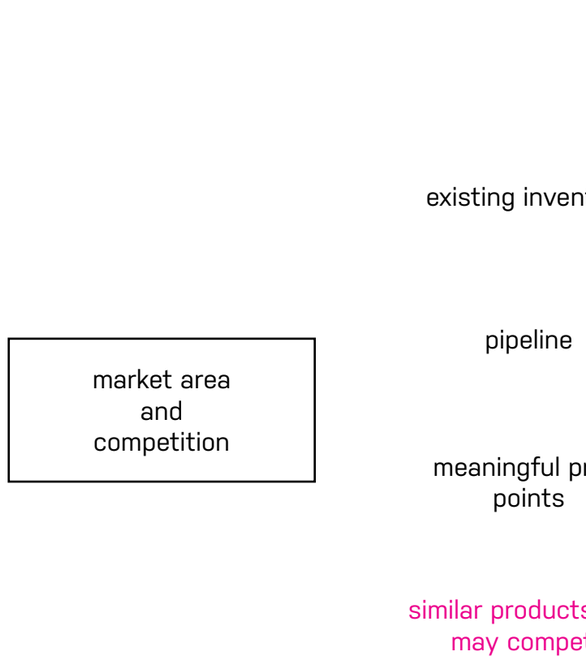
Developers also research what and where other developers are building and what is the physical and financial health of the communities since the success of real estate development is also dependent on these factors (Peiser, p.160).

According to the real estate development theory there is is two ways of selecting a site (Peiser, 2012):

1. select a use and a target market and then find a suitable site
2. select the site first and then undertake market analyses to identify potential uses and markets for that parcel

421 site evaluation factors: real estate developer*

market area and competition



Real estate market is driven by a customer demand. This demand is based on the references which exist in the market and customers are familiar with. Therefore same size apartments with same size rooms are offered in one project next to the other. It is goes hand in hand with the required legislature, ease of development (planning + building). Same typological systems are being repeated from a project to a project in order to be efficient in time. Which is of course logical. A company needs to run and be responsible for its commitments.

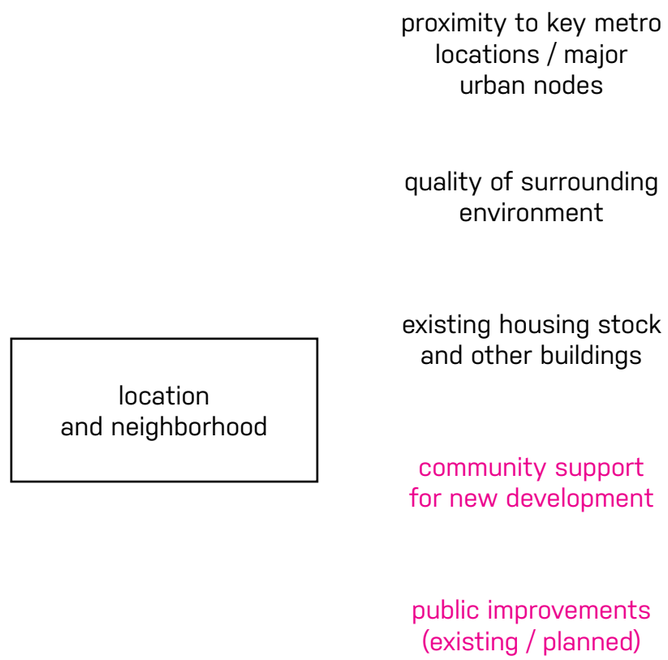
This approach unfortunately causes that the same typologies without a big change are being executed for years even though peoples (dwellers) demands are changing (Jack Self, Rotterdam, 2016). For developing architect it is an opportunity to bring a contemporary approach, something up to date, which reacts flexibly to the situation in the society and combine it with the site specifics.

Because the drive behind this profession is to provide good architecture besides the profit part. Such approach may be more time consuming and therefore costly, but that is what there is to be explored. Alternative typology is not necessarily costly.

Customer target group is also predetermined by this approach, but that is completely fine. That is part of the process, one can never satisfy all. Different people have different taste or demands.

* Peiser 2012

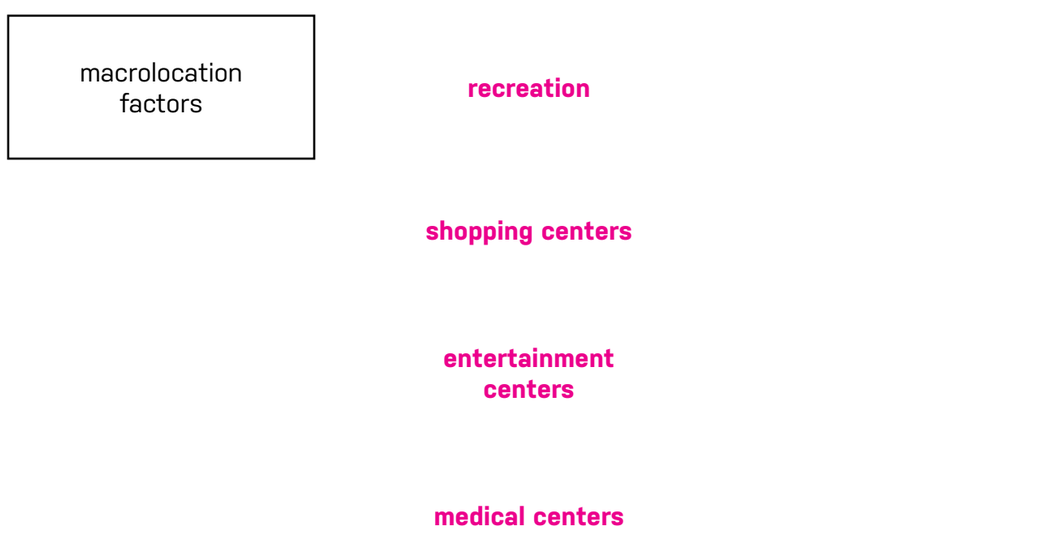
location and neighborhood



Community support for new development is I believe very much dependent on the project itself and the approach of the developer. Bad project with a wrong approach towards community can be always rejected.

New building can be considered as public improvement, not just as a present or future condition exploiter. Here we may see another different approach towards a project between the architect and the developer. Developer works with present conditions and how those could suite or improve the intended project. On the other hand architects have in mind improvement of the present situation within cities. We can discuss the term improvement of course, whether it is the hospitality of public space, places to sit down in a shadow of a tree, access to services, entertainment and goods of everyday need or it is the built quality of new buildings expressed by its size, proportion or materials.

macrolocation factors



All of the macrolocation factors are very much related to commerce and consumerism which are of a personal nutshell. Macrolocation factors are very much dependent on who is the target group I want to develop for and are related to the importance of local (micro) factors specific for each location and its identity.

microlocation factors

Building in noise places in a close proximity to railway tracks or busy roads is in general considered as not feasible. Even though we can see in architectural practices how this problem can be dealt with. It is always a question of the amount of extra costs for designing, planning and building an adequate solution it is a challenge that can be overcome and as a reward may be an exceptional building on and exceptional place.

utilities

utilities

water
sewer

electricity
(availability / quality)

wireless reception

teledata
broadband

physical conditions

physical conditions

appeal

wildlife
ecological features

visibility

toxic waste

accessibility

geology
soils
hydrology

views

vegetation
forestry
agriculture

size & shape

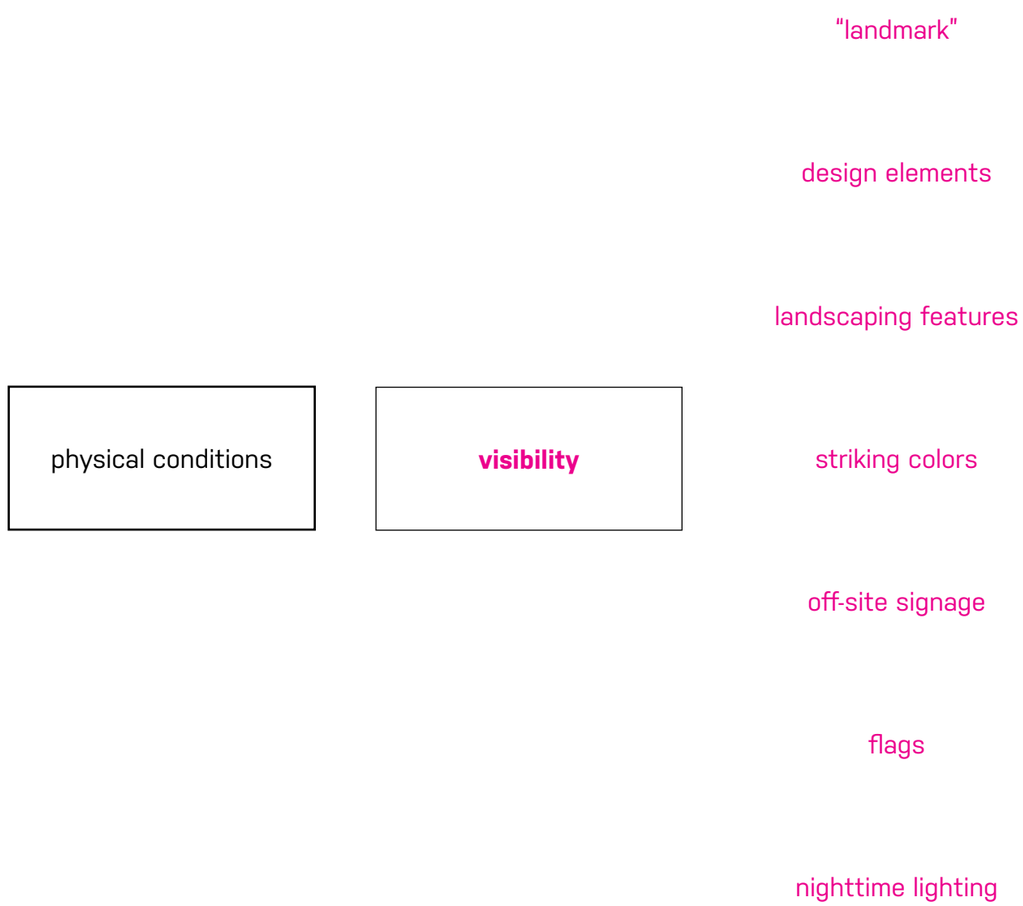
storm water

slopes & topography

**existing structures
on the site**

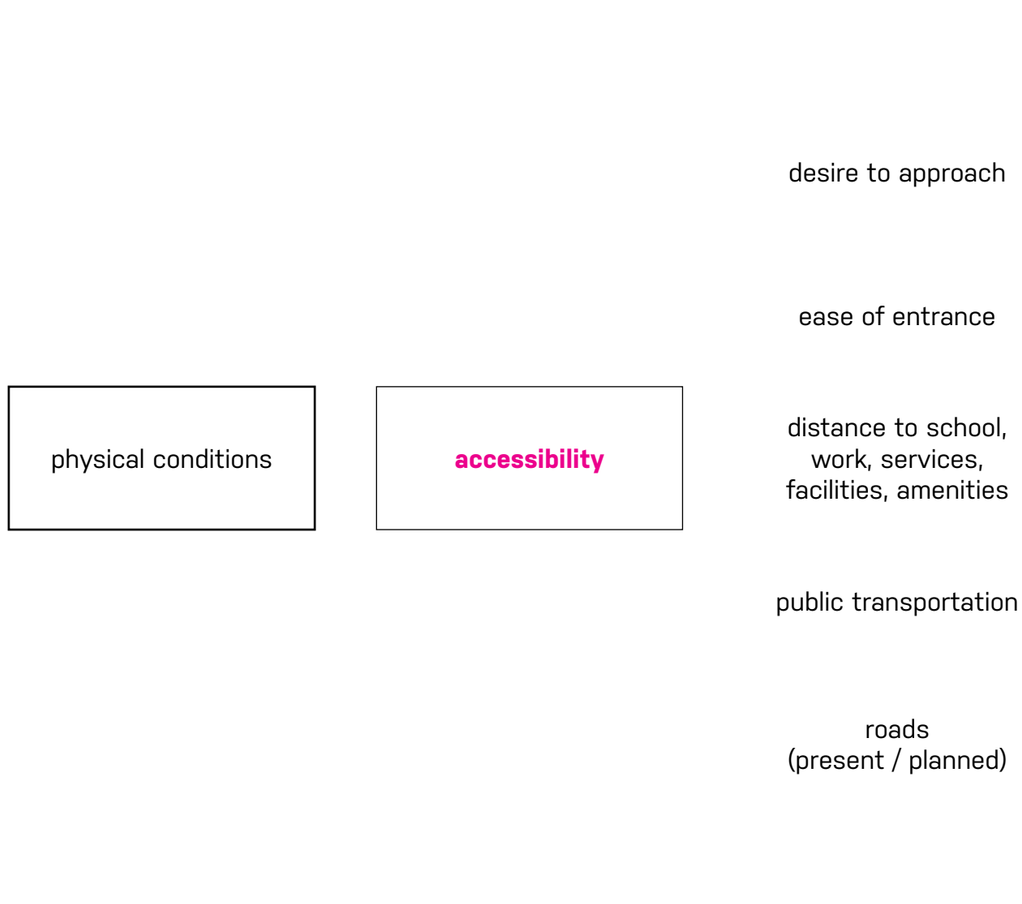
For developers it is important that the site is easy to develop in general so the planning and construction phase is minimized to maximum.

physical conditions / visibility



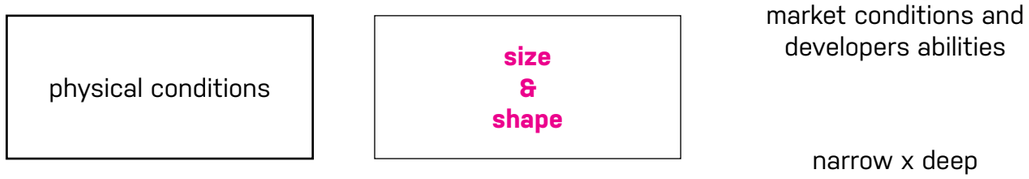
These values are honestly very hard to comment on. Since those are methods which all schools of architecture warn every single student about.

physical conditions / accessibility



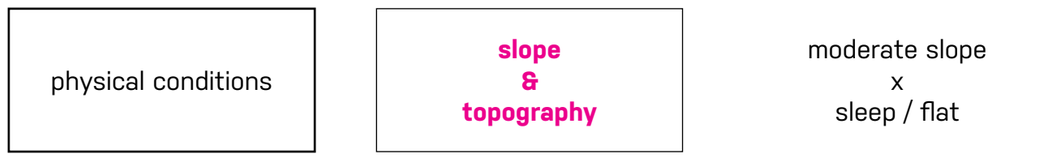
A building can be very eye-catching and step out but can be also very subtle and therefore step up in an noninvasive way.

physical conditions / size & shape



Size and shape can be of an engine for a non-conform development. Many architects have proofed the potential of a narrow or too deep plots on which exceptional buildings were created. Such projects show exceptional interest of people and therefore become popular and of a desire of people to live. A challenging plot can allow for unexpected and new typology of different spatial qualities. Exceptionality creates demand. And we can again always discuss exceptionality of which cost. It can be provided at low cost as well as high cost. As with previous criteria, overcoming challenges always requires an extra time and therefore cost during the design and planning phase. Therefore there is a chance for a result to be different from the competition.

physical conditions / slope & topography



Developing a sloping site is indeed more costly than developing a flat site. Although with the relationship to the expensive and creative approach of the architect the final product can again provide more thorough typologies and spaces.

Developers always play it safe. The willingness to risk is minimized. As a result most of the development is very standardized. Real estate is part of the commercial market. Is sold (and afterwards built) as clothes, watch, cars. But it allows for so much more variety since the building conditions are never the same. The degree of the slope of the site, the orientation of the plot, the location, the surroundings are never the same. Houses meant to be placed on flat land are placed on a sloping plot with much effort when evening the plot.

There are many paradoxes and illogical mechanism that have been applied.

physical conditions / existing structures on the site

physical conditions

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There are many paradoxes and illogical mechanism that have been applied.

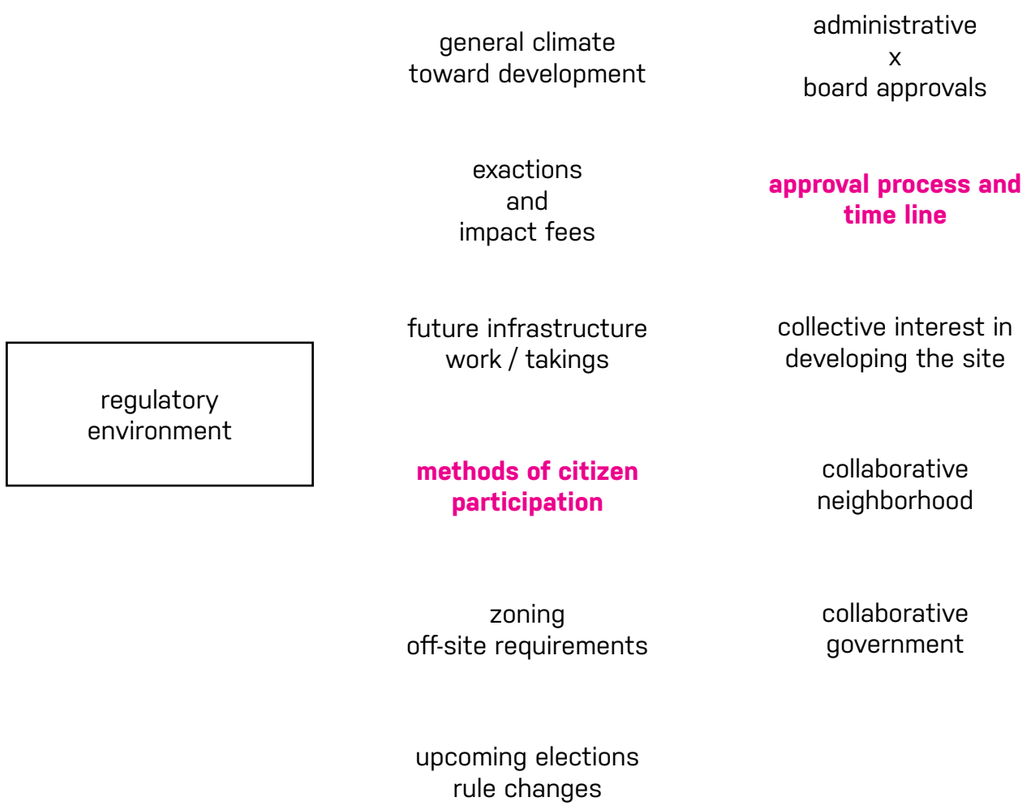
legal constrains

legal constrains

covenants
and
deed restrictions

utility
and
private easements

regulatory environment



Real estate development text books mention citizen participation but do not elaborate further. Citizen participation can be time and money consuming but can be a tool to support and reevaluate market analysis. Furthermore the participation of citizens can be of a profit towards the development so the citizens become familiar with the project and can collaborate on it and therefore the project is shaped based on their needs and can fit in the location more successfully.

While trying to come up with a unique solution for every site the planning process can be easily prolonged which relates to higher planning costs. Similarly some solutions may require longer approval process in order to achieve the desired quality of development.

Relation between planning time (which includes approval processes) and money is inevitable. The question is how far can one to go to create a valuable design and stay within the budget.

architect-developer site selection notes

Site selection in real estate development seems to be market and profit driven, there is too many predetermined aspects (user or site), it is not concerned with the needs of the users and the context as much as if these decisions go hand in hand:

3. select a major function and a goal I want to achieve, find a site, identify and clarify users and program

Further on real estate developers according to text books and the above presented factors prefer their site to be easy to develop.

architect-developer site evaluation factors

. unexpected location

The goal for the architect-developer would be to fins a site which would not be considered by a regular developer to be developed for potential constrains and challenges which could require a longer time of development as well as higher financial investment and therefore lower profit.

. constrains and challenges

The ability of the architect-developer should be to overcome certain constrains and challenges of projects and gain that way an advantage over the regular real estate developer corporations by adding values to equities which were long before considered to be lost. Turn disadvantages into advantages

As constrains can be considered: noise in the proximity of the site, existing building on a site which could be adapted for a new use, uneven terrain of the site (steep slope), need for negotiation between parties (public and private interest), longer time of development (to the extent the project is still profitable).

. potential for positive contribution of the building to the city life and environment

The constrains of certain sites considered as disadvantages can be by a challenged and by careful approach while incorporating the city and public in the discussions over the future of such projects and finding that way a proper function of a new development can lead to a positive contribution of a building to the city life because the needs of the citizens living in the certain location have been understood and met. "Quality of a building will be in the future more evaluated by its ability to contribute to the public." (Eberle 2015, 22)

. mix of functions

Mix of functions can allow for the building to be integrated in the urban fabric easier while it is a building which offers different activities for the public throughout the day. Such building should also be able to react to changes in the needs of the society and be able to adapt to those needs. Developers often still do not consider mix of functions as an added value to the project but rather a complication while dealing with different stakeholders. + (Eberle 2015, 22)

. mix of private ownership & public interest

Mix of functions goes hand in hand with the mix of ownerships and interests. For the building to contribute to the city life and be by the public fully appreciated it is important that the private investments understands the public needs.

. the project must have a potential to create a profit

Even an architect-developer must be aware of the profitability of a project to be able to stay solvent and be able to ensure the continuity of his/her practice.

starting architect-developer site evaluation factors

. smallness of the development

The size (meaning the floor area and volume of the building) is at the beginning very important and guiding aspect. Since the experience of the starting architect-developer with being in charge of the whole building process is compare to experienced real estate developer very low it is important to start gaining experiences with rather smaller projects and work ones way to the larger projects.

. rather low financial resources

For the same reasons as the size of the project the financial resources should be kept low.

Selecting sites based on reasonable size of the possible development and costs so it is possible to grasp and develop such place as a starting architect-developer / student and try to address correctly all upcoming issues. Depending on the possible height of the building, the plot size should be up to **2500m²** *of plot size with maximum of around 8 floors of height (the height is derived from the maximum number of floors of buildings within the inner city limits of Prague). The size of the plot has been derived based on the selected sites. The size of the plot should also not allow to build more than one coherent building on one plot (also for the reasons to be able to grasp the design in the context of development).*

. familiarity with the place

Is of an advantage in order to understand the context better, processes in the area, culture or legislative limits.

. personal emotions

It is said by real estate developers that it is good to start with a project to which one has a personal emotions to get the most fun out of the project (... 2014)

site selection steps

1. selecting exceptional sites based on site evaluation factors specific for the architect-developer

. 6 sites were selected in the first round
in account were taken all previously mentioned aspects:
. the fragmentation of urban tissue of Prague
. the surroundings
. mix of private and public functions as well as ownership interests
. possible change and improvement for the area.

