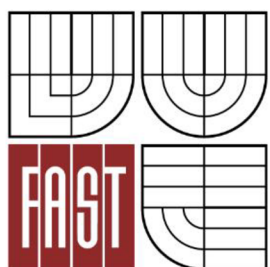




VYSOKÉ UČENÍ TECHNICKÉ V BRNĚ
BRNO UNIVERSITY OF TECHNOLOGY



FAKULTA STAVEBNÍ
ÚSTAV POZEMNÍHO STAVITELSTVÍ

FACULTY OF CIVIL ENGINEERING
INSTITUTE OF BUILDING STRUCTURES

PENZION PRO SENIORY

SENIOR&APOS;S BOARDING HOUSE

DIPLOMOVÁ PRÁCE

DIPLOMA THESIS

AUTOR PRÁCE

AUTHOR

BC. ELIŠKA UHERÍKOVÁ

VEDOUcí PRÁCE

SUPERVISOR

Ing. arch. IVANA KOŠÍČKOVÁ, Ph.D.



VYSOKÉ UČENÍ TECHNICKÉ V BRNĚ FAKULTA STAVEBNÍ

Studijní program	N3607 Civil Engineering
Typ studijního programu	Navazující magisterský studijní program s výukou v anglickém jazyce s prezenční formou studia
Studijní obor	3608T001 Pozemní stavby
Pracoviště	Ústav pozemního stavitelství

ZADÁNÍ DIPLOMOVÉ PRÁCE

Diplomant	Bc. Eliška Uheríková
Název	Penzion pro seniory
Vedoucí diplomové práce	Ing. arch. Ivana Košíčková, Ph.D.
Datum zadání diplomové práce	31. 3. 2015
Datum odevzdání diplomové práce	15. 1. 2016
V Brně dne 31. 3. 2015	

.....
prof. Ing. Miloslav Novotný, CSc.
Vedoucí ústavu

.....
prof. Ing. Rostislav Drochytka, CSc., MBA
Děkan Fakulty stavební VUT

Podklady a literatura

Katalogy a odborná literatura, Zákon č. 183/2006 Sb. ve znění zákona č. 350/2012 Sb., Vyhláška č. 499/2006 Sb. ve znění vyhlášky č. 62/2013 Sb., Vyhláška č.268/2009 Sb., Vyhláška č.398/2009 Sb., platné ČSN, Směrnice děkana č. 19/2011 a dodatky.

Zásady pro vypracování

Zadání VŠKP: Projektová dokumentace stavební části k provedení novostavby penzionu pro seniory.

Cíl práce: vyřešení dispozice pro daný účel, návrh vhodné konstrukční soustavy, nosného systému a vypracování výkresové dokumentace včetně textové části a příloh podle pokynů vedoucího práce. Textová i výkresová část bude zpracována s využitím výpočetní techniky. Výkresy budou opatřeny jednotným popisovým polem a k obhajobě budou předloženy složené do desek z tvrdého papíru potažených černým plátnem s předepsaným popisem se zlatým písmem. Dílčí složky formátu A4 budou opatřeny popisovým polem s uvedením seznamu příloh na vnitřní straně složky.

Požadované výstupy dle uvedené Směrnice:

Textová část VŠKP bude obsahovat kromě ostatních položek také položku h) Úvod (popis námětu na zadání VŠKP), položku i) Vlastní text práce (textová část projektové dokumentace dle vyhlášky č. 499/2006 Sb. ve znění vyhlášky 62/2013 Sb.) a položku j) Závěr (zhodnocení obsahu VŠKP, soulad se zadáním, změny oproti původní studii).

Příloha textové části VŠKP v případě, že diplomovou práci tvoří konstruktivní projekt, bude povinná a bude obsahovat výkresy pro provedení stavby (technická situace, základy, půdorysy řešených podlaží, konstrukce zastřešení, svislé řezy, pohledy, detaily, výkresy sestavy dílců popř. výkresy tvaru stropní konstrukce, specifikace, tabulky skladeb konstrukcí – rozsah určí vedoucí práce), zprávu požární bezpečnosti, stavebně fyzikální posouzení stavebních konstrukcí včetně zadané specializované části. O zpracování specializované části bude rozhodnuto vedoucím DP v průběhu práce studenta na zadaném tématu.

VŠKP vypracujte a rozčleňte podle dále uvedené struktury:

1. Textová část VŠKP zpracovaná podle Směrnice rektora "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací" a Směrnice děkana "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací na FAST VUT" (povinná součást VŠKP).

2. Příloh

Struktura bakalářské/diplomové práce

VŠKP vypracujte a rozčleňte podle dále uvedené struktury:

1. Textová část VŠKP zpracovaná podle Směrnice rektora "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací" a Směrnice děkana "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací na FAST VUT" (povinná součást VŠKP).
2. Přílohy textové části VŠKP zpracované podle Směrnice rektora "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací" a Směrnice děkana "Úprava, odevzdávání, zveřejňování a uchovávání vysokoškolských kvalifikačních prací na FAST VUT" (nepovinná součást VŠKP v případě, že přílohy nejsou součástí textové části VŠKP, ale textovou část doplňují).

3.

