

WORKS TENDER - LOT 2

Component 2: Reconstruction of District PO in East Sarajevo

TECHNICAL SPECIFICATIONS

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PART I: ARCHITECTURE

On the basis of terms of reference of investors of the High Judicial and Prosecutorial Council of Sarajevo, as well as done and accepted conceptual design, is made of investment-technical documentation, the main project for the reconstruction and upgrading of the District Prosecution in East Sarajevo, on a construction site designated with cp No. 2716/328, K.O. Lukavica, MnM, the city of East Sarajevo.

1. LOCATION

Facility in which there is a District Prosecutor's Office, the District Court and Magistrate Court is located in East New Sarajevo, the construction land marked with cp No. 2716/328, K.O. Lukavica, MnM, the city of East Sarajevo.

2. CURRENT SITUATION

Facility District Prosecutor's Office has floors Pr + 1 and is part of the complex within which there is a District Prosecutor's Office, the District Court and Magistrate Court. The building of the district prosecutor's office is accessed from a common hall, located in the building of the Municipal Court. The building was built in 1960 and designed to accommodate the military but for ten years is used as an administrative building.

Dimensions are approximately 33.8 x 14,90 m², has a gross surface P = 1026.80 m² with a gable covering of corrugated board. The plot on which the facility is located is located by the city roads. The same side of the main entrance to the building and the side of the building there is an existing entrance for witnesses.

Building District Attorney's Office and basic court was reconstructed in recent years and is thus significantly as determined by the building facade design and selection of materials for facade elements

Architecture:

3. DISPOSITION AND PURPOSE

The building is designed based on the dimensions defined by the technical solutions in terms of Permit No. _____ of _____, issued by the administrative offices of the municipality of East New Sarajevo authorized the Department of Planning and Housing and Communal Services. (attached to the planning and technical requirements done by doo "Atrium" in 2014.)

Outlines are:

Clutch 3-G1 34.00 x 15.75 m. GF + 2

The building is designed as a structurally independent building, with planned access to the existing road.

Enters the building is retained. The division of space is done in a way that they are located on the ground floor spaces of detention suspects. As specified in terms of reference, two detention cells instead of the existing sanitary facilities on the ground floor were established. The first floor layout is the same as the existing condition. The new offices for prosecutors, meeting rooms, room with the suspects and witnesses, as well as the central archive were formed on the new floor. Due to the smooth and full of functioning of the facility are projected all necessary installation. Ventilation all rooms within the main building is done naturally through the windows. In terms of design, the building was designed as a modern form with added elements. Object a hipped roof conditioned. Openings on the facade are designed for purpose and character of the area, as well as the orientation of the object itself.

The ceiling height is 342 cm floor, first floor, 318 cm, 278 cm second floor. The content and size of units in the building are visible from the draft, as well as the layout.

Heating facility is planned renovation of the existing connection in the manhole in front of the building of the District Court.

Basic benchmark leveling elevation on the ground floor of the newly solution is 0.00m + = + 529.97 meters above sea level, in fact, is about 70 cm above the level of the access road out of the area behind the building where the boiler is 30 cm above the pavement.

EXISTING BRUTTO AREA

1. Ground floor.....	516,73 m2
2. First floor.....	516,75 m2
TOTAL:	1033,48 m2

NEW BRUTTO AREA

1. Ground floor.....	518,57 m2
2. First floor.....	518,57 m2
3. Second floor.....	536,44 m2
TOTAL:	1573,58 m2

GROUND FLOOR-EXISTING NETTO AREA

	PRIZEMLJE- KORISNA POVRŠINA ground floor-usable area	obrada poda/ floor covering	obrada plafona/ ceiling processing	obrada zidova/ processing of walls	čista vis./ height	površina/ area
1.	Informacije/ information	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	25,36 m2
2.	Pisarnica/ writing office	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	27,45 m2
3.	Sudska policija/ judicial police	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	8,05 m2
4.	Sudska policija/ judicial police	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	12,88 m2
5.	Računovodstvo/ counting room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	28,55 m2
6.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,57 m2
7.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,06 m2
8.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,63 m2
9.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,78 m2
10.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,96 m2
11.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	21,00 m2
12.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	19,54 m2
13.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,63 m2
14.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,60 m2
15.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,96 m2
16.	Pritvorska ćelija 1/ detention cell	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	10,15 m2
17.	Sanitarni čvor/ toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	10,00 m2
18.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	9,61 m2
19.	Server soba/ server room	antistatik pod/ antistatic floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,34 m2
20.	Vozači/ room for drivers	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	13,89 m2
21.	Psiholog/ psychologist	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	17,98 m2
22.	Muški sanitarni čvor/ men toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	345 cm	13,43 m2
23.	Ženski sanitarni čvor/ women toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	345 cm	10,21 m2
24.	Hodnik/ hallway	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	76,24 m2
25.	Stepenište/ staircase	mermer/ stone flooring	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,74 m2
26.	Pošta/ post office	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	5,42 m2
UKUPNO /total:						443,28 m2
UKUPNO UMANJENO -3% /total -3%:						429,71 m2

FIRST FLOOR-EXISTING

PRVI SPRAT KORISNA POVRŠINA first floor-usable area		obrada poda/ floor covering	obrada plafona/ ceiling processing	obrada zidova/ processing of walls	čista vis./ height	površina/ area
1.	Sala za sastanke/ meeting room	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	28,04 m2
2.	Tehnički sekretar/ technical secretary	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,65 m2
3.	Kancelarija tužioca/ prosecutor office	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,53 m2
4.	Kancelarija tužioca/ prosecutor office	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	19,67 m2
5.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,92 m2
6.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,64 m2
7.	Tehnički sekretar/ technical secretary	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,57 m2
8.	Kancelarija tužioca/ prosecutor office	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	21,13 m2
9.	Kancelarija tužioca/ prosecutor office	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	19,88 m2
10.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	7,14 m2
11.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,70 m2
12.	Tehnički sekretar/ technical secretary	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	21,00 m2
13.	Sekretar tužioca/ technical secretary	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,29 m2
14.	Glavni tužilac/ main prosecutor	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	27,98 m2
15.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,86 m2
16.	IT soba/ IT room	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	18,39 m2
17.	Rukovodilac pisarne/manager of writeroom	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	14,24 m2
18.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	9,58 m2
19.	Arhiva/ archive	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	9,66 m2
20.	Muški sanitarni čvor/ men toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	13,91 m2
21.	Ženski sanitarni čvor/ women toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,41 m2
22.	S. čvor za zaposlene/ toilet for the employees	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,26 m2
23.	Čajna kuhinja/ kitchenette	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,41 m2
24.	Hodnik/ hallway	laminat/ laminate floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	76,24 m2
25.	Stepenište/ staircase	mermer/ stone flooring	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,74 m2
UKUPNO /total:						447,84 m2
UKUPNO UMANJENO -3% /total -3%:						434,40 m2

TOTAL EXISTING- USABLE AREA

1. Ground floor.....	429,71 m2
2. First floor.....	434,40 m2
TOTAL:	864,11 m2

GROUND FLOOR-NEW

PRIZEMLJE- KORISNA POVRŠINA ground floor-usable area		obrada poda/ floor covering	obrada plafona/ ceiling processing	obrada zidova/ processing of walls	čista vis./ height	površina/ area
1.	Informacije/ information	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	25,36 m2
2.	Pisarnica/ writing office	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	27,45 m2
3.	Sudska policija/ judicial police	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	8,05 m2
4.	Sudska policija/ judicial police	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	12,88 m2
5.	Računovodstvo/ counting room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	28,55 m2
6.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,57 m2
7.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,06 m2
8.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,63 m2
9.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,78 m2
10.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,96 m2
11.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	21,00 m2
12.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	19,54 m2
13.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	20,63 m2
14.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,60 m2
15.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,96 m2
16.	Pritvorska ćelija 1/ detention cell	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	10,15 m2
17.	Pritvorska ćelija 2/ detention cell	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	10,31 m2
18.	Pritvorska ćelija 3/ detention cell	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	9,61 m2
19.	Server soba/ server room	antistatik pod/ antistatic floor	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	6,34 m2
20.	Vozači/ room for drivers	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	13,89 m2
21.	Psiholog/ psychologist	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	17,98 m2
22.	Muški sanitarni čvor/ men toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	317 cm	13,43 m2
23.	Ženski sanitarni čvor/ women toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	317 cm	10,21 m2
24.	Hodnik/ hallway	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	345 cm	76,24 m2
25.	Stepenište/ staircase	mermer/ stone flooring	-	malter/disperzija/ mortar	345 cm	20,74 m2
26.	Pošta/ post office	ker. pločice/ceramic tile	malter/disperzija/ mortar	malter/disperzija/ mortar	345 cm	5,42 m2
UKUPNO /total:						446,28 m2
UKUPNO UMANJENO -3% /total -3%:						432,81 m2

FIRST FLOOR –NEW

PRVI SPRAT KORISNA POVRŠINA first floor-usable area		obrada poda/ floor covering	obrada plafona/ ceiling processing	obrada zidova/ processing of walls	čista vis./ height	površina/ area
1.	Sala za sastanke/ meeting room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	28,04 m2
2.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,65 m2
3.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,53 m2
4.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	19,67 m2
5.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,92 m2
6.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,64 m2
7.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,57 m2
8.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	21,13 m2
9.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	19,88 m2
10.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	7,14 m2
11.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,70 m2
12.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	21,00 m2
13.	Sekretar tužioca/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	20,29 m2
14.	Glavni tužilac/ main prosecutor	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	27,98 m2
15.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	6,86 m2
16.	IT soba/ IT room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	18,39 m2
17.	Rukovodilac pisarne/manager of writeroom	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	14,24 m2
18.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	9,58 m2
19.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	9,66 m2
20.	Muški sanitarni čvor/ men toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	13,91 m2
21.	Ženski sanitarni čvor/ women toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,41 m2
22.	S. čvor za zaposlene/ toilet for the employees	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,26 m2
23.	Čajna kuhinja/ kitchenette	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	318 cm	10,41 m2
24.	Hodnik/ hallway	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	318 cm	76,24 m2
25.	Stepenište/ staircase	mermer/ stone flooring	-	malter/disperzija/ mortar	318 cm	20,74 m2
UKUPNO /total:						447,84 m2
UKUPNO UMANJENO -3% /total -3%:						434,40 m2