2. performing quick costs check

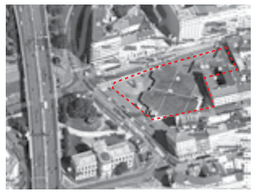
3. evaluating the site as the developer

4. evaluating the site as the architect-developer

5. final site selection


supermarket | Letenské náměstí
metro hub | Florenc
former substation | Preslova
tram depot | Vinohrady
former train station | Vyšehrad
vacant lot | Kodaňská
Prague
PRAGUE 1
PRAGUE 3
PRAGUE 4
PRAGUE 7
PRAGUE 8
PRAGUE 10
HANSPAULKA
DEJVICE
OŘECHOVKA
STŘEŠOVICE
HRADČANY
POHOŘELEC
MALÁ STRANA
STRAHOV
KLÁRA
KLAMOVKA
SMÍCHOV
ANDĚL
ČERNÝ VRCH
MALVAZINKY
RADLICE
OLD TOWN
NEW TOWN
MÚSTEK
PETRSKÁ ČTVRŤ
FLORENC
HOLEŠOVICE
ROHANSKÝ OSTROV
ŠVÁBKY
LIBEŇ
HORNÍ LIBEŇ
PODVINNÍ
NOVÉ VYSOČANY
MEZITRATÍ
NA BALKÁNĚ
INVALIDOVNA
CHMELNICE
ŽIDOVSKÉ PECE
VRŠOVICE
FIDLOVAČKA
ŽIŽKOV
OLŠANY
TŘEBEŠÍN
FLORA
Vltava
Letenské sady
Havlíčkovy sady
Bubenské nábř.
Rohanské nábř.
Dvořákovo nábř.
Nábřeží Edvarda Beneše
Argentinská
Bubenská
Dukelských hrdinů
Jankovcova
U Uranie
Dělnická
Voctářova
Sokolovská
Spojovací
Českomoravská
Zenklova
Prosecká
Počernická
Jeseniova
Svatovítská
Pevnostní
Jelení
Mariánské hradby
Střešovická
Keplerova
Pražský hrad
Strahovský klášter
Petřínská rozhledna
Petřín
Vaníčkova
Tomanova
Velký strahovský stadion
Atletická
Pod stadiony
Na Hřebenech II
Podbělohorská
Holečkova
Plzeňská
Duškova
Vrchlického
Na Václavce
Santoška
Jinonická
Peroutkova
Na Slupi
Vyšehradská
Rašínovo nábř.
Vratislavova
Čiklova
Nuselský most
5. května
Táborská
Nuselská
Wilsonova
Husitská
Seifertova
Konevova
Vitkov
Malešická
J. Želivského
Vojenská pohřebiště
Olšanské hřbitovy
Židovské hřbitovy
Počernická
Vinohradská
Francouzská
Ruská
Vršovická
Průběžná
Bělocerkevská
Na Jarově
Kolbenova
Novovysočanská
Na Rejdišti
Na Rejdištěm
Nemocnice Na Bulovce
BULOVKA
Zámecký park Troja
Na Štáhlavce
Na Písčinách
Na Pískách
Křižíkova fontána
Tipsport arena
Národní technické muzeum
Palladium
Prašná brána
Karlův most
Národní divadlo
Václavské náměstí
Národní muzeum
Žižkovská televizní věž
Tančící dům
Fölimanka
EDEN ARÉNA
O2 arena
Zelená
VŠCHT

1. selecting exceptional sites based on site evaluation



	supermarket Letenské náměstí	metro hub Florenc	former substation Preslova
	Praha 7	Praha 8	Praha 5
	inner city	inner city	inner city
			unexpected
area [m2]	**1600**	**6540**	**240**
maximum floors	5	8	3
location usage index / FAR	1,68	1.43	1.54
ownership	private	public	public
major area use	residential	administration	mix
	historically a square	transport hub	transformation station
	historically a market	supermarket	
	today a supermarket	small shops	
	neighborhood node	neighborhood node	
	tram stop	tram stop	
		metro station	
		bus station	
	vehicular noise	vehicular noise	
	public parks close		public park close
	top of hill		river close
	amenities and services	amenities and services	amenities and services
	minimum public space	minimum public space	
	low rise	low rise	low rise
	mono use	mix use	mono use
	art district		
	progressive hood		
	will to experiment		

factors specific for the architect-developer

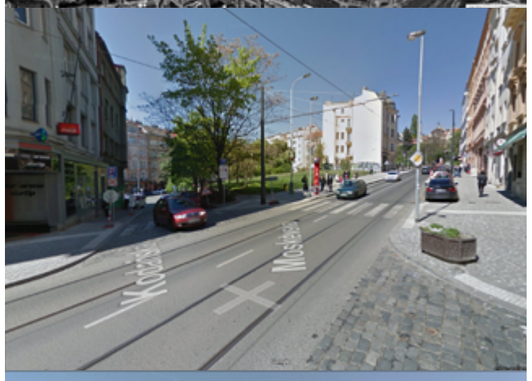
	tram depot Vinohrady	vacant lot Kodaňská tržíčko	former train station Vyšehrad	
	Praha 2	Praha 2	Praha 2	
	inner city	inner city	inner city	
	unexpected		unexpected	
area [m2]	**8330**	**3144**	**2180**	**m2**
maximum floors	3	5	4	
location usage index / FAR	0.94	1,37	1.13	
ownership	public	private	public	
major area use	residential	residential	residential	
	tram depot	historically a square	former train station	
		historically a market	today empty	
		today empty		
		neighborhood node		
		tram stop	tram stop	
			train noise	
	public park close	it is park itself		
			river close	
	amenities and services	amenities and services	amenities and services	
		undefined public space	unused	
	low rise	empty	low rise	
	mono use	mono use	mono use	

Letenské náměstí with a grocery store taking the whole space
area: 1680 m²

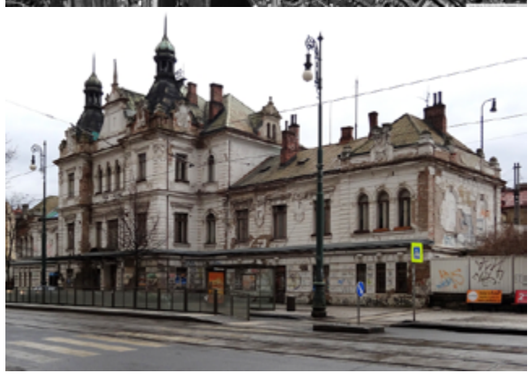
Florenc metro hub
area: 6540 m²

electric substation Preslova
area: 300 m²

Tram depo
area: 8330 m²

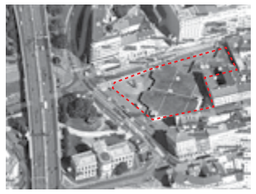


Kodaňská "little market" space
area: 620 m² + 1350 m² = 1970 m²



former Trainstation Vyšehrad
area: 2180 m²

2. performing quick costs check

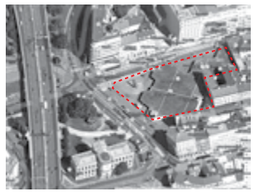

	Letenské náměstí	Florenc	Preslova
area	1 600	6 540	240
	7 900		
maximum floors	5	8	3
	6		
usage index / FAR	1,68	1,43	1,54
maximum footprint	1 100	4 850	240
total floor area	6 600	**38 800**	***720***
ownership	private	private/public	public
plot price	500	**1 300**	360
=	800 000	**8 502 000**	***86 400***
demolition of existing structures	200	200	
=	320 000	1 308 000	
site development	500	500	
=	800 000	3 270 000	
building costs	1 000	1 000	900
=	6 600 000	**38 800 000**	***648 000***
building costs total	8 520 000	**51 880 000**	***734 400***
technologies	4 733 333	28 822 222	408 000
operation and aditional costs	3 786 667	23 057 778	326 400
financing	946 667	5 764 444	81 600
marketing	946 667	5 764 444	81 600
total investment	18 933 333	**115 288 889**	***1 632 000***
building price	2 869	2 971	***2 267***
market price	**3 703**	***2 621***	3 421
market price total	24 439 800	101 694 800	2 463 120
win	5 506 467	*-13 594 089*	831 120
revenue	**29,08**	*-11,79*	**50,93**



	Tram depo Vinohrady	Kodaňská tržíčko	Former train station Vyšehrad	
		1176 + 1968	1040 + 1140	
area	8 330	3 144	2 180	m2
				m2
maximum floors	3	5	3	
usage index / FAR	0,94	1,37	1,13	
maximum footprint	5 610	1 665	6 540	m2
total floor area	16 830	8 325	19 620	m2
ownership	private/public	private	private/public	
plot price	400	***315***	350	€ / m2
=	3 332 000	990 360	763 000	€
demolition of existing structures				€ / m2
=				€
site development	500	500	500	€ / m2
=	4 165 000	1 572 000	1 090 000	€
building costs	1 000	1 000	1 200	€ / m2
=	16 830 000	8 325 000	23 544 000	€
building costs total	24 327 000	10 887 360	25 397 000	€ **45 %**
technologies	13 515 000	6 048 533	14 109 444	€ **25 %**
operation and aditional costs	10 812 000	4 838 827	11 287 556	€ **20 %**
financing	2 703 000	1 209 707	2 821 889	€ **5 %**
marketing	2 703 000	1 209 707	2 821 889	€ **5 %**
total investment	54 060 000	24 194 133	56 437 778	€ **100 %**
building price	**3 212**	2 906	2 877	€ / m2
market price	3 555	3 555	3 134	€ / m2
market price total	59 830 650	29 595 375	61 489 080	€
win	5 770 650	5 401 242	5 051 302	€
revenue	10,67	22,32	8,95	%

3. evaluating the site as the developer

supermarket
Letenské náměstí



metro hub
Florenc

former substation
Preslova

tram depot
Vinohrady

vacant lot
Kodaňská tržíčko

former train station
Vyšehrad

<u>market area and competition</u>						
existing inventory	●	●	●	●	●	●
pipeline	●	●	●	●	●	●
competing similar products	●	●	●	●	●	●
price points	●	●	●	●	●	●
<u>location and neighborhood</u>						
proximity to transportation	●	●	•	●	●	•
quality of surroundings	●	○	•	•	●	•
existing housing stock	●	●	●	●	●	●
schools, (churches)	●	•	●	●	●	•
parks, clubs, recreation	●	○	●	●	●	•
support for new development	●	●	●	●	●	●
shopping & entertainment	●	●	•	•	●	○
public improvements	○	○	○	○	○	○
visibility	●	●	○	○	•	•
security	●	●	●	●	●	●
privacy	○	○	●	•	•	•
noise level	○	○	●	•	•	●
cmmnt physical & financial health	●	○	•	•	●	•
<u>utilities</u>						
water, sewer	●	●	●	●	●	●
electricity	●	●	●	●	●	●
teledata, broadband	●	●	●	●	●	●
wireless reception	●	●	●	●	●	●

● • ○ ○

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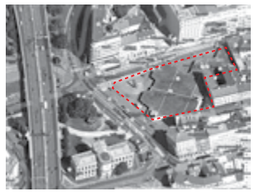
3. evaluating the site as the developer

supermarket
Letenské náměstí



metro hub
Florenc

former substation
Preslova

tram depot
Vinohrady

vacant lot
Kodaňská tržíčko

former train station
Vyšehrad

<u>physical conditions</u>

accessibility	●	●	●	●	●	●
slopes (topography, view)	●	○	•	•	•	○
existing structures	○	○	•	○	●	◯
wildlife, ecological features	●	●	●	●	●	●
toxic waste, nuisance	●	●	●	●	●	●
soil, hydrology	●	●	●	●	●	●
vegetation, forestry, agriculture	•	◯	●	•	•	○

<u>legal constrains</u>

utility and private easements	●	●	●	●	●	●
covenants and deed restriction	●	●	●	●	●	●

<u>regulatory environment</u>

climate toward development	●	●	●	●	●	●
exactions and impact fees	●	●	●	●	●	●
future infrastructure works	●	•	●	●	●	•
citizen participations	●	●	●	●	●	●
zoning, off-site requirements	●	•	◯	◯	●	◯
political situation	●	●	●	●	●	●
administrative & board approvals	◯	◯	◯	◯	◯	◯
approval process, time line	◯	◯	◯	◯	◯	◯

● • ○ ◯

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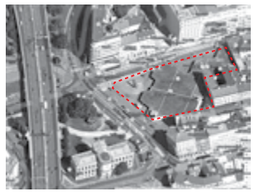
4. evaluating the site as the architect-developer

supermarket
Letenské náměstí



metro hub
Florenc

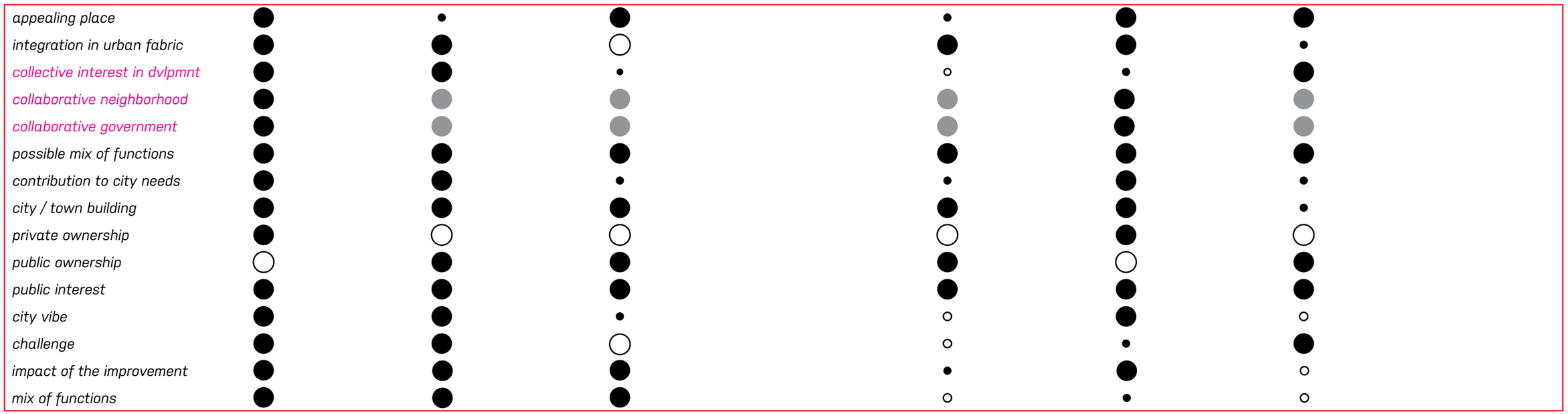
former substation
Preslova

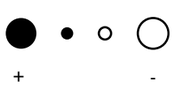
tram depot
Vinohrady

vacant lot
Kodaňská tržíčko

former train station
Vyšehrad

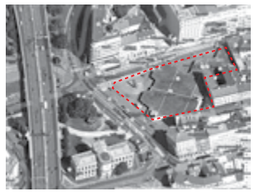
architect-developer





4. evaluating the site as the architect-developer

supermarket
Letenské náměstí



metro hub
Florenc

former substation
Preslova

tram depot
Vinohrady

vacant lot
Kodaňská tržíčko

former train station
Vyšehrad

architect-developer constrains & challenges

existing structures around
existing structures on site
noise
sloping site

level of negotiation (lowest)

length of development (shortest)

private x public ownership
private x public interest

starting architect-developer

size (smallness)
financial resources (lowest)

5. final site selection

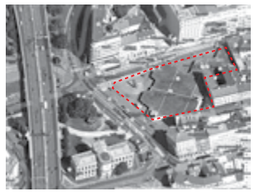
supermarket
Letenské náměstí

ok size

ok for dwelling

mix of functions

ownership issues



metro hub
Florenc

too big

office space location

mix functions

big investment

no revenue

former substation
Preslova

new x old

small

good for dwelling

mix functions

small investment

tram depot
Vinohrady

new x old

too big

off location

mostly dwelling

hard to mix functions

big investment

vacant lot
Kodaňská tržíčko

ok size

mostly dwelling

hard to mix functions

to little challenging

former train station
Vyšehrad

new x old

strong heritage

off location

not best for dwelling

hard to mix functions

no revenue

architect-developer site selection notes

The selected sites were evaluated based on the real estate development theory and complemented with the parameters discovered to be typical for the architect-developer.

The site of the former substation at the crossing of Náměstí 14. října and Preslova street at Smíchov Quarter in Prague. The aspects of its smallness and low investment played a big but not the most important role. The size of the property and the low investment is without a question a bonus for a starting architect-developer, not if the only option how to start such a new endeavor.

This site besides the above mentioned allows for a decent amount of dwelling or other use development atop an existing structure with another, for example public use. The goals set at the beginning of the site selection are all met in this project. Dealing with the existing structure and its function while building a new structure above it can lead to a challenging and interesting project.

Finding another use for the existing building with all its typological constrains is a challenge characteristic for architect's work. I task which in most cases requires more involvement, commitment and time. Needles to say that such a project when a new function is needed for existing structure also means more risks. The chance of succeeding in incorporating all necessary requirements is lower than while building a new building. A task which most of real estate developers would like to skip for the higher risks.

Building additional structure atop an existing building is also a challenging task which is dependent on the quality of the existing structure, subsoil conditions or typological limits created by the existing structure. Though the additional structure can enclose the missing urban structure within the urban fabric of the city and form the rest of the urban block and create a dominant which would help to frame the space of the park.

**the site:
former substation**

exterior

the site: 1953

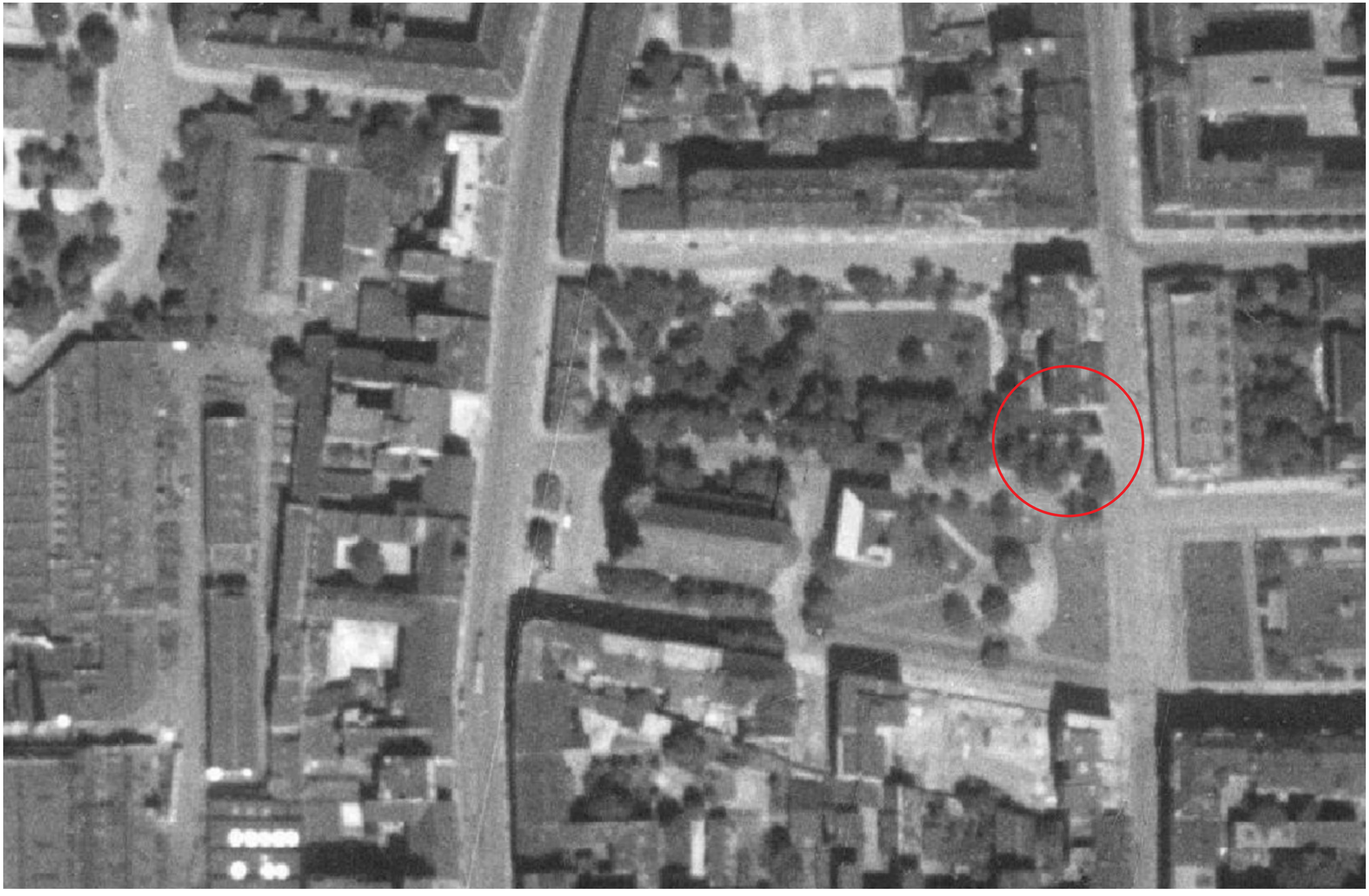
Náměstí 14. října x Preslova, Praha 5, Smíchov

