

**NEW TOWN HALL
FOR
PRAGUE 7 DISTRICT**

portfolio



Annotation

The proposal is a result of "CLEANING" the existing design in order to get rid of certain negative features of the building, which are as follows:

1. chaos (overall solid / facades / internal layout)
2. optical weight
3. lack of character

The current form of the building doesn't correspond with its urban context, which is firmly influenced by the character and scale of the surrounding buildings.

It also doesn't have a presence appropriate to its future purpose.

Description of the design

- architectural/urban solution

Since the urban solution has to remain with no major changes, the main goal is to improve the quality of the existing block to obtain a desired image and find a way to better fit this over scaled structure in the context.

The key was to find an important historical reference.

The common historical feature for the traditional town halls is a tower, which usually adds more dignity to the building character and makes its use clearly recognizable.

With the "tower" the new Prague 7 town hall has a chance to be substantially transformed.

Some minor demolitions to the existing block allow to reshape the upper part of the building and create the "tower". That makes the building presence less stubby. Also the use of the specific facade materials increases lightness and delicacy and gives the compact and homogenous look.

The internal layout is based on a central core arrangement, which makes the space more effective, flexible and easily read by users. The central core consists of the fire protected staircase (plus lifts) and the sanitary block zone with bathrooms, kitchenette, cleaning room etc.

The core divides the layout into 2 zones. The northern zone (deeper in plan) is dedicated to the departments/use, which accommodate higher number of visitors, while the other zone is less exposed to the public.

- facade solutions

The front and back elevations are to be double-skin glazed structures..

The external layer is a curtain walling system with the ribbed-glass. The internal layer for the northern and southern part is to be the standard/high performance wall with triple glazing and photovoltaic panels (to the south). The double layer system is to prevent the heat gain (south) and potential noise factor (north).

The opaque insulated stud envelope will be applied to the eastern and western sides (with some fenestration).

The $U_{C(max)}$ [$W/(m^2 \cdot K)$] for the refurbished walls is to be below 0,25.

Energy concept of the building

- Building construction

The double-skin facades are the buffer zones; from noise and heat loss (north) and from the heat gain (south) - with using the PV panels and integrated aluminium blinds (provide solar shading).

The main glazing - triple with krypton.

The other facades are to be opaque (stud structure) with a composite thermal insulation and glass finish externally. There will be provided a fenestration within the western elevation (triple with krypton).

The green concept is to be used to minimise the embodied energy of construction materials/processes. The central core concrete with blast furnace sand replacing the cement improves the CO₂ balance.

There will be crucial to develop thermal-bridge free / reduced structures. The air tightness also has to be addressed (seals at the junction between solid and lightweight components).

- Building services

One or two ventilation units will supply fresh air to the internal spaces. Ground collectors will preheat/cool the fresh air. The supply air will be distributed by the ducts located in the central core shaft and via suspended ceiling areas located around the central core. The waste air from the offices will be drawn into the "circulation" space and finally into the vertical exhaust ducts.

The mechanical ventilation system will operate with the higher rates exchange over the summer nights to cool down the building's thermal mass. Centrally controlled panels in the exterior façade will be opened during the summer between 10 p.m. and 6 a.m. to utilize the cool evening and night air. For this purpose the offices' concrete ceilings will be exposed to allow them to act as storage mass.

When outside temperatures will be between 15 °C and 23 °C, the offices will be ventilated naturally, i.e. by the staff opening the windows in their offices.

Some rooms (server, meeting rooms) will be actively cooled by using ceiling panels. The main office spaces will be cooled with ground water by using an adiabatic system.