.....
Ing. arch. Ivana Košíčková, Ph.D.
Vedoucí diplomové práce

Abstrakt

Tato práce má za cíl vypracovat projektovou dokumentaci pro provedení stavby. Projekt je řešen jako studie pro budoucí reálnou novostavbu Následné lůžkové péče řazené do kategorie ubytování pro seniory v lokalitě Ostrava – Vratimov. Novostavba je určena pro krátkodobý pobyt (max 3 týdny). V budově je 21 pokojů pro 42 pacientů. Dispozice jsou řešeny do bloků pro budoucí upravení nebo rozšíření. Budova je trojpodlažní respektující okolní zástavbu, z které vycházely designové prvky budov. Budova disponuje i terasou se zelení. Konstruktivní systém je ze zdiva Porotherm plněným minerální vatou kombinovaný s železobetonovou monolitickou deskou. Střešní konstrukce je z opakovaných sedlových střech s plechovou krytinou.

Klíčová slova

Senioři, zděná konstrukce, opakovaná sedlová střecha, ozeleněná terasa, následná lůžková péče, bloková dispozice, kovová střešní konstrukce

Abstract

The aim of this thesis is design the project documentation for building realisation. The project is solved as study for real building. The subsequent bed health care settled in category of accommodation for seniors in Ostrava – Vratimov location. The building is available for maximal period 3 weeks. The building is equipped by 21 rooms for 42 patients. The new building is design as block disposition for future redesign or construction. The building is three floor structure with respect to surrounding building architecture on which the design of building is based. In the building there are also terrace with green roof part. Vertical structure are made from ceramic blocks Porotherm with mineral wool infill combined with reinforced concrete monolithic slab. The roof structure is from repeated pitched roofs with metal roof covering.

Keywords

Seniors, ceramic block structure, repeated pitched roof, green terrace, subsequent bed health care, block disposition, metal roof cover

Bibliografická citace VŠKP

Bc. Eliška Uheríková *Penzion pro seniory*. Brno, 2016. 22 s., 278 s. příl. Diplomová práce.
Vysoké učení technické v Brně, Fakulta stavební, Ústav pozemního stavitelství. Vedoucí práce
Ing. arch. Ivana Košíčková, Ph.D.

Prohlášení:

Prohlašuji, že jsem diplomovou práci zpracoval(a) samostatně a že jsem uvedl(a) všechny použité informační zdroje.

V Brně dne 15.1.2016

.....

podpis autora

Bc. Eliška Uheríková

PROHLÁŠENÍ O SHODĚ LISTINNÉ A ELEKTRONICKÉ FORMY VŠKP

Prohlášení:

Prohlašuji, že elektronická forma odevzdané diplomové práce je shodná s odevzdanou listinnou formou.

V Brně dne 14.1.2016

.....
podpis autora

Bc. Eliška Uheríková



VYSOKÉ UČENÍ TECHNICKÉ V BRNĚ
FAKULTA STAVEBNÍ

POPISNÝ SOUBOR ZÁVĚREČNÉ PRÁCE

Vedoucí práce Ing. arch. Ivana Košíčková, Ph.D.

Autor práce Bc. Eliška Uheríková

Škola Vysoké učení technické v Brně

Fakulta Stavební

Ústav Ústav pozemního stavitelství

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Název práce Penzion pro seniory

Název práce v anglickém jazyce Senior's Boarding House

Typ práce Diplomová práce

Přidělovaný titul Ing.

Jazyk práce Čeština

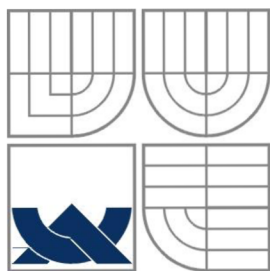
Datový formát elektronické verze

Anotace práce

Anotace práce v anglickém jazyce

Klíčová slova

Klíčová slova v anglickém jazyce



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BRNO UNIVERSITY OF TECHNOLOGY



FAKULTA STAVEBNÍ
ÚSTAV

FACULTY OF CIVIL ENGINEERING
DEPARTMENT

A. ACCOMPAGNING REPORT

PENZION PRO SENIORY
SUBSEQUENT HEALTH CARE

AUTOR PRÁCE
AUTHOR

Bc. ELIŠKA UHERÍKOVÁ

VEDOUCÍ PRÁCE
SUPERVISOR

Ing. arch. IVANA KOŠÍČKOVÁ Ph.D.

BRNO 2016

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A. ACCOMPAGNING REPORT

A.1. IDENTIFICATION INFORMATION

A.1.1. BUILDING INFORMATION

Building name: SUBSEQUENT BED HEALT CARE

Building placement: Sokolská 133/1
739 32
Vratimov

Area: 848 m2

Cadastral area: Vratimov [\[785601\]](#)

Parcel number: 155

Owner cadastral leaf: 3528

Map leaf: Ostrava, 7-4/14

Owner: H&H MEDICA s.r.o.

Documentation subject: Diploma project

A.1.2. CONTRACTOR INFORMATION:

Contractor: H&H MEDICA s.r.o.
Dr. Martínka 1491/7
Hrabůvka
70030 Ostrava

A.1.3. DESIGNER INFORMATION:

Designer: Bc. Eliška Uheríková
Vrbka 35
Krásné Pole
72526 Ostrava

A.2. LIST OF ENTRANCE INFORMATION

- Basic information about decisions or arrangement on which base is building permit. (Notation of building office/name of authorized inspector, date of process and number of negotiation decision or arrangement. Not a point of diploma project.
- Basic information about the documentation or project documentation on which base was the project documentation made for providing of building.