the site: substation 1975

Náměstí 14. října x Preslova, Praha 5, Smíchov

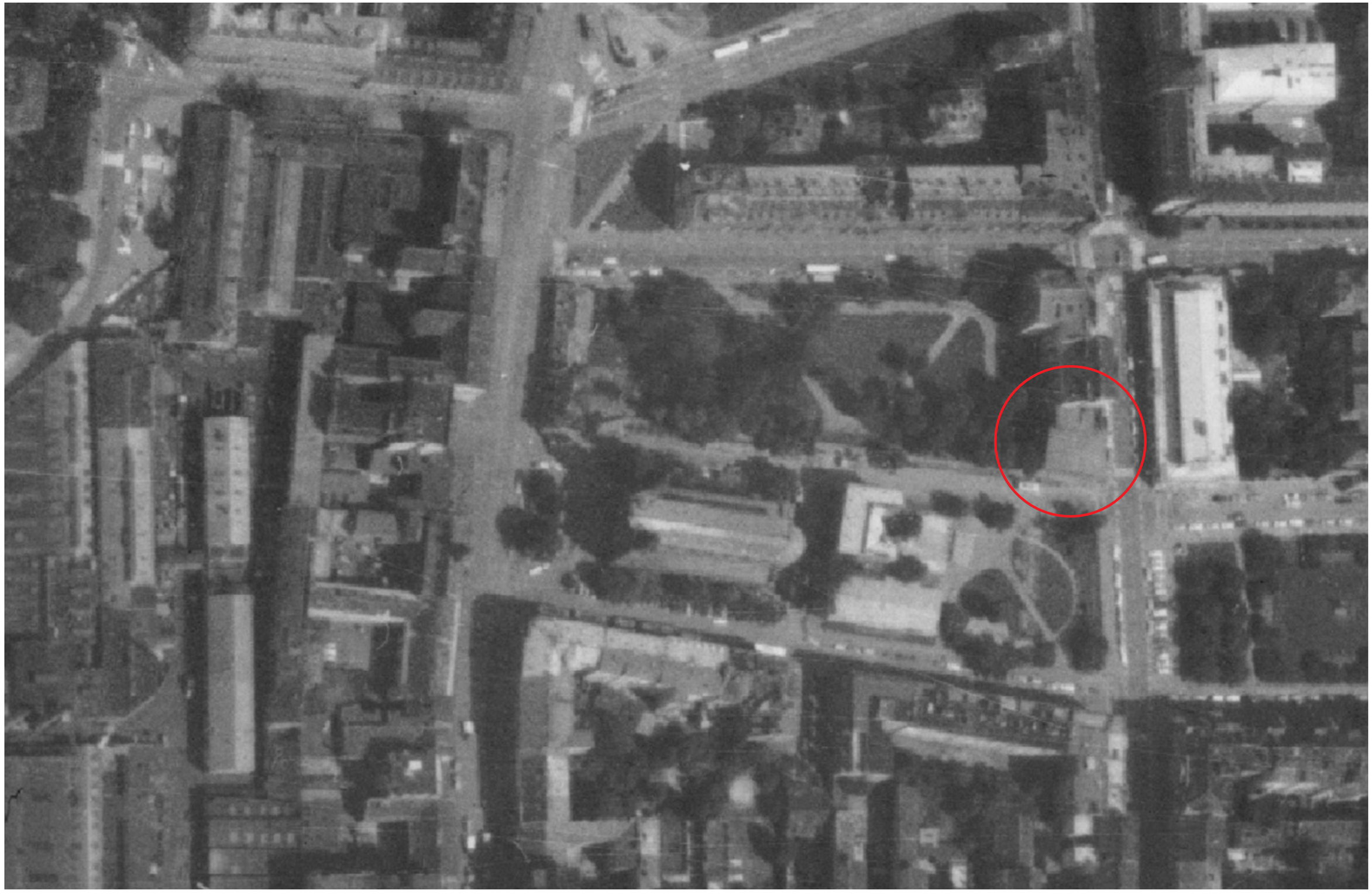
the site: former substation 2016

Náměstí 14. října x Preslova, Praha 5, Smíchov



the site: 1953

Náměstí 14. října x Preslova, Praha 5, Smíchov

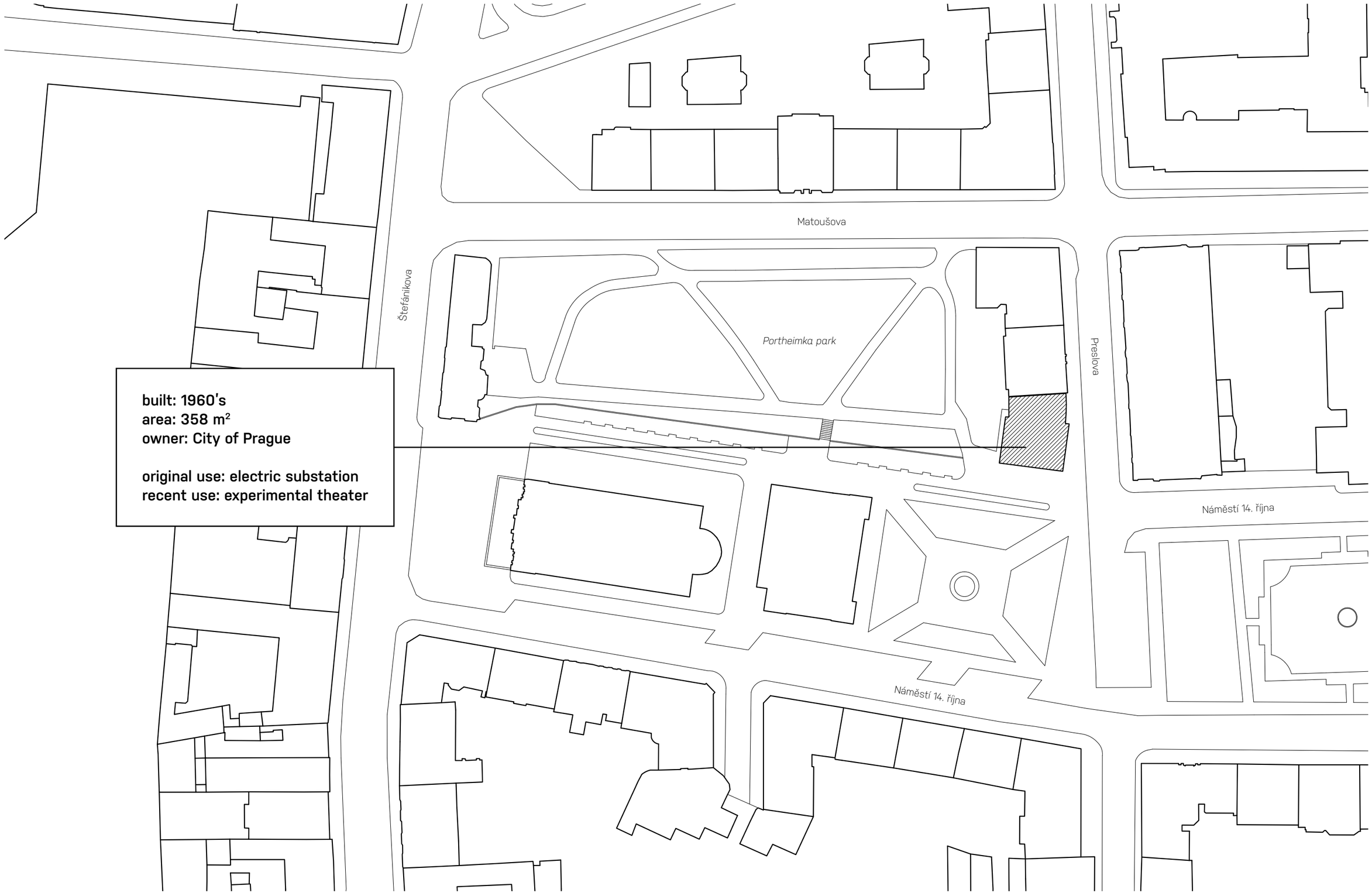


the site: substation 1975

Náměstí 14. října x Preslova, Praha 5, Smíchov

the site: former substation 2016

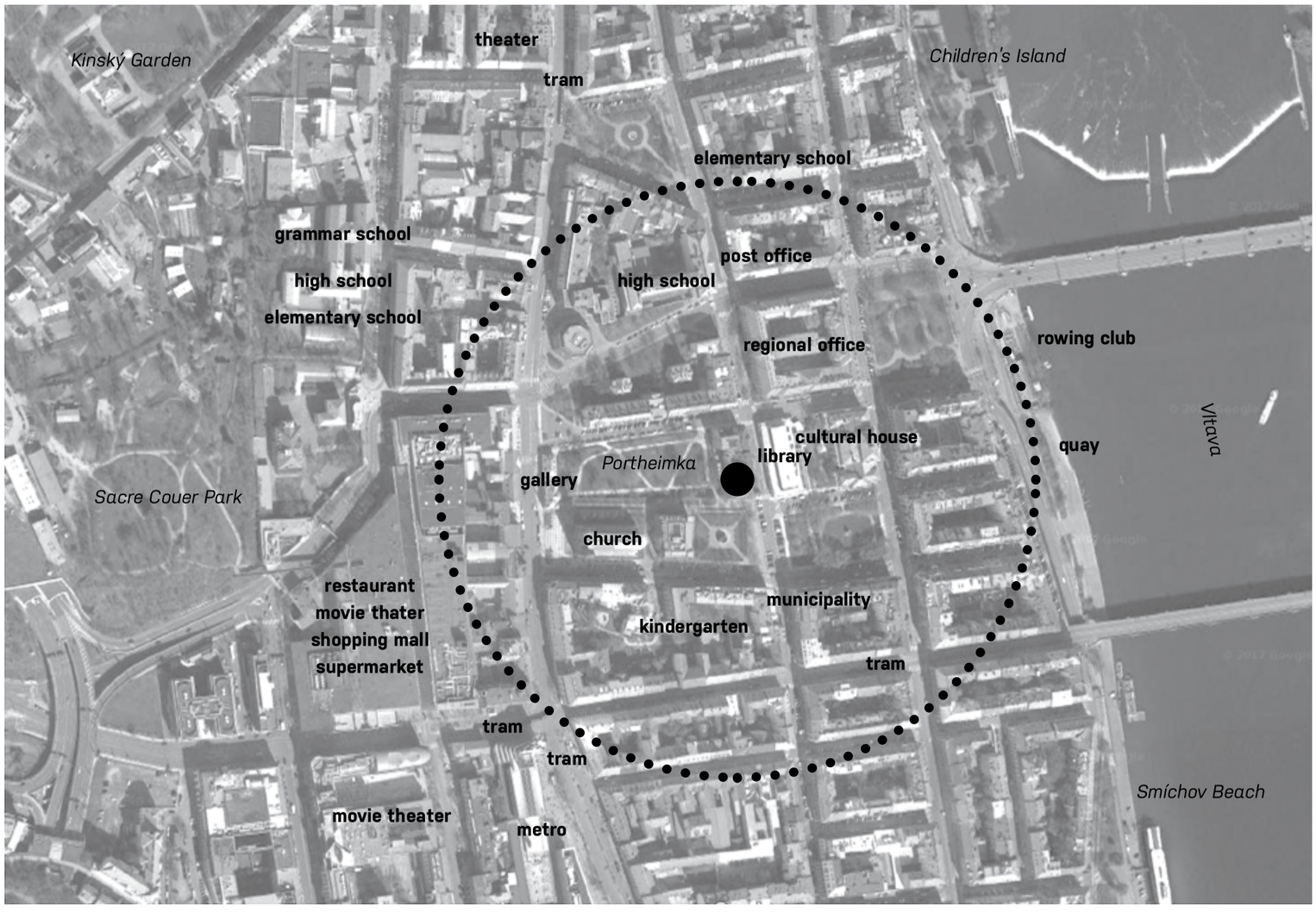
Náměstí 14. října x Preslova, Praha 5, Smíchov

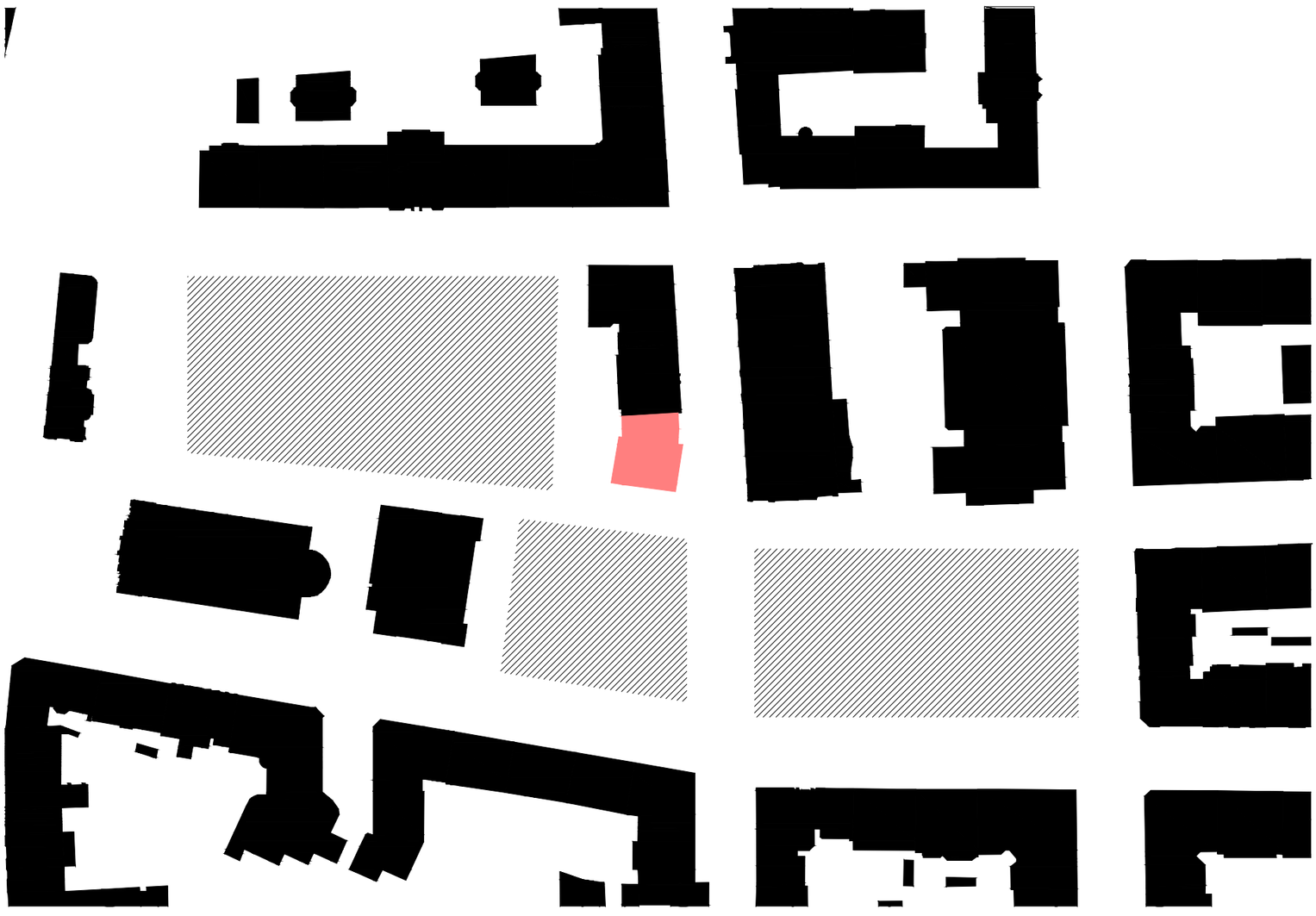


built: 1960's
area: 358 m²
owner: City of Prague

original use: electric substation
recent use: experimental theater

site plan 1 : 1000


Kinský Garden
theater
tram
Children's Island
elementary school
grammar school
high school
elementary school
post office
high school
regional office
rowing club
Vltava
quay
cultural house
library
Portheimka
gallery
Sacre Couer Park
church
restaurant
movie thater
shopping mall
supermarket
municipality
kindergarten
tram
tram
tram
Smíchov Beach
movie theater
metro



main building use

ground floor use

interior

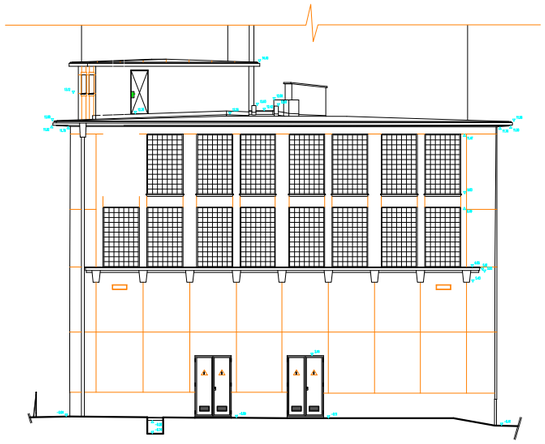
The 358 m^2 site is located on the west bank of the Vltava river in the Smíchov quarter. The existing substation forms a tip of an unfinished urban block. On the western side of the building there where there was supposed to be a block of urban houses is a Portheimka park now enclosed on the western side by a baroque villa Portheimka designed by architect Kilian Ignaz Dientzenhofer in 18th century. The building serves as a gallery today. The neighboring church of Saint Wenceslas was built in neo-renaissance style in 19th century. The square which is a park square is touching the substation on the southern side. The building is then fully exposed and not bothered by any buildings and the roof of the existing substation offers a view over the whole area. On the eastern side of the substation across the street is former market hall, a supermarket and a public library today with a art nouveau style municipality house from the early 20th century behind it. All buildings are facing the parks.

The buildings' use at the street level in the proximity of the substation is mainly public, commercial or municipal use. Some have office use. This speaks of a relatively active street front while the main use of all buildings expect the public and municipal buildings is mainly housing.

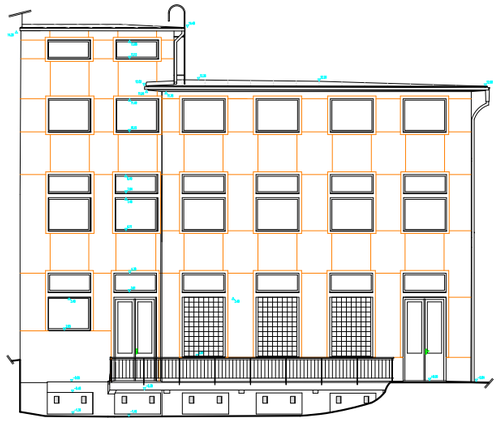
Grocery stores, shops, restaurants, theaters, movie theaters, shopping mall as well as the Vltava river are all accessible within 5 min walk.

The site is very well accessible by public transport (the metro station and tram stops are within 400 m reach) as well as by vehicular transport.

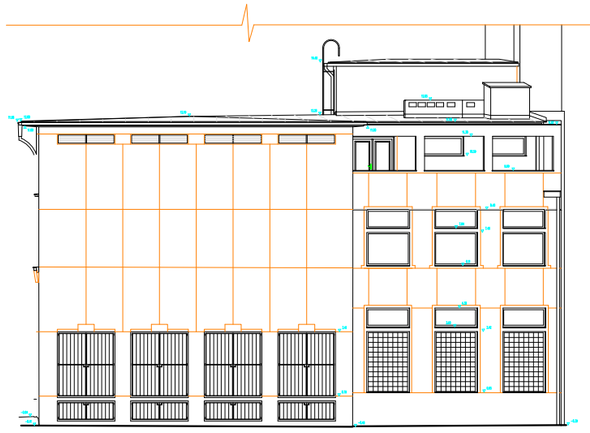
<u>building facts:</u>
original use: electric substation
recent use: theater scenery workshop, theater
present use: empty
load bearing structure: reinforced concrete
plot area: 358 m^2
built area: 340 m^2
number of floors: 3 above ground + basement (100 m2) + elevator engine room on the roof



southern elevation 1 : 250

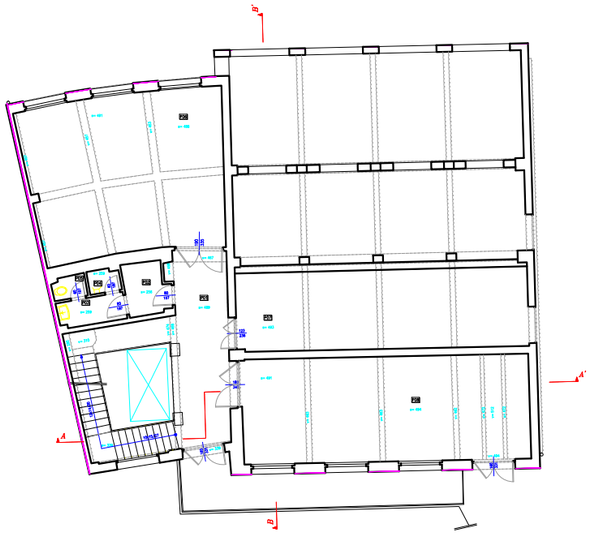


eastern elevation 1 : 250

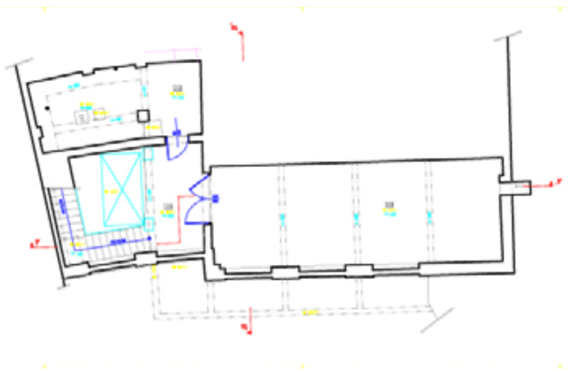


western elevation 1 : 250

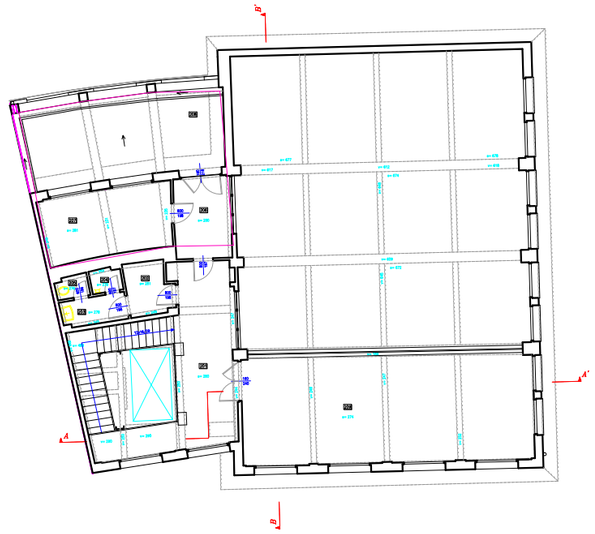
plans: current conditions



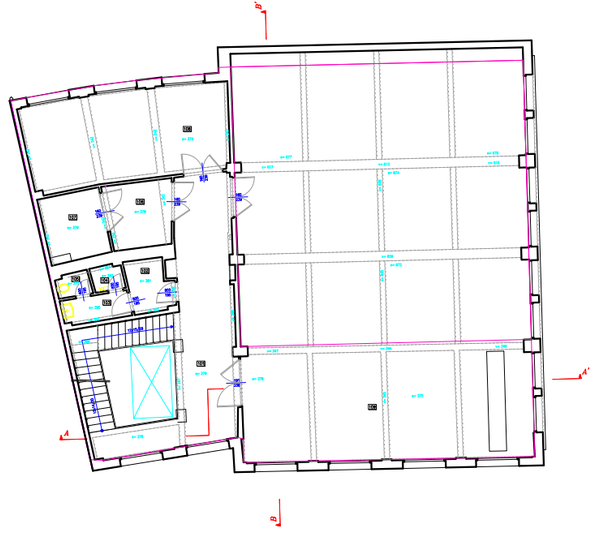
00 ground floor 1 : 250



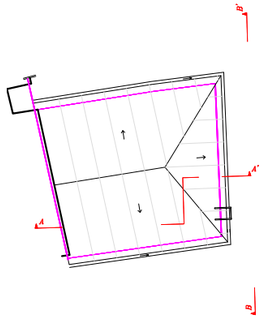
-01 basement 1 : 250



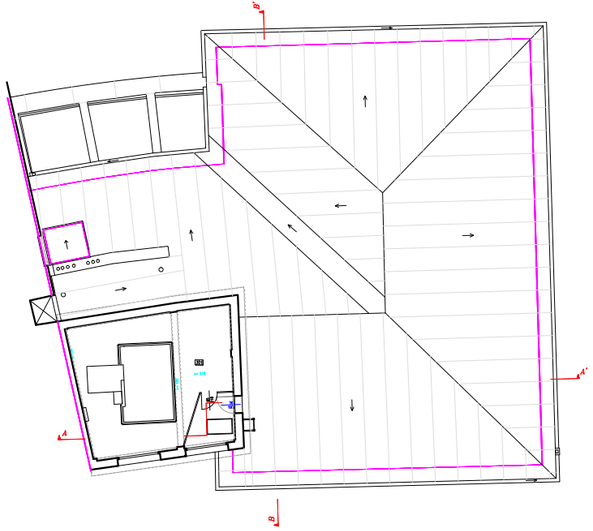
02 floor 1 : 250



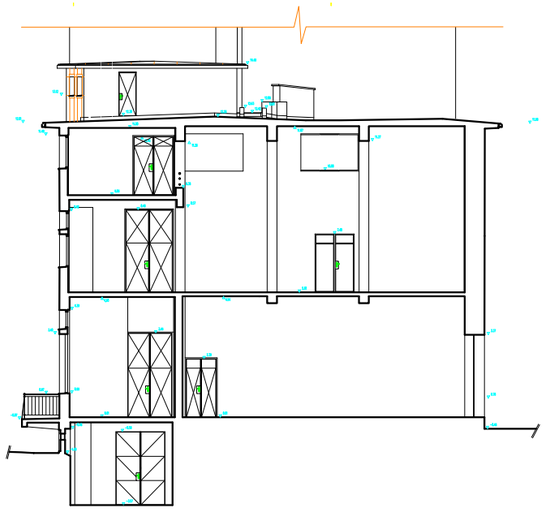
01 floor 1 : 250



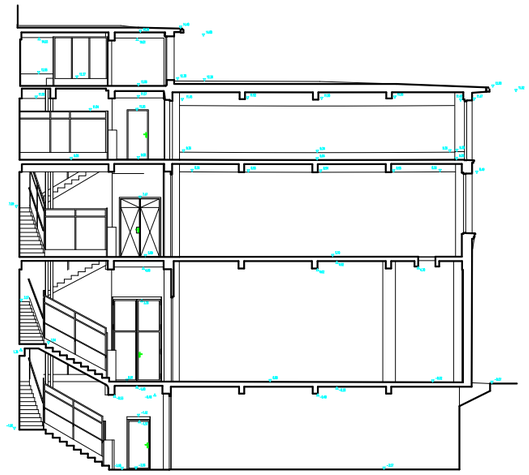
04 roof 1 : 250



03 roof 1 : 250



section A-A 1 : 250



section B-B 1 : 250

◆ inception of the idea / location idea

site & market research	feasibility study

◇ site acquisition

◇ site acquisition

function, program, volume	design

experimental theater group "Farm in the Cave"