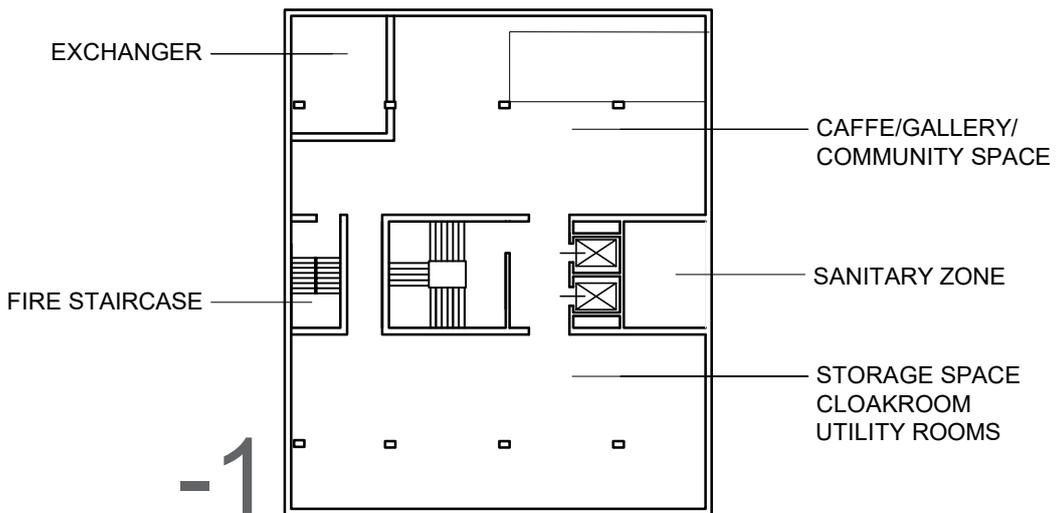
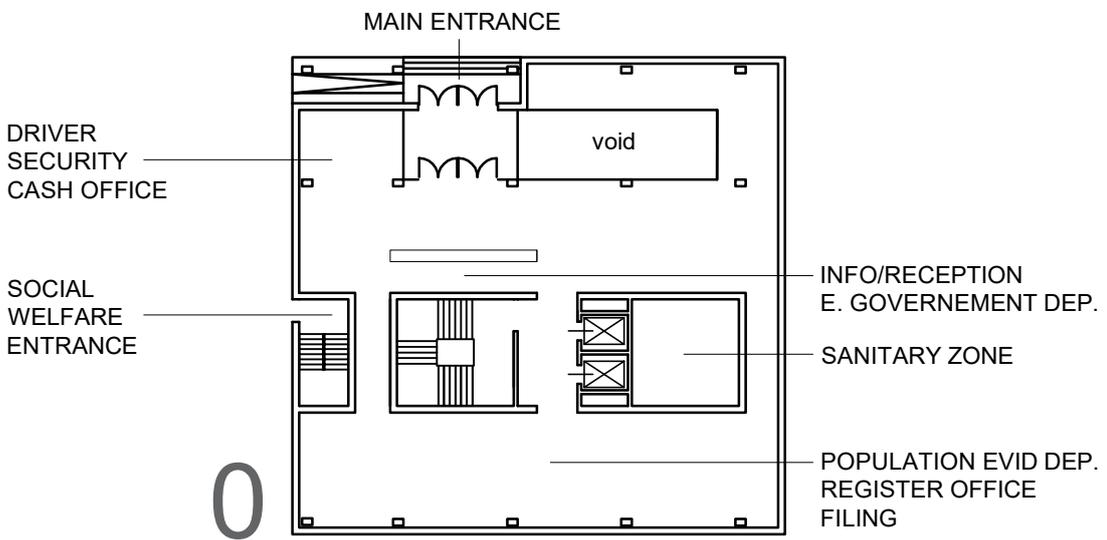
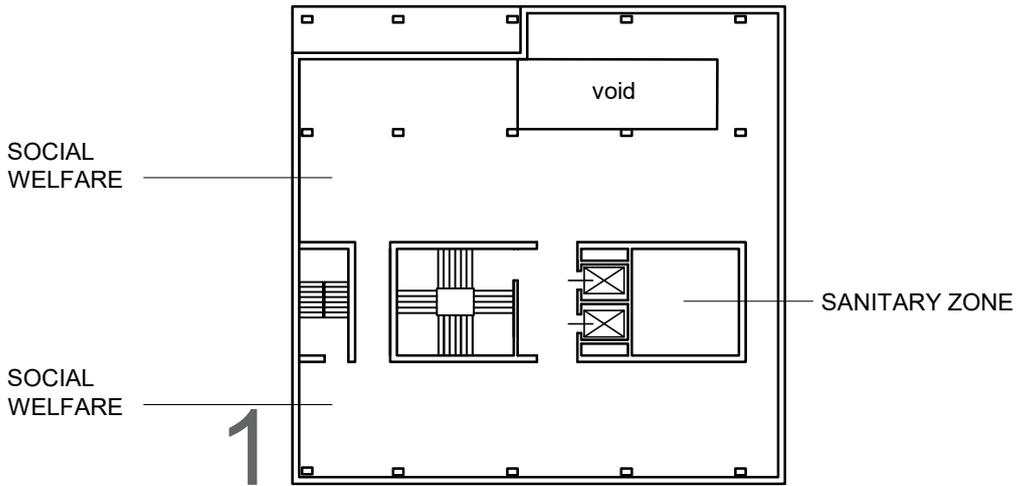
The heat supply is to be provided by the local district heating network (distribution by conventional radiators).

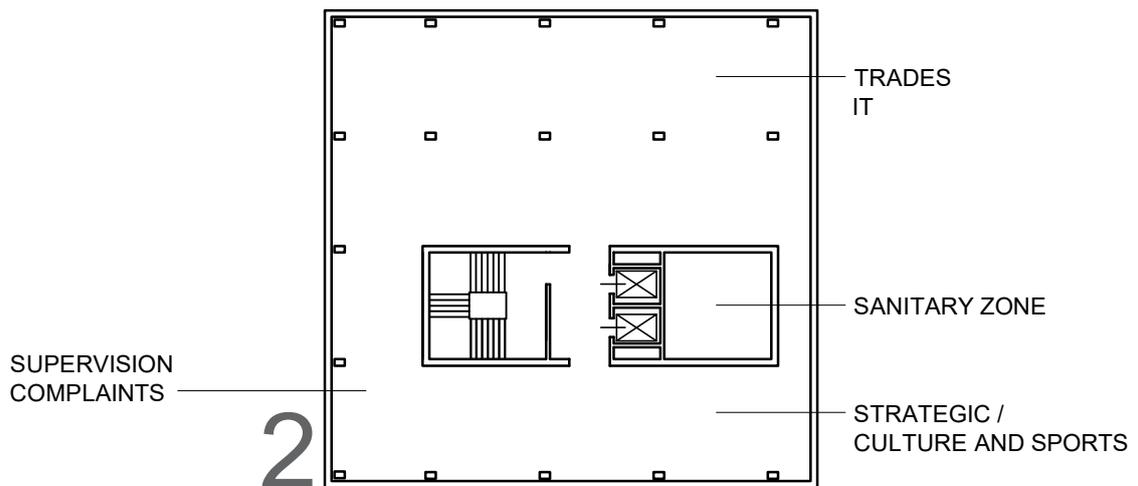
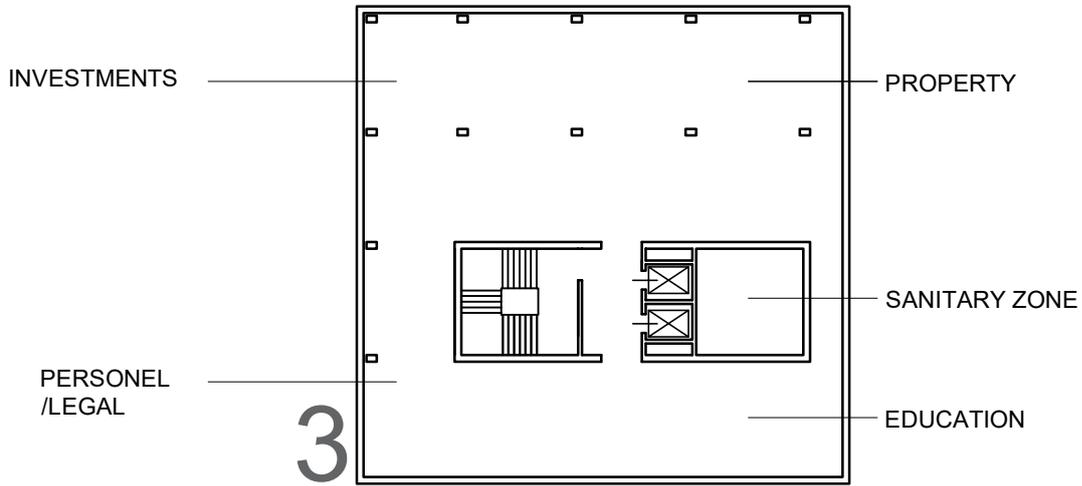
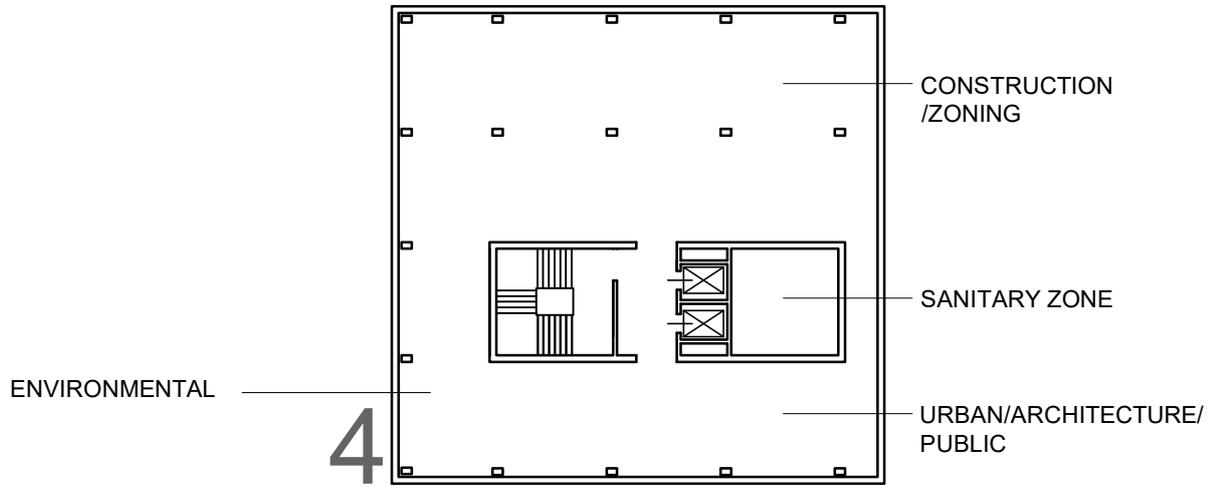
The use of renewable energy sources will help to limit the cost of electricity (PV panels on facades and roof), as well as using the natural light.

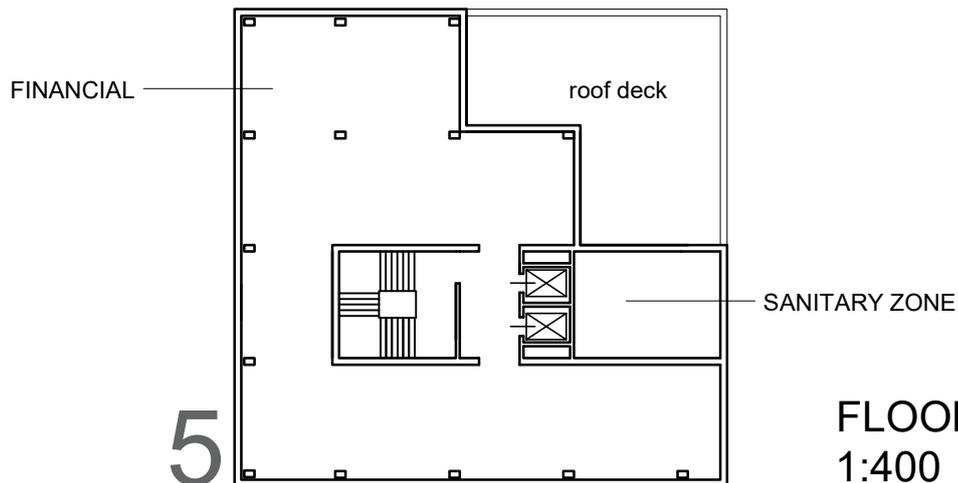
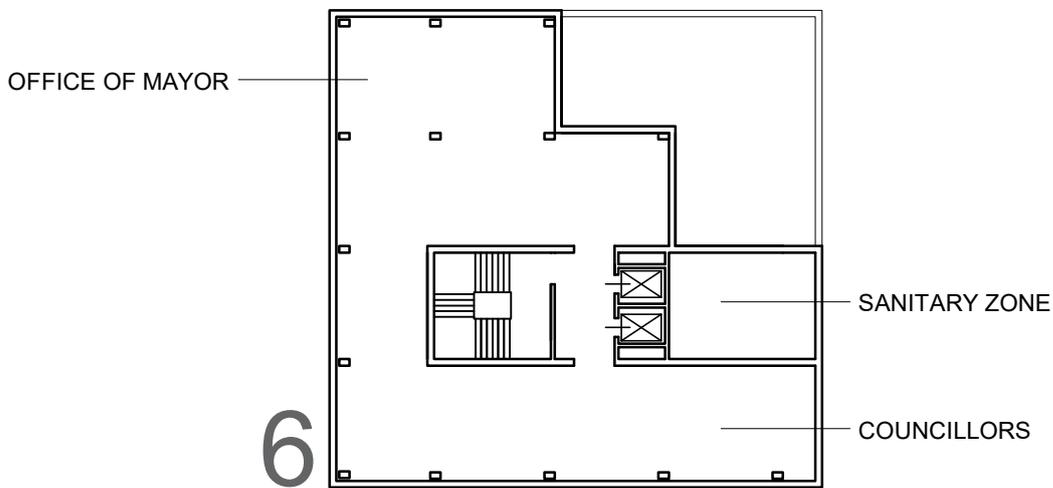
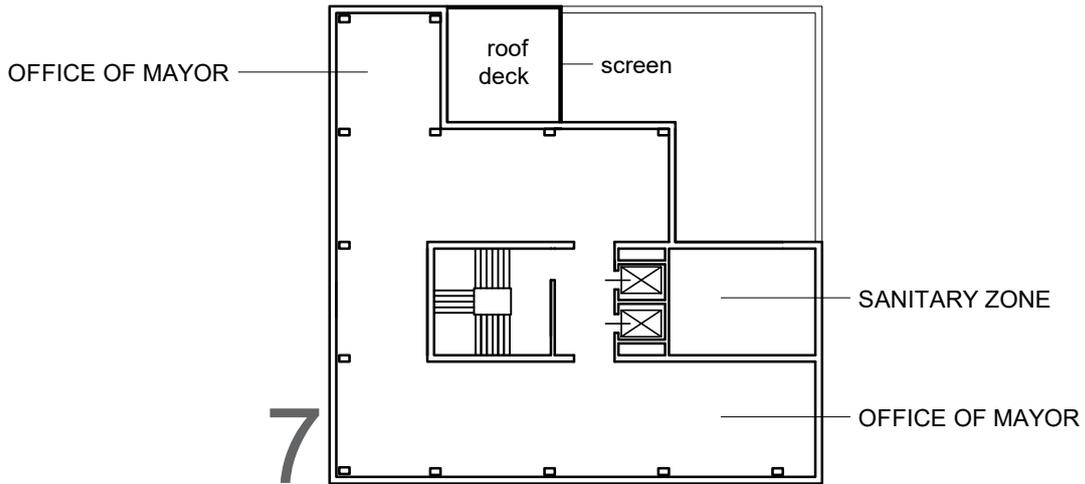
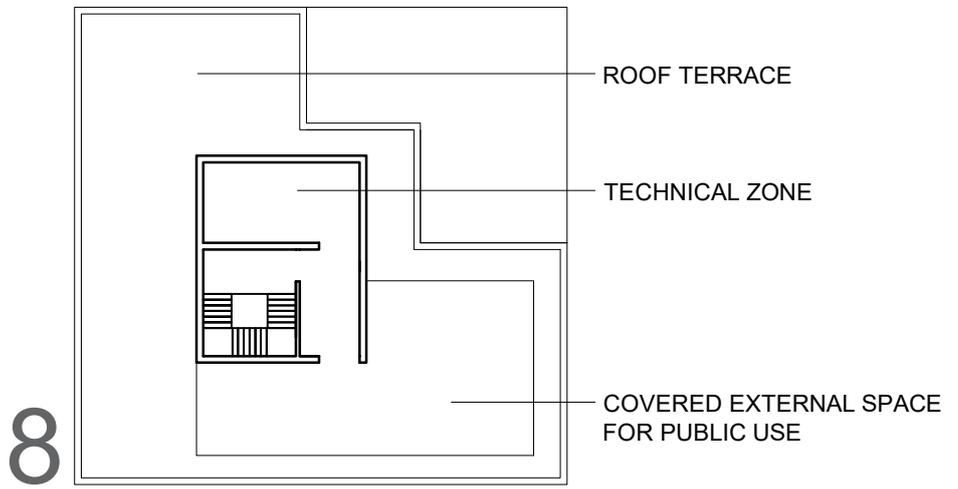
The office areas are to be lit by ceiling lights, each having a plug-in module comprising an integrated daylight sensor, a presence and an infra-red interface.

To allow a largely automatic and economical operation of the technical building services, a primary building management system (BMS) will be installed. This combines many data points by means of an automation system using DDC (direct digital control) to enable simplified operation, centralized monitoring and optimization of the technical building services.

To reduce the cost of water use there will be the rainwater harvesting and grey water use systems provided. The roof will be arranged partially as green in order to absorb rain water. Some of the "recessed" walls surrounding the deck/roof terraces on higher floors will also be green in order to provide noise damping.







FLOOR PLANS
1:400

Building parameters

	unit	number of units
Land area	m2	1 282
Built-up area	m2	626
Built-up space	m3	19 200
Carpet area	m2	5 566

Investment costs

	unit	number of units	unit price*	price Nr of units x unit price
Outdoor spaces				7500000
Reconstruction of the building, including all installations and built-in equipment	m2	3 920,00		
Carpet area without corridors and technical equipment rooms - Pu	m2	4 446	5 757 Kč	25 600 000 Kč
Corridors area - Pk	m2	1 000	3 600 Kč	3 600 000 Kč
Area for technical equipment - Ptv	m2	120	6 666 Kč	800 000 Kč
Surface of facades in total	m2	2 700,00		
Lightweight external facade	m2	2 700	16 666 Kč	45 000 000 Kč
Heavy external facade	m2	0	0 Kč	0 Kč
Other.....	m2	0	0 Kč	0 Kč
Area of the roof and terraces	m2	600,00		
Roof	m2	100	1 800 Kč	180 000 Kč
Walkable roof	m2	300	2 000 Kč	600 000 Kč
Green roof	m2	200	2 000 Kč	400 000 Kč
Technology				
airconditioning	set	estimate costs		22 000 000 Kč
smart building system (Measurement and control, smart instalation etc)	set	estimate costs		3 000 000 Kč
elevators	set	estimate costs		2 000 000 Kč
other technologies	set	estimate costs		2 000 000 Kč
Embedded Interior	set	estimate costs		5 570 000 Kč
Furniture and settings	set	estimate costs		14 250 000 Kč
Reserve	5,00%			7 500 000 Kč
Investment costs in total				140 000 000 Kč

*Indicate the price list of works on the basis of which the price is determined, or describe a method for determining the unit price

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