

**BILL C**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specificati on Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>I</b>	<b>Sec C. 1</b>	<b>I. PREPARATION AND FINISHING WORKS</b>				
1	Sec C.1.1	Preparation works include: - site opening - comparison of the real state with the design documents, and in case of discrepancy, consultation with the supervisor. - necessary weighing and adjustments	lump sum			
2	Sec C.1.2	Disassembly of the existing heating units complete with pipeline network and supports, brackets and other parts of the pipeline, disposal of to the place designated by the investor.	lump sum			
3	Sec C.1.3	Finishing work, site clearing with driving off the excess material, trial operation and handing over the installation to the end user (Investor)	lump sum			
4	Sec C.1.4	Regulation of air quantity on the grids and flow regulators	lump sum			
5	Sec C.1.5	Giving certificates for all the elements that are installed in the object	lump sum			
6	Sec C.1.6	preparation of as-built design in tri copies	lump sum			
<b>TOTAL ~ I. PREPARATION AND FINISHING WORKS</b>						<b>0.00</b>

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**Bill C -Thermo Technical Installations**

**Facility**

NR	Technical Specificatio n Ref. number	TYPE OF WORKS			Total Amount
<b>I</b>	<b>Sec C. 1</b>	<b>I. PREPARATION AND FINISHING WORKS</b>			
			<b>TOTAL</b>		<b>0.00</b>

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No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>II</b>	<b>Sec C.2</b>	<b>II. RADIATOR HEATING</b>				
1	Sec C.2.1	Delivery and installation of aluminum ribbed radiators, product of the Global Vox or equivalent	pcs	307		0.00
2	Sec C.2.2	Delivery and installation of aluminum radiator plugs DN25, reductions DN25-DN15, seals, nipples	set	39		0.00
3	Sec C.2.3	Delivery and installation of KUD nbrackets, NGR supports and dividers.	pcs	39		0.00
4	Sec C.2.4	Delivery and installation of radiator corner valves (thermostatic valve for two-pipe heating system complete with thermostatic head with remote control 2m), product of the DANFOSS or equivalent. DN15-1/2"	pcs	39		0.00
5	Sec C.2.5	Delivery and installation of radiator lockshields, product of the DANFOSS or equivalent. DN15-1/2"	pcs	39		0.00
6	Sec C.2.6	Delivery and installation of automatic vent vessels for mounting on radiators. DN15, product Caleffi or equivalent	pcs	39		0.00
7	Sec C.2.7	Delivery and installation of valves with inclined spindle assemblies, with connections for dif. Manometer, drain faucet, product "HERZ" or equivalent				
		Stromax M DN25	pcs	2		0.00
8	Sec C.2.8	Delivery and installation of faucets with cap and chain, set with latch-sealant material.				
		Calculation per piece R 1/2"	pcs	39		0.00
9	Sec C.2.9	Delivery and installation of black seamless pipes according to SRPS C.B5.021 and SRPS C.B5.221				
10		Ø21,3x2	m	200		0.00
11		Ø26,9x2,6	m	60		0.00
12		Ø33,7x2,6	m	120		0.00
13		Ø42,4x2,6	m	40		0.00

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No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
14	Sec C.2.10	For fittings, sliding and fixed supports, hangers, paper tube, clamping sealing material, oxygen, disugas, welding electrodes and all other necessary materials take 50% of the value of the previous item				
		Lump sum calculation	%	50		0.00
15	Sec C.2.15	Cleaning and painting of steel pipes and supports with basic color	m	420		0.00
16	Sec C.2.16	Delivery and installation of thermal insulation of mineral wool in the aluminum sheet lining with minimum thickness of 40 mm. Thermal insulation is placed through unheated basement areas and hallway in the basement. Calculated per m2 as measured by the outside diameter of the insulation	m2	50		0.00
17	Sec C.2.17	For all construction works that will appear during the execution of the installation, such as penertation of openings, chiseling holes and slits for the passage and laying of installation, constant cleaning of work places during the works with debris removal from the site. This item also includes the finishing processing around the holes (filling and plastering)				
		Lump sum calculation	Lumpsum	1		0.00
18	Sec C.2.18	Installation testing on cold hydraulic pressure.	Lumpsum	1		0.00
19	Sec C.2.19	Hot testing of the radiator heating installation.	Lumpsum	1		0.00
20	Sec C.2.20	Painting of piping network with the final paint resistant to temperatures up to 110 OC in a color chosen by the investor. Refers only to uninsulated sections.	m2	310		0.00
<b>TOTAL - II. RADIATOR HEATING</b>						<b>0.00</b>