SECOND FLOOR-NEW

DRUGI SPRAT KORISNA POVRŠINA second floor-usable area		obrada poda/ floor covering	obrada plafona/ ceiling processing	obrada zidova/ processing of walls	čista vis./ height	površina/ area
1.	Sala za sastanke/ meeting room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	30,16 m2
2.	Arhiva/ archive	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	53,01 m2
3.	Stručni saradnik/ profesional assistant	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	28,66 m2
4.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	20,32 m2
5.	Stručni saradnik/ profesional assistant	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	31,54 m2
6.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	28,51 m2
7.	Tehnički sekretar/ technical secretary	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	22,21 m2
8.	Stručni saradnik/ profesional assistant	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	29,20 m2
9.	Kancelarija tužioca/ prosecutor office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	30,57 m2
10.	Soba za pripravnike/ room for aspirant	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	20,45 m2
11.	Sala za sastanke/ meeting room	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	16,71 m2
12.	Kancelarija/ office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	8,96 m2
13.	Soba za osumnjičene/ room for suspected	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	9,82 m2
14.	Soba za svjedoke/ room for witnesses	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	8,20 m2
15.	Ženski sanitarni čvor/ women toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	278 cm	8,39 m2
16.	Muški sanitarni čvor/ men toilet	ker. pločice/ceramic tile	spušteni strop/ suspended ceiling	keramika-malter / ceramic tile-mortar	278 cm	9,83 m2
17.	Kancelarija/ office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	11,37 m2
18.	Kancelarija/ office	parket/ parquet	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	12,05 m2
19.	Hodnik/ hallway	granitna keramika/ granite ceramics	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	76,88 m2
20.	Stepenište/ staircase	mermer/ stone flooring	spušteni strop/ suspended ceiling	malter/disperzija/ mortar	278 cm	21,11 m2
UKUPNO /total:						477,96 m2
UKUPNO UMANJENO -3% /total -3%:						463,72 m2

TOTAL USABLE AREA-NEW

1. Ground floor.....432,81 m2
2. First floor.....434,40 m2
3. Second floor.....463,72 m2

TOTAL: 1330,93 m2

USABLE AREA- DIFFERENCE BETWEEN EXISTING AND NEW

1. Existing.....864,11 m2
2. New.....1330,93 m2

USABLE AREA TOTAL: 466,82 m2

1. STRUCTURAL SYSTEM

The building is designed to land good geomorphological structure. Funding is done on a ratio geomechanical study. The existing building is designed as a massive structural system with beams structure above the ground and wooden ceiling above the ground. Planned upgrade is designed as structural system made of columns and beams. Bearing walls of the existing building are of brick thickness of 38 cm and a newly designed floor sun projected walls of brick block thickness of 25 cm. Retaining walls are brick block 25 cm, dividing and dividing walls are made of brick block 20 and 12 cm. The existing facility is founded on the fundamental band depth of 80 cm, while the newly designed floor rests over the pillars on footings 200/100/50 cm in size that are planned under the existing basic tape, and everything was done on the basis of structural analysis, which is an integral part of this project. The floor structure is AB thickness $d = 15$ cm with AB horizontal beams .. The floor panels are protected with waterproofing tape-“biverplast” 2x with flaps 10 cm.

2. WALLS

The walls were built of brick block 25 and 12cm in cement mortar, plastered in PCM 1: 2: 6, finish and layers of materials that meet the standards of thermal and acoustic protection.

3. FLOORS

The floor structure is designed with layers of materials that meet the standards of thermal, acoustic protection and waterproofing.

The floors in the rooms are bukovg flooring (natural), in the hallways is designed granite ware while in the toilet facilities and kitchenette provided tiles measuring 50 x 20 cm. The ceramic with grout joints 5 mm, and at the junction with the walls done holkel of the same material. At the junction of the two types of flooring installed brass band. The walls are plastered, smoothed and painted lean color. After the construction of the facility will be done in complete interior decorating project, which will provide a detailed treatment of all areas within the office building.

A / Floor

- 1 Flooring 22.0 mm
- 2 Cement screed 40.0 mm
- 3 PVC
- 4 Insulation 50.00 mm
- 5 Waterproofing 2x condor 10.0 mm
- 6 AB plate 150.0 mm
- 7 Mortar 20 mm

B / Floor

- 1 Ceramic 10.0 mm
- 2 Cement screed 40.0 mm
- 3 PVC
- 4 Insulation 50 mm
- 5 Waterproofing 2x condor 10.0 mm
- 6 AB plate 150.0 mm
- 7 Mortar 20 mm

C / Floor

- 1 Ceramic 10.0 mm
- 2 Cement screed 40.0 mm
- 3 PVC
- 4 Insulation 50.00 mm
- 5 Waterproofing 2x condor 10.0 mm
- 6 AB plates (existing) 100.0 mm
- 7 Floating layer (existing)

D / Floor

- 1 Flooring 22.0 mm
- 2 Cement screed 40.0 mm
- 3 PVC
- 4 Insulation 50.00 mm
- 6 AB plate 100.0 mm
- 7 Floating layer

E / Floor (Server Room)

- 1 Antistatic under 10 mm
- 2 Board base 20,00 cm
- 3 Cement screed 40.0 mm
- 4 PVC
- 5 Insulation 50.00 mm
- 6 AB plate 100.0 mm
- 7 Floating layer

4. ROOF STRUCTURE

The roof has a hipped conditioned. The roof covering tile trapezoidal sheet wave height 4cm.

The roof has a hipped of fir lumber of various regular sections, with wedding dresses passed and anchored in a designated horizontal ring beam. All materials needed prior impregirati I paint paint for wood .Based breakthroughs are processed with the specified precast apron

5. INTERIOR WALLS PROCESSING

The walls are treated with dispersion paint and OIKOS color. This product is environmentally friendly since it is manufactured on the basis of water and natural materials (diluted with water, any contamination of one dye is removed by water). Dug his lifetime. It is resistant to abrasion. Non-toxic is because they do not contain heavy metals and toxic solvents. It is not flammable. The product is certified according to DIN, ISO standards with mandatory environmental approval. The walls of the toilets are plastered to a height of 240cm covered with ceramic tiles 50 x 20 cm. After the construction of the facility will be done in complete interior decorating project, which will provide a detailed treatment of all areas within the office building.

6. FACADE OPENINGS

To create a position opening - External hardware are designed from aluminum profiles with thermal break. Positions are made of these profiles are glazed termoinsollation glass 4 + 12 + 4 mm. Equipped with the appropriate fittings.

Carpentry-frame is made in the full width of the wall made of spruce or beech. The door leaf is made of spruce or beech filled with honeycomb paper and painted on both sides.

7. EXTERIOR TREATMENT

As facade cladding provided a demit facade with Thermal insulation d = 10 polystyrene specific weight 40 kg / m 3, with brushed acrylic plaster in the color of choice for investors. Finishing attics and facade beams provided the same treatment with the thickness of insulation d = 3 cm.

When designing the facility were paying attention to the protection of property: the thermal diffusion and protection. For the facility are projected all necessary installation (water, sewer, mechanical, electrical and lightning and telephone installations). Technical descriptions enclosed installations are especially relevant projects by type, which is not the subject of this part of the project. The building is connected to the city sewage system

PART II: CONSTRUCTION

1. CURRENT SITUATION

Floors covered by this budget are the ground floor and two floors (existing floors + one new floor). One floor is upgraded on the existing structure. The existing facility is founded on shallow elevation of -0.80 m below ground level. The foundation is committed to the fundamental bands of 80 cm. For upgrade geomechanical testing of soil is done, which shows that the base layer at a depth of 0.80 m, and that the funding is done at a level of -1.30 m from ground level, so that new footings thickness of 50.00 cm crawl under the existing lanes. Elaborate on geomechanical testing is done by the "Earth" doo Tuzla since July 2014. Allowable stresses the straps are 240.00 kN / m²

The ceilings are ribbed concrete slab level 100, with a total height of 35.00 cm, a width of ribs 10:00 cm plate and 5:00 cm.

Ceiling relies on external facade window framing and interior load-bearing wall thickness of 25.00 cm.

Above window manufacturers rely on the window pillars built of brick in cement mortar. On load-bearing walls measuring 38 and 25 cm were made horizontal corners. The facility are made vertical corners, because at the time of preparation of project documentation at the then applicable regulations facility was located in zone VI level of seismic activity in MCS scale. Not withstanding the foregoing object had sufficient capacity in terms of seismic activity as the load-bearing walls of brick thickness of 25.00 and 38.00 cm arranged in two orthogonal directions, and to an external transverse, and two medium and facade in the longitudinal direction.

Last ceiling level of 200 is derived from the wooden wood beams with the possibility of suspension roof structure.

Between window columns, width up to 95 cm have the capacity to accept the additional burden upgraded floors.

Middle longitudinal wall cavity only open three doors have the capacity to accommodate the additional load.

In the analysis of the existing building with a view of available existing documentation and geomechanical study on soil surveys to the exercised trenching foundations, it was noted that the existing foundation of the axis C can accommodate additional loads of upgrades.

The existing ceiling level of 200 crashes, a new ceiling in the RC performance relies on an RC skeleton.