International Farm Festival 2007

<u>conflict</u>

. 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)

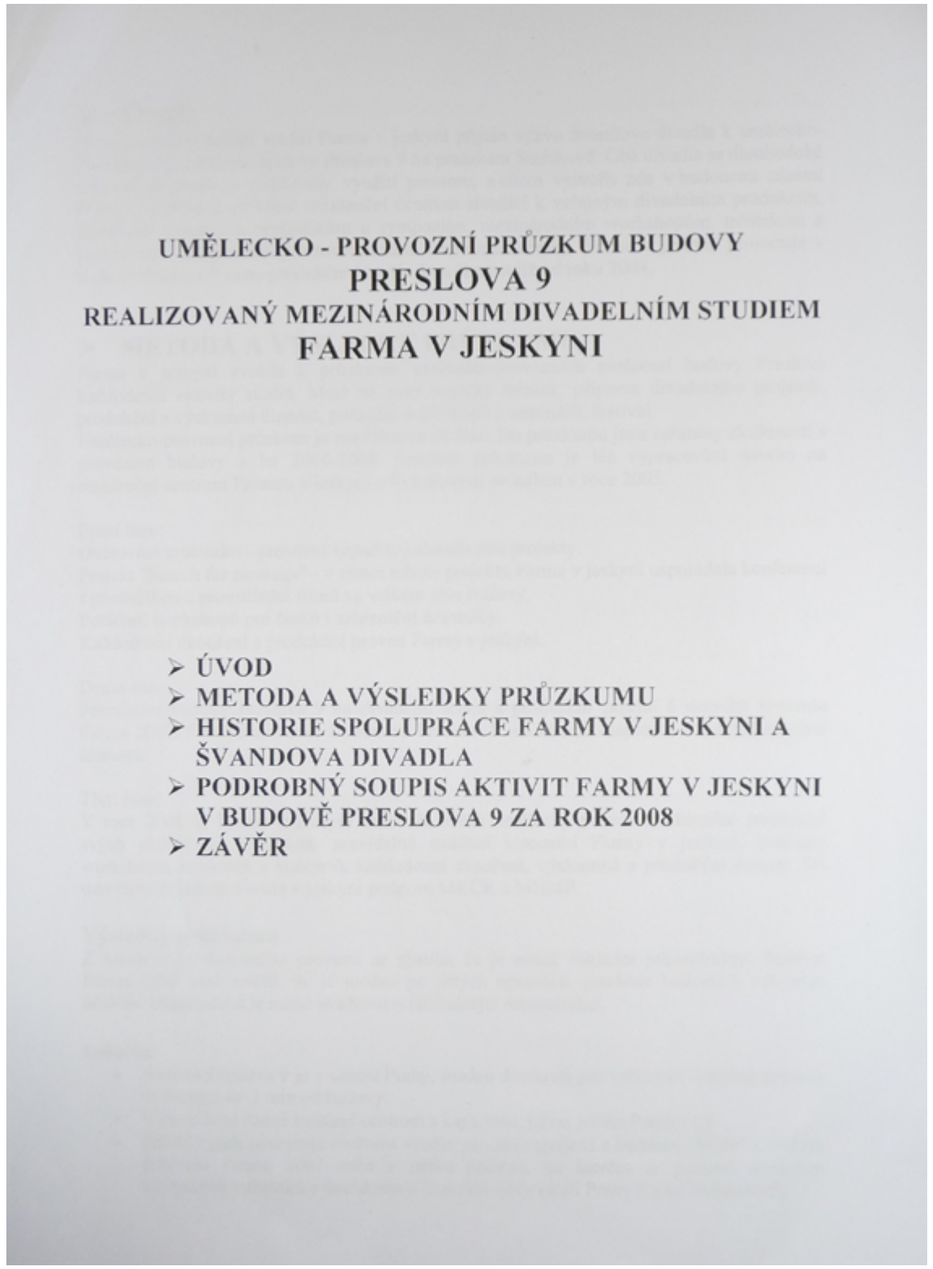
. missing finances

. by preserving the public use and the existing building, the additional development does not allow for a big and super profitable development which a regular developer would desire

. possible higher running costs while in need to combine more functions under "one roof"

<u>opportunity</u>

*. 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 including the cultural non-profitable use*


UMĚLECKO - PROVOZNÍ PRŮZKUM BUDOVY
PRESLOVA 9
REALIZOVANÝ MEZINÁRODNÍM DIVADELNÍM STUDIEM
FARMA V JESKYNI

- ÚVOD
- METODA A VÝSLEDKY PRŮZKUMU
- HISTORIE SPOLUPRÁCE FARMY V JESKYNI A ŠVANDOVA DIVADLA
- PODROBNÝ SOUPIS AKTIVIT FARMY V JESKYNI V BUDOVĚ PRESLOVA 9 ZA ROK 2008
- ZÁVĚR

suitability of theater

suitability

. The suitability of the substation has been studied by the theater group Farm in the cave itself and the building has been qualified as suitable for the needs of the experimental theater. All the aspects were carried out in a feasibility study.

. Further the feasibility study specified the requirements and program of the building which would suit the theater group the best. This study is a ground for definition of the program for my building.

◇ inception of the idea / location idea

site research | feasibility study

◇ site acquisition

function, program, volume | design

◇ site acquisition

Česká geologická služba gd3v
databáze geologicky dokumentovaných objektů

STRATIGRAFICKY VYMEZENÝ VÝPIS GEOLOGICKÉ DOKUMENTACE ARCHIVNÍHO VRTU
V-1 [Hlavní město Praha]

Klíč báze GDO : 187942 Číslo posudku : U006561 Mapy 1:25.000 12-243 M-33-65-D-b
Souřadnice - X : 1042464.50 Y : 742111.20 [zaměřeno]
Nadmořská výška: 190.10 [Jadran-Lišov] Rok ukončení : 1974
Hloubka / délka : 16.50 [vrt svislý] Datum výpisu : 12.5.2015
Účel objektu : inženýrsko-geologický
Realizace : Proj. ústav. doprav. inž. staveb (PÚDIS) Praha
Komentář :

hloubkový interval [m]	stratigrafie základní popis polohy rozšíření popisu polohy komentář k poloze
	Kvartér - holocén
0.00 - 0.40 :	asfalt; geneze antropogenní přítomnost : štěrk
0.40 - 2.00 :	navážka písčitá, štěrkovitá, slídnatá, hlinitá; geneze antropogenní přítomnost : křemenec (ortokvarcit) v ostrohranných úlomcích, max.velikost částic 8 cm
2.00 - 3.00 :	navážka písčitá, psamitická, silně hlinitá; geneze antropogenní přítomnost : opuka v ostrohranných úlomcích, max.velikost částic 7 cm
3.00 - 5.00 :	navážka písčitá, hlinitá; geneze antropogenní přítomnost : opuka v ostrohranných úlomcích, zastoupení horniny - 55 %; příměs: křemenec (ortokvarcit)
	Kvartér
5.00 - 15.70 :	štěrk psefitický, ve valounech, max.velikost částic 1 dm, zastoupení horniny - 70 %, šedý; geneze fluviální přítomnost : písek psamitický, čistý
	Ordovik - beroun
15.70 - 16.50 :	břidlice prachovitá, slídnatá, pevná, v ostrohranných úlomcích, černošedá; geneze sedimentární
	ZJIŠTĚNÉ LITOSTRATIGRAFICKÉ JEDNOTKY
15.70 - 16.50 :	Vinické souvrství

Hladina podzemní vody - hloubka [m] : 5.70 druh hladiny : naražená

subsoil conditions

To start with it is important to know the site conditions concerning the subsoil layers and infrastructure network. Since there is an existing site with functional infrastructure the only unknown remaining in the project are the subsoil layers.

In case of the necessity of any groundwork the first consistent layer upon which it is possible to built is a layer of gravel which starts 5 m deep below the ground.

Based on the way the substation has been set in the ground it has been also estimated that the ground between the basement and this layer of gravel should be also coherent.

The level of groundwater is 5.7 m below the ground level.

CZECH REPUBLIC

TRENDS IN HOUSING MARKETS

According to Census data, in 2011 there were 4 104 635 inhabited dwellings in Czech Republic, out of which 43,7 % were located in family houses and 55 % in multi-dwelling buildings. Out of the total occupied dwellings, 55.9% were owner occupied, 22.4% occupied by tenants, 9.4% cooperative ownership, 3.4% occupied rent-free.
The overall downturn in housing construction has continued over the last six years with the biggest falls observed in the category of family houses. 2013 saw the smallest amount of new dwellings constructed since 1998, a 7.3% reduction from the previous year.
According to the estimation of the Ministry of Regional Development, there is no general housing deficit in the Czech Republic. However, it can be very roughly estimated that in 2013 there were 100 000 – 120 000 households in housing need, out of which: 50 000 – 55 000 were living in rented dwellings with the costs of living exceeding 65 % of their income, and 30 000 were homeless people, among others.
In 2012 the share of household income spent on housing was: 25,1 % in rented dwellings, 17,9 % in cooperative dwellings, 17,3 % in personal ownership dwellings and 14,7 % in own house.

POLICY DEVELOPMENTS

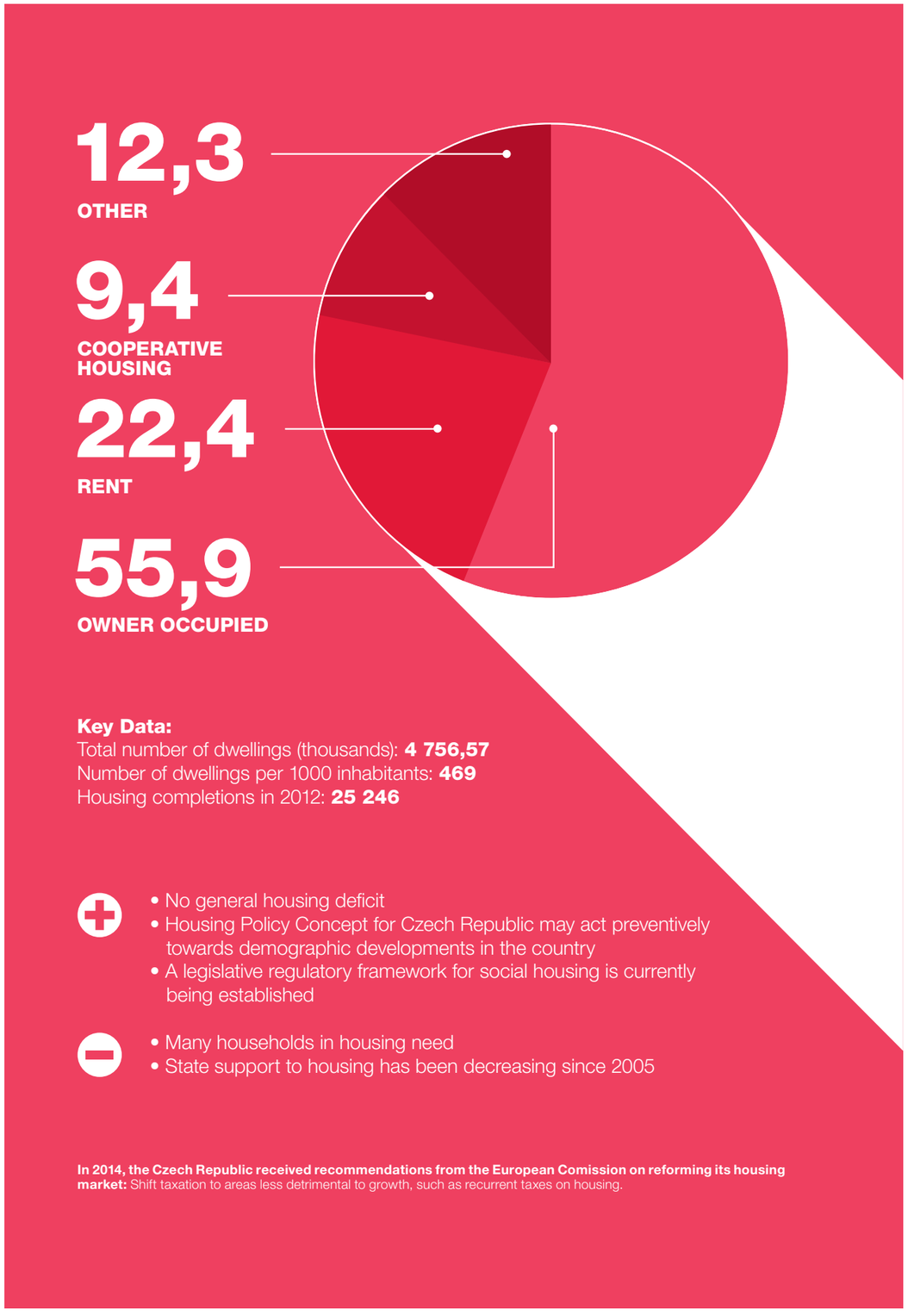
State support for housing has been decreasing since 2005 with the share of 0,13 % of GDP in 2013. According to HPI, the prices of real estate in 2013 dropped by 1,5 % compared to 2010.
The "Housing Policy Concept for the Czech Republic till 2020" was approved by the government in 2011. This new housing concept continues to rely on the State Housing Development Fund as a very important tool of the state housing policy. The Concept reacts to projections of demographic development indicating that the number of lone senior citizens will be growing. Senior citizens sometimes spend more than 60 % of their income on housing. Current priorities for housing policy in Czech Republic are:
- A better-balanced rate of support of own housing and rental housing and support for groups of people threatened by social exclusion
- Extending the offer of dwellings corresponding to the needs of the handicapped
- Reducing energy demands of housing
- State aid for victims of natural disasters in terms of housing
- Improved use of EU funds in 2014-2020
- Earnings from the sale of emission credits used to support housing
- Reducing the investment debt through programs supporting re-development and modernization of multi-dwelling buildings
- Improving the quality of external environment of residential areas by starting up programs to support the regeneration of residential areas, including the support of crime prevention.

Since 1998, a total of 20 000 dwellings were built with the help of state subsidies for various groups of vulnerable or disadvantaged people. Until 2010 there had been funds intended exclusively for municipalities but since 2011 other bodies can apply for state funding for housing construction, for example legal entities, businesses, non-profit organizations, etc.
There is a new social housing legislative framework for the Czech Republic that has recently been approved. This regulation defines and divides social housing into three tiers. The first tier or: "housing in crisis/asylum housing" will be a new type of social service for people who are in acute need of housing and they will be able to use this service for a maximum duration of six months. The second tier or "social flat" will be provided by the municipality. This dwelling will represent a lower standard housing and tenants will be under the supervision of a social worker. The third tier or "affordable flat" will be provided by the municipality and will represent a standard quality dwelling. The municipality will sign a contract with tenants for two years. The living standard of tenants will be reviewed annually by the municipality and in case that it rises above set limits, the rent could also be raised by up to 15 %. This project will be co-financed by the EU Structural Funds (ESIF).

References
(1) Data from Ministry of Regional Development, based on 2011 Census

In 2013 there were 100 000 - 120 000 households in housing need

housing market in CZ



Key Data:
Total number of dwellings (thousands): **4 756,57**
Number of dwellings per 1000 inhabitants: **469**
Housing completions in 2012: **25 246**

- No general housing deficit
- Housing Policy Concept for Czech Republic may act preventively towards demographic developments in the country
- A legislative regulatory framework for social housing is currently being established

- Many households in housing need
- State support to housing has been decreasing since 2005

In 2014, the Czech Republic received recommendations from the European Comission on reforming its housing market: Shift taxation to areas less detrimental to growth, such as recurrent taxes on housing.

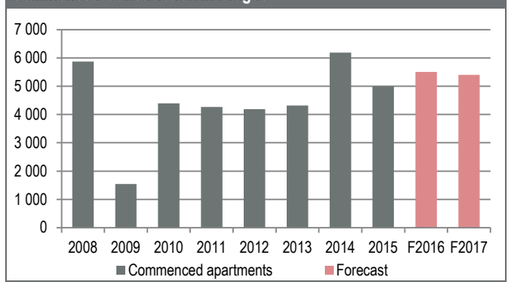
Prague Residential Pulse

H2 2015

Supply

In H2 2015, a total of ca. 2,300 apartments in 34 projects were commenced in Prague. For the entire year (2015), a total of ca. 5,000 apartments were commenced in Prague, which, compared to 2014's results, represents a decrease of 19%. Despite the fact that 2015 results are behind 2014 levels, they are still above the 5 year average which is ca. 4,800 apartments. For 2016, ca. 5,500 apartments are planned to be commenced. However, only 1,700 of them are currently in the pre-sales phase.

Commenced Construction in Prague



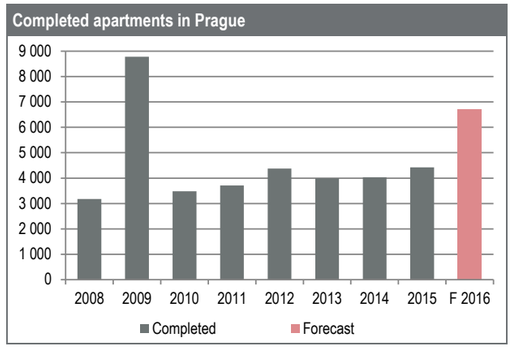
Source: *JLL, February 2016*

In H2 2015, a total of ca. 3,000 apartments were completed in Prague, which represents a 10.5% increase compared to the same period of last year. In addition, during H2 2015 a total of 56 new projects were delivered, as opposed to the 44 completed in H2 2014. For the entire 2015, a total of ca. 4,400 apartments were completed in Prague which is an almost 10% growth on 2014 levels.

For 2016, we expect a higher level of new completions to be delivered to the market. Approximately 6,700 apartments are scheduled for completion, which will be the highest figure since 2009. These higher levels are naturally arising from the high levels of commencements going back to 2014.

The majority of new projects in 2015 were commenced in Prague 10, Prague 9 and Prague 4 which form about 66% of all new deliveries. However, new projects were delivered to all of the 10 main Prague districts during 2015.

Completed apartments in Prague

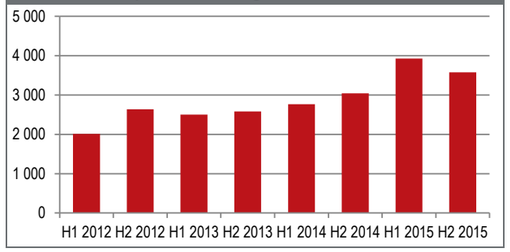


Source: *JLL, February 2016*

Demand

During the second half of 2015, a total of ca. 3,600 units were sold in new apartment buildings and villa houses. Compared to H1 2015, the number of sold apartments slightly decreased. Year-on-year, H2 2015 results are 18% higher than those from H2 2014. For the entire year (2015), the total number of apartments sold reached 7,500 which is a 29% improvement on 2014 levels. Unsurprisingly, the largest volume of sold apartments was recorded in Prague 10, Prague 9 and Prague 5, which altogether accounted for almost 4,700 apartments.

Number of Sold Apartments in Prague



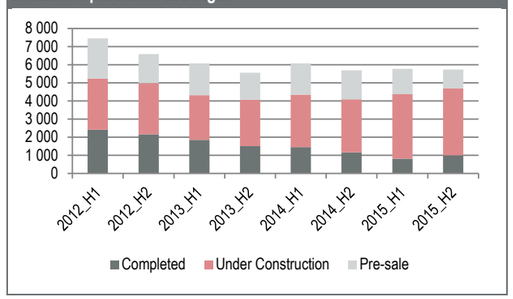
Source: JLL, February 2016

Until H1 2015, the majority of apartments were sold in affordable projects with the average sale price, excluding VAT, of below CZK 45,000 per sqm. During H2 2015, we have registered a change in the structure of sold apartments with affordable apartments (below 45,000 CZK) forming only 32% of the total. For the full year (2015), this share reached 45% as opposed to 56% in 2014.

Available Apartments

At the end of 2015, there were ca. 5,700 vacant units on the Prague market in completed projects, projects under construction and projects in a pre-sale phase. When compared to H1 2015 results, the number of available apartments on the market decreased by approximately 9%.

Available apartments in Prague

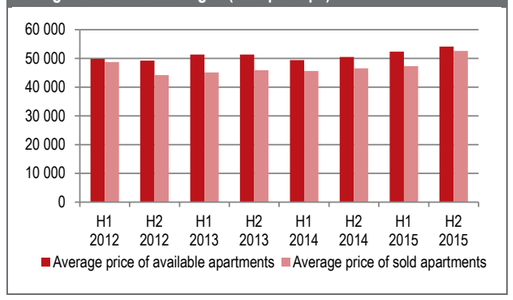


Source: *JLL, February 2016*

Price levels

The price levels of apartments in Prague have been adjusting over the past few quarters and the minor ups and downs are caused by the constantly changing structure of available supply, strong price competition among major developers and due to potential taxation changes on the market.