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**Bill C -Thermo Technical Installations  
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NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
II	Sec C. 2	II. RADIATOR HEATING			
				<b>TOTAL</b>	<b>0.00</b>

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No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
<b>III</b>	<b>Sec C. 3</b>	<b>III. SUBSTATION (PART FOR THE RADIATOR HEATING AND UP TP THE KK ALTERNATOR)</b>				
		Delivery and installation of throttle valves complete with counter flanges and latch sealant material:				
1	Sec C.3.1	DN65 NP16	pcs	8		0.00
2		DN40 NP16	pcs	4		0.00
3		DN32 NP16	pcs	5		0.00
		Delivery and installation of regulation valves complete with counter flanges and latch sealant material:				
4	Sec C.3.2	DN40NP16	pcs	1		0.00
5		DN25NP16 threading	pcs	1		0.00
6		Delivery and installation of strainers complete with counter flanges and latch sealant material:				
7		DN65 NP16	pcs	2		0.00
8		DN32NP16	pcs	1		0.00
		Delivery and installation of circulation pumps complete with counter flanges and latch sealant material. Pumps are produced by WILO or equivalent				
9	Sec C.3.3	Stratos -ZD 40/1-8 GG CAN PN6/10	pcs	1		0.00
10		TOP-SD 40/ 7 ~ PN6/10	pcs	1		0.00
		TOP -SD 50/7 3~PN6/10	pcs	1		0.00
11	Sec C.3.4	Delivery and installation of the collectors and distributors DN250x600mm complete with connections	pcs	4		0.00
12		Delivery and installation of air pots complete with associated valve DN 15 for irradiation.				
13		DN100 x 300mm	pcs	4		0.00

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**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
14	Sec C.3.5	Delivery and installation of black seamless pipes according to SRPS C.B5.021 and SRPS C.B5.221				
	Sec C.3.6	Ø42,4x2,6	m	10		0.00
15		Ø76,1x3,2	m	20		0.00
	Sec C.3.7	Delivery and installation of check valve complete with flanges and counter flanges				
16		DN32NP15	pcs	1		0.00
17		DN40NP16	pcs	1		0.00
	Sec C.3.8	For fittings, sliding and fixed supports, hangers, paper tube, clamping sealing material, oxygen, disugas, welding electrodes and all other necessary materials take 50% of the value of the previous item				
18		Lump sum calculation	%	50		0.00
19		Cleaning and painting of steel pipes and	m	30		0.00
	Sec C.3.9	Pipe insulation with plate insulation with vapor barrier product ARMAFLEX, thickness 19mm.	m2	36		0.00
20		Delivery and installation of manometer	pcs	1		0.00
21	Sec C.3.10	Delivery and installation of thermometer in a protective sleeve for temperature measurement	pcs	2		0.00
22	Sec C.3.11	Delivery and installation of faucets for filling and emptying DN 15	pcs	6		0.00
23	Sec C.3.12	Installation testing on cold hydraulic pressure.	Lumpsum	1		0.00
24	Sec C.3.13	Hot testing of the radiator heating installation.	Lumpsum	1		0.00
25	Sec C.3.14	<b>TOTAL – III.SUBSTATION (PART FOR THE RADIATOR HEATING AND UP TP THE KK ALTERNATOR)</b>				<b>0.00</b>
<b>Bill C -Thermo Technical Installations</b>						
<b>Facility</b>						
	<b>Technical Specification Ref. number</b>	<b>TYPE OF WORKS</b>				<b>Total Amount</b>
C	Sec C. 3	III. SUBSTATION (PART FOR THE RADIATOR HEATING AND UP TP THE KK ALTERNATOR)				
			<b>TOTAL</b>			<b>0.00</b>