2. THE NEW DESIGNED SITUATION

From the above it as the right solution to upgrade the download is a part of load on the external lateral walls of the building pillars measuring 30/50 cm funded foundation footings size 100/200 cm at a level of funding from -1.30 m from ground level. Poles are in raster between window columns, and 4.50 m, respectively 2.38 and 2.20 m. 20 cm is embeded in the existing brick wall thickness of 38 cm.

When the upgrade is made it was ensured that the horizontal joints on the external lateral walls of Styrofoam 5:00 cm are made to prevent the transfer burden on the existing exterior walls. Existing ribbed concrete slab level of 100 during the construction phase will receive a constant load over a wooden beam to the load placed on a plurality of ribs of the slab. Previously is necessary to remove all the layers of floor-to-press plate floor. In bearing wall in the axis C above the 100 is working Slice width of 80.00 cm. The existing horizontal corners are level 100 demolished part of wall to anchor valves pillars measuring 25/80 cm. Poles are made in the axis of transverse frames. Link column and ring beam is articulated and allows reception of only vertical reactions.

Above the existing wall to the axis C level of 200 demolished to the level beams of the longitudinal frames, it is a horizontal expansion

Styrofoam thickness is 5.0 cm. The ceiling level of 200 is a monolithic AB ceiling thickness 15.00 cm.

After the curing phase plate level 200, it transfers the load across the beam columns.

At the level of 300 for the ceiling in the monolithic embodiment 15.00 cm thick, and the burden of it transferred to the new formed outer longitudinal beams, and through them to the poles, while the middle part of the load current acceptance of the longitudinal wall levels 000-100.

Poles in order to reduce the slenderness transversely stiffened massive beams of dimensions 20/60 cm (from architectural and structural reasons) in the other direction are linked to the PTO for existing RC beams so that only receive horizontal forces in two directions.

Vertical communication is performed with an attached staircase. The initial leg from the level of 100 is based on the existing beam and landing relies on the walls, which are made only to the level of landings.

The foundations were laid in the foundation footings dimensions 1.00x2.00 m.

Stresses on the contact coupling footings soil are 271.36 kN / m² significantly below permitted in certain Elaborate on geomechanical testing.

For existing building stresses at the contact based soil amounts after the upgrade:

- 136.86 kN / m²

Allowable stresses of the study were approximately 240 kN / m², with a shrug that was carried 0.636 cm.

Maximum subsidence of the foundations of singles is 13.57 mm, a differential settlement was 7.50 mm less than the allowable.

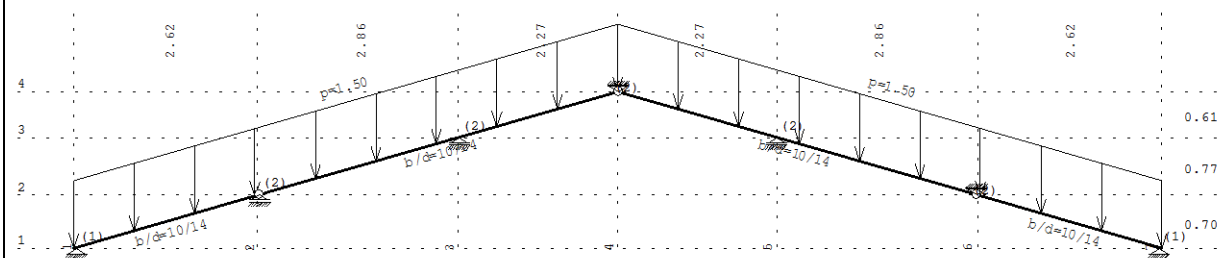
Differential subsidence may take a horizontal expansion of 5.0 cm.

- Analysis of the influence of the spatial model was carried out in a professional software package "RADIMPEX", Belgrade, program "TOWER-7"

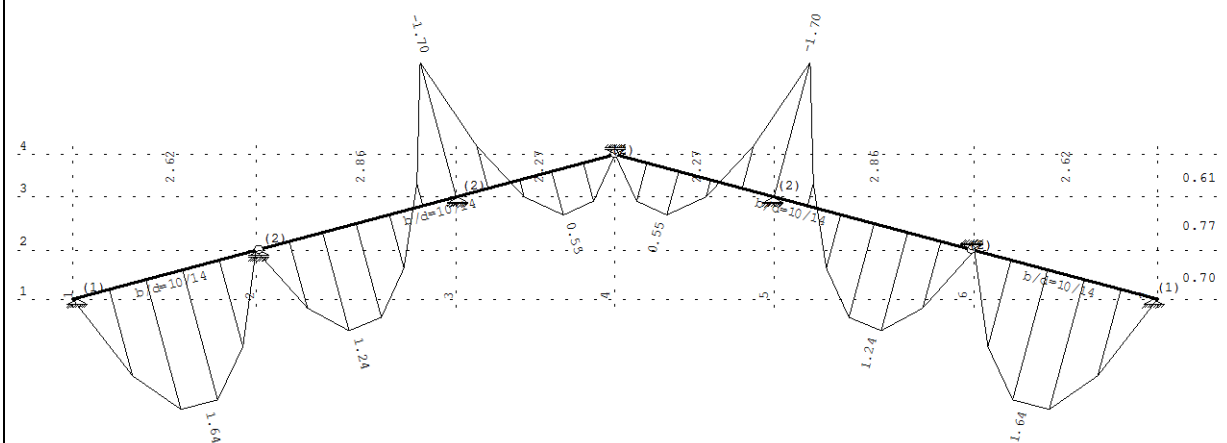
In the second analysis are included in addition to the impact of vertical and horizontal seismic effects.

- Facility in terms of seismic zones in VII, and considering the number of floors of the ESM method after completion of modal analysis, it is not necessary to set the AB walls. For supporting the roof structure are made AB towers above the plate level 300 with beams. The staircase is bifurcated, and the thickness is 15:00 cm.

Opt. 2: Povremeno

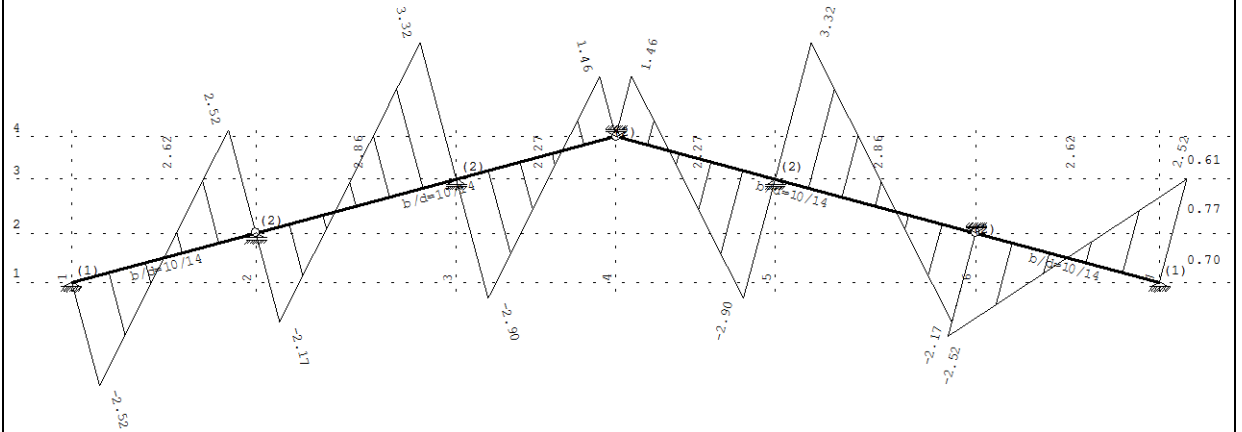


Opt. 3: I+II



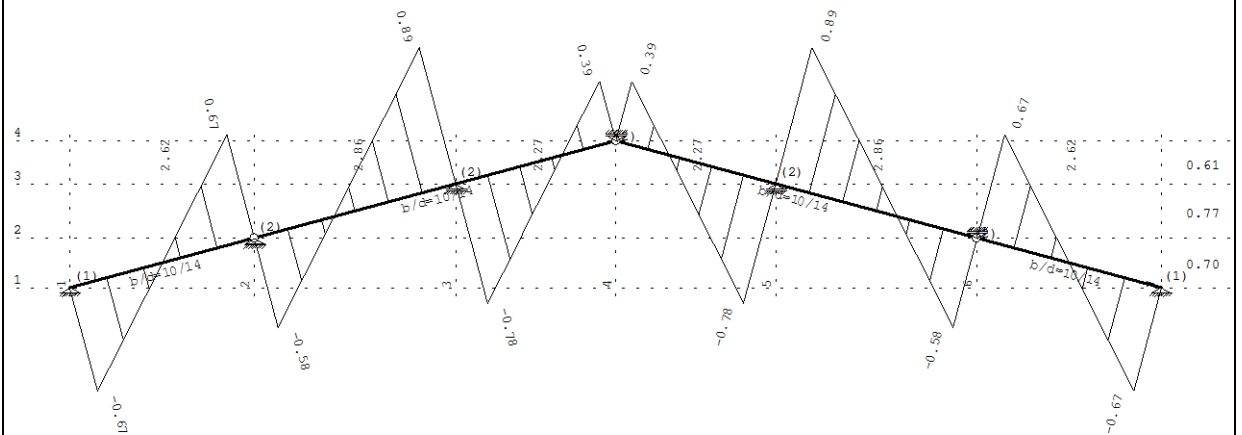
Uticaji u gredi: max M3= 1.64 / min M3= -1.70 kNm