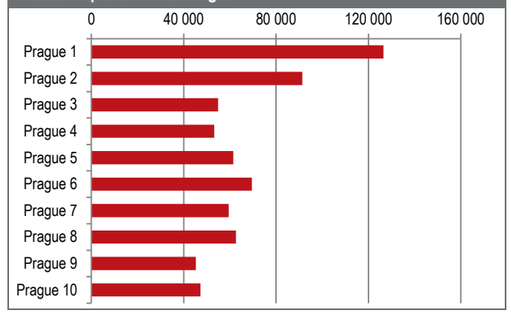
Asking Price Levels in Prague (CZK per sqm)



Source: *JLL, February 2016*

Based on JLL's statistics, that following average prices for purely new development projects, the average sales price for sold apartments during H2 2015 reached 52,500 CZK per sqm (of inner area, excluding VAT). When compared to H1 2015, the price increased by 11%. The average price of apartments which are currently available on the market reached 54,100 CZK per sqm, increasing by 3.5% since H1 2015. Year-on-year, the average sales price for sold apartments increased by 13%. The average price for available apartments which are now being offered on the market is approximately 7% higher than it was a year ago.

Available apartments in Prague



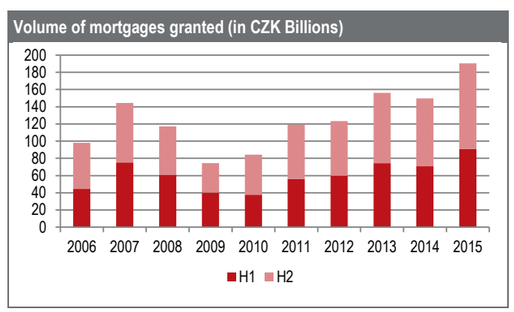
Source: *JLL, February 2016*

Loan market

According to the Ministry of Regional Development during 2015, the total volume of newly granted mortgages (to households) reached CZK 184.3 billion, increasing year-on-year by nearly 29%. As expected, the full year results set a new record by surpassing the recently high 2013 volumes (CZK 149.3 billion).

Moreover, in the last quarter of 2015, the average granted mortgage value reached CZK 1.87 million, increasing from the CZK 1.669 million in 2014. In addition, the current level is even higher than the previous record registered in the pre-crisis period (CZK1.778 million in 2008). It demonstrates households' willingness to take on bigger loans, but on the other hand, compared to 2008, general conditions to obtain a mortgage are more favourable. Interest rates are significantly lower (2.1 % in 2015 compared to 5.6% in 2008) and conditions to obtain 100% LTV mortgages are less strict.

Volume of mortgages granted (in CZK Billions)



Source: *JLL, February 2016*

housing market in Prague

http://archiv.ihned.cz/c1-65108820-v-praze-se-stavi-mene-bytu-nez-kolik-se-jich-proda

20/01/2016

Developeři jich ale loni prodali sedm tisíc – zhruba dvakrát tolik, než kolik bytů začali v témže roce stavět.
stavební úřady v Praze vydaly meziročně o něco méně stavebních povolení pro bytové domy než před rokem.
"Některým developerům svým způsobem došel dech, neboť nestíhají novými projekty uspokojovat poptávku," manažer Deloittu Petr Hána
Letos se podle odhadu developerů v Praze prodá 7200–8000 nových bytů.
"Rychleji se vyprodávají menší a levnější byty a na trhu zůstávají ty dražší a větší," vysvětluje Milan Roček, Hyposervis.
Firma si však podle něj mohla dovolit ceny zvednout i díky vysoké poptávce. Dušan Kunovský, šéf Central Group
Praha 7 patří mezi lokality, kde se staví málo. V naprosté většině tam developerské projekty vznikají rekonstrukcí stávajících domů.

http://archiv.ihned.cz/c1-65246620-v-cesku-dochazeji-byty-rekordni-poptavku-nebrzdi-ani-rychly-rust-cen-a-developeri-se-boji-ze-nebudou-mit-co-prodavat

13/04/2016

Rekordní zájem má tři hlavní důvody: extrémně levné hypotéky, nízké úroky na vkladech v bankách a růst ekonomiky, který přináší zvyšování platů a snižuje obavy ze ztrát zaměstnání.
Ceny nemovitostí rychle rostou, ale ani to lidi neodrazuje. Podle developerů zájem o byty ještě nikdy nebyl tak velký jako nyní.
Nových bytů je méně, protože ubývá developerských projektů.
Nabídkové ceny bytů se na konci minulého roku dostaly už na úroveň před krizí a letos rostou ještě rychleji.
Loni prodaly developerské firmy v Praze zhruba šest a půl tisíce nových bytů, za stejnou dobu ale zahájily výstavbu jen necelých čtyř tisíc.
Stavební úřady také loni opět vydaly menší množství stavebních povolení.
"Tento trend – růst zájmu o nemovitosti – bude pokračovat, dokud banky budou držet nízké sazby hypoték,"

http://byznys.ihned.cz/reality/c1-65428330-na-dum-o-35-bytech-mame-800-zajemcu-rika-sef-firmy-trigema-marcel-soural

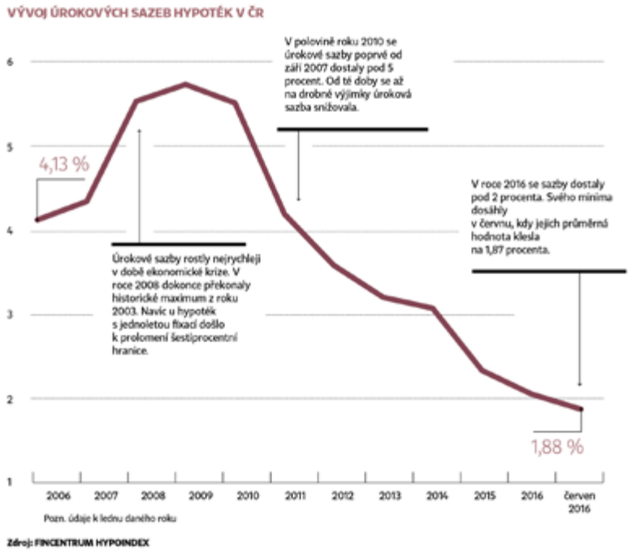
07/09/2016

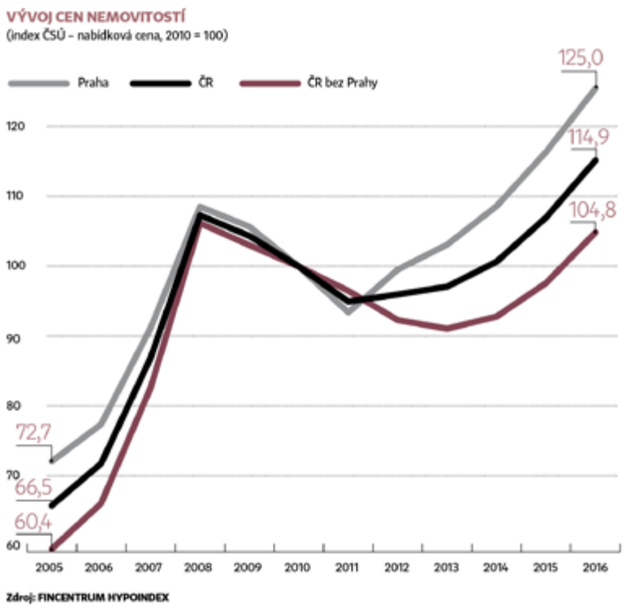
Počet nových 4700 bytů určených k prodeji se ke konci června meziročně propadl o třetinu. Ve druhém čtvrtletí se jich však oproti loňsku prodalo o čtvrtinu více.
Rovnice je to jednoduchá: klesá-li nabídka, roste cena.
Podíl viny na nedostatku nových bytů na trhu nesou podle developerů úřady, které zdržují povolování staveb.
Trigema dosud stavěla byty střední až středně vyšší kategorie, nyní se pouští do prémiového segmentu. To znamená, že s dispozicemi bytů a vybavením interiérů firmě u vybraných domů pomohou architekti.

http://byznys.ihned.cz/reality/c1-65444540-koupit-byt-uz-neni-tak-vyhodne-ceny-vzrostly#

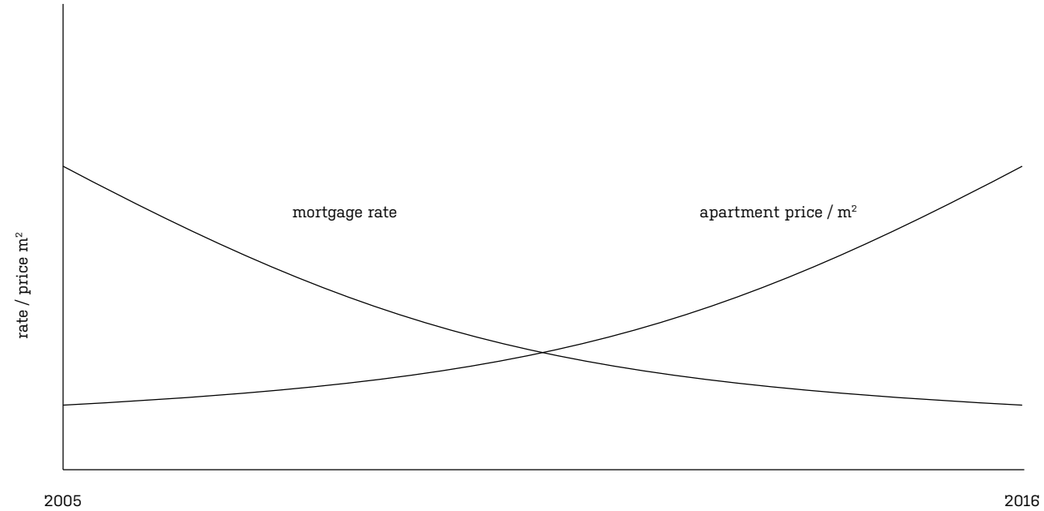
13/4/2016

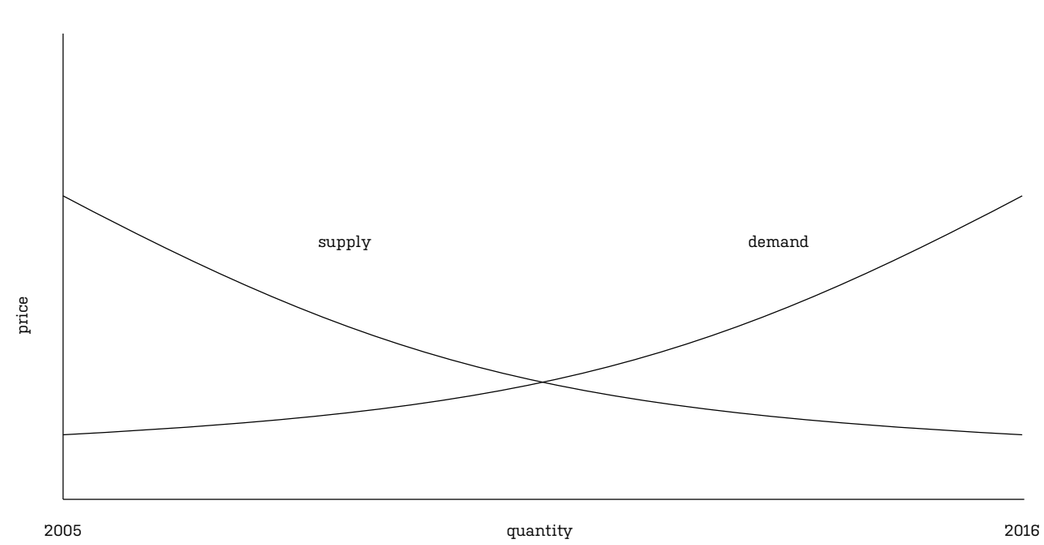
Úrokové sazby jsou rekordně nízko a zásoba nových bytů se navíc v žádaných lokalitách tenčí.
"Jsem přesvědčen o tom, že developeři tvoří paniku záměrně. Jednak aby podpořili poptávku po svých bytech ve společnosti, a také proto, aby vytvořili tlak na radnice měst a lépe a rychleji se jim dařilo získávat povolení k nové stavbě, která je často pravým opakem přirozené a kvalitní urbanizace," říká ředitel Fincentrum Reality Martin Fojtík.
Prodeji bytů nahrávají již zmíněné levné hypotéky.
V červenci průměrný Čech dosáhl podle Fincentrum Hypoindexu Hypoteční banky na 1,88procentní úrokovou sazbu.
Spolu s ní šly však nahoru i ceny nemovitostí.
"Ceny rostou v závislosti na poptávce a ta je díky levným hypotékám, relativně prosperující ekonomice Česka a dobré životní úrovni obyvatel opravdu vysoká. Hodnota bytů na kvalitních místech za poslední rok raketově vzrostla a spekulativní kupci na nich mohli vydělat statisíce korun.
"V dnešní době se vyplatí investovat do nemovitosti za okolností, že se nachází v dobré lokalitě,"
Nedostatek nových bytů však v Praze má i negativní efekt. Tím je předraženost některých projektů. Týká se to především nově postavených bytových domů v okrajových částech metropole.
"Vyšší cena není daná tím, že by projekty na okraji Prahy byly natolik kvalitní. Problém je skutečně v tom, že je nových bytů v Praze málo. Poptávající proto kupují byty v horších lokalitách dráže. Vzhledem k pomalé výstavbě se bude držet cena těchto projektů vysoko i do budoucna,"
Nutno však dodat, že nové byty tvoří jen část trhu. Z dvaceti tisíc bytů, které se vloni v Praze prodaly, tvořily ty v novostavbách zhruba šest tisíc. Zbylých čtrnáct tisíc se nacházelo ve starší zástavbě.





http://byznys.ihned.cz/reality/c1-65444540-koupit-byt-uz-neni-tak-vyhodne-ceny-vzrostly#





2015_H2_Prague_Residential_Market_PULSE_EN_FINAL

Na Bělidle street
renovated residential complex in the neighborhood (2016)

2. floor
3 rooms + kitchen, 92 m²
8 355 000,- Kč / 310 000,- €
91 000,- Kč/m² / 3 370,- €/m²

Zborovská street
renovated residential complex in the neighborhood (2016)

7. floor
4 rooms + kitchen, 76 m²
7 695 000,- Kč / 285 000,- €
101 000,- Kč/m² / 3 740,- €/m²

Malátova street
renovated residential complex in the neighborhood (2016)

2. floor
2 rooms + kitchen, 81 m² (spacious apartment)
9 750 000,- Kč / 361 000,- €
120 000,- Kč/m² / 4 450,- €/m²

housing market in the location

The real estate market index numbers reflect the one very typical aspect of the current Czech economy. The Central National Bank as a tool to support the competitiveness of the Czech Republic after the crisis on the global, especially European, market hold the Czech currency artificially at a low level compare to the Euro. This is causing excess of money held by the banks and their need to circulate the money on the market. The mortgages are therefore at their historical minimum at this moment. People see it as a potential and are keen on buying real estate properties. The real estate market is though unable to react to such a high demand, there is not enough buildings built, and prices of the real estate properties are therefore increasing. The time for a dwelling development seems to be right. Though it is important to mention that it is difficult to predict the development of the real estate market at the time of the completion of the building. Even though the prices are also at high level, it is safer to count with lower sale prices per square meter than is the market's maximum at this moment. The selling price for a new property has been established to 80 000,- CZK/m² [3 000,- €/m²].

construction costs in the Czech Republic
27 000,- Kč/m^2 / cca 1 000,- €/m^2 (dependent on the standards)
5 500,- Kč/m^3 / cca 185,- €/ m^3 (dependent on the standards)

renovation costs in the Czech Republic
15 000,- Kč/m^2 / cca 550,- €/m^2 (dependent on the standards)
3000,- Kč/m^3 / cca 110,- €/ m^3 (dependent on the standards)

construction costs in the Czech Republic

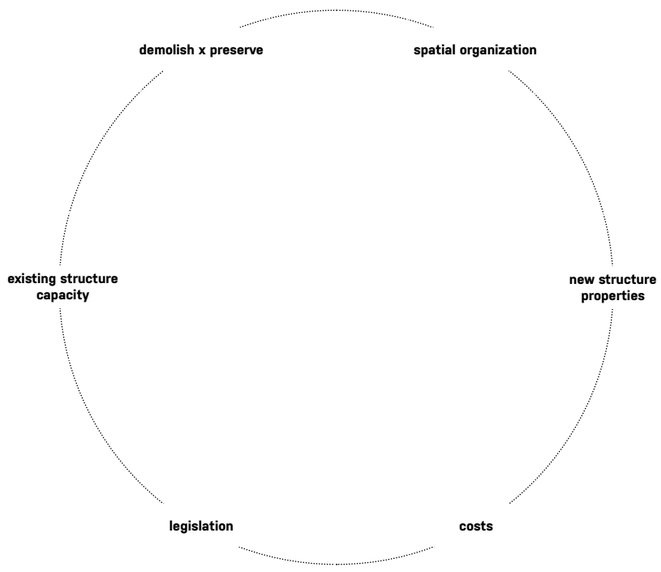
◇ inception of the idea / location idea

site research & selection	feasibility study

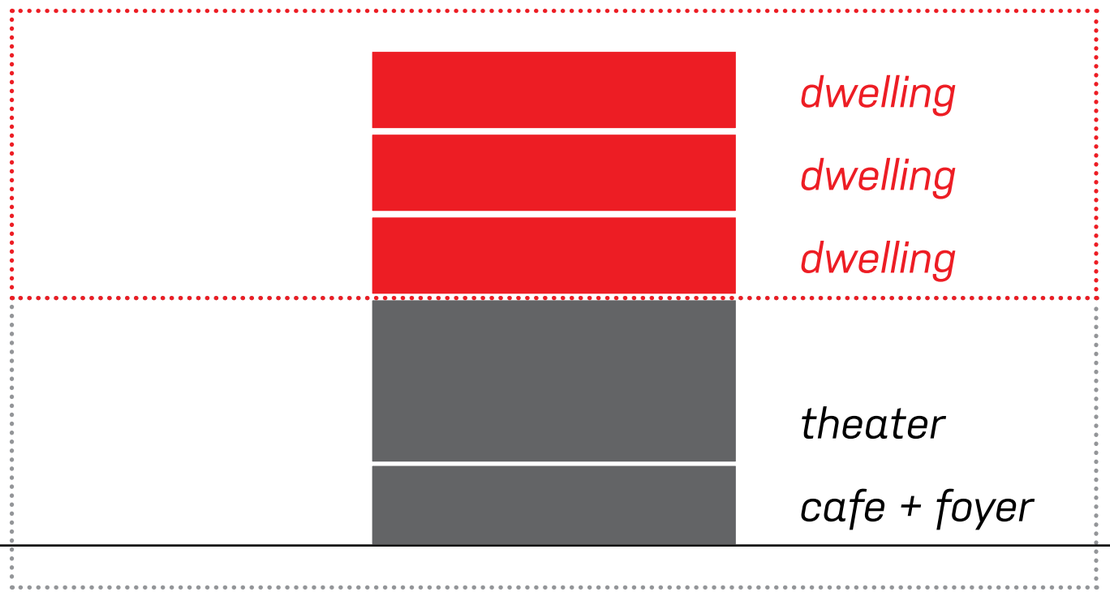
◇ site acquisition

function, program, volume	design

◇ site acquisition



The feasibility study , as experienced, is not a linear process, it is a parallel process of different actions where one influences the other and when the architect, in this case the architect-developer, is present in the project since the initial project phase, the result of this phase can be more complex and the outcome of such a process can already be a elaborate preliminary design. The studied aspects which my project required in the feasibility study phase are described in the next chapter.



municipality provides the site for development

+

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

The initial function idea goes together with its economic feasibility. Without an economically feasible functions the project itself would not be feasible because it would not create a profit which is a necessary component.

In the scenario when the municipality provides the architect-developer the site (the building) for redevelopment under earlier agreed conditions the project is feasible. Three floors of dwelling of 240 m² NIA [UFA] and theater's participations on the maintenance and running costs can provide a 19% profit. Even though it is just 1 % below the banks in the Czech Republic require I believe in the future of the projects through further negotiations.

The spreadsheet with the calculations can be seen on the next page.

initial function idea and feasibility check

ARCHITECT-DEVELOPER

BILANČNÍ TABULKA
EXPLORE LAB 22, TU DELFT

NÁZEV PROJEKTU: Preslova - a-d A **SKUPINA:** dwell **DATUM:** 10.11.2016

SOUHRNNÁ KARTA

Poznámky k vyplňování tabulky:
Červeně označená pole jsou určená k vepsání modelovaných hodnot. Některé z těchto hodnot jsou předvyplněné, budou ovšem předmětem individuálních konzultací.
Výměry podlaží jednotlivých budov vepisujte do příslušných listů této tabulky.
Zkratky:
HPP – hrubá podlažní plocha, půdorysná plocha podlaží včetně plochy zdí
ČPP – čistá podlažní plocha
p.a. – (per annum) = ročně

OBJEKT	STAVEBNÍ NÁKLADY										
	dwelling		garage		public function		co-working/open space		commercial		
		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP	
		25 000		15 000		20 000		25 000		22 000	
	plocha m² HPP	náklady Kč	plocha m² HPP	náklady Kč	plocha m² HPP	náklady Kč	plocha m² HPP	náklady Kč	plocha m² HPP	náklady Kč	stavební náklady celkem Kč
A	300	7 500 000	0	0	0	0	0	0	0	0	7 500 000
B	300	7 500 000	0	0	0	0	0	0	0	0	7 500 000
C	300	7 500 000	0	0	0	0	0	0	0	0	7 500 000
D	0	0	0	0	300	6 000 000	0	0	0	0	6 000 000
E	0	0	0	0	0	0	0	0	300	6 600 000	6 600 000
F	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	0	0	0	0
K	0	0	0	0	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0	0	0	0	0
M	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0	0	0
Q	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0	0
U	0	0	0	0	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0
X	0	0	0	0	0	0	0	0	0	0	0
Y	0	0	0	0	0	0	0	0	0	0	0
Z	0	0	0	0	0	0	0	0	0	0	0
celkem	900	22 500 000	0	0	300	6 000 000	0	0	300	6 600 000	35 100 000

1.

OBJEKT	PRODEJ		
	dwelling		
	koeficient ČPP/HPP		m2
	0,8		30
	m² užitné plochy	výnosy z prodeje Kč/m² ČPP	Kč
A	240	80 000	19 200 000
B	240	80 000	19 200 000
C	240	80 000	19 200 000
D	0	80 000	0
E	0	80 000	0
F	0	80 000	0
G	0	80 000	0
H	0	80 000	0
I	0	80 000	0
J	0	80 000	0
K	0	80 000	0
L	0	80 000	0
M	0	80 000	0
N	0	80 000	0
O	0	80 000	0
P	0	80 000	0
Q	0	80 000	0
R	0	80 000	0
S	0	80 000	0
T	0	80 000	0
U	0	80 000	0
V	0	80 000	0
W	0	80 000	0
X	0	80 000	0
Y	0	80 000	0
Z	0	80 000	0
celkem	720		57 600 000

3.

OBJEKT	VÝNOSY														
	PRONÁJEM			PRONÁJEM											
	garage			public function			co-working/open space			commercial					
	plocha stání m2 HPP/stání			koeficient ČPP/HPP			koeficient ČPP/HPP			koeficient ČPP/HPP				yield %	
	0,95	30		0,95			0,8			0,12	00%			12,00%	
	počet stání	výnosy z pronájmu Kč/stání p.a.	Kč	m² užitné plochy	výnosy z pronájmu Kč/m² p.a.	Kč	m² užitné plochy	výnosy z pronájmu Kč/m² p.a.	Kč	m² užitné plochy	výnosy z pronájmu Kč/m² p.a.	Kč	výnosy z pronájmu Kč p.a.	výnosy z pronájmu celkem Kč	výnosy celkem Kč
A	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	19 200 000
B	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	19 200 000
C	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	19 200 000
D	0	30 000	0	285	0	0	0	4 000	0	0	6 000	0	0	0	0
E	0	30 000	0	0	0	0	0	4 000	0	270	6 000	1 620 000	1 620 000	13 500 000	13 500 000
F	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
G	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
H	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
I	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
J	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
K	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
L	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
M	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
N	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
O	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
P	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
Q	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
R	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
S	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
T	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
U	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
V	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
W	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
X	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
Y	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
Z	0	30 000	0	0	0	0	0	4 000	0	0	6 000	0	0	0	0
	0		0	285		0	0		0	270		1 620 000	1 620 000	13 500 000	71 100 000

4.

NÁKLADY – VENKOVNÍ ÚPRAVY											
	komunikace		chodníky		parkovací stání (návštěvníci)		parková zeleň		ostatní zeleň		náklady venkovních úprav
		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP		jednotkové náklady Kč/m² HPP	
		3 500		3 500		1 800		0		200	
	plocha m²	náklady Kč	plocha m²	náklady Kč	plocha m²	náklady Kč	plocha m²	náklady Kč	plocha m²	náklady Kč	Kč
	0	0	500	1 750 000	0	0	0	0	500	100 000	1 850 000

SOFT COST									
	právní služby		projektové práce	prodej+marketing		project management	developer		soft cost celkem
		% z nákladů	% z nákladů	% z prodejní ceny	% z ročního nájmu	% z nákladů		% z nákladů	
		0,50%	4,50%	3,00%	15,00%	2,00%		20,00%	
		náklady Kč	náklady Kč	náklady Kč	náklady Kč	náklady Kč		náklady Kč	
		184 750	1 662 750	1 728 000	243 000	739 000		7 390 000	11 947 500
					1 971 000				

CENA POZEMKU				
	pořizovací cena pozemku		kontrola:	
		náklady (z cenové mapy) Kč/m² pozemku	pořizovací nákladyu vztaženy k výši celkových nákladů %	
		13 500	125,46%	
	plocha m²	náklady Kč		
	358	4 833 000		4 833 000

FINANČNÍ NÁKLADY					
	ekvita (vlastní zdroje)		cizí peníze		finanční náklady
		ekvita % z nákladů		cena peněz %	
		25,00%		2,00%	
		ekvita Kč	cizí peníze Kč	cena peněz Kč	
		13 432 625	40 297 875	3 852 125	3 852 125

NÁKLADY CELKEM		57 582 625
VÝNOSY CELKEM		71 100 000
ZISK	absolutní – rozdíl mezi výnosy a náklady	13 517 375
	relativní - % z ekvity	100,68%
	kontrola: zisk vyjádřený jako podíl z výnosů	19,01%

2.

5.

1: 3 floors of dwelling

2: 720 m2 usable floor area

3: market selling price

4: participation on the rent

5: 19 % revenue

Informace o pozemku

Parcelní číslo:	8/3
Obec:	Praha [554782]
Katastrální území:	Smíchov [729051]
Číslo LV:	2838
Výměra [m^2]:	358
Typ parcely:	Parcela katastru nemovitostí
Mapový list:	DKM
Určení výměry:	Ze souřadnic v S-JTSK
Druh pozemku:	zastavěná plocha a nádvoří

Součástí je stavba

Budova s číslem popisným:	Smíchov [400301]; č. p. 262; stavba občanského vybavení
Stavba stojí na pozemku:	p. č. 8/3
Stavební objekt:	č. p. 262
Ulice:	Preslova
Adresní místa:	Preslova 262/9

Vlastníci, jiní oprávnění

Vlastnické právo	Podíl
HLAVNÍ MĚSTO PRAHA, Mariánské náměstí 2/2, Staré Město, 11000 Praha 1	

Způsob ochrany nemovitosti

Název
pam. zóna - budova, pozemek v památkové zóně
památkově chráněné území

Seznam BPEJ

Parcela nemá evidované BPEJ.

Omezení vlastnického práva

Nejsou evidována žádná omezení.

Jiné zápisy

Typ
Změna výměr obnovou operátu

Řízení, v rámci kterých byl k nemovitosti zapsán cenový údaj

Nemovitost je v územním obvodu, kde státní správu katastru nemovitostí ČR vykonává Katastrální úřad pro hlavní město Prahu, Katastrální pracoviště Praha

Zobrazené údaje mají informativní charakter. Platnost k 18.09.2016 11:00:00.

Verze aplikace: 5.3.2 build 0

It is necessary to know the legal aspects of the site.
Beside others the definition of property boundaries will be needed in later phases.
The zoning plans confirm the future characteristics of the are around the building (the parks will remain parks) and it establishes the number of floors allowed. Together with the building regulations the zoning plan creates the boundaries of the maximum volume of the proposed building.

Smíchov - 035

MĚSTSKÁ ČÁST:
Praha 5

KATASTRÁLNÍ ÚZEMÍ:
Malá Strana, Smíchov

SPRÁVNÍ OBVOD:
Praha 5

OOO / URČUJÍCÍ CHARAKTER LOKALITY

Lokalita se nachází na rovinatém terénu levého břehu Vltavy při úpatí kopce Petřína.
Uliční síť tvoří pravidelný pravoúhlý rastr, ve kterém jsou jednotlivé bloky zastavěny nebo volné jako náměstí příp. park. Struktura ulic vychází z původní zástavby z první poloviny 19. st. Ve stopě původní stezky spojující Zbraslav s Pražským hradem je dnešní ulice Štefánikova - Nádražní, která si zachovává nepravidelnou stopu. Jedná se o čtvrťovou třídu, která spolu s ulicí Zborovská - Svornosti tvoří kostru veřejných prostranství v severojižním směru, na kterých jsou jednotlivá náměstí s parkovou úpravou a kde se soustředí obchodní parter, v příčném směru je to čtvrťová třída Lidická jako pokračování Plzeňské k Vltavě. Významným místem je křížení U Anděla, významný dopravní, obchodní a společenské bod.
Zástavbu tvoří převážně činžovní domy v jednotném stylu. Některé bloky jsou zcela zastavěny solitérní stavbou, především podél ulice Plzeňská, kde se jedná o novou zástavbu.

/ O
VYUŽITÍ : obytná

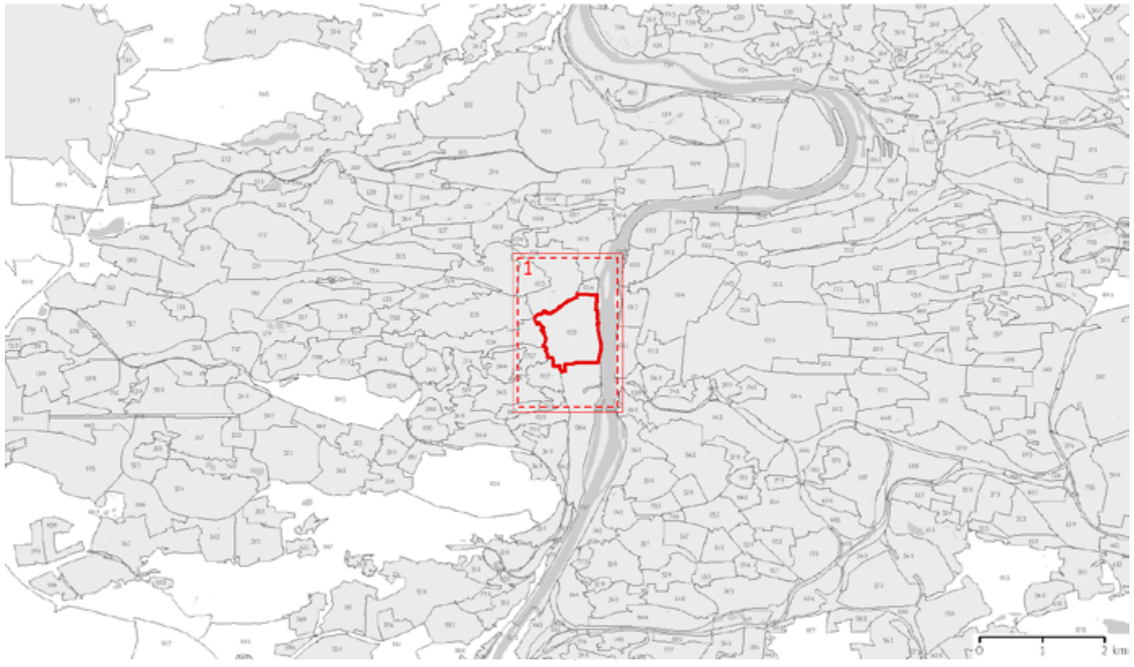
[S]
STABILITA : stabilizovaná

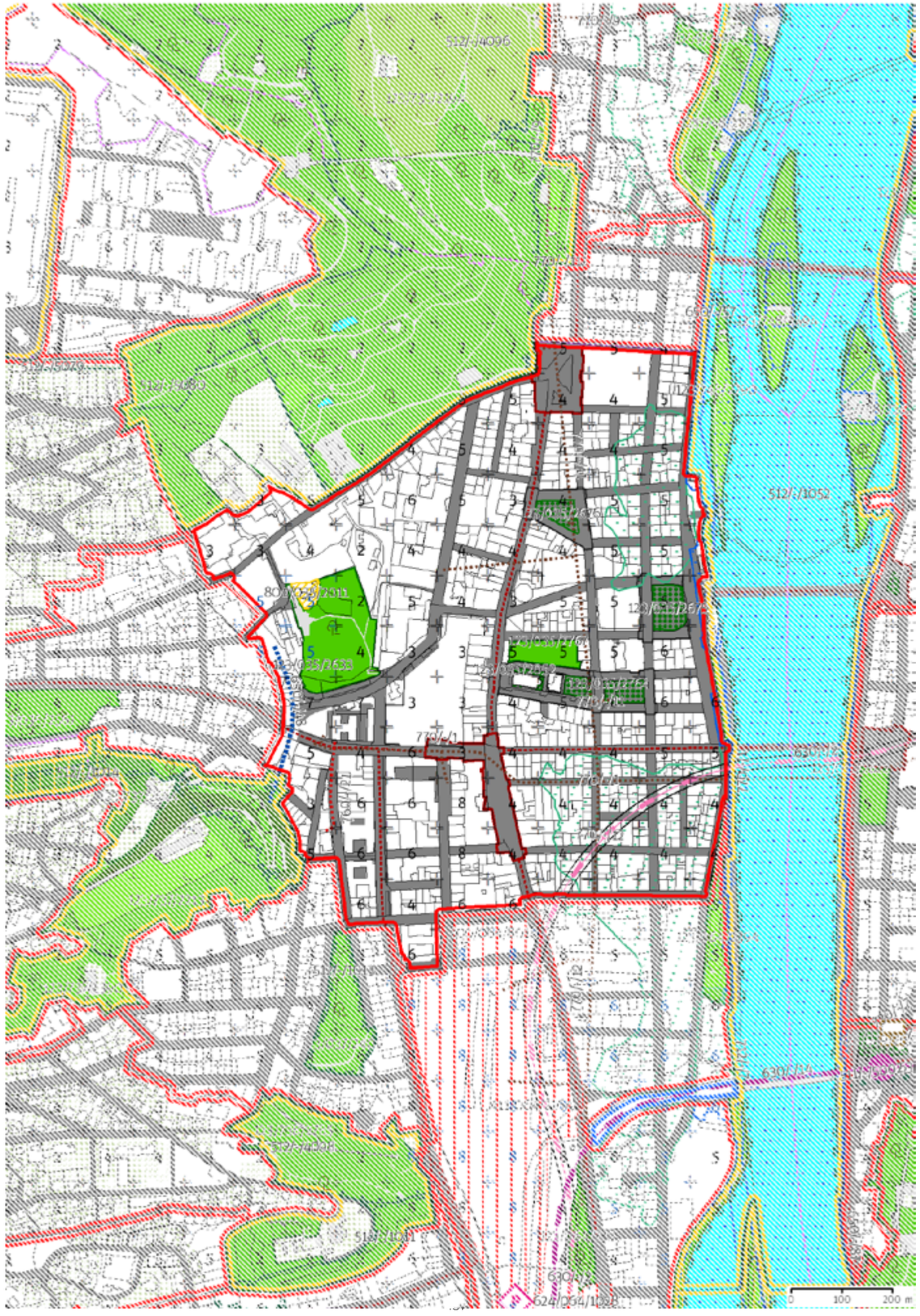
1.54/1.54
INDEX VYUŽITÍ
Is/In

OOO / CÍLOVÝ CHARAKTER LOKALITY

Základní požadavky

Rozvíjet zastavitelnou; stabilizovanou; obytnou lokalitu Smíchov se strukturou blokovou v souladu s jejím určujícím charakterem podle stanovených podmínek.





100/ KRAJINA VE MĚSTĚ

Základní požadavky:

Parky

123/035/2633 Zahrada a park Sacré Coeur - lokalitní park, interakční prvek ÚSES
123/035/2767 Zahrada vily Portheimka - místní park, interakční prvek ÚSES
123/035/2052 Park u kostela sv. Václava - místní park na náměstí, interakční prvek ÚSES
123/035/2675 Diezenhofferovy sady - místní park na náměstí, interakční prvek ÚSES
123/035/2676 Park na Arbesově náměstí - místní park na náměstí, interakční prvek ÚSES
123/035/2764 Park na náměstí 14.října - místní park na náměstí, interakční prvek ÚSES

200/ MĚSTO

Základní požadavky:

300/ VYUŽITÍ ÚZEMÍ

Základní požadavky:

400/ POTENCIÁL

Základní požadavky:

500/ KRAJINNÁ INFRASTRUKTURA

Základní požadavky:

512/-/4096 LBC Petřín - v přesných hranicích, výměra minimálne 3 ha

600/ DOPRAVNÍ INFRASTRUKTURA

Základní požadavky:

Železniční doprava

630/-/2 Konvenční železniční trať Nové spojení II - územní rezerva

Cyklistická a pěší doprava

650/-/48 Pěší propojení Lávka nad mosty u tunelů u Anděla - návrh

700/ TECHNICKÁ INFRASTRUKTURA

Základní požadavky:

Záplavová území

Využití území je omezeno záplavovým územím Vltavy a Berounky kategorie: Neprůtočná, Určeno k ochraně pro Q2002, Aktivní zóna.
Využití kategorií se řídí kapitolou 712 výrokové části.

Zásobování elektrickou energií

760/-/21 kabelový tunel Smíchov sever - návrh

Kolektor

770/-/1 Kolektor 2. kategorie Centrum - Smíchov - návrh
770/-/11 Kolektor 2. kategorie Smíchov II - návrh
770/-/12 Kolektor 2. kategorie Smíchov III - návrh

800/ VEŘEJNÁ VYBAVENOST

Základní požadavky:

Veřejná vybavenost

800/035/2011 - Plocha rezervovaná pro veřejnou vybavenost, pro využití: občanská vybavenost

900/ VEŘEJNĚ PROSPĚŠNÉ STAVBY A VEŘEJNĚ PROSPĚŠNÁ OPATŘENÍ

Základní požadavky:

Smíchov - 035
Z02 0 [S]

930 / Plochy pro omezení vlastnického práva formou věcného břemene pro stavby technické infrastruktury

930-760/-/21 Kabelový tunel Smíchov sever
930-770/-/1 Kolektor Centrum - Smíchov
930-770/-/11 Kolektor Smíchov II
930-770/-/12 Kolektor Smíchov III

Územní plán hl.m. Prahy (Metropolitní plán): Návrh / lokalita 035 - Smíchov verze ke dni 31. 5. 2016

Textova cast zavazne casti MPP

Podrobná pravidla výškové regulace

Článek 172
Podrobná pravidla pro dominanty
Pro **dominanty** je za dalších podmínek přípustné překročení regulovaného počtu podlaží. Dominanty tvoří:

a) budovy občanského vybavení, které mohou překročit regulovaný počet podlaží mírou, kterou vyžaduje jejich typologie, význam a urbanistická poloha; nejvíce však o dvě plnohodnotná podlaží v hladině s regulovanou výškou do čtyř podlaží včetně, od hladiny pěti podlaží včetně o tři plnohodnotná podlaží,

b) obecně urbanisticky exponované budovy např. na nároží, v průhledu ulice nebo v ose náměstí, mohou překročit regulovaný +2 počet podlaží maximálně o dvě podlaží nejvýše nad jednou třetinou plochy posledního plnohodnotného podlaží, pro prostorové řešení střechy nad posledním přípustným podlažím platí pravidla analogická k omezení střech nad hlavní římsou,

c) budovy podél metropolitní třídy mohou překročit regulovaný počet podlaží o jedno plnohodnotné podlaží v hladině s regulovanou výškou do čtyř podlaží včetně, od hladiny pěti podlaží včetně o dvě plnohodnotná podlaží,

d) budovy podél městské třídy mohou +1 překročit regulovaný počet podlaží o jedno plnohodnotné podlaží.

Článek 173
Dominanty a orientační body
(1) **Lokální dominanty** specifikované v regulaci lokality mohou překročit regulovaný počet podlaží o jedno plnohodnotné podlaží v hladině s regulovanou výškou do čtyř podlaží včetně, od hladiny pěti podlaží o dvě plnohodnotná podlaží, není-li u nich uvedeno individuálně.

(2) **Městské dominanty** specifikované v regulaci lokality mohou překročit regulovaný počet podlaží o čtyři plnohodnotná podlaží v hladině s regulovanou výškou do čtyř podlaží včetně, od hladiny pěti podlaží o pět plnohodnotných podlaží, a od hladiny osmi podlaží o libovolný počet podlaží, nejvýše však do výšky 100 m.

(3) Orientační body zvlášť specifikované v regulaci lokality mohou překročit regulovaný počet podlaží pouze do počtu podlaží nebo výšky budovy uvedené v jejich popisu mapříklad stanice metra na periferii), nejvýše však lze stanovit výšku 100 m.

height regulation [MPP 45]

PSP 2016

§ 27
Určení výšky

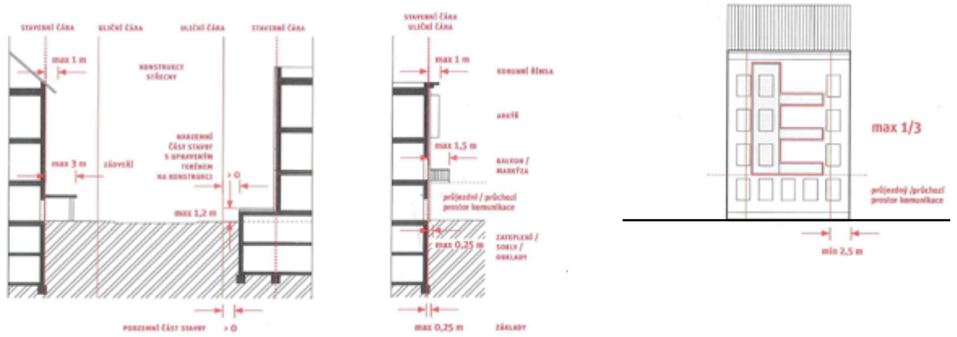
(4) Nestanovíli územní nebo regulační plán v souladu s § 83 odst. 2 jinak, mohou maximální výšku v odůvodněných případech přesáhnout:
a) veřejné budovy (budovy občanského vybavení),

b) budovy, které v urbanisticky exponované poloze (nároží, osa náměstí apod.) lokálně zvýrazňují urbanistickou strukturu +2 města (**lokální dominanty**), neníli to v rozporu s charakterem území; regulovanou výšku budovy lze v tomto případě zvýšit maximálně o 2 podlaží a nejvýše nad jednou třetinou plochy posledního plnohodnotného podlaží.

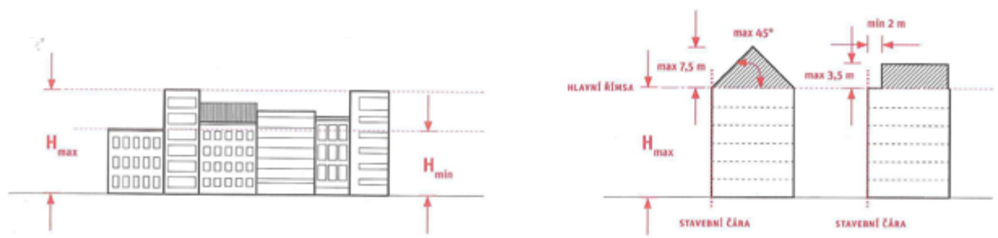
+2

+5

height regulation [Pražské stavební předpisy 92]



building line x street line x property line
[Pražské stavební předpisy 89]



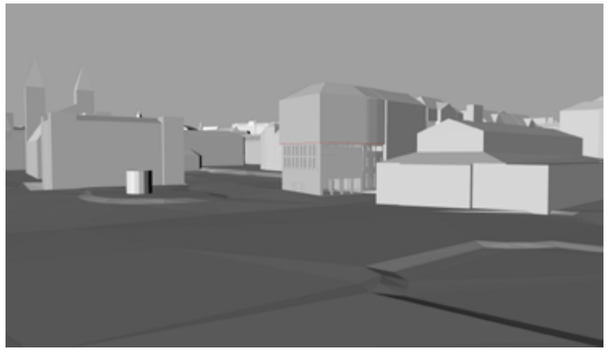
height regulation
[Pražské stavební předpisy 92]

The Prague Building Regulations define the relationship between the building line, street line and the property line. In the case of the substation these three lines merge into one line.

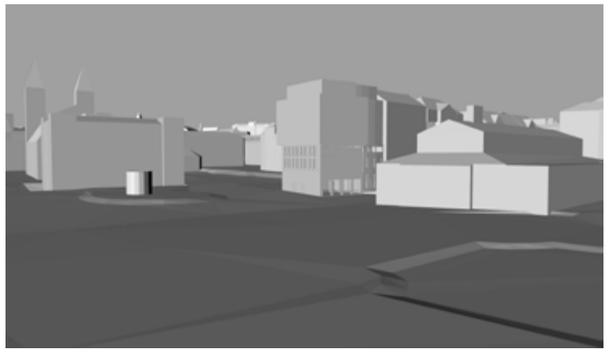
The building boundaries can be extended up to 25 cm over the property line for building addition purposes. The property line can be exceeded in the case of a bay window (up to 1 m) and a balcony (up to 1.5 m). In both cases the area of the extension can not exceed 1/3 of the facade area and must be at least 2.5 m from the neighboring building and the ground floor has to remain clear. For the corner buildings there is an exception which allows for up to 2/3 of the facade area.

The height of the building is set by the attic height of the neighboring buildings. The neighboring buildings establish the minimum height of the attic and maximum height of the roof ridge. From the attic level the building can have either a pitched roof or a set back of 2 m and the facade height behind the attic can not be higher than 3.5 m. In the case of the substation the building block consists of two buildings with the same attic and roof ridge height.

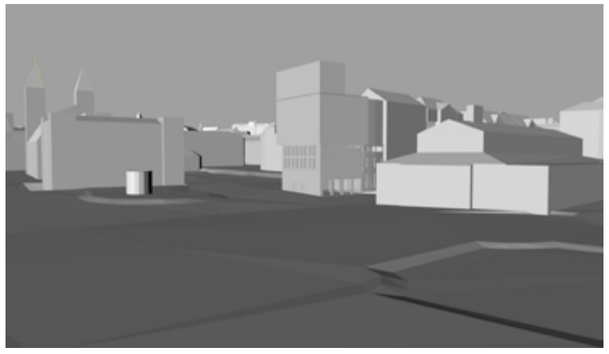
For corner buildings the regulations set a rule of the local dominant. It allows either for 2 extra floors of 1/3 of the floor area of the main building volume or for 1 extra floor of 2/3 of the floor area of the main building volume.



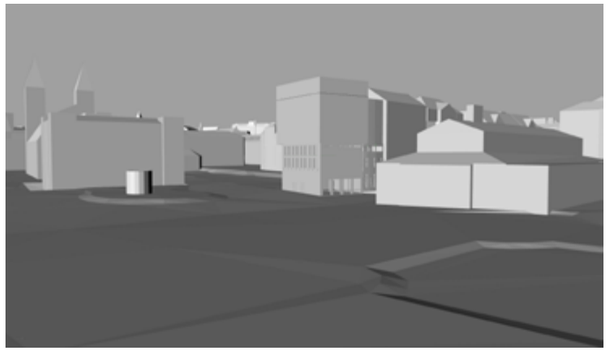
A



B



C



D

volume options according to the building regulations

According to the regulations 4 options for the new building volume were rendered to be tested further:

A.
Volume with a pitched roof.
Attic and roof ridge at the height of the urban block
3 floors + attic floor
960 m²

B.
Volume with a flat roof
Attic at the height of the urban block. Set back 2 m. Attic floor height 3.5 m
3 floors + attic floor with terraces
890 m²

C.
Dominant 1
Attic at the height of the urban block.
3 floors + 2 floors of 1/3 of the floor are of the main volume
890 m²

D.
Dominant 2
Attic at the height of the urban block.
3 floors + 1 floors of 2/3 of the floor are of the main volume
890 m²

At this moment not one option has been yet selected as the prefered one.

1. cultural objects with up to 200 visitors: **10 parking spots**

2. in case of a mix function building in the city center up to 10 parking spaces it is possible to mix residential and temporary parking together

3. if the required parking spot amount in the city center is **lower than 10** *there is an exception possible to not build any parking spots*

1 parking spot / 80 m2 of usable floor area
usable floor area dwelling: 890 m2
zone 1 (inner city) index ratio (recount of parking spots amount in a location): 70 %
= 590 m2
= 7 parking spots
< 10 parking spots

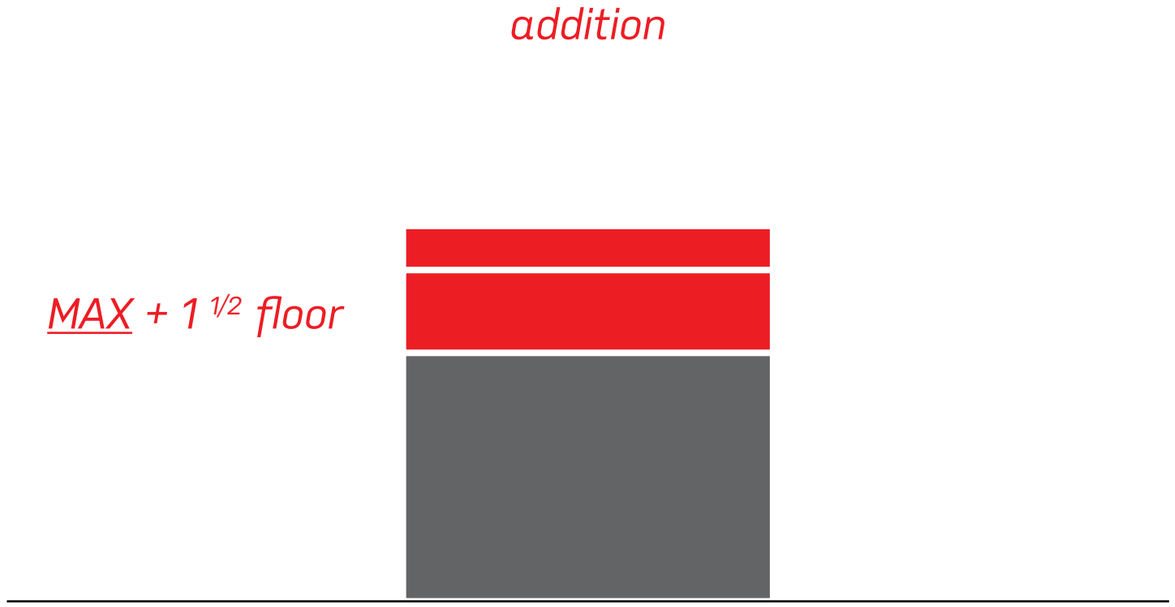
>>> no parking spots are required

every public gathering [theater] space:
. 2 fire escape exits leading to a protected fire escape route or to the exterior
. min. width of escape route: 2 x 550 m = 1100 mm

housing up to the height of 25.5 m of living area:
. 1 fire escape exit
. fire escape exit type A (naturally ventilated)
. 10 people / floor min. width of the escape route: 900 mm
. distance to the fire escape route: max. 25 m

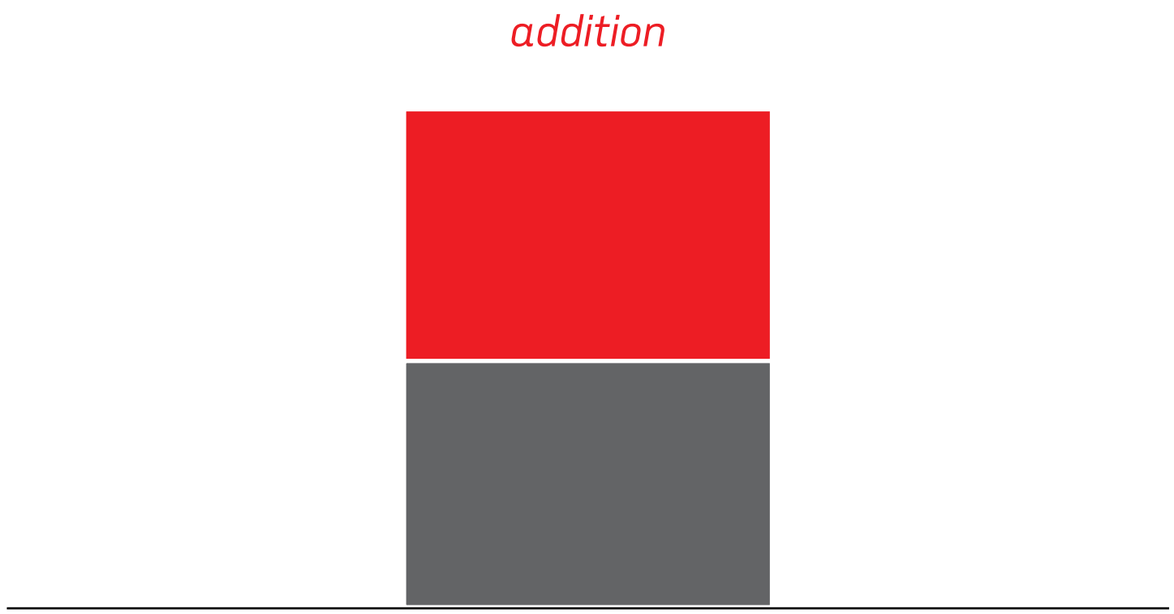
parking [Pražské stavební předpisy 106]

fire escapes [Pražské stavební předpisy 106]



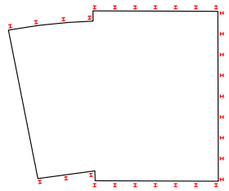
carrying capacity of the existing load bearing structure

After a structural engineer's (empirical) evaluation the building's carrying capacity of the existing load bearing concrete structure has been estimated to a maximum of 1 1/2 floor. If there is demand for more floors the existing building needs to be either reinforced or there is a need for a new load bearing structure built around the existing building. In either case the foundations of the existing building would need to be reinforced by jet grouting.



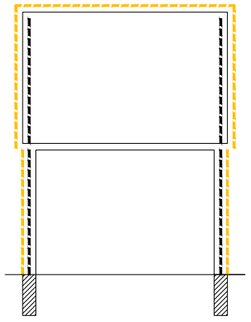
Because the existing structure does not allow to carry the load of all the floors of apartments which are needed to finance the renovation of the theater and foyer and the whole project the next is to figure out how the additional floors can be built and whether it is still feasible.

A

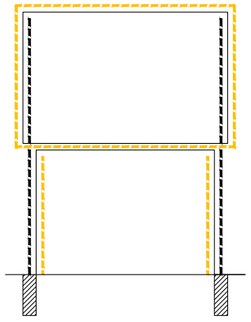


2 divided units
larger spans

A1



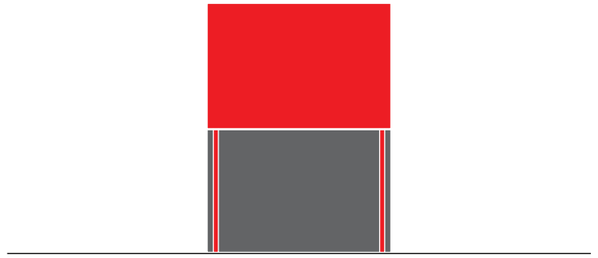
A2

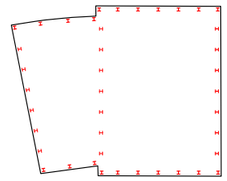


thermal insulation of the existing building
outside *inside*

new load bearing structure outside

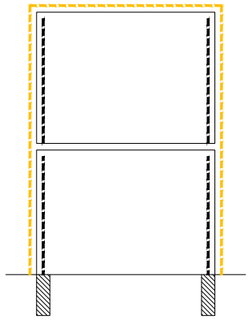
B



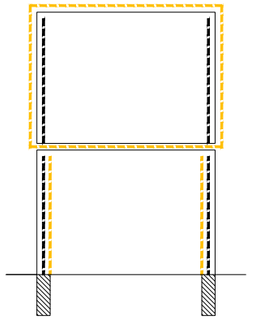


1 connected unit
smaller spans

B1

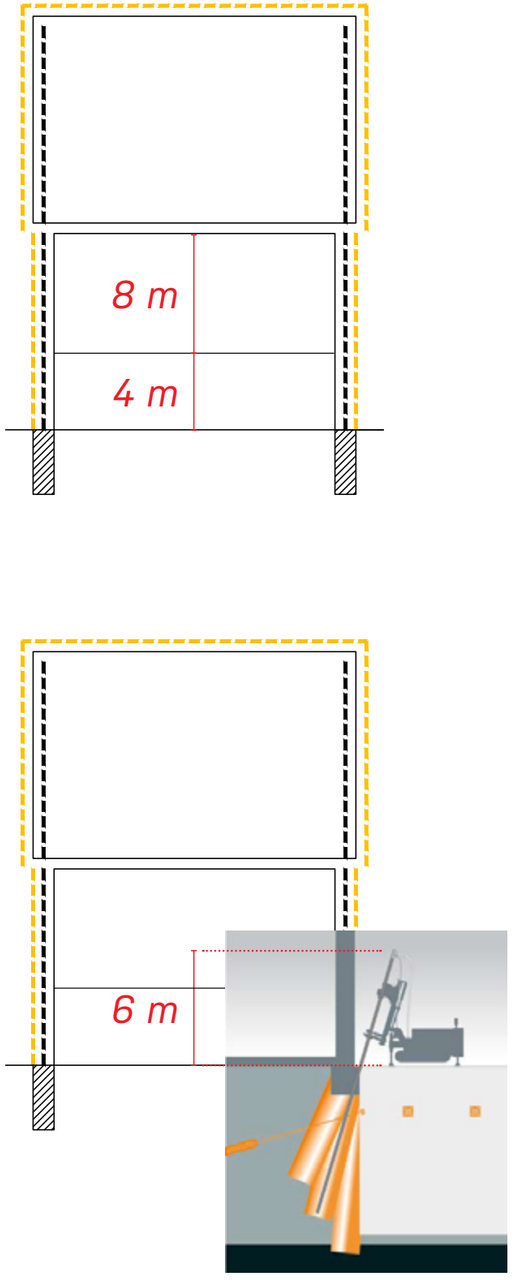


B2



thermal insulation of the existing building
outside *inside*

new load bearing structure inside



existing foundation reinforcement
jet grouting machine

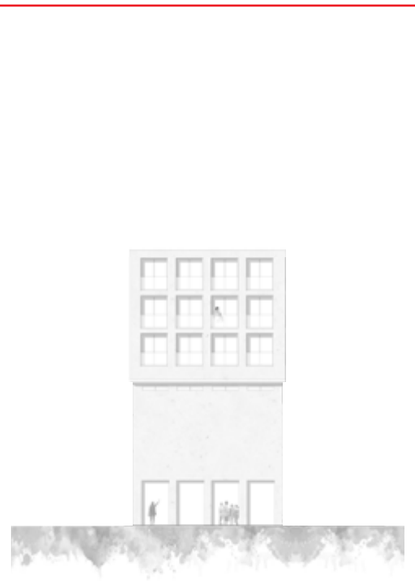
The new structure of the new additional form can be done in two ways:
A. independently outside of the existing substation volume,
B. inside the existing substation volume by reinforcing existing columns and floors up to the roof.

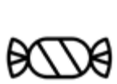
Each of the options then allows for two other options how to insulate the existing building. Either inside or outside.

Is is very obvious that the new additional structure will be out of steel its structural properties as well as affordability in price.

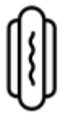
Knowing that the new structure needs to have foundation and that the existing foundations need to be reinforced by jet grouting the building management comes into the play here as first. The jet grouting machine has its arm of height of 6 m. Since the height of the ground floor is only 4 m, the costs of demolishing the whole ceiling of the ground floor would be very high the building management makes the decision for me here in this case. The new structure for the additional form needs to be placed to the outside of the existing substation.

A1





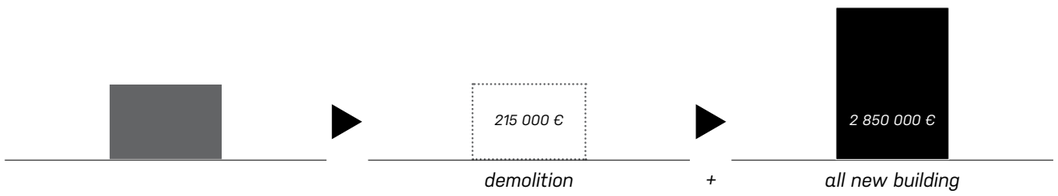
A2



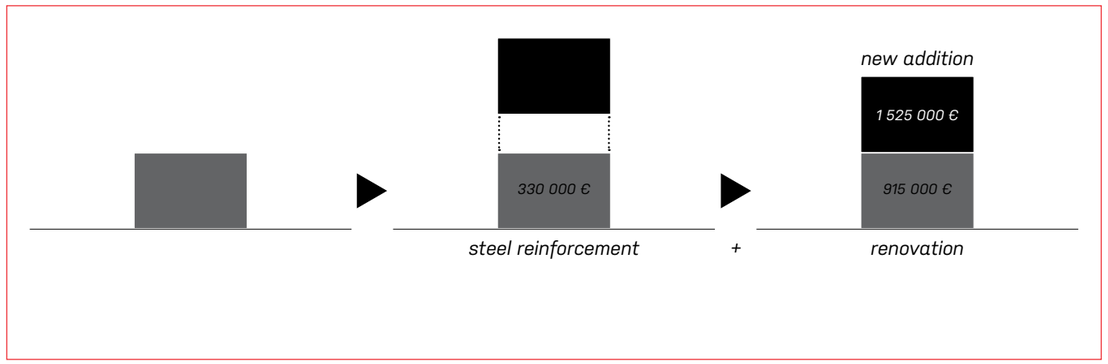
To decide whether the insulation is on the exterior of the existing substation and the new additional structure is hidden under the facade (A1) or the insulation is inside of the existing building, the new additional structure is exposed and the facade of the existing building untouched (A2), the aesthetic quality and financial affordability were considered for each of the options.

Constructions with thermal insulations in the interior of existing buildings is more costly than in the exterior. The thermal insulation for interior uses needs to be accompanied with vapor stop layer. Considering that the interior space size would get reduced by thermal insulation on the inside, the detail of the facade of the existing building is not super exceptional and the exposed columns may be obstructing the sidewalk the option with thermal insulation on the outside is selected.

On top this solution allows for one thermal insulation layer of the whole building which will ensure easier detailing and continuous thermal insulating layer.



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



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

Whether to A. demolish and replace the existing substation with a new building with a typology that suits the new use the best or whether to B. preserve the existing building and build an extension over is today a question not only of cultural value and environmental responsibility but also finances.

In order to compare the comparable facts of each option the construction costs were estimated. The option B. preserve was estimated as cheaper to built (renovation + addition).

The adaptation of the existing substation for the experimental theater and the theater's services seems to be according to the study carried out by the theater itself feasible. The adaptation of the substation into the theater should be possible. An approach every architect I would say would be happy about. But what would the real estate developer say?

To demolish the old substation and replace it with a brand new building with all floor area to sell or rent would be probably more profitable project despite the higher construction costs. Though this option was not tested it was not the idea of the project to demolish the existing substation. Therefore the initial construction of each options had a higher importance for my decision making.

By re-using the existing building I can achieve its adaptation to a new use and find a new life to a form which has already been constructed and is part of the city and its history. Moreover such approach saves the material, saves energy, saves resources and it may save the construction time. Concerning the legislative permission of a new function, the theater, within the existing building may also be an easier process since the building standards and requirements for building adaptations and spaces within existing buildings are not as strict.

It is important to note though that the additional steel structure building around and atop the building is a part of the construction which can create complications due to the groundworks.

strategy 1

steel construction costs [steel load bearing system around the existing building + new steel structure atop seperate]

	height / length [m]	A [m2]	V [m3]	steel density [kg/m3]	column / beam weight [kg]	#	weight total [kg]	weight total [t]	price / t [CZK] brutto	price total [CZK]		
column HEB 220	13	0,0091	0,1183	7850	929	36	33432	33	27000	902 652,66 Kč		
beam HEB 220	0	0,0091	0	7850	0	15	0	0	27000	0,00 Kč		
beam HEB 220	0	0,0091	0	7850	0	24	0	0	27000	0,00 Kč		
beam IPE 600	20	0,0156	0,312	7850	2449	10	24492	24	27000	661 284,00 Kč		
beam IPE 600	17	0,0156	0,2652	7850	2082	16	33309	33	27000	899 346,24 Kč		
reinforcement HEB 220	10	0,0091	0,091	7850	714	18	12858	13	27000	347 174,10 Kč		
										2 810 457,00 Kč	**104 091,00 €**	
	length					#	lenght total [m]		price / m [CZK] brutto			
steel column pile foundation	5					18	90		3800	**342 000,00 Kč**	**12 666,67 €**	
	length					#	lenght total [m]		price / m [CZK] brutto			
foundation concrete injection reinforcement	3					36	108		15000	**1 620 000,00 Kč**	**60 000,00 €**	
TOTAL STEEL REINFORCEMENT										**4 772 457,00 Kč**	**176 757,67 €**	**brutto**
RESERVE										+ 25 %		
										5 965 571,25 Kč	**220 947,08 €**	
renovation of the old building for theater												
building volume	5500 m3											
price / m3										4 000,00 Kč	**148,15 €**	
TOTAL renovation of the old building										**22 000 000,00 Kč**	**814 814,81 €**	**brutto**
* price indicators for 2016												
										26 772 457,00 Kč	**991 572,48 €**	**brutto**

strategy 2

demolition			
building volume	5500 m3		
structure volume x built volume	30%		
structure volume	1650 m3		
price / m3		3 500,00 Kč	**129,63 €**
TOTAL DEMOLITON		**5 775 000,00 Kč**	**313 888,89 €** **brutto**
* all inclusive			
new theater building instead of the existing building			
building volume	5500 m3		
price / m3		7 000,00 Kč	**259,26 €**
TOTAL new theater building		**38 500 000,00 Kč**	**1 525 925,93 €** **brutto**
* price indicators for 2016			
		44 275 000,00 Kč	**1 739 814,81 €** **brutto**

new building atop [strategy 1 +2]

new building in steel on the new steel table				
		price / m3 [CZK] brutto		
TOTAL new building in steel	5500	7000	**38 500 000,00 Kč**	**1 525 925,93 €**
* price indicators for 2016				
strategy 1			**65 272 457,00 Kč**	**2 717 498,41 €**
strategy 2			**82 775 000,00 Kč**	**3 065 740,74 €**

A

theater
theater in existing building - maintaining the industrial character of the space
use of high ceilings (+ double height)
easy connection foyer + theater
theater space can be adapted later for a new use

apartments
more complicated typology - new structure to suit the needs and be flexible, no compromises
apartments are "paying" for the building adaptation - new structure in high standard
high investment - high quality - high income

separation public x private

different functions - different structures, materials, expressions - clear division

B

theater
theater in a new structure atop - possibility of a open air theater

harder connection foyer + theater

apartments
more complicated typology - harder to adapt in the existing structure to suit the needs
high ceilings are not necessary for dwellings
high ceilings could create interesting dwelling typologies

mix public x private (with one staircase can be worse for the dwellers for privacy and security)

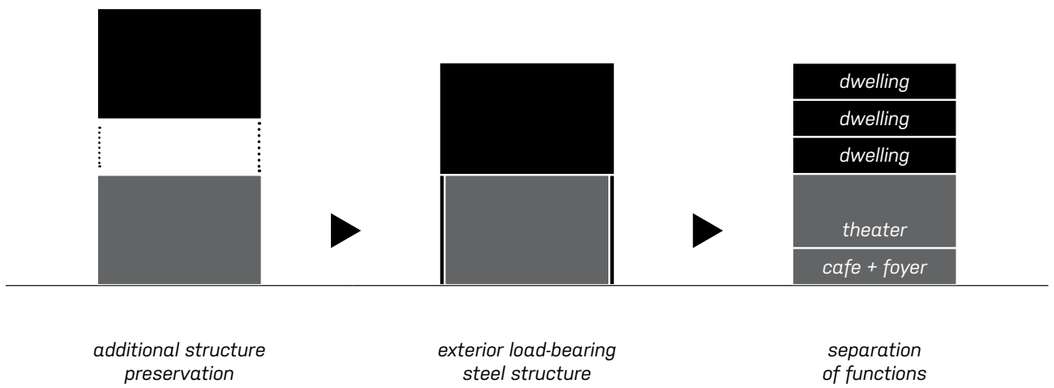
new extra floor needed for dwelling for economical feasibility (3rd type of structure, loss of clarity)

The given scheme also allows for different spatial organizations.

The option A follows the concept of separation of functions and volumes. The theater occupies the existing building as the building is perfectly suitable for such use. The industrial open space of the building is maintained. The full potential of the double height ceiling is used by the theater hall and the foyer and cafe on the ground floor allows for easy connection to the theater hall (just one floor above). The private domain, the apartments, are then separated from the public domain, the theater. The spatial flow can be organized without higher complications. Accommodating the apartments within the new structure allows for a design without compromises, a design, which will suit the needs of the apartments in full. The climate comfort can also be ensured better by designing the walls and ceiling according to contemporary standards. What also makes sense is that since the dwelling's part is supposed to finance the theater spaces it is logical to create the spaces which will be of the highest investment and should to create the highest income in the highest quality. Architecturally speaking option A offers a clear division between the two different functions and structures.

The option B needs to be considered for one aspect. Even though the spatial flow seems to be much more complicated because the functions mix between each other this solution could offer lower initial investment. Reinforcing the existing building from inside and building in the dwellings in the first and second floor of the substation could replace the exterior steel structure needed for option A. The reinforced substation would be able to carry the load of one extra floor of dwelling and the open typology of the theater. If the theater would be place atop there would be a possibility of an open air theater. Unfortunately the option B besides the structural advantage brings only disadvantages. As we know from earlier, the building if it should carry more weight its foundations need to be reinforced. That is easier to be done from outside. Building the dwellings in the double height space of the substation could create interesting typologies but the main space, the original space of the sub station, would be lost. The spirit of the place and its history would be given up. The dwellings, the highest investment and the return on investment creator may undergo compromising decision. The mix of public and private functions creates privacy complications in the times of theater performances. There would be for a need of one new floor of dwelling for the profitability of the project. That would require third type of a structure, making the project even more complicated and the division of forms and functions unclear. There would be higher demands for acoustic insulations between the apartments and the theater.

While making the decision about the spatial organization of the building architectural, functional, structural, social, financial aspects must have been considered. And even though the option B may allow for lower investment the option A has been selected to be developed further. Option A is believed to offer more flexibility and simplicity to the design and is thought to be crucial for the success of the project in terms of function, flows and comfort of all users and be that way competitive on the market.



The following design will be influenced by the decisions made in this part of the feasibility study. It has been decided to re-use and adapt the existing building to a experimental theater space, preserve its qualities and build an additional load bearing steel structure around it to inhabit the demands for apartments which have been placed on top of the existing building for clear division of functions and easy separation of public and private flows.

Such approach could bring an exciting and successful mix use product to the real estate market which could attract the inhabitants of the city and could help to reintegrate the abandoned substation space into the urban activities and could infill the gap in the urban block and complete the urban structure.

◇ inception of the idea / location idea

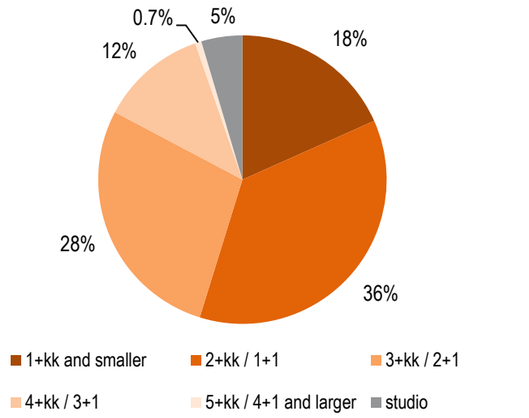
site research & selection	feasibility study

◇ site acquisition

◇ site acquisition

function, program, volume	design

H1 2016 – Apartments Sold in Prague by Type



2016_H1_Prague_Residential_Market_PULSE_EN_FINAL

1 room: 18 %
2 room: 36 %
3 room: 28 %
4 room: 12 %
other: 6%

dwelling's type

Ovenecka			m2	K[illegible]	=	[illegible]	=
201	1	1+kk	34,9	118 450	4 133 905	4 387	153 108
202	1	1+kk	34,9	118 450	4 133 905	4 387	153 108
203	1	1+kk	39,9	118 450	4 726 155	4 387	175 043
204	1	2+kk	61,8	118 450	7 320 210	4 387	271 119
205	1	1+kk	31,6	118 450	3 743 020	4 387	138 630
206	1	2+kk	54,4	118 450	6 443 680	4 387	238 655
207	1	2+kk	50,3	118 450	5 958 035	4 387	220 668
208	1	*2+kk*	*30,9*	118 450	3 660 105	4 387	135 559
301	1	1+kk	34,9	118 450	4 133 905	4 387	153 108
302	1	1+kk	34,9	118 450	4 133 905	4 387	153 108
303	1	1+kk	39,9	118 450	4 726 155	4 387	175 043
304	1	2+kk	61,8	118 450	7 320 210	4 387	271 119
305	1	1+kk	31,6	118 450	3 743 020	4 387	138 630
306	1	2+kk	54,4	118 450	6 443 680	4 387	238 655
307	1	2+kk	50,3	118 450	5 958 035	4 387	220 668
308	1	*2+kk*	*31,7*	118 450	3 754 865	4 387	139 069
401	1	3+kk	85,6	118 450	10 139 320	4 387	375 530
402	1	2+1	67,4	118 450	7 983 530	4 387	295 686
403	1	**2+1**	**103,2**	118 450	12 224 040	4 387	452 742
404	1	**3+kk**	**117,2**	118 450	13 882 340	4 387	514 161
501	1	3+kk	84,9	118 450	10 056 405	4 387	372 459
502	1	2+1	64,2	118 450	7 604 490	4 387	281 648
503	1	**2+1**	**107,5**	118 450	12 733 375	4 387	471 606
504	1	**3+kk**	**117,2**	118 450	13 882 340	4 387	514 161
601	1	**3+1**	**106,3**	118 450	12 591 235	4 387	466 342
602	1	**2+kk**	**79,4**	118 450	9 404 930	4 387	348 331
603	1	**3+kk**	**120**	118 450	14 214 000	4 387	526 444
604	1	**2+1**	**109**	118 450	12 911 050	4 387	478 187
	28		1840,1		217 959 845 CZK		8 072 587 C
	8	1+kk	35,3		22,8		
	8	2+kk	58,1		27,2		
	2	*2+kk*	*31,3*	*undersized*			
	1	**2+kk**	**79,4**	***oversized***			
	2	3+kk	85,3				
	7	**3+kk**	**111,5**	**oversized**			
	28						

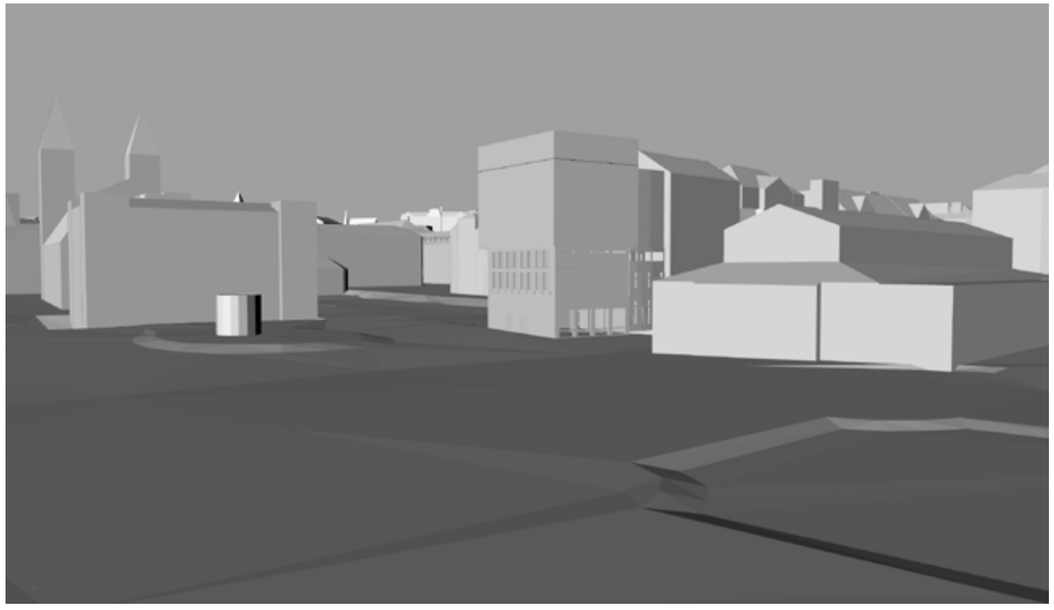
1 room: 35 m²
2 room: 58 m²
3 room: 85 m²
4 room: 107 m²

dwelling's size

As a starting point to ensure the design meets the market demand it is necessary to known what kind of dwellings with how many number of rooms and what floor area are being demanded by dwellers in the area of the location.

A market research was carried out to define the dwelling's types and sizes. The results can be seen on the left page.

Whether the types and sizes are appropriate will be discussed in the design part. Already at this moment it can be said, as it is a personal design approach, the total floor area of the apartments may not change as much but the room sizes may change with the emphasis put on the common living spaces and variability.

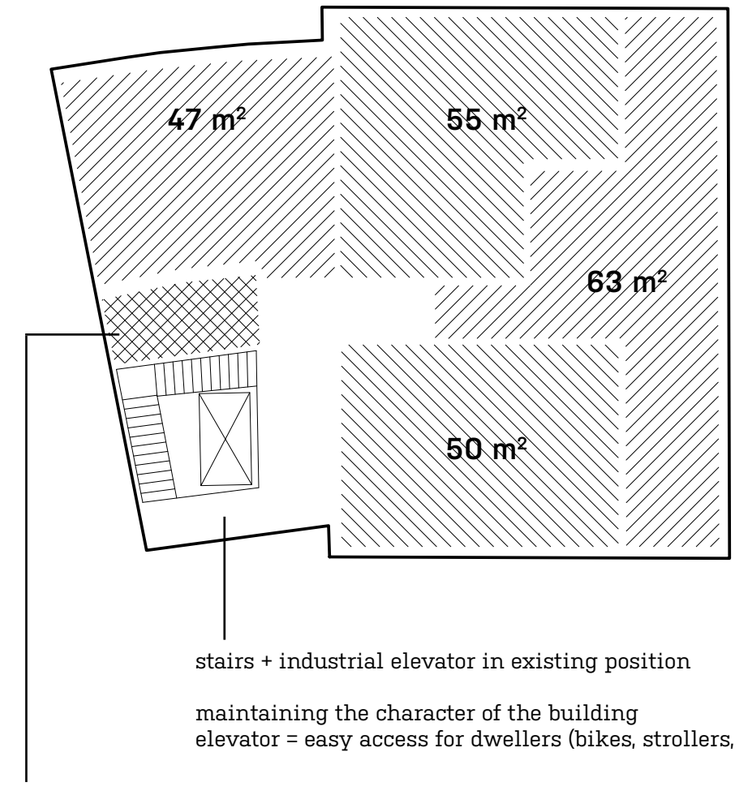


As the Prague building regulations allow for it is possible for the building to have one additional floor above the attic level of the 2/3 of the floor are of the main volume if the building can be considered as exposed, dominant or corner building. With this solution it is possible to create a strong end to the urban block and create solid form facing both parks. At the same time a gap between the pitched roof building and the new regular form is created to create a clear division between the volumes as well as times of building period.

The detailed program of the building will be created to be accommodated within this volume.

3 floors x 4 apartments = 12 apartments
1 floor x 3 apartments = 3 apartments
= 15 apartments

3 x 215 m^2 = 645 m^2
1 x 168 m^2 = 168 m^2
= 813 m^2 [NIA]



stairs + industrial elevator in existing position

maintaining the character of the building
elevator = easy access for dwellers (bikes, strollers, skis)

laundry + storage

(no storage in the basement for dwellers - it is used for theater)

program apartments

strategy:

. connection to the existing substation and steel structure of the additional structure suggest industrial character of living as well as lively living in a mix use building which will be busy from the morning until the evening

. keep the existing staircase tower + elevator (industrial character + connection with the existing building + practical access for the dwellers to each floor)

. common activity areas on each floor (laundry room)

. storage spaces on each floor next to the apartment (since no basement is available the storage stalls need to be placed on each floor, the large industrial elevator will allow for such use which will lead to storage stalls which are easily accessible at any time).

. exposed materials (support of the industrial character of the building, more options for appropriation by the future dwellers)

. adaptability of typologies (easy adaptation for dweller's demands not only before the apartments are completed but also during the time while families will grow larger or smaller the typology can allow for negotiation between the dwellers and allow the inhabitants to remain in their house)

. higher ceilings (support of the idea of adaptability of typologies and adds the possibility of adaptability of functions)

. as the gathering room for the inhabitants the area of the cafe can serve as the meeting area for the inhabitants

. target group: young (urban) professionals, young families, culture and city life lovers

dwellings strategy

program:
02
. mini studio / training hall (stage size)
. office

01
. theater hall (150 spectators, acoustic & thermal insulation) *150 m²*
. stage
. changing rooms, showers, toilets *50 m²*

00
. entrance(s)
. foyer
. cloak room
. cafe / bar
. information center for public
. toilets

- 01
. storage
. mini studio / training hall (stage size) *50 m²*
. engine room (heating, air circulation)

activities:

. actor's training

. theater project preparation

. production and research activities

. workshops & seminars

. festivals

program & activities theater

strategy:

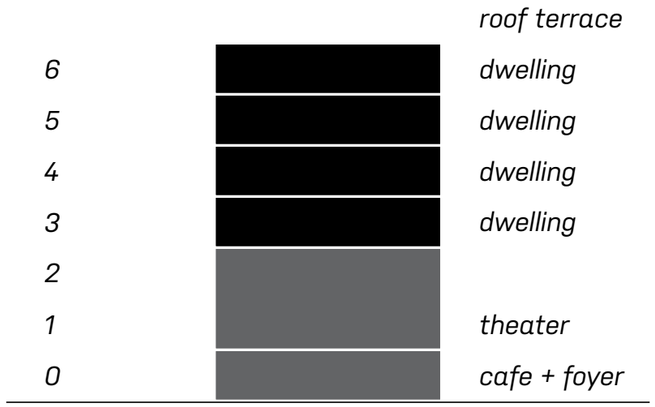
. keep the spirit of the existing building to its maximum (leave the existing building exposed as possible)

. adapt the building for modern purposes for the theater group use (acoustics, insulation, technology

. create an open ground building so the activities happening within the building can be visible from the street front

. connect the building with the surrounding parks to allow for festivals and workshops to happen not only within the interior of the building

theater group activites & strategy

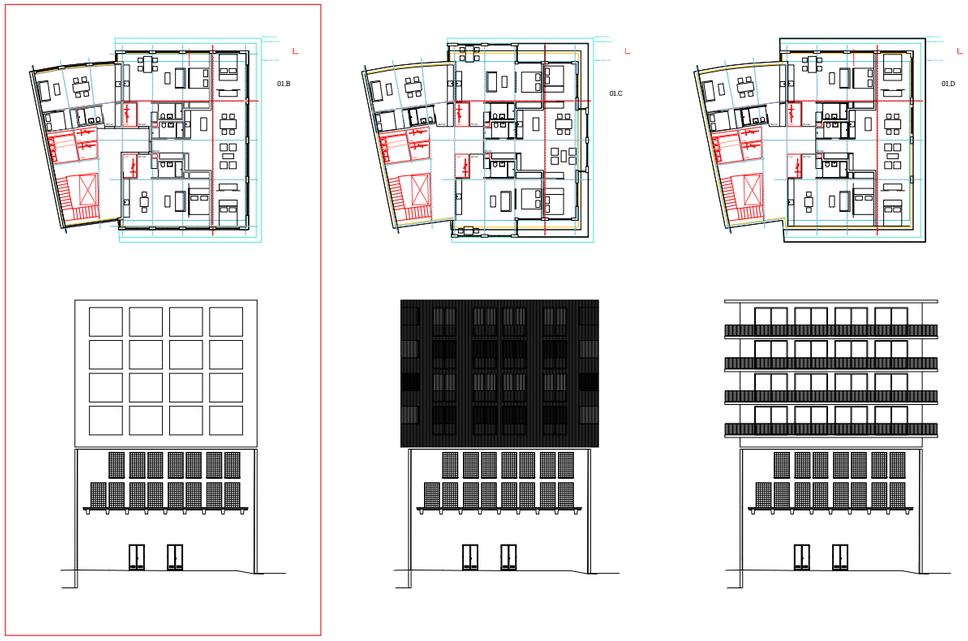

roof terrace
6
dwelling
5
dwelling
4
dwelling
3
dwelling
2
1
theater
0
cafe + foyer

program


roof terrace
dwelling
170 m²
common spaces
10 m²
engine room
10 m²
6
dwelling
215 m²
common spaces
20 m²
5
dwelling
215 m²
common spaces
20 m²
4
dwelling
215 m²
common spaces
20 m²
3
office
50 m²
wc
2
theater [stage, aditorium]
200 m²
changing rooms
50 m²
wc shower
25 m²
1
entrance foyer cloak room cafe / bar
150 m²
training room
50 m²
kitchen back end
50 m²
wc
25 m²
0
storage room
50 m²
engine room
25 m²
-1

474 size & volume ii

A *B* *C*

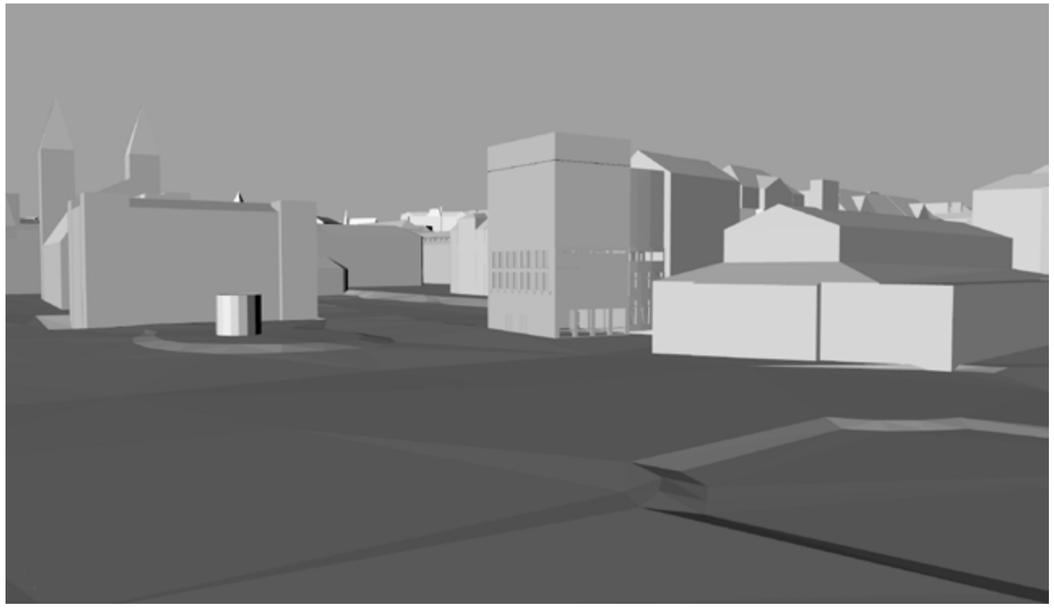


The building regulations allowed for three options of floorplan studies and three options of the building appearance. Option A works within the limits of the existing substation. Dwellings are provided with large floor to ceiling sliding window openings. Option B works with combination of bay windows and balconies. Option C offers continuous balconies around the whole perimeter of the building. All options offer same floor area. Options B and C are only enlarger by the exterior space.

Architecturally speaking, balconies nor the combination of bay windows and balconies fit the context of the neighborhood nor the existing substation. Both option B and C seem to attract too much attention and try to supersede the old building. Option A which stays within the outline of the existing substation proves to fit the context and its simple shape grows naturally from the old substation.

It may be an attractive decision for a real estate developer to maximize the floor area and increase it by exterior spaces to create more profit. This decision was by the architect-developer considered as inappropriate to the surroundings and evaluated as not fully practical at all levels.

475 size & volume iii



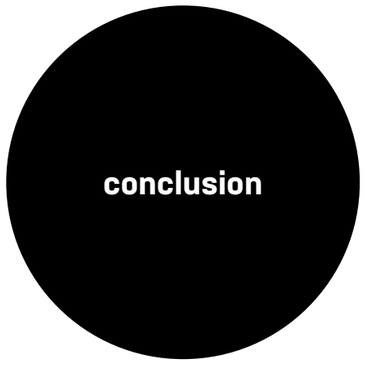
The final volume and shape of the building creates a dominant at the end of the urban block, and keeps a distance from the existing buildings to emphasize the new and existing volumes.

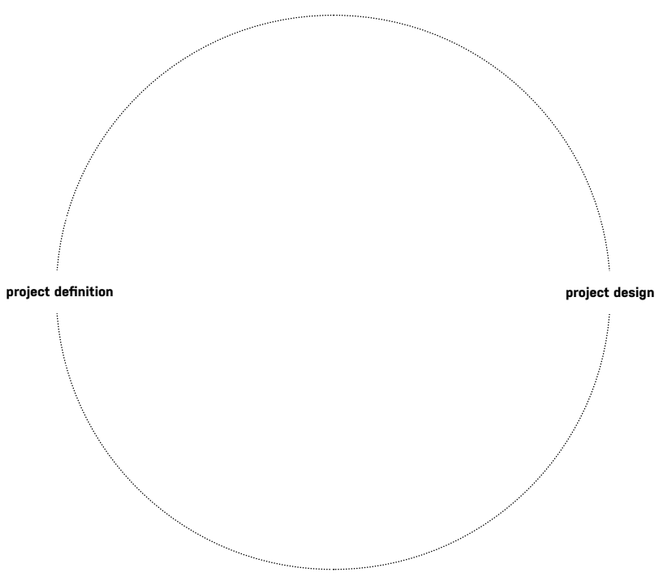
The outline of the new volume copies the outline of the existing substation.

The new volume separates itself from the old volume. The distinction between old and new is clear and illustrates the respect to the existing building. This distinction should be created by different materials used for the facades of the two volumes.

The ordered and regular facades of the additional structure react to the regularity of the existing substation as well as to the context of the neighborhood, where the regularity and gird organization of windows is a very strong and typical feature.

To integrate of the building to the city fabric and engage contact of the building with the public space large window openings are designed at the street level.


conclusion



As suggested at the beginning of the feasibility study, the process of defining the function, program, size and volumes of the building is influenced by many actions which have a reflection in the actual design of a building. The project design goes hand in hand with the project definition. The existing structure determines the demands for the new additional structure, the building management and technological limits decide what will the new additional structure look like and how it will be built, the spatial properties of the existing building influence the spatial organization of the new functions within the building, the costs help to decide whether it is still feasible to renovate the existing building or it is easier to demolish the existing building and replace it with the a completely new building, the building codes say how big the building can be.

The presence of the architect in the initial process brings another layer to the decision making process and the decisions taken are not only pragmatic or technical. Aesthetic, spatial, contextual, social or cultural values become another rationale for the actions which are taken.

At the end the initial phase of the project the project brief is not just a raw volumetric study and a spreadsheet with program and floor area per floor. Because all decisions were made while all agencies, all professionals, all agencies were involved the project brief can be more complex.

It is hard to compare the limits of such approach yet. Such approach can require more time in the initial phase in order to tackle all aspects but can also save on time needed for the actual design and can prevent some complications in the later process which could not have been adressed because some of the professionals were missing in the chain of decision makers.

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Dominik Saitl