**BILL C****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
<b>IV</b>	<b>Sec C. 4</b>	<b>IV. PART OF THE SUBSTATION FOR KK AND INSTALLATIONS FOR A/C CHAMBER HEATING</b>				
		Delivery and installation of throttle valves complete with counter flanges and latch sealant material:				
1	Sec C.4.1	DN65 NP16	pcs	11		0.00
2		DN40 NP16	pcs	14		0.00
3		DN32 NP16	pcs	1		0.00
4		DN25 NP16	pcs	1		0.00
		Delivery and installation of regulation valves complete with counter flanges and latch sealant material:				
5	Sec C.4.2	DN40 NP16	pcs	3		0.00
6		DN32NP16	pcs	1		0.00
7		DN25 NP16	pcs	3		0.00
8		DN20NP16	pcs	2		0.00
		Delivery and installation of strainers complete with counter flanges and latch sealant material:				
9	Sec C.4.3	DN65 NP16	pcs	1		0.00
10		DN40NP16	pcs	2		0.00
11		DN32NP16	pcs	1		0.00
12		DN25NP16	pcs	1		0.00
		Delivery and installation of security valves				
13	Sec C.4.4	DN25 Po=4bar-a	pcs	1		0.00
14		DN20 Po=4bar-a	pcs	1		0.00
15	Sec C.4.5	Delivery and installation of expansion vessels with total volume of 500 liters, ELBI product or equivalent	pcs	2		0.00
		Delivery and installation of circulation pumps complete with counter flanges and latch sealant material. Pumps are produced by WILO or equivalent				
16	Sec C.4.6	TOP-SD 40/ 7 ~ PN6/10	pcs	2		0.00
17		TOP-SD 40/ 10 ~ PN6/10	pcs	1		0.00
18		TOP-SD 40/ 15 ~ PN6/10	pcs	2		0.00

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**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
19	Sec C.4.7	Delivery and installation of the collectors and distributors DN250x600mm complete with connections	pcs	2		
		Delivery and installation of black seamless pipes according to SRPS C.B5.021 and SRPS C.B5.221				
20	Sec C.4.8	Ø33,7x2,6	m	60		0.00
21		Ø42,4x3,2	m	60		0.00
22		Ø48,3x2,6	m	120		0.00
23		Ø76,1x3,2	m	100		0.00
		For fittings, sliding and fixed supports, hangers, paper tube, clamping sealing material, oxygen, disugas, welding electrodes and all other necessary materials take 50% of the value of the previous item				
24	Sec C.4.9	Lump sum calculation	%	50		0.00
25	Sec C.4.10	Cleaning and painting of steel pipes and supports with basic color	m	340		0.00
26	Sec C.4.11	Delivery and installation of thermal insulation with vapor barrier of minimum thickness 13mm.	m2	60		0.00
		Delivery and installation of three-way electro motor control valves, Sauter product				
27	Sec C.4.12	DN15 BUN-F 300	pcs	1		0.00
28		DN15 BUN-F 320	pcs	1		0.00
29		DN25 BUN-F 310	pcs	2		0.00
30	Sec C.4.13	Delivery and installation of automatic vent valves with metal casing. DN15	pcs	4		0.00
31	Sec C.4.14	Delivery and installation of faucets for filling and emptying DN 15	pcs	4		0.00
32	Sec C.4.15	Delivery and installation of manometer ranging 0-6 bar complete with pressure gauge valve and connecting pipe	pcs	4		0.00

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No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
33	Sec C.4.16	Delivery and installation of thermometer in a protective sleeve for temperature measurement	pcs	8		0.00
34	Sec C.4.17	Delivery and installation of plate heat alternator, capacity 233.4kW,	pcs	1		0.00
35	Sec C.4.18	Delivery and installation of an electric boiler, capacity 100kW	pcs	1		0.00
36	Sec C.4.19	Delivery and installation of ethyl glycol 100%	lit.	400		0.00
37	Sec C.4.20	Installation testing on cold hydraulic pressure.	lumpsum	1		0.00
38	Sec C.4.21	Hot testing of the radiator heating installation.	lumpsum	1		0.00
		<b>TOTAL – IV. PART OF THE SUBSTATION FOR KK AND INSTALLATIONS FOR A/C CHAMBER HEATING</b>				<b>0.00</b>

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**Bill C -Thermo Technical Installations****Facility**

NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
IV	Sec C. 4	IV. PART OF THE SUBSTATION FOR KK AND INSTALLATIONS FOR A/C CHAMBER HEATING			
				<b>TOTAL</b>	<b>0.00</b>