Opt. 3: I-II



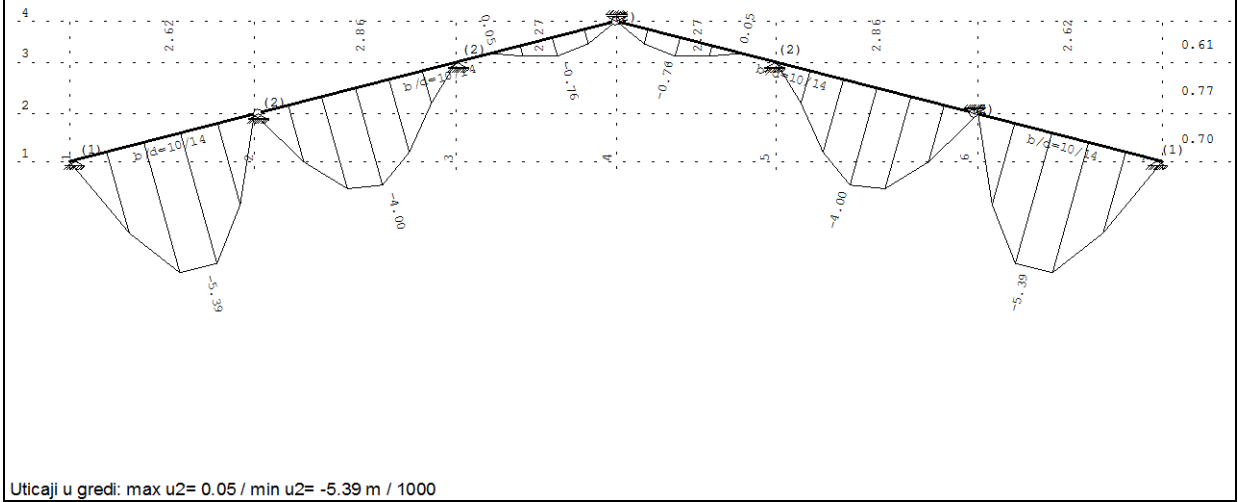
Uticaji u gredi: max T2= 3.32 / min T2= -2.90 kN

Opt. 3: I-II

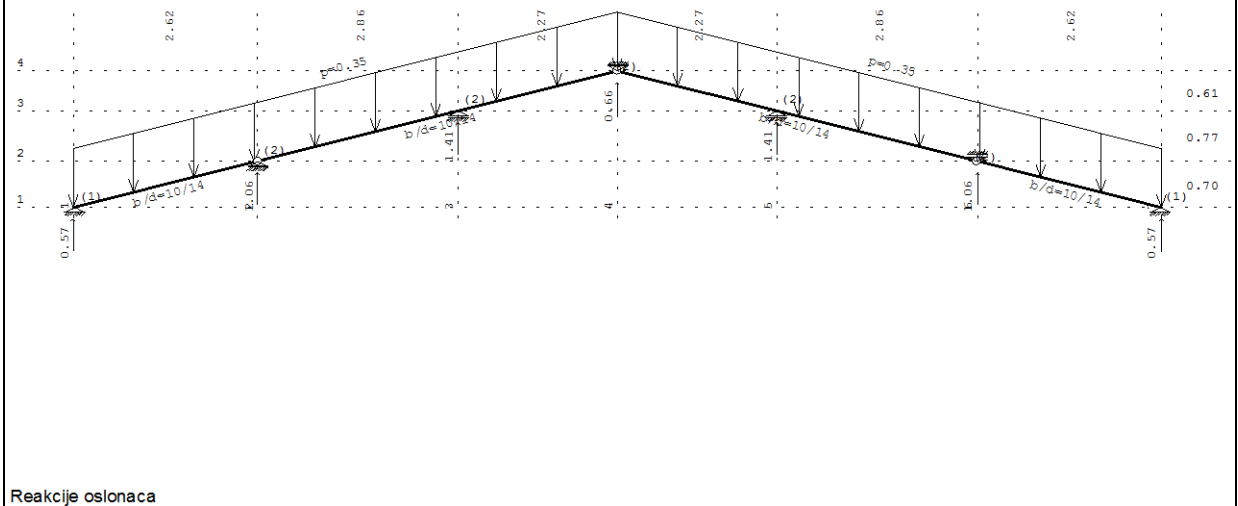


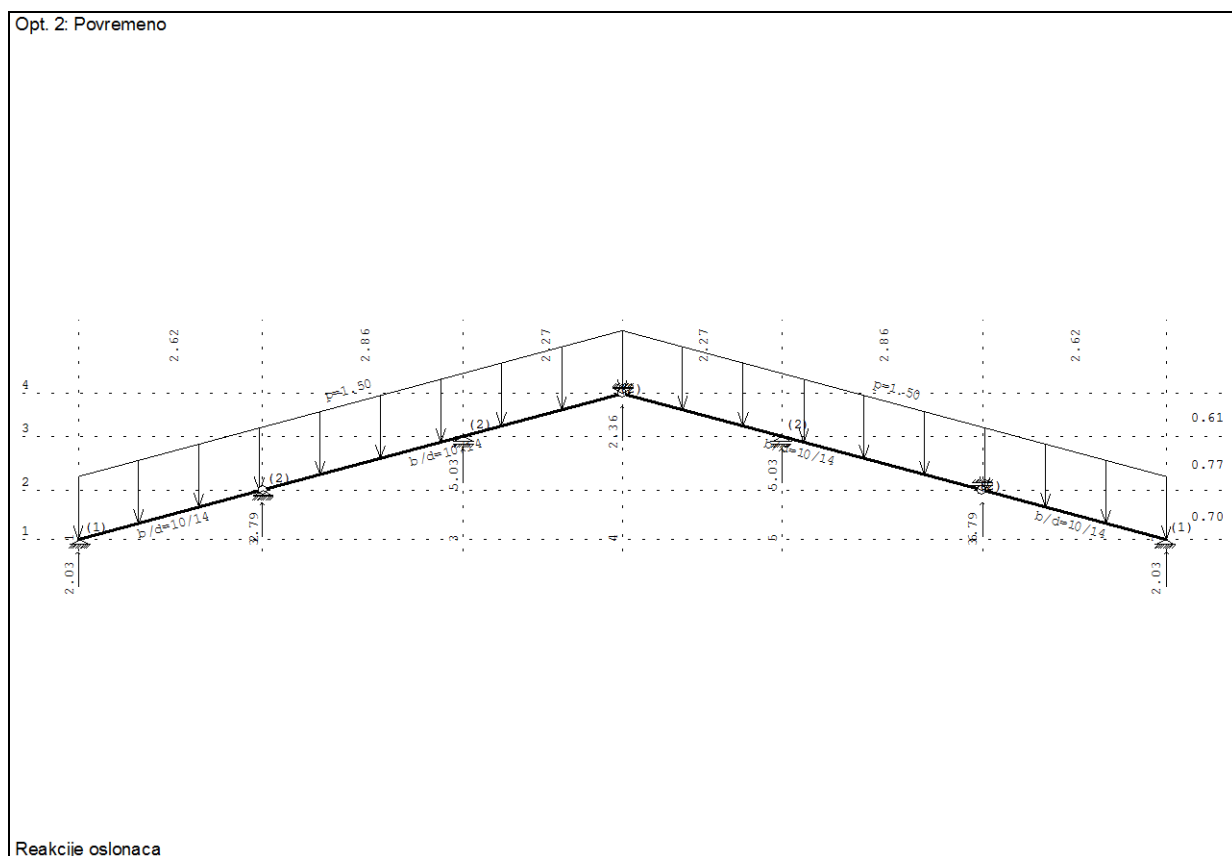
Uticaji u gredi: max N1= 0.89 / min N1= -0.78 kN

Opt. 3: I+II



Opt. 1: Stalno (g)





2.1. ROOF STRUCTURE

INFORMATION ON CONSTRUCTION

- Static system: double chair,
- The mutual distance between the rafters: $a = 80$ cm,
- Roof slope: Roof $\alpha_1 = 15^\circ$
- Type of cover: sandwich plate.
- Series Night I, the object is exposed to a height of over 10 m,
- Base material: coniferous tree class II $\sigma_s = 1.00$ kN/m²

2.1.1. RAFTERS

2.1.1.1. LOADS

RB	TIP LOAD	extention	INTENSITY	UNIT
1.	trapezoidal sheet	by regulations	0.35	kN/m ² KKP
2.	Snow + wind	by regulations	1.87	kN/m ² KRO
TOTAL LOADS:		constant (1) $g =$	0.35	kN/m ² KKP
		variable (4) $p =$	1.87	kN/m ² OSN

The slope of the roof $\alpha = 15^\circ$

- Vertical effect on the roof plane:
 $g_v = g / \cos \alpha = 0.35 / \cos 15^\circ = 0.37$ kN/m² the basics
 $p = 1.87$ kN/m² the basics

- Vertical effect on the rafters:
 $g_R = g_v \times a = 0.37 \times 0.80 = 0.30 \text{ kN/m}^1$ the basics
 $p_R = p_x \times a = 1.870 \times 0.80 = 1.50 \text{ kN/m}^1$ the basics

2.1.1.2. SIZING

Cross-section: 10/14 cm $\rightarrow W = 10 \times 14^2 / 6 = 3247 \text{ cm}^3 \rightarrow \sigma =$
 $M/W = 170 / 327 = 0.52 \text{ kN/cm}^2$
 $f = 0.539 \text{ cm}$ ADOPTED: 10/14 cm, conifer. II class

Note:

Influences of the normal forces are small, and are not taken into calculation.

In order to reduce deflection rafters continue over purlins and resistor linked to below the rafters.

When performing the rafter properly cut into 2-3 cm and tie nails for purlins and dresses.

2.1.2. PURLINS, RIDGE

2.1.2.1. SIZING

14/16 cm $\rightarrow W = 14 \times 16^2 / 6 = 597 \text{ cm}^3$, Purlins, ridge, conifer. II class

Poles in size 14/14, 14/14 struts, handles 14/14 cm.

Note: Wedding dresses for reinforcements to tie the anchor bolts $\phi 14 \text{ mm} / 150 \text{ cm}$, across the board subject to $\delta = 8 \text{ mm}$

- reinforced concrete level 300 is calculated on the full roof load, so it's possible reliance wooden roof structure at any place (of course through wooden shims).

2.2. REINFORCED CONCRETE STRUCTURE

INFORMATION ON CONSTRUCTION

- Static system: combined system, brick building EXISTING, UPGRADE skeletal system
- The ceiling structure: reinforced concrete slabs $d = 15 \text{ cm}$,
- Material: Concrete MB30, fittings RA 500/560, MAR 500/560

○ VERTICAL LOADS of RC BOARD

BOARD LEVEL 200 ,300

RB	TIP LOAD	extention	INTENSITY	UNIT
----	----------	-----------	-----------	------

1.	Net weight	Shall be included in the program			kN/m ²
2.	mortar d=2 cm	0.02x19.00		0.38	kN/m ²
3.	styrofoam d=2 cm	0.02x2.00		0.04	kN/m ²
4.	floor			0.16	kN/m ²
5.	screed d=4 cm	0.04x23.00		0.92	kN/m ²
6.	Partitions, roof			1.00	kN/m ²
7.	Useful			3.00	kN/m ²
TOTAL LOAD:		(2+3+4+5+6)	g	2.50	kN/m ²
		(7)	=	3.00	kN/m ²
			p		kN/m ²
			=		

Cantilever slabs, stairs, platforms stairs: p=3.0 kN/m²

Load cases and combinations thereof when calculating the spatial model

Types of load	1.	2.	3.	4.	5.	Anvelope
1. PERMANENT	1.00					
2. USEFUL		1.00				
3. Sx			1.00			
4. Sy				1.00		
5. Q1=1.0xG+1.0xP	1.00	1.00				
6. Q2=1.6xG+1.8Xp	1.60	1.80				+
7. Q4=1.9xG+2.1xP	1.90	2.10				+
8. Q5=1.3xG+1.3xP+1.3xSx	1.30	1.30	1.30			+
9. Q7=1.3xG+1.3*P+1.3xSy	1.30	1.30		1.30		+

PART III: ELECTRICAL INSTALLATIONS

1. HIGH ELECTRICAL CURRENT

1.1. INTRODUCTION

This part of the project will give a solution of high and low electrical voltage for the reconstruction and upgrading of the District Prosecutor's office in East Sarajevo

The project was done on the basis of:

- ▣ Architectural Building Foundation
- ▣ Treaty with designers of other phases
- ▣ applicable technical regulations, standards and recommendations.

The project has provided a solution:

- ▣ Power wiring
- ▣ switch boards
- ▣ Installation of lighting (general and necessary)
- ▣ Electrical installation
- ▣ Installations for potential equalization.
- ▣ Installation of Telephone
- ▣ computer installations
- ▣ video surveillance
- ▣ Control Inputs

Electricity provided from three sources: NN network, 0.4 kV; and diesel electric generators and units uninterruptible power supply (UPS), which are located on the premises of the server room corridor of NN network facility is supplied with cable lines laid in cable trench dimensions 0,4x0,8m, from diesel generators and UPS (placed in the room for a communication system and equipment) is supplied cables laid in perforated cable channel above the suspended ceiling and double floor.

1.2. POWER SUPPLY AND DISTRIBUTION BATTERY

Distribution boxes for electrical power facilities prosecutors are supplied with an enclosure (MDC) placed under the stairs in the building.

Installation of facilities is designed so that consumers are supplied with low voltage network, and in the case of a power supply voltage to the unit, and so users in the absence of mains power, can continue to work with powered generators.

In addition, some consumers object (which must have a continuous power supply, are connected to a central device for uninterrupted power supply (UPS), which is in the room for communication and system equipment.

1.3. DISTRIBUTION CABLE INSTALLATION

Installations in the running cables PP-Y (installation distribution in buildings) and PPOO (power distribution cables battery installation distribution in buildings), which shall be deposited in the installation screens, above the suspended ceiling in perforated cable Regal, the clamps (3 pieces / m) above the suspended ceiling and the structure of the facility, in parapet ducts in the control room, the PVC protective pipe Ø 110 mm in the underground cable channel ip / w of the suspended ceiling to the consumer.

In the area of sanitation used OG watertight installation materials to be installed "to cover" the wall.

1.4. LIGHTING INSTALLATIONS

General lighting provided in areas of the object's intensity 500lx and 300LX in service areas and implemented appropriate lamps with fluorescent bulbs. Type and type of the light source are determined as a function of the conditions in space and on the basis of the applicable standards and recommendations. Safety lighting for used lamps with FC 2x8W tubes in the chassis along with the battery in 1 hour autonomy. These lamps are placed in the hallway and exit, and are oriented to show the shortest way to exit the building.

Lighting control in the facility's local switches mounted on the premises. Light switches are installed at a height $h = 1.1\text{m}$ from FFL.

1.5. INSTALLATION OF CONNECTORS AND OTHER USER

Single-phase power sockets in set 4 pieces are provided in all rooms, and were placed on the positive selected sites in partition walls. Socket set at a height $h = 0.5$ from the floor and parapet installation channel. For the purpose of connecting the computer system and equipment is expected to distribute with a central UPS. To avoid joining other consumer outlets and they should be its color or form different from the other outlets.

Jacks in office equipment (desks) mounted in Legrand-energy channels, computer and telephone.

1.6. PROTECTION AND POTENTIAL equalized

Protection against hazardous contact voltage in the facilities is provided by the system of zeroing with special protective water (TN-S system). Therefore, in all power supply cables and installation takes a special wire (yellow-green), which is associated metal mass devices that do not belong to the circuit. In the terminal battery all the wires are connected to the special bus (Justine bus).

Besides the **spas** is designed for installation equipotential. All metal masses in health **spas** (taps, cisterns, sinks, etc..) are associated with line P / F 1x6 mm² through boxes PS-49, with a safety bus in the corresponding switchboard.

Cable trays are associated with protective bus in the corresponding switchboard line P / F 1x6mm².

Antistatic floor in server room are connected to line 2xP / F 1x10 mm², via ROP, with a safety bus.

Ground unit raises the bar Fe / Zn 25x4mm that binds to foundation earthing.

Protection against overload and short circuit protection provides for the automatic and soluble circuit breaker.

1.7. LIGHTNING PROTECTION INSTALLATION

In order to protect the lightning on building is provided lightning conductor system, realized by a Faraday cage.

Handle the lightning rod is Fe-Zn 20x3mm laid on the roof of the building to suitable carriers (1pc / 0.8 m ') by a cover plate.

The drain lines are derived from the Fe-Zn 20x3mm placed in columns of the structure. These drains buoys need to connect them to perform the grounding.

Earthing building is a classic and is performed strip Fe / Zn 25x4mm passed part directly in the ground, and partly in the layer of concrete foundation beams and the rates of the object. The tape should be placed "on the edge". The use one of the existing grounding electrode.

With the grounding of the facility is necessary to establish the ground running sewer lines lightning rod and metal structures of buildings.

2. TECHNICAL DESCRIPTION OF DIESEL POWER GENERATORS

For power consumers of the object is provided diesel electric generator power 150kVA; 120kW, three-phase 400 / 231V, 50Hz, 1500 rev / min, designed for automatic operation, closed versions / outdoor installation.

A diesel engine should have the following technical specifications:

The unit must be automatic. Due to the work with the UPS needs to be oversized generator. In addition, the generator should have independent excitation with respect to the output voltage of generator. The engine and generator are firmly attached over damper (vibration damper) mounted on a stand. The whole assembly is fitted and all other equipment necessary for smooth operation. All rotating parts must be protected against contact.

2.1 CHARACTERISTICS OF AGGREGATE:

- ▣ Power 150kVA / 120kW
- ▣ Motor Perkins 1006TG1 or similar
- ▣ Fuel Diesel, Class 2, according to the specifications of DIN 51 306/1
- ▣ Water Cooling with heat sink and fan
- ▣ Alternator power min. 180 kVA
- ▣ Excitation independent, permanent-magnet
- ▣ RPM 1500 rev / min
- ▣ Dimensions approximately: 2.900x1900x950mm (length x width x height)
- ▣ Weight about 1870 kg of fuel and 2020 kg of fuel.
- ▣ voltage 3x400 / 230 +/- 1%
- ▣ Retrieval frequency 50Hz, +/- 2%

Rated power of the generator is chosen higher than in the diesel engine to make use of the UPS units with thyristor device generates a large content of higher harmonics. Low internal impedance of the generator will reduce the voltage deviation caused by higher harmonics. We believe that this procedure is less expensive than the installation of a special system for uninterrupted power.

The unit is equipped with:

- ▣ Control panel for controlling the unit that contains a minimum of:

1 First measurements of the aggregate:

- Voltmeter with Voltmeter switch
- Ammeter with Voltmeter switch
- Frequency
- Temperature measurement
- Oil Pressure
- The temperature of the cooling water
- Battery voltage
- Hourmeter

2 Protect the aggregate:

- Low oil pressure
- High temperature
- High and low voltage generator
- Switch for generator protection against overload and short circuit

3 Indications and stop the machine with:

- Abortive start
- High temperature of cooling water
- Low oil pressure
- Speeding
- Overvoltage and undervoltage

4 Remote signaling dry contact:

- General alarm
- The unit of work

5 Switches the command:

- Selection of operating mode Start / Auto / Exclusion
- Test bulb
- Emergency stop

- ▣ Fuel tank in the base unit of at least 150 liters with level indicator
- ▣ Rechargeable Battery
- ▣ AC adapter for charging the battery pack
- ▣ heater coolant
- ▣ Hand pump to replenish the reservoirs
- ▣ drain valve and drain the old oil on the side stand
- ▣ Mushroom for disconnection in case of emergency

With the engine deliver more energy cabinet that performs switching consumers and gives the order aggregate that starts or stops. This cabinet required includes:

- ▣ motorized switch NETWORK / AGGREGATE current 125A. Switch must be able to manually manipulate the case of failure of the electronics.
- ▣ the manual switch 125 A, which allows the bypass unit.
- ▣ Indications
 - The network is present
 - Consumers Online
 - Generator, voltage is present
 - Consumers in the aggregate
- ▣ Controls:
 - Switch the mode Test with consumers / Auto / Test without consumers
 - Configurable controllers and network agregatskog voltage
 - Adjustable time delay at the start, return on net, stopping the engine
 - Test bulb

2.2. SUPPLY, INSTALLATION, CONNECTION AND PUTTING INTO OPERATION OF DIESEL ELECTRIC GENERATORS

The unit is mounted in front of the building concrete floor will be reinforced and double thickness of at least 200mm to the engine could be mounted directly on the floor and secured with steel screws and anchors.

Generator is connected with transfer panel with cable P000 4x70 mm². Transfer panel is mounted in the MDB.

The obligation of the supplier is to make and any other cables necessary for the smooth and automatic operation.

All kit is assembled, tested and ready to work, with accompanying documents, certificates and instructions for operation and maintenance.

2.3. THE PHILOSOPHY OF INCLUSION DIESEL GENERATORS

The disappearance of the supply voltage shall be registered by the automation of the control cabinet MDC (transfer panel) that performs the inclusion of aggregate.

2.4. PERMISSIBLE LOAD CURRENT NN CABLE CONNECTIONS DIESEL ENGINE - GRO

Rated current subject-cable connection is:

Which is less than the allowable load current projected supply cable PP00 4x70mm² which is $I_d = 200A$ (in the air), so that the selected cable meets the load current.

3. TECHNICAL DESCRIPTION OF THE UNINTERRUPTED POWER SUPPLY (UPS)

To ensure quality supply of computer equipment in the facility is planned installation of devices uninterrupted power supply (UPS) and power distribution with the device is done via UPS section of MDC and ROpUPS.RO1UPS and RO2UPS.

The unit will be in the series ON LINE double conversion. According to the installed capacity of users is necessary to deliver the unit uninterruptible power supply 50kVA; 40kW with the possibility of autonomy than 10min.

3.1 CHARACTERISTICS OF THE DEVICE

UPS units will have the technical characteristics, as follows:

Conversion part

- ▣ Power: 50kVA / 49kW
- ▣ Nom.input voltage: 230/400 VAC three-phase
- ▣ change input voltage: 342 to 477 VAC
- ▣ Frequency of the input voltage range: 50Hz + 10% -10%
- ▣ Dimensions: Approx: 712x848x1.900mm (widthxdepthxheight)
- ▣ Autonomy: 10 min. at full load
- ▣ Nom. Exodus. Voltage: 230/400 VAC three-phase
- ▣ Reg.out.volt. (static): + 1%
- ▣ Reg.out.volt. (Dynamic) + 5%
- ▣ Degree of utilization: ▣ 92%
- ▣ Overload (UPS): 125% / 10 minutes; 150% / 5sec
- ▣ Overload (Bypass): 130% / permanent; 2000% / 20msec
- ▣ Weight: Approximately 420 kg with batteries
- ▣ Operating temperature: 0 to 40°C

battery part

Autonomy System of 10min / 50kVA / 40kW realized by self-sustained batteries, made in GEL technology, with front terminal, living life in a minimum of 12 years.

Wardrobe UPS

The MDC has built four polarities service switch UPS-0-bridging. Connecting the switch and method of operation shall certify the supplier Uppsala or similar.

The unit is equipped with the appropriate sound and light signaling:

- presence Mains
- Invertor Work
- malfunction
- battery charging

- malfunction rectifier
- rest autonomy system
- malfunction inverter etc.

The possibility of remote monitoring

Ability to block the static switch and cancellation of charge when working on the generator

Possibility of remote emergency off

Documents supporting the device:

- multi operation and maintenance
- block schemes device
- Guarantee
- certificate of supplier of ten securing spare parts and service
- delivery, installation, networking and putting into operation of devices for uninterrupted ac power consumer, UPS.

3.2 PREPARATION OF THE SPACE

- Supply cable P P00 5x16mm², length 30 m, for connection MDC - UPS (cable cross section according to the manufacturer's instructions)
- Outgoing cable PP00 16x16mm², length 30 m, the relationship UPS - GRO
- The supply cable to provide 80A fuse (close-in)
- The MDC predict quadrupole service switch UPS-0-bridging. Connecting the switch and method of operation shall certify the supplier UPS
- From UPS should attend a minimum of three pairs of signaling / command
- Two pairs (collective alarm and emergency stop) to pass to the control room
- One pair of diesel aggregate lay up for notification that the UPS to generator voltage
- Cable entry from below, and should provide a way of taking the channel or channel floor.
- In the space provided operating temperature 15 to 30°C, taking into account the heat dissipation Uppsala approx 4,5kW
- UPS and battery cabinet to be mounted side by side. From the front to leave a space of 1000mm, and the other three sides by min. 500mm for proper cooling and regular inspections and any service calls.

3.3 PERMISSIBLE LOAD CURRENT NN CABLE CONNECTIONS UPS - MDC

Rated current subject-cable connection is:

which is less than the allowable load current projected supply cable PP00 5x25mm² which is $I_d = 125 \text{ A}$ (in the air), so that the selected cable meets the load current.

4. TECHNICAL DESCRIPTION LOW VOLTAGE INSTALLATIONS

4.1. Instalation for answering FIRE

Instalation for reporting fires B will then performed conductors JH (St) Y 2x2x0,8mm², passed in PF-13mm tubes, which will be placed under the ceiling of perforated cable shelf.

Fire alarms serve optical fire detectors thermally-thermodiferential and manual call points.

Set to 1 outer electric siren and 2 internal siren ground, 1st floor and 2nd floor.

All these elements need to be connected to fire alarm VDC, which is set on the ground floor.

Panel will be a microprocessor, the central module, power supply and emergency power supply. Switchboard can be connected via telephone combiner to automatically send voice messages to 5 + 5 phone numbers, in case of need. Also, the control panel contains the output port ze siren (the report of fire). Power panel is 220V AC. Switchboard is being provided and the backup (own) power, which is automatically replenished.

Panel is also designed to be mounted in the wall and the wall or cabinet.

With headquarters is graded 1 cable for the automatic fire extinguisher system in the server room.

4.2. INSTALLATION OF VIDEO SURVEILLANCE

Installation of video surveillance will be carried by coaxial cable RG-59, which will be placed in the pipe PF-13mm, perforated cable on shelves or concealed.

Also, the video surveillance equipment should lead cables of the type PP-Y 3x1,5 mm², which will be used for power supply of these devices. To manage the device surveillance will serve multiplexer. It is a digital duplex multiplexer with a remote control, the video motion detectors for each camera, with the ability to connect a separate keyboard for managing and selecting a camera view on the monitors (main and spot monitor).

Surveillance system will be equipped with a video recorder, which will have the ability to record on a regular VHS tape 3, 12 and 24 hours, with the possibility of defining system operation (stop, replay, etc.).

Color cameras will be placed under the ceiling and exterior walls. The cameras include lenses with a fixed lens, 480 TV lines, sensitivity 0,04Lux.

All devices video surveillance system should be supplied with electricity from the same phase.

4.3. TELEPHONE INSTALLATION

Connection to the telephone network, the telephone cable running TI 40x2x0,8mm² that the TO cabinet to take the server room to the telephone exchange.

Divorce is for UTP CAT6 cable to the phone jack in the office, mounted in legrand channel. Internal telephone wiring run to the Technical Requirements for telephone installations and the introduction issued by the community PTT.

4.4. INSTALLATION TO CONNECT COMPUTER IN THE NETWORK

Installations to connect a computer to the network will be carried out by cable UTP type-6 (hard lead), which will be placed under the ceiling of perforated cable Regal ip / f and legrand channel. The main computer will be placed in the rack, and will be connected to the computer units in the building. Because of faster communication, each computer will be connected through the portal 24 switch with the main computer. 24 switch the portal is in RORM powered from the UPS and connected to the rack with 2xCAT6 Cable. Wardrobe RORM connect with RACK cable TOSM 03 (2x6) 1x0.4x3.5 CMKN passed in PVC pipe Ø13 mm cable tray ip / f to the ground floor.

The cable ends with optical boxes with FC / PC connectors in communication closet. This cable connects to computer installations.

All cables for computers to be completed RJ45 socket type. Outlet will be placed at tables in legrand channel.

4.5. ATTENDANCE AND ACCESS CONTROL

The device uses the TCP / IP communication protocol, which allows direct connection to a computer network using UTP CAT 5 cable and more, without using any additional hardware or computers.

The device itself is in itself an integrated web server and the underlying database.

Using the web browser enables the administration and configuration of the device, view logs, adding and deleting users, export logs, backup logs, and all data. In the memory of the device there is a built-in database containing basic information about their users and logs.

4.6. THE CENTRAL UNIT OF THE SYSTEM TO CONTROL THE SERVER ROOM

EA200 digital controller for installation in a server room

Digital detector min. and max. temperature with LCD display, measured range from 0 to 50 ° C (-50 ° to 150 ° C with optional temperature probe), 2 single and one common relay output. Primary probe temperature built into device EA200 is an ideal solution for small to medium server rooms because it allows monitoring and timely alerting in case of creating unauthorised state of the environment in the server room, such as, for example, high temperature or humidity, and the like.

5. CONECTION AND TERMINATING CABLES

Mergers and termination of cables have to carry the appropriate cable accessories (cable ties, cable terminal) which must have approval of the polls. Mounting of cable accessories are made solely by the manufacturer.

In low voltage cabinets cable line is marked by the inscription engraved on the matrix plate of aluminum sheet, measuring 150x150 mm.

The board labeled:

- The name of the cable (arr)
- Cable type and cross section
- The length of the cable line
- Construction

Plates attached below cable finish in a conspicuous place.

Cable route marked on the ground by concrete columns with the corresponding metal plate on which is marked the route of the cable.

6. APPLIED SAFEGUARDS

In order to protect people and buildings, in terms of general safety at work, all work on the construction or rehabilitation of power facilities must be conducted according to the provisions stated in the "Law on Protection at Work" and other Regulations that cover this issue and under the provisions of "Standards Branch Union of Yugoslav Electric Power "(GSE 40/81), which is in Bosnia and Herzegovina accepted as the " standard of Electric Power Industry Branch BiH ".

Prior to the commencement of construction or rehabilitation facility, the Contractor shall prepare the study of the organization of the site. Operations can be performed only if all conditions are provided to protect the work under the Act. The investor is required to determine the supervisory authority and the contractor, the manager works.

In order to protect against mines and UXO, work on the construction or rehabilitation of the building must not be commenced prior to obtaining a certificate (certificate) of the completed demining and proper marking of space for the works.

In addition, if during the execution of the works, encountering suspicious objects or a need to expand the work area work must be stopped, and to pull personnel immediately and inform the supervisory authorities to take further measures.

Strictly prohibits its own initiative EOD or injury of workers in mine uncleared area.

In terms of protection from physical and chemical injury, head of the works must ensure the construction site, equipment, and machinery and tools and equipment that must be certified. Organize the construction site, and the work carried out in accordance with the provisions of the "Law on Protection at Work" and other technical regulations in this area.

7. TESTING CABLE AFTER LAYING

Insulation testing cable after laying is carried out in a completely installed cable, with its accessories, in accordance with JUS N.C5.235. The test may be performed one of the following ways:

- a) Direct voltage
- b) AC voltage

In the following table the values of the test voltage, as well as the values of the duration of the test.

Rated voltage cable
U ₀ / U (kV) 0.6 / 1 0.6 / 1
Type of cable (insulation) PE-X PVC
Dc test voltage (kV)
Test time in (min) 6
15 4.5
15
AC test voltage (kV)
Test time in (min) 3.5
5 2.5
15

The order of connection of the test voltage on the cable is effected in a manner presented in the TP-5th

After completing the test, the authorized examiner shall issue a protocol with the test results.

PART IV: MECHANICAL INSTALLATIONS

1. TECHNICAL DESCRIPTION

1.1. INSTALLATION OF CENTRAL HEATING

Design documents for the design of the installation of central heating for the reconstruction and upgrading of the District Prosecutor's office in East Sarajevo is done on the basis of architectural and construction of the project and the applicable regulations in this area as provided for space heating in the winter.

1.1.1. Construction parameters

The subject of the project is building floors Gf+2:

- Ground floor	443,28 m ²
- First floor	447,84 m ²
- Second floor	478,07 m ²

SUM:	1369,19 m ²
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The basic characteristics of public facility the following:

- Basic structure of the building consists of the walls thickness $d = 38$ cm from the block of brick masonry in cement mortar 1: 3: 9, with a facade processed by "demit" system with thermal insulation styrofoam 10 cm thick.
- Inner walls are made of brick block thickness $d = 25$, 20 and 10 cm, plastered on both sides.
- Entrance doors are made of aluminum profiles.
- All interior doors are made of wood.
- Windows and glass walls are made of aluminum profiles and glazed insulated glass.
- Attic structure is designed as a reinforced concrete slab 15 cm thick, with a layer of thermal insulation thickness of 5 cm.

1.1.2. Source heat

Supply of building heating energy will be carried out from the heat substations located in an adjacent building.

1.1.3. Heating body

The total installed power of heating bodies for a given thermal regime is 145154 W.

For the purposes of heating applied to a two-pipe hot water system 90/70°C.

Heating of the building is done through ribbed aluminum radiator height 690 mm, the distance between the terminal 600 mm, the thermal performance of 168 W per ribbed. The ground floor and first floor of the building will retain the existing radiators, which will need to be repacked. We considered that the 10% when installing radiator ribbed to be useless. The second floor provides for the installation of new radiators of the same type. Radiators are hung on the wall over the radiator brackets and mounting.

In detention cells, room for witnesses and suspects provided room for the underfloor heating.

Heating to the pipe network connected via radiator valves with two-pipe heating system.

1.1.4. Pipe network

Basic pipe network is standing by the horizontal distribution networks and vertical lines, which is made of seamless steel tubes.

Horizontal distribution network is kept below the ceiling on the ground floor. Mounting of pipes is done via the carrier made of steel "L" profile 30x30 mm.

Connecting switchboards for underfloor achieved through vertical lines V1, V2, V3 and V4.

Circuits are performed by using the Pex-Al-Pex pipes the diameter of 16 mm. Pex-Al-Pex pipe are retracted into the outer casing diameter of 25 mm for protection against mechanical damage and undisturbed expansion, and are laid in cement mortar. Circuits are derived from the manifold and collector in the switchbox, which are connected via ball valves with vertical lines. Switchboxes are supplied with all required fittings for proper operation, such as: valves to manifold and collectors, automatic venting valve and valve for filling and emptying. All switchboxes are placed in a common corridor to ensure smooth access in case of intervention.

1.1.5. Irradiation and drainage of the system

Irradiation of the pipe network and heating bodies envisaged by air vent valves on the heating equipment, automatic air vent valve installed in switchboards, as well as through the air vent pots placed on top of each vertical, where there is automatic venting valve. A discharge pipe network is performed at the lowest point of pipeline and at the bottom of each vertical line.

When installing, the installation is taken into account to achieve a steady decline in the pipeline at least 0.2% to the heat substations.

1.1.6. Testing and commissioning of the installation

Upon completion of the installation of new heating installations entire body undergoes testing for leaks cold water, and then the working pressure of the hot test. After completion of testing and eventual elimination of errors is performed functional testing and commissioning.

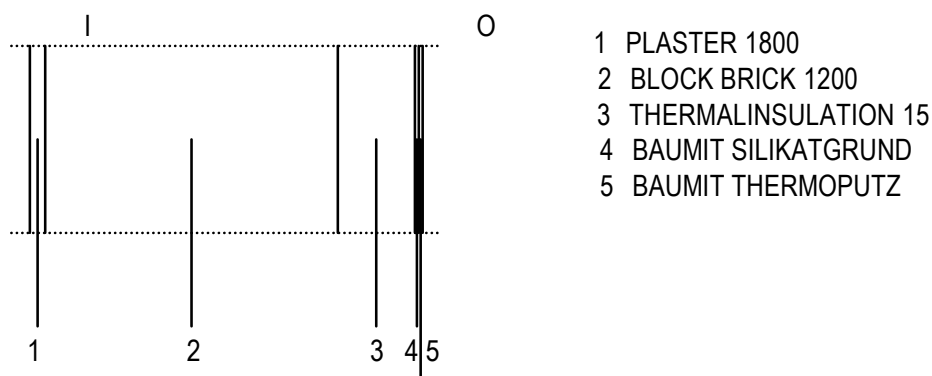
1.2. AIR CONDITIONING

Conditioning server room is planned to install two wall air conditioner-inverter split system. Air conditioners are placed so that the one working and the other 100% reserve. To make this role may change from time to time provide for the construction of the weekly timer. Because of the potential needs of air conditioning in the winter, air conditioner has the ability to work to a temperature of -15 ° C.

2. CALCULATION OF INSULATION THICKNESS

The task of thermal insulation is to reduce heat loss to the environment. All exterior walls are insulated with a layer of styrofoam as part of the facade designed by the "demit".

DRAWING OF CONSTRUCTION



DATA SCHELUDE

N	construction	d [cm]	ρ [kg/m ³]	λ [W/°Cm]	c [J/kg°C]
	inside				
	against the wall				
1	PLASTER 1800	2,000	1.800	0,870	1.050
2	BLOCK BRICK 1200	38,000	1.200	0,520	920
3	THERMALINSULATION 15	15	15	0,041	1.260
4	BAUMIT SILIKATGRUND	0,500	1.550	0,700	1.050
5	BAUMIT THERMOPUTZ	0,500	490	0,130	1.050
	against the wall				
	outside				

Data:

$$t_s = -20^{\circ}\text{C}$$

$$t_u = 20^{\circ}\text{C}$$

$$q = q_{opt} = 11 \text{ W/m}^2$$

$$\alpha_s = 25 \text{ W/m}^2 \text{ K}; \alpha_u = 8 \text{ W/m}^2 \text{ K}$$

$$d_{iz} = \lambda_{iz} \left[\frac{t_u - t_s}{q} - \left(\frac{1}{\alpha_s} + \sum_{i=1}^n \frac{d_i}{\lambda_i} + \frac{1}{\alpha_u} \right) \right] [m]$$

$$d_{iz} = 0,041 \left[\frac{20 - (-20)}{11} - \left(\frac{1}{25} + \frac{0,02}{0,87} + \frac{0,38}{0,52} + \frac{0,005}{0,7} + \frac{0,005}{0,13} + \frac{1}{8} \right) \right] = 0,109 \text{ m}$$

adopts the: $\delta_{iz} = 0,1 \text{ m} = 10 \text{ cm}$

Actual specific heat flux through the outer wall:

$$q_{stv} = k(t_u - t_s) = \frac{t_u - t_s}{\frac{1}{\alpha_s} + \frac{d_{iz}}{\lambda_{iz}} + \sum_{i=1}^n \frac{d_i}{\lambda_i} + \frac{1}{\alpha_u}} = \frac{20 - (-20)}{\frac{1}{25} + \frac{0,1}{0,041} + \frac{0,02}{0,87} + \frac{0,38}{0,52} + \frac{0,005}{0,7} + \frac{0,005}{0,13} + \frac{1}{8}} = 11,75 \text{ W/m}^2$$

3. CALCULATION OF HEAT LOSS

a. Review coefficients thud of passage through the barrier

designation	name	k(W/m²K)
SZ	exterior wall d=38 cm	0,294
UZ1	inner wall d=38 cm	0,974
UZ2	inner wall d=25 cm	1,287
UZ3	inner wall d=20 cm	1,469
UZ4	inner wall d=10 cm	2,048
UZ5	inner wall - gypsum board d=17,5 cm	0,322
P1	floor, ceramics ground floor	0,507
P2	floor, ceramics first and second floor	0,556
P3	floor, parquet ground	0,496
P4	floor, parquet first and second floor	0,527
T	ceiling	0,605

b. review coefficients thud of passage through the openings

designation	name	k(W/m²K)
SP	exterior window	3,5
SV	exterior door	3,5
UP	internal window	2,3
UV	internal door	2,3

c. review of the adopted internal design temperatures

the name of the room	t _{up} (°C)
hallway	15
staircase	15
office	20
kitchenette	20
detention cell	20
room for suspected	20
room for witnesses	20
server room	20
archive	-3
attic	-12

PART V: SEWAGE AND PLUMBING INSTALLATIONS

1. SEWAGE

Sewerage work of PVC pipes Ø 50 to Ø 150th.

In places where sewer changes direction in distribution within the facility should be set up audit in case of intervention in clogging.

Fecal and sink verticals eventually be exported out of the roof and end with caps ventilation.

Before walling and plastering around the vertical pipe as it passes through the tube walls are watertight sewer.

Ports of entry and exit PVC pipe sewer manholes is required to be plaster to avoid leaching of fine material.

Sewer manholes perform the double-sided plate 15 cm thick concrete stamps MB - 30, light opening 80 x 80 cm, and height, as shown in the project.

Inner side plastered cement mortar and smooth to the black gloss.

Sneeze handle half pipe profiles.

Be sure to incorporate climbing Ø 20 mm, with a spacing of 30 cm.

On manhole covers should be installed by cast - iron iron 15 ton load.

Pipe sewer network must be made of durable and strong material that is resistant to corrosion or protected from it inside and out.

Due to the possibility of loss of water in the siphon cap, thereby creating the opportunity for penetrating odor, gases and insects on the premises of the building, particular attention must be paid to the suction and evaporation of water from the sump.

Proper positioning of the branches of sanitary facilities to vertical and installation of ventilation ducts to prevent Self - priming siphon cap.

Each fecal verticals must have ventilation pipe.

When fecal verticals, for a building with 8 floors (23.0 m), it needs to perform a condominium, sanitary facilities with levels below which performs a condominium must be connected to the horizontal - horizontal division of the vertical portion.

If the condominium is less than 2.0 m, it must be applied bypass a sanitary connect to it.

Performing vertical ventilation on the roof.

An overhang above the roof is 1.0 m.

If ventilation is performed to walkable roof-terrace, then the camber least 1.5 m. Ventilation in exceptional circumstances can be carried out under the ceiling of the uppermost floor of the facade. Distance from the window horizontally must be minimum of 1.0 m.

Completion of the ventilation system must be such as to allow the proper functioning while protecting against damage.

It is forbidden to connect the sewer ventilation with chimneys or other channels for ventilation.

Crossing the vertical to the horizontal hammock can only run in the basement or technical level.

On verticals (connections of sanitary elements) should be installed single-branches and at an angle of 45 °.

May exceptionally be incorporated double prong 45 degrees.

Vertical installation must be a separate one.

Rainy verticals can not be used as a ventilation sewage installation.

Fecal vertical and vertical rainwater can be placed visibly on the wall, within the stipulated groove, can be retro obzidati and disguise.

In all cases verticals should be spaced from the wall 1-2 cm, and secured by the building structure with clamps.

Between the clamps and hoses should be placed inset rubber or felt.

On passing through the ceiling joists pipes may not be firmly embedded, but in the lowest ceiling of the passage must be well sealed to prevent insect access to upper floors. At its bottom, ie. before crossing the horizontal line must be installed reduction to increase the profile and revision fitting.

At the bottom is fitted with a rate of knee and below the knee place concrete piece.

In exceptional circumstances where it is not possible, thorough, basement installation run under the floor, the same work as hanging from the ceiling and the walls.

The decline of the installation is minimally 2.0%.

Fixture for construction should be done with clamps every 2.0 m.

As a rule, this installation carried out the building by the shortest route to the sewer outside the building. Only in exceptional circumstances (built facilities, close to the primary installation, etc.) The entire installation should be performed in the facility.

Network must provide a sufficient number cleaners.

Installation through the free space (hallway).

Minimum height of the axle tube hammock to the floor shall be 2.0 m.

Changing direction can be performed with a bow of 45 °.

Passage through the joints are not permitted.

In places where pipes pass through walls and structures put temporary tube whose orifice is larger than the pipe cross 3 - 4 cm, and the gap filled with an elastic filler.

Manholes are performed to reach areas, where there is a possibility of clogging, while changing the direction of the channel at the point of connection of the side channels in a cascade, as well as in the longer straight section of the building, each 15.0 m, and the outside of the building most 30.0 m .

On Installations outside of the building it is necessary to enable the preparation of audit manholes inspected and cleaned installations.

Size of audit panes can be 80/80 cm or 100/100 cm, depending on the depth of the sewer.

For manholes deeper than 1.0 m, it is necessary to incorporate climbing Ø 20 mm to 30 cm in height.

2. PLUMBING

Plumbing system in the horizontal and vertical distribution is performed by Aquatherm pipe inside the building and outside the building and the PEHD pipe.

PEHD pipes of water meter manhole to enter the premises are set in protective tubes.

Hydrant, sanitary pipe and pipe for businesses separate the main shaft and thus separate pipeline to enter the building and then distribution is done by drawing as shown.

Water supply, hydrants and sewer verticals work in «Slice» ie. the opening in the wall of 30 cm. The exact vertical position is determined by the architectural part of the project

In gauging shaft are installed water meters for meter total consumption of sanitary, water hydrants and water for offices.

After the distribution and fixing, plumbing systems are watertight according to manufacturer's instructions mentioned pipes.

After the carried out tests on the pressure of the system it is necessary to wash with water or a mixture of water and air and disinfect.

It is necessary bacteriological and chemical analyzes of water from the authorized institution and attach it with the technical documentation when receiving facility.

While laying water mains to adhere to the guidelines given in the Manual issued by the Ministry of Planning, Housing - Utilities, Construction and Ecology, 1999 year:

- 2.1. Pipes are laid in a straight line, horizontally and vertically, using fittings parts (fitting). Lines are placed in easily accessible locations in the ascent to the discharge.
- 2.2. In the basement of the building water main lead is visible on the ceiling or walls, and it is always easily accessible locations. Tube attached to a structure with clamps with the addition of rubber or felt between the pipes and clamps. Clamps placed at a distance 2.0 m.
- 2.3. Open in walls and beams where the conduct pipe must be larger section of pipe profiles. It is necessary to install temporary pipes to fill a gap elastic sealer.
- 2.4. Only in exceptional cases in the basement pipes can be run on the floor, but in a concrete channel.
- 2.5. Vertical and horizontal pipes must always be sufficiently far removed from the walls and insulated adequate quality and thermal insulation.
- 2.6. Risers should be laid in the grooves provided for, installation spaces or visible on the walls to reach areas for installation, inspection and repair, pipes must tighten the clamp for construction at a distance 2.0 m. Pipelines are generally predict in space and toilets.
- 2.7. In parallel conduct more tubes you need them to be wide apart due to a thermal insulation.
- 2.8. Vertical lines, which pass through the mezzanine structure through the mounting plate with welded steel pipes wicket. Fill the space between the elastic sealer. Minimum profile vertiklanog riser diameter is 20 mm.
- 2.9. Riser complete with air vent with proper drainage. Bleeder valve installed above a bathtub or other sanitary devices.
- 2.10. The main horizontal network and risers set throughput with outlet valves. Each valve should always be in an accessible place. Valves are placed at least 1.5 m from the floor and should be protected from mechanical damage.
- 2.11. Safety valves are installed only on the network that is supplied through pumping plant and the vertical to the pressure vessel or to the plant. With safety valves installed and water pumps.
- 2.12. In cases where there are greater pressure than 6.0 bar, it is necessary to install a pressure reducing valve. With these valves fitted strainer and bandwidth valves.
- 2.13. In addition to sanitary facilities provide appropriate valves. Be sure to give to the heaters, wash basins, sinks, washing machines and dishwashers, and lavatory cisterns.
- 2.14. Digging into the wall must be such as to prevent the occurrence of condensation. The thickness of the mortar between the installed pipe and the finished surface of the wall should be at least 2.0 cm. The pipes must be wrapped in material to absorb condensation and preventing aggressive influence on mortar tube.
- 2.15. The minimum horizontal distance from the gas pipes, sewer and electrical lines is 1.0 m, and 0.5 m vertically. Compounds deluge after the pressure test.
- 2.16. Testing of water mains pressure is performed before installing insulation and protective masks. The pressure and duration of the examination prescribed by the ordinance of municipal water supply. Pressure during the test should be 50 to 100% more than the maximum operating pressure. Test duration is 2.0 hours. A test shall be made, signed by the supervisory authority.
- 2.17. After completion of the water supply network must be done rinsing and disinfection. Water from the installation must be given to the bacteriological analysis.
- 2.18. Prior to backfilling the exterior water networks perform geodetic survey. Video submitted to the competent institution for keeping a register of installations.