A.2.1. STANDARDS

- ČSN 013420 – Civil engineering drawings – Drawing of building part
- ČSN 730540-2 Thermal protection of buildings
- ČSN 730540-3 Thermal protection of buildings . part 3-Design quantity values
- ČSN 730532 Acoustic – Noise protection from building and connected with acoustic properties of a product
- ČSN 730802 Fire safety – non-manufacturing objects
- ČSN 013495 Fire safety drawing

A.2.2. REGULATION

- 298/2009 About general technical requirements ensure wheelchair accessible usage of buildings
- 269/2009 About general requirements for usage of area

A.2.3. INTERNET SOURCES

- www.isover.cz
- www.porotherm.cz
- <http://lindabstrechy.cz/>
- <http://linet.com/>
- <http://rigips.com/>

A.3. SITE INFORMATION

A.3.1. EXTENT OF BUILDING SITE

In time of draw up of project the building site is partially built up. The parcel is written in the cadastral maps as building parcel according the territorial plan of municipality.

A.3.2. PROTECTION OF BUILDING SITE

For this parcel is not necessary use any other regulation such as monument protection, historic sight zone, flood up area ...)

A.3.3. BUILDING SITE OUTFLOW

The surface area is pretty big, smoothly in slope max 1 m differences and mostly is covered by grass or pavement. The pavement id made of grassy concrete tiles for better properties of outflow possibilities. The roof has metal cover with coefficient $\psi=1.0$, terrace has coefficient $\psi=0.5$. The water will be used for irrigation of vegetation on terrace and in building surrounding. The building site is good for rain water soaking.

A.3.4. LOCAL PLANING DOCUMENTATION

The project is done according the information with local planning documentation, if there are no local decisions or regulations, or if there are no local agreements. The project is done according to Local plan of municipality Vratimov and Moravian-Silesian region.

A.3.5. LOCAL PLAN DECISION

The information must be according to the local decisions or statutory contract replaced the local decision or local agreement, alternatively to regulation plan in extent of replacing local regulation with the building permit and in case of additional building works there are certain conditions given by changes in usage of building and its accordance with the local plan documentation. The project is done according to Local plan of municipality Vratimov and Moravian-Silesian region.

A.3.6. CONDITIONS FOR USAGE OF SITE

The common condition for usage if building site are fulfilled.

A.3.7. CONDITIONS FOR STATE AUTHORITY

The common conditions for communication and presentation of documents to state authority are fulfilled.

A.3.8. LIST OF EXEPTIONS AND RELIEF

There is no need any exception and relief for this building project.

A.3.9. LIST OF RELATED AND DETERMINED INVESTITIONS

There is no related and determined investing for this building project.

A.3.10. LIST OF AFFECTED PARCELS AND BUILDING

The building will be closely affected by existing buildings on the building site. The surgery is under the same owner as the investor of the project of subsequent bed health care. Another affected parcel is a neighbor parking place in the ownership of the municipality. There is an agreement that the personal of surgery and future inhabitants can use the parking for agreed payment without any maintenance. The maintenance will be fulfilled by technicians employed by the surgery owner.

A.4. BUILDING INFORMATION

A.4.1. TYPE OF BUILDING

Designed building is new building, it isn't reconstruction or another change of existing building.

A.4.2. PURPOSE OF BUILDING

The main building purpose is subsequent bed health care. The building capacity is 42 people. The time spent in building is for patient maximal 3 weeks, the healthcare serve as any kind of health resort mostly for people unable to take care about themselves.

A.4.3. PERMANENT OR TEMPORARY

The building is permanent structure.

A.4.4. MONUMENT PROTECTION

The building is not protected as any kind of historical monument and do not contain any special conditions.

A.4.5. TECHNICAL REQUIREMENT

The information about technical requirements to building and common technical requirements ensure wheel chair accessibility usage of building

The design documentation is done according the regulation 268/2009 About the common technical requirements to building and especially regulation about:

- Common requirements to building site products
- Thermal and energetic requirements
- Fire safety

The building technical requirements and same time common technical requirements ensured wheel chair accessibility usage of building according the regulation 398/2009

A.4.6. CONDITIONS FOR STATE AUTHORITY

The common conditions for communication and presentation of documents to state authority are fulfilled.

A.4.7. LIST OF EXEPTIONS AND RELIEF

There is no need any exception and relief for this building project.

A.4.8. BUILDING CAPACITY

Design capacity of building:

- New build up area: 970.825m²
- Existing building area: 848 m²
- Parcel area: 7 515 m²
- Percentage of buildup area: 24,2%
- Design capacity: 21 patient room for 42 patients
- Employees: 10 employees

A.4.9. BASIC BALANCE OF BUILDING

Demand and consumption of medias and matters, rain water management, waste management and type of waste and emission, the class of energy demand ..)

This questions are not in the solving of Diploma project.

A.4.10. TIME SCHEDULE

The basic milestones are just orientation milestones, expected time:

Start of construction:	7/16
Finishing of earth works:	8/16
Finishing of connections:	9/16
Finishing of load bearing structures:	10/16
Complete finishing:	8/17
Hand over the building:	10/17

A.4.11. COST

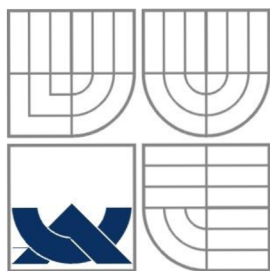
The orientation building cost is set on 92 mil CZK without WAT

A.5. TECHNICAL AND TECHNOLOGICAL EQUIPMENT

Building main source is gas and electricity. The technological equipment is gas kettle and heater of domestic water. New technology is also heating of room by wall panels under the plaster. This technology is specified in assembly manual.

Day 16.1.2015

Signature



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FAKULTA STAVEBNÍ
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B. SUMMARY TECHNICAL REPORT

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BRNO 2016

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A. ACCOPAGNING REPORT

B. SUMMARY TECHNICAL REPORT

B.1. SITE DESCRIPTION

B.1.1. BUILDING SITE DESCRIPTION

Given parcel with the parcel number 155 signed in cadastral evidence in 3528 owner leaf has area 7515 m² and is located in Sokolská 133/1, Vratimov, 739 32. The building site has already one existing building and then the parcel is defined as building parcel. This parcel location is equipped by engineering nets as are gas, electricity, fresh water and sewage system piping. The new building has specified connection in drawing 0000-C2-02 with connected pipe connections.

The parcel owner is company H&H MEDICA s.r.o., with office situation in Hrabůvka, street Dr. Martíňka 1491/7, 700 30 Ostrava. The parcel is 283 meters above sea level.

B.1.2. RESEARCHS AND ANALYSES:

In the building site there were realized radon analysis, which declare middle radon risk. Next analysis specified the earth composition and the underground water level. Soil type is sandy loam SP, class S2, R_{dt}=0,32 MPa. The underground water level does not influence construction not at all.

SOIL PROPERTY

Remould modulus E _{def} (MPa)	3,3*
Conversion coefficient	0,47
Weight capacity γ (kN/m ³)	19,8 - 20,1*
Total cohesiveness C _u (kPa)	60
Effective cohesiveness C _{ef} (kPa)	12
Eff. angle of internal friction φ _{ef} (°)	18
Poisson coefficient ν	0,40

B.1.3. PROTECTION AND SAFETY AREA:

The building is design with accordance to fulfill all condition for protection and safety areas.

B.1.4. FLOOD UP AREA:

The building is not located in area with flood risk, mined area or any other risky area.

B.1.5. INFLUENCE TO SURROUNDING:

The building will not have any negative influence to surrounding areas. In time of construction there is need to organize all building works to not restrict traffic in streets in neighbor area. The construction works can't have any negative influence to surrounding buildings and areas. From the environmental point of view there will be specific care about noise, vibration and protect against pollution of communication and fresh air, pollution of ground level and under ground level water and respecting requirements and regulations in objects in building equipment.

The noise and vibration influence will be mostly to surgery in same parcel. In the time of construction there will be protection walls against noise. Also all the operations will be moved into another surgery to reach perfect conditions.

B.1.6. ASSENTATION, DEMOLITIN, TREE LOGGING:

For building requirements there are no need for assentation, demolition or tree logging in area of building parcel.

B.1.7. AGRICULTURAL LAND RESOURCES:

There are any requirements for confiscation or occupation from agricultural land resource or parcel which need to fulfill the requirements for forest permanent or temporary.

B.1.8. TECHNICAL LAND CONDITION:

The connection to infrastructure in municipality will be done by reinforced access road, which comes from existing communication III. Class no. 0026. These connections are realized according the reinforced area purpose. The connection to parking area has asphalt finishing surface. There are parking place for 45 cars which is not only for Subsequent bed health care but also for municipality needs. The solving parcel has her own parking places 6 parking places for employees of surgery in dimension 2,5 m x 5 m and 6 parking places (min 5% from all accessible parking places) design only for handicapped people in dimension 3,5 m x 5 m. Nearby there are another parking place for 30 cars.

The fire road is basic asphalt road to handicapped parking extended by concrete grassy tiles to requirement width.

Connection to technical infrastructure is by connections. The water, electricity, gas and sewage piping. In parcel there are build concrete pillar for HUP – main gas closure (covering the box 620x410x950mm) , concrete control shaft from sewage piping S1 with diameter 1000mm and steel cover 600mm, water measuring shaft A21200x900mm with steel round cover 600x600mm. There are also distribution box in building interior in dimension 485x350x197 mm in masonry pillar.

B.1.9. SUBJECT AND TIME BINDING:

The building do not request any subject or time binding limited building realization.

B.2. SITE DESCRIPTION

B.2.1. BUILDING PURPOSE

- New build up area: 970.825m²
- Existing building area: 848 m²
- Parcel area: 7 515 m²
- Percentage of buildup area: 24,2%
- Design capacity: 21 patient room for 42 patients
- Employees: 10 employees

The main building purpose is subsequent bed health care. The building capacity is 42 people. The time spend in building is for patient maximal 3 weeks, the healthcare serve as any kind of health resort mostly for people unable to take care about themselves.

B.2.2. ARCHITECTONIC AND URBAN SOLUTION

B.2.2.1. URBANISMUS

The main investor peak is to build standard building the Subsequent bed health care, including fencing and access roads, garden equipment, net connection ... The building function is commercial and service. The building respect surrounding building and copy the typical municipality style with modern point of view and new modern materials.

B.2.2.2. ARCHITECTURE

The building has three floors, with patient rooms oriented to the south. The demand from investor was to reach the main corridor lighten by daily light. From this case the shape was formed to allow terrace in the second floor level. The terrace is design for calm relaxation in time of summer days with garden and comfortable vegetation. The terrace has concrete tiles cover with substrate vegetation part with glowers.

The building copy the pitched roof style of surrounding buildings and bring a little taste of west Amsterdam culture of variation of colors and different window shape and position repetition. The colors are in the ochre tone with slightly different fullness and granularity.

B.2.3. OPERATION ORDER

In the building there will be no manufacturing, the function of building is clearly commercial. Operation order see – appendix.

B.2.4. DISABILITY BUILDING USAGE

The building is designed according the regulation no. 398/2009 about technical requirements for disability people.

Working part of building is not designed for handicapped people with disability or with lower ability of movement. There are situated door sill and the dimension are not designed for movement for disability people.

The rest of building is designed for the movement for disable people. This part was solved according to the regulation and requirements for disable people. Namely it consider the dimensions of patient rooms, the bathroom in rooms, the corridor and another communications ways. With the accordance of movement of disable people the building

is design with view of hospital bed transport – elevators, corridors, patient room doors. Most important in disable people comfort design are openings dimensions and handrails.

Also the staircase steps width and height are design with view to handicapped people and their movement comfort.

The main building entrance is also design for handicapped people. The concrete reinforced area with maximal slope of 2% reach the main entrance door from parking place by using pedestrian area. The maximal height differences is up to 20mm.

The closest part of parking places is design for handicapped people to allow comfortable and fast transport to health care and back.

B.2.5. DISABILITY BUILDING USAGE

From the point of view of safety of work and technical equipment is a common environment for users of the object.

The danger can only occur due to negligence and eg. In improper handling and storage of hazardous waste or drugs. It can also be a threat eg. in the use of household appliances and heaters. The detailed safety measures are stated in user instructions for individual appliances. Paramedics and Nurses must be to work on the jobsite trained and have the necessary qualifying for the implementation of the operation.

Operation preparation falls into a separate operation where a person may not work unlearned and people with inadequate qualifications. Here, the conditions for occupational safety and handling equipment instructions and requirements for the operation.

B.2.6. BASIC CHARACTERISTIC

B.2.6.1. URBANISMUS

The building Subsequent bed health care is individually standing building. Disposition solved for 21 patient room for 42 people, there are 13 employees including people in the services. The building has 3 floor and layout shape is rectangular. In both side of building are located communication ways as elevator and staircase.

The building has rectangular shape and the disposition conception is mainly into patient blocks repeating in each of 3 floors. The main hall goes linearly throw whole building and serves also as a fire path. The connection between layers is divided into two staircase in both sides of building layout extended by two hospital bed elevators. The opposite of patient rooms is situated base for employees including daily room, office, main nurse room and hygienic facilities.

The building energy comes from co-generation unit based on stilling engine on electricity. The surplus of energy will be sold back into electric distribution net. The heating of patient rooms is throw wall piping technology covered by plaster. This technology works in same time as a cooling too. The rest of rooms is heated by floor heating.

The elevators are designed as a patient bed elevators also serves for fire safety evacuation. One elevator in each side of building layout. The installation shafts are situated into gypsum board partitions with mineral wool infill.

B.2.6.2. STRUCTURAL AND MATERIAL SOLUTION

- *EARTHWORKS*

For engaged intention, shallow drilling sounding was carried out sample collections including soil analysis on characteristic depths. Foundation conditions are, in accordance with the standard (ČSN 73 1001), simple, the structure of designed building is complicated for the reason of its sensitivity for non-uniform settlement. (influencing the foundation design, 2nd geo-technique category - ČSN 73 1001). Judged locality –site is conditionally available for foundation of two-storied building of strip footing.

After standard “Earthwork” (ČSN 73 3050) – subsoil belongs to 2nd class of workability. Timbering to excavation is recommended. Founding on pads is possible with the view of foundation conditions but the construction from bearing elements of the building would be more expensive and more complicated. The submitter of the task didn’t demand the geological prospection of the bedrock.

On the base of radon survey, the site of building has middle radon index (concerning infiltration of the radon from subsoil into building)Middle radon index together with the fixed permeability for radon (31.4 kB/m) requires specific measures – single-layer insulation connecting two functions – insulation against soil humidity and gas-tight insulation. In the course of construction, it is necessary that the footing bottom before compacting and after compacting was dray, non-frozen and properly cleaned. Its stage before and after compacting should be noted by record in site diary.

- *FOUNDATION*

The soil has load resistance $R_{dt} = 320$ kPa. The class is S2, sandy loam notification SP. According the calculation the foundation width is min 0,64m, under the wall 400mm. The depth of foundation is according the calculation is 700mm.

FOUNDATION STRIP CONCRETE DEMAND 167,01 m³

Foundation strip are made of reinforced concrete C 20/25, XC2. Reinforcing B500B steel. Peripheral wall has foundation in 1,2 m, interior wall has foundation in 0,7 m, width 0,60m.

FOUNDATION SUBBASE CONCRETE DEMAND 11,62 m³

Foundation strip subbase are made of concrete C 16/20, XC2. Peripheral wall has foundation subbase in -1,55 m, interior wall has foundation in 1,050 m, the foundation width is equal to 0,60m,the foundation heights equal to 0,080m.

FOUNDATION SOIL DIG OUT DEMAND 409,28 m³

Formwork with cross bracing. Interior foundation formwork demand (0,7 m deep) is 172,72 m in total. Peripheral wall formwork demand (1,2 m deep) is 236,56 m. The surrounding width is 0,5 meter in both sides.

Mechanical properties of concrete	14000 - 41000 MPa (2 - 6 x 10 ⁶ psi)
Density : 2240 - 2400 kg/m ³ (140 - 150 lb/ft ³)	Permeability : 1 x 10 ⁻¹⁰ cm/sec
Compressive strength :	Coefficient of thermal expansion :
20 - 40 MPa (3000 - 6000 psi)	10 ⁻⁵ oC ⁻¹ (5.5 x 10 ⁻⁶ oF ⁻¹)
Flexural strength : 3 - 5 MPa (400 - 700 psi)	Drying shrinkage : 4 - 8 x 10 ⁻⁴
Tensile strength : 2 - 5 MPa (300 - 700 psi)	Drying shrinkage of reinforced concrete : 2 - 3 x 10 ⁻⁴
Modulus of elasticity :	Poisson's ratio : 0.20 - 0.21
	Shear strength : 6 - 17 MPa

- *VERTICAL STRUCTURES*

The vertical structure is made from masonry with different width. The load bearing peripheral walls are made of POROTHERM 38 T Profi, with dimension 248x380x238mm. The masonry is ceramic block with mineral wool infill. The thermal parameters U=0,19 W/m²K and thermal resistance R=5,23 m²K/W. From the fire safety point of view the fire resistance is REI 90 DP1.

In the building there are a few types of partitions. The partition between individual rooms are made from masonry POROTHERM 20 AKU with dimension 372x200x238mm. The masonry is ceramic block with special acoustic properties R_w=52 dB. The thermal parameters U=0,64 W/m²K.. From the fire safety point of view the fire resistance is REI 180 DP1.

Another partitions are made again from ceramic block POROTHERM 8 P+D, with dimension 497x80x238mm. The thermal parameters U=1,75 W/m²K and thermal resistance is R=0,33m²K/W. From the fire safety point of view the fire resistance is EI 60 DP1.

Vertical structures in openings are completed by lintels. The lintels are ceramic lintels POROTHERM LINTEL 7 with thickness 70mm, the coefficient of thermal flow λ_{eq} = 1,00 W/(m.K). Fire resistance of whole ceramic lintel is A1 class. The profiles consist of ceramic U shape profile UZ 238/70 with concrete infill C25/30 reinforced by KARI (W) steel type BSt 500A with bulk density 142 kg/m².

Lintels longer than recommended distances are made from ceramic lintels mostly in peripheral walls longer than 3 m type - POROTHERM KP XL, combined with reinforced concrete infill, according producer technology requirements.

- *HORIZONTAL STRUCTURES*

The ceilings above floors will be made as monolithic reinforced concrete slab 200mm supported by load bearing walls. Reinforcing is steel net for distributive and main reinforcing. Reinforcing will be calculate by ČSN.

Mechanical properties of concrete

Density :	2240 - 2400 kg/m ³ (140 - 150 lb/ft ³)
Compressive strength :	20 - 40 MPa (3000 - 6000 psi)
Flexural strength :	3 - 5 MPa (400 - 700 psi)
Tensile strength:	2 - 5 MPa (300 - 700 psi)
Modulus of elasticity :	14000 - 41000 MPa (2 - 6 x 10 ⁶ psi)
Permeability :	1 x 10 ⁻¹⁰ cm/sec
Coefficient of thermal expansion :	10-5 oC-1 (5.5 x 10 ⁻⁶ oF-1)
Drying shrinkage :	4 - 8 x 10 ⁻⁴
Drying shrinkage of rfc concrete :	2 - 3 x 10 ⁻⁴
Poisson's ratio :	0.20 - 0.21
Shear strength :	6 - 17 MPa

- *STAIRCASE*

The staircase are made from prefabricated elements. Two elements are just middle landing and floor connection and two types of staircase element. One element is the first arm – designed to connected to floor slab. The rest of staircase arms are same – see in drawings staircase 0500-C2.

D05a - stair element - first staircase arm, 1400x3300mm

D05b - stair element - following staircase arm, 1400x3100mm

D05c - staircase landing 300x1200mm

D05d - staircase landing 300x1550mm

Calculation of stairs - see appendix calculation of stairs

The floor finishing in on the staircase are made by using of aluminum profile which connect floor on the top of stairs and also in the vertical part of stair step.

- *ROOF STRUCTURE*

The roof structure is made from timber trusses defined in drawings. The distance from individual timber trusses is 1,2m. The timber trusses are settled on the monolithic reinforced concrete slab. On the slab there is layer with mineral wool insulation. On the top of timber structure there are OSB board with waterproofing insulation and final layer is metal sheet cover. The roof structure continuous on the exterior vertical separation façade elements and side communications parts.

- *THERMAL INSULATION*

The roof structure insulation is mineral wool insulation ISOVER Piano with thermal properties $\lambda=0,037$ W/m²K, specific load values 0,15 KN/m³ and fire resistance class A1. Cd= 840 J/kgK. The insulation layer is placed on water vapor barrier. The type of insulation in roof system is chosen for easy manipulation and inserting between timber trusses.

The insulation in floors against the impact sound is made from stabilized polystyrene board EPS of thickness of 80mm, with thermal property $\lambda=0,035$ W/mK. The diffusion factor is 70. The pressure stress increase of 10% of compression (σ_{10}) $CS(\sigma_{10})=150$ kPa.

The last type of thermal insulation used in big value in the building is extruded polystyrene boards in dimensions 1250x600mm Styrodure 3035 CS, with properties $W_i(t)=0,2\%$. The pressure stress increase of 10% of compression (σ_{10}) $CS(\sigma_{10})=300$ kPa. The thermal insulation property is $\lambda=0,038$ W/mK. The diffusion factor is 150-50.

- *ACOUSTIC INSULATION*

The acoustic insulation is insulation in floors against the impact sound is made from stabilized polystyrene board EPS of thickness of 80mm, with thermal property $\lambda=0,035$ W/mK. The diffusion factor is 70. The pressure stress increase of 10% of compression (σ_{10}) $CS(\sigma_{10})=150$ kPa. There are also insulation straight under the floor mirelon th.: 50mm.

- *WATERPROOFING, RADON INSULATION*

The waterproofing on the terrain is made from SBS modified asphalt with bulk density 3,5 kg/m² and diffusion factor 29 000. Middle layer is reinforced by glass fiber net and top layer could be graveled. This waterproofing is connected by melting to another waterproofing layer – oxidized asphalt with diffusion factor 45 000, and bulk density 1,4 kg/m².

The application of waterproofing is according the assembly instruction of producer.

B.2.7. TECHNICAL AND TECHNOLOGICAL EQUIPMENT

Building main source is gas and electricity. The technological equipment is gas kettle and heater of domestic water. New technology is also heating of room by wall panels under the plaster. This technology is specified in assembly manual.

B.2.8. FIRE PROTECTION

Project for building permit “Subsequent impatient health care” satisfy requirement for fire safety of building by respecting above mentioned requirements and noted changes in contrast to original project:

All building products assuring fire safety (Plasterboard structure, emergency lighting) will be certified and will be installed by competent company and operated according instructions of supplier / producer. All technical and technological devices will satisfy law and normative statues – for instance distance of heating appliances from combustible substances.

B.2.9. ENERGY MANAGEMENT

There is a boiler room present in an object, for gaseous fuels with two boilers with total performance 170 kW. This room was separated to an individual fore compartment due to boilers performance. Boiler room will be solved according CSN 070703, here will be places 1xphp CO2 and space will be equipped by gas flee sensors.

Inside an object the floor heating connected to boiler room will be provided according valid CSN. Chimney will correspond to CSN EN 1443:2004 and CSN 734201:2010 its revision will run in according to government regulation no. 91/2010. Safety distances between combustible substances, decree no 23/2008.

B.2.10. HYGIENIC MANAGEMENT

Newly built homes for the elderly is designed to accommodate the service provided meet hygiene requirements both in terms of heating, ventilating, water supply and lighting. All areas of the building are naturally ventilated windows, except bathrooms where

Natural ventilation: Assessing the acoustics design, insolation and lighting residential room. The building will be constructed space for storing municipal waste that is shown in the drawing situation. The waste will be treated in accordance with Decree 185/2001 Coll. About Waste. The resulting waste. It will be sorted according to valid regulations. Medical hazardous waste will be weighed in charge services at designated places (incinerators) and at given time intervals. This waste will be secured against manipulation unspecialized persons. The construction does not have a significant negative effect on the surrounding structures. Due to the nature the object is not expected significant nuisance surroundings noise, vibration or dustiness.

B.2.11. PROTECTION AGAINST NEGATIVE INFLUENCE

- Protection against penetration of radon from the subsoil

On the construction site survey was conducted radon risk, which proved Medium radon risk. Waterproofing is designed from two asphalt sheets SBS modification Type S strewn on the asphalt penetration. This waterproofing stack meet the equirements for protection against medium radon risk.

- Protection against stray currents

The building is not in the occurrence of stray currents. Under construction will established the grounding system because of seduction surges or lightning strikes.

- Protection from technical seismicity

The building is not located in seismically vulnerable areas.

- Protection against noise

The construction does not cause excessive noise.

- Flood control

The building is not located in a flood area.

B.3. TECHNICAL INFRASTRUCTURE CONNECTION

- Gas:

The house will be connected to an underground connection to the public pipeline.

- Water supply:

Water supply will be connected to the public water supply system.

- Sewerage:

Sewage and rainwater will be connected to the public sewer system.

- Electricity:

The building will be connected to an underground connection to the public power grid.

Mounting dimensions, power capacity and length:

Connection to technical infrastructure is using the connection. connection will made a public water system, public network, gas and electricity. All connections are made on the north side of the building. See drawing situation.

B.4. INFRASTRUCTURE

B.4.1. Description of the traffic solution:

Connection will be divided according to purpose and on a paved area used for parking building on the access road to the building, which then leads to a supply entrance to preparative. Because of the possible arrival of ambulance service was designed reinforced area that leads to the main entrance to the building, which can in extreme cases be used for.

B.4.2. Approaching vehicles:

Parking spaces are 2.5 x 5 meters 3.5 x 5 meters are designed for people parking with limited mobility.

B.4.3. Connection to existing infrastructure:

Connection object to the transport infrastructure will be carried paved driveway area that will be taken from existing roads III. Classes

B.4.4. Transport calm:

The building will closely affected existing building of surgery in building site. The surgery is under the same owner as investor of project of subsequent bed health care. Another affected parcel is neighbor parking place in ownership of municipality. There is agreement than the personal of surgery and future inhabitants can use the parking for agreed payment without any maintenance. The maintenance will be fulfilled by technicians employed by surgery owner.

B.4.5. Walking and cycling trails:

Pedestrian object will be accessible from the east. Near the house is not biking trails.

B.5. VEGETATION SOLUTION AND LANDSCAPE

B.5.1. Landscape:

Excavations associated with the construction of the building will be covered with soil deposited on land. Carry out sowing grass green. Vegetation modification to the plot will also fall planting shrubs and trees. The plot is also set up a bench to recreational users of the building but also local residents.

B.5.2. Vegetation elements:

Trees, bushes elements grassing.

B.5.3. Biotechnical equipment:

No biotechnical measures are required.

B.6. STRUCTURAL AND ENVIRONMENTAL PROTECTION

B.6.1. Impact to environment:

The use of the building will not have a negative impact on the protection of air, ensuring a perfect dust-free operation of the whole. Disputes implementation may be used only materials that satisfy conditions Ministry of Health 76/93 Coll. During the operation of the building are not exceeded any limits noise and dust pollutants emitted into the air. The building will not be threatened by noise from the surroundings and even its own operations will not endanger the environment nearby to excessive noise. Controlled waste will be collected, sorted and taken to a collection point a controlled liquidation.

B.6.2. Impact to landscape:

Impact of construction on nature and landscape (protection of trees, protection of protected trees, protection plants and animals, etc.), maintaining the ecological functions and linkages in the landscape The property does not affect the nature and landscape.

B.6.3. Impact to Natura 2000:

The building is not in the protected area.

B.6.4. Impact to EIA:

Proposal taking into account the conditions of the end detection procedure or the EIA Construction is not subject management.

B.6.5. Impact to safety zone:

The proposed protective and safety zones, restriction of the scope and terms of protection under other laws Building or parts thereof require the establishment of new protection zones.

B.7. PROTECTION OF POPULATION

Protection of Population Location, nature and custom design of the building meets the requirements in terms of protection population.

B.8. PRINCIPLES OF ORGANISATION OF CONSTRUCTION

B.8.1. Construction energy supply:

The needs and consumption of critical media and materials, their security Supply point of water and electricity will be provided by the newly established connections, which will be used for the connection object. For the purposes of hygiene and sanitary facilities. Buildings will be installed mobile toilets.

B.8.2. Draining of site:

Ground water does not reach the level of foundation structures and therefore not counting the device for pumping out the water. Alternatively, formation of large amounts of precipitation and groundwater existed the foundation base, this will have to be incurred solve these problems by using a submersible pump water from the footing bottom drain.

B.8.3. Connection to existing infrastructure:

The connection of the site to the existing transport and technical infrastructure Supply point of water and electricity will be provided by the newly established connections which will be used for the connection object.

For connecting the site to the transport infrastructure will be created alpine road Head around the property. Site road will be solved concrete panels and will removed after the works.

B.8.4. Surrounding buildings influence:

The effects of construction on the surrounding buildings and land. The construction will have a negative impact on the surrounding land and buildings.

During the construction of the elevated level of acoustic noise in nearby buildings. Owners surrounding buildings will be informed of the commencement of work and even with increased noise. Construction will be over fencing to ensure safe operation and prevent access to unauthorized persons. After completion of the building will be the site to its original condition (sows new grass, typeset it greenery, trees).

B.8.5. Environmental site protection:

Environmental protection and site requirements related to sanitation, demolition, tree felling: Construction sites will follow throughout the construction fence fencing height of 2 m, the entrance to the site will only be through the gate at the entrance to the land. Place will be equipped with warning with signs informing people moving near the construction site .After completion of construction work is typeset in the form of green trees and bushes in the eastern part of the land that will serve as a park for the public.

B.8.6. Maximal occupation:

Not everything is stored on the property builder.

B.8.7. Maximal producing quantities:

Maximum produced quantities and types of waste and emissions during construction, liquidation. During construction will emerge from the following wastes listed in the table:

No.	Name and type of waste disposal	
170101	Concrete	Recycling,garbage
17 01 02	Bricks	Recycling, garbage
17 02 01	Wood	Recycling, garbage
17 02 02	Glass	Recycling, garbage
17 02 03	Plastic	Recycling, garbage
17 03 01	bituminous mixtures containing coal tar	recycling, disposal
17 04	metals (including their alloys)	recycling, waste
17 06 04	insulation materials	recycling, waste
20 01 01	Paper and cardboard	recycling, waste
20 01 02	Glass	Recycling, garbage
20 03 01	Mixed municipal waste	disposal to landfill

B.8.8. Balanced earth work:

Balance earthworks, requirements or supply depot earth: Before construction will be carried out at stripping topsoil thickness of 20 cm. Topsoil will be stored on a dump located on the construction site. Depositions will have a maximum height of 2 m and 45 ° inclination.

B.8.9. Environmental protection:

All waste from construction activities will be handled in an environmentally friendly way to protect Nature - ie. Sorting of waste according to Act no. 185/2001 Coll., The amendment to Act no. 31/2011 Coll. Decree no. 381/2001 Coll., and the amendment to Decree no. 154/2010 Coll. For execution of the works will be nearby to noise pollution from Construction machinery and tools. Work on the building will be carried out at night.

B.8.10. Safety and health on building site:

Occupational safety and health under other laws. Construction will be carried out by specialist stockiest. When performing construction and movement on site it is necessary to ensure the safety requirements. Work on the construction and protection of the health of persons in accordance with applicable regulations. Construction work will be supervised construction supervision.

B.8.11. Disability access:

Adjustments for the construction of barrier-free use of the affected buildings. Edit site for people with limited mobility are not necessary, because for the execution of works will be accessible to those persons site.

B.8.12. Special conditions:

Establishment of special conditions for the execution of the project (performing buildings in use, measures against the effects of external environment during construction, etc.). Construction sites will follow throughout the construction fence fence height of 2 m, the entrance to the the site will only be through the gate at the entrance to the land. Place will be equipped with warning sign for informing persons moving in the vicinity of the construction site.

B.8.13. Milestones:

The basic milestones are just orientation milestones, expected time:

Start of construction:	7/16
Finishing of earth works:	8/16
Finishing of connections:	9/16
Finishing of load bearing structures:	10/16
Complete finishing:	8/17
Hand over the building:	10/17