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**BILL C**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>V</b>	<b>Sec C. 5</b>	<b>V. AIR CONDITIONING</b>				
		Delivery and installation of outdoor units of the VRF system, Mitsubishi Electric product with sub-construction EQUIPMENT PROCURED FROM DONATIONS				
1	Sec C.5.1	PUHY P250 YJMA cooling capacity 28kW heating capacity 31.5 kW el. power heating/cooling 7,4/7,34 kW	pcs	1		
2	Sec C.5.2	PUHY P300 YJMA cooling capacity 33.5 kW heating capacity 37.5 kW el. power heating/cooling 9/9,25 kW	pcs	2		
3	Sec C.5.3	PUHY EP200 YJMA cooling capacity 22.4 kW heating capacity 25kW el. power heating/cooling 5,09/5.54 kW	pcs	3		
4	Sec C.5.4	PUHY EP250 YSJMA cooling capacity 28kW heating capacity 31.5 kW el. power heating/cooling 6,73/7,15 kW	pcs	2		
5	Sec C.5.5	Erection of outside units on the building roof	Lump sum			
		Delivery and installation of indoor units of the VRF system, Mitsubishi Electric product EQUIPMENT PROCURED FROM DONATIONS				
6	Sec C.5.6	All indoor units are wall mounted PKFY 20 VBM-E cooling capacity 2.2 kW heating capacity 2.5kW el. power heating/cooling 0.04 kW	pcs	6		
7	Sec C.5.7	PKFY 25VBM-E cooling capacity 2.8 kW heating capacity 3.2 kW el. power heating/cooling 0.04 kW	pcs	3		
8	Sec C.5.8	PKFY 32VHM-E cooling capacity 3.6 kW heating capacity 4 kW el. power heating/cooling 0.04 kW	pcs	11		

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No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
9	Sec C.5.9	PKFY 40VHM-E	pcs	6		
		cooling capacity 4.5kW				
		heating capacity 5kW				
		el. power heating/cooling 0.04 kW				
10	Sec C.5.10	PKFY 63VKM-E	pcs	2		
		cooling capacity 7.1kW				
		heating capacity 8kW				
		el. power heating/cooling 0.04 kW				
		Delivery and installation of remote controllers, Mitsubishi Electric product EQUIPMENT PROCURED FROM DONATIONS				
11	Sec C.5.11	PAR-FL32MA	pcs	28		
		Delivery and installation of LEV kit, Mitsubishi Electric product EQUIPMENT PROCURED FROM DONATIONS				
12	Sec C.5.12	the set contains				
		a-Electric expansion valve				
		b-Accompanying temperature sensors for air				
		c-Accompanying temperature sensors for freon				
		d-Wire controller,				
		e-Accompanying automation for the control of the electric expansion valve PAC-AH · MH				
		AH 125	pcs	2		
max. cooling capacity 11.2 kW						
max. heating capacity 12.5kW						
13	Sec C.5.13	AH250	pcs	4		
		max. cooling capacity 28kW				
		max. heating capacity 31.5kW				
		Delivery and installation of a central controller with a touch screen and the ability to connect the external units product, Mitsubishi Electric product EQUIPMENT PROCURED FROM DONATIONS				
14	Sec C.5.14	AG150A	pcs	1		
		Delivery and installation interface module for the communication of the air conditioning system with the central monitoring and control system, complete with power supply EQUIPMENT PROCURED FROM DONATIONS				
15	Sec C.5.15	BAC NET				

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<b>Facility</b>						
16	Sec C.5.15	BAC HD150	pcs	1		
		Delivery and installation a bifurcation for connecting copper pipe network, Mitsubishi Electric product				
17	Sec C.5.18	CMY-Y102SS G2	pcs	19		0.00
18		CMY-Y102LS G2	pcs	3		0.00
19		CMY-Y104-G	pcs	1		0.00
		Delivery and installation of copper piping network, complete with insulation with vapor barrier of minimum thickness of 9 mm				
20	Sec C.5.19	6.35 - R410A	m	115		0.00
21		9.52 - R410A	m	205		0.00
22		12.70 - R410A	m	175		0.00
23		15.88 - R410A	m	94		0.00
24		19.05 - R410A	m	75		0.00
25		22 - R410A	m	52		0.00
26		28 - R410A	m	50		0.00
27	Sec C.5.20	For all small auxiliary material relating to his knees, silver welding, gas for bottles, etc. take 30% of the value of copper pipes			30%	0.00
		Delivery and installation of plastic pipes for the condensate				
28	Sec C.5.21	DN18 connection	m	55.00		0.00
29		DN20	m	42.00		0.00
30		DN25	m	45.00		0.00
31	Sec C.5.21	For all small auxiliary material relating to his knees, condensate drain siphons, etc. take 30 % of the value of plastic pipes			30%	0.00
32	Sec C.5.22	Delivery and installation of condensate drain pumps for installation in the indoor unit EQUIPMENT PROCURED FROM DONATIONS	pcs	30		
33	Sec C.5.23	Adding freon to the system R410A	kg	31		
		Delivery and installation of a split system for air conditioning of the area of the RACK cabinet EQUIPMENT PROCURED FROM DONATIONS				
34	Sec C.5.24	PKA RP71KAL/PUHZ RP71VHA	pcs	2		
		cooling capacity 7.1 kw				
		heating capacity 8kw				
		el. power heating/cooling 1,96/2,13kW				
		Wire controller PAR 30MAAj				

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<b>Facility</b>						
<b>EQUIPMENT PROCURED FROM DONATIONS</b>						
35	Sec C.5.25	PAR 30MAAj	pcs	2		
36		2x075 mm	m	890		
37	Sec C.5.26	Testing freon installation for impermeability with nitrogen - pressure 40 bar. In accordance with the technical recommendations of the manufacturer. Commissioning.	Lump sum			
38	Sec C.5.27	Penetration of construction openings	Lump sum			0.00
39	Sec C.5.28	Disassembly of the split units and their removal from the canal passage vertical	Lump sum			0.00
<b>TOTAL - V. AIR CONDITIONING</b>						<b>0.00</b>

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V	Sec C. 5	V. AIR CONDITIONING			
<b>TOTAL</b>					<b>0.00</b>

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<b>Facility</b>						
<b>VI</b>	<b>Sec C. 6</b>	<b>VI. VENTILATION</b>				
1	Sec C.6.1	<p>Delivery and installation of a/c chamber product of the ENERGYRATIONALIZATION Belgrade of the following characteristics complete with the sub-construction</p> <p>EQUIPMENT PROCURED FROM DONATIONS</p> <p>NPZ immovable shutter</p> <p>DP – Control dumper</p> <p>FB – filter class EU4 section</p> <p>GB – heater section, hot water is the fluid,  <math>Q_g = 57,47 \text{ KW}</math> for <math>t_{vu/i} = -12 / 26</math> i <math>t_{wu/i} = 80 /</math></p> <p>HV – cooler section with drop eliminator, freon is the fluid,  <math>Q_h = 29,54 \text{ KW}</math> for <math>T_{vu}/T_{vi} (\text{°C}) = +33 / + 12,9</math> i <math>t_{wu/i} = 5 / 45 \text{ °C}</math></p> <p>VU – discharge fan section, <math>V_u = 3480 \text{ m}^3/\text{h}</math>, <math>p_{ext} = 200 \text{ Pa}</math>, with freq. reg.</p> <p>fan TLZ 280, <math>P_{em} = 1,5 \text{ KW}</math></p> <p>Size 6, composition NPZ+DP+FB+GB+HV+VU</p>	pcs	1		
2	Sec C.6.2	<p>Delivery and installation of a/c chamber product of the ENERGYRATIONALIZATION Belgrade of the following characteristics complete with the sub-construction</p> <p>EQUIPMENT PROCURED FROM DONATIONS</p> <p>NPZ immovable shutter</p> <p>DP – Control dumper</p> <p>FB – filter class EU4 section</p> <p>GB – heater section, hot water is the fluid,  <math>Q_g = 17,76 \text{ KW}</math> for <math>t_{vu/i} = -12 / 26</math> i <math>t_{wu/i} = 80 / 60 \text{ °C}</math></p> <p>HV – cooler section with drop eliminator, freon is the fluid,  <math>Q_h = 10,33 \text{ KW}</math> za <math>T_{vu}/T_{vi} (\text{°C}) = +33 / + 12,9</math> i <math>t_{wu/i} = 5 / 45 \text{ °C}</math></p> <p>VU – discharge fan section,  <math>V_u = 1155 \text{ m}^3/\text{h}</math>, <math>p_{ext} = 376 \text{ Pa}</math>, with freq. reg.</p> <p>fan TLZ 200, <math>P_{em} = 0,37 \text{ KW}</math></p> <p>Size 3, composition NPZ+DP+FB+GB+HV+VU</p>	pcs	1		

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		<b>Facility</b>				
3	Sec C.6.3	Delivery and installation of a/c chamber product of the ENERGYRATIONALIZATION Belgrade of the following characteristics complete with the sub-construction EQUIPMENT PROCURED FROM DONATIONS NPZ immovable shutter DP – Control dumper FB – filter class EU4 section GB – heater section, hot water is the fluid, $Q_g = 66,07 \text{ KW}$ for $t_{vu/i} = -12 / 26$ i $t_{wu/i} = 80 / 60 \text{ }^\circ\text{C}$ HV – cooler section with drop eliminator, freon is the fluid, $Q_h = 38,55 \text{ KW}$ for $T_{vu/Tvi} (^\circ\text{C}) = +33 / + 12,9$ i $t_{wu/i} = 5 / 45 \text{ }^\circ\text{C}$ VU – discharge fan section, $V_u = 4430 \text{ m}^3/\text{h}$ , $p_{ext} = 300 \text{ Pa}$ , with freq. reg. venfan TLZ 315, $P_{em} = 1,5 \text{ KW}$ Size 9, composition NPZ+DP+FB+GB+HV+VU	pcs	1		
4	Sec C.6.4	Delivery and installation of a/c chamber product of the ENERGYRATIONALIZATION Belgrade of the following characteristics complete with the sub-construction EQUIPMENT PROCURED FROM DONATIONS NPZ immovable shutter DP – Control dumper FB – filter class EU4 section GB – heater section, hot water is the fluid, $Q_g = 92,08 \text{ KW}$ za $t_{vu/i} = -12 / 26$ i $t_{wu/i} = 80 / 60 \text{ }^\circ\text{C}$ HV – cooler section with drop eliminator, freon is the fluid, $Q_h = 46,16 \text{ KW}$ for $T_{vu/Tvi} (^\circ\text{C}) = +33 / + 12,9$ i $t_{wu/i} = 5 / 45 \text{ }^\circ\text{C}$ VU – discharge fan section, $V_u = 5540 \text{ m}^3/\text{h}$ , $p_{ext} = 230 \text{ Pa}$ with freq. reg. fan TLZ 355, $P_{em} = 2,2 \text{ KW}$ Size 9, composition NPZ+DP+FB+GB+HV+VU	pcs	1		
		Delivery and installation of grids for air extraction with flow control product "TROX" or equivalent with the following dimensions				
5	Sec C.6.5	AT-AG 425x125	pcs	35		0.00
6		AT-AG 325x125	pcs	7		0.00

## BILL C

## Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
		Delivery and installation of diffuser complete with plenum box and flow regulator, Trox product or equivalent. Color according to the request of investors. Material for grids - aluminum.				
7	Sec C.6.6	ADLQ-AK-M/250	pcs	27		0.00
8		ADLQ-AK-M/300	pcs	12		0.00
9		ADLQ-AK-M/400	pcs	17		0.00
10		ADLQ-AK-M/500	pcs	10		0.00
11		ADLQ-AK-M/600	pcs	4		0.00
		Delivery and installation of PV valves				
12	Sec C.6.7	LVS 125	pcs	6		0.00
13		LVS 160	pcs	26		0.00
14	Sec C.6.8	Production, delivery and installation of galvanized sheet metal channels with minimum thickness according to SRPS, made with double curved suture, dimensions according to the design with a lengths up to 2m and fittings as separate parts of the channel network. End of the channel and fittings to be connected with the frame made of angle iron or sleeve profile for better sealing, connect sections with screws and nuts. Do the curves with air deflectors. For incidental ventilation it is necessary to provide a certificate of fire resistance.	kg	4500		0.00
		Delivery and installation of spiral channels				
15	Sec C.6.9	Ø160	m	65		0.00
16		Ø200	m	80		0.00
17		Ø250	m	40		0.00
18		Ø315	m	10		0.00
		Delivery and installation of spiral channels made of plastic masses resistant to acidic substances. Channels must have attestats.				
19	Sec C.6.10	Ø100	m	450		0.00
20		Ø250	m	350		0.00
21	Sec C.6.11	Delivery and installation of shock absorbers and washers for suspended installation of channels that reduce the noise level by 15 dB take 30% of the previous item	30%			0.00
		Delivery and installation of thermally insulated flexible connections for diffuser connection				
22	Sec C.6.12	Ø160	m	54		0.00
23		Ø200	m	75		0.00
24		Ø250	m	35		0.00
25		Ø315	m	10		0.00
		Delivery and installation of thermally non-insulated flexible connections for diffuser connection				
26	Sec C.6.13	Ø160	m	39		0.00
27		Ø200	m	17		0.00
28		Ø250	m	10		0.00
29		Ø315	m	5		0.00

B

## BILL C

## Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
		Delivery and installation of CAV flow controller with electric actuator for mounting on inlet grids in the laboratories, TROX products or equivalent, for use in the automation system according to the automation design				
30	Sec C.6.14	Ø200	pcs	4.00		0.00
31		Ø250	pcs	5.00		0.00
32		Ø315	pcs	1.00		0.00
33		350x100	pcs	1.00		0.00
		Delivery and installation of VAV flow controller with electric actuator for mounting on outlet grids in the laboratories, TROX products or equivalent, for use in the automation system according to the automation design				
34	Sec C.6.15	Ø200	pcs	4.00		0.00
35		Ø250	pcs	2.00		0.00
36		Ø315	pcs	1.00		0.00
		Delivery and installation of flow controller				
37	Sec C.6.16	300x200	pcs	4		0.00
38		500x300	pcs	2		0.00
		Delivery and installation of PP flaps with motor drive TROX product				
39	Sec C.6.17	Ø160 FKRS 160	pcs	1		0.00
40		300x250 FK EU 300x259	pcs	2		0.00
41		500x300 FK EU 500x300	pcs	4		0.00
		Delivery and installation of anti-smoke flaps with electro motor drive for incidental ventilation, product of the VIS Company Belgrade or equivalent				
42	Sec C.6.18	300x100	pcs	16		0.00
43		400x100	pcs	3		0.00
		Delivery and installation of pre-current grid in the toilet doors				
44	Sec C.6.19	400x300	pcs	1		0.00
45	Sec C.6.20	Delivery and installation of filter batteries with 3 filtration classes (G4, H13, F7) for digestors with capacity up to 480 m3/h EQUIPMENT PROCURED FROM DONATIONS	pcs	8		
46	Sec C.6.21	Delivery and installation of filter batteries with 3 filtration classes (G4, H13, F7) for safety boxes with capacity up to 30 m3/h EQUIPMENT PROCURED FROM DONATIONS	pcs	8		

**BILL C**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
47	Sec C.6.22	Delivery and installation of filter batteries with 3 filtration classes (G4, H13, F7) for ventilation arms with capacity up to 100 m3/h EQUIPMENT PROCURED FROM DONATIONS	pcs	11		
48	Sec C.6.23	Delivery and installation of fans, product of the S&P Spain, for air extraction from the digester room, complete with the sub-construction EQUIPMENT PROCURED FROM DONATIONS TH 800 EXT	kom	13		
49	Sec C.6.24	Delivery and installation of fans, product of the S&P Spain, for air extraction from safety boxes. Fans must be resistant to aggressive environments and with an attest complete with the sub-construction TH-800/200 ATEX EEXEIT3	pcs	8		0
50	Sec C.6.25	Delivery and installation of in line fans, product of the S&P Spain, for air extraction from rooms, secondary ventilation. Fans must be resistant to aggressive environments and with an attest TD 160-100	pcs	14		0
51	Sec C.6.26	Delivery and installation of fans, product of the S&P Spain, for air extraction from the digester room, complete with the sub-construction TH-1200/315 ATEX EEXEIT3	pcs	8		0
		Delivery and installation of fans for air extraction from the following laboratories, complete with the sub-construction				
52	Sec C.6.27	chemistry SMRT/4/315 3210 m3/h 610 Pa	pcs	1		0
53	Sec C.6.28	Explosives SMRT/4-250 1045 m3/h 588 Pa	pcs	1		0
54	Sec C.6.29	Fibre colors SMRT/4-315 3910 m/h 891 Pa	pcs	1		0
55	Sec C.6.30	Toxicology SMRT/4-315 5205 m3/h 891 Pa	pcs	1		0

**BILL C**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
		Delivery and installation of roof fan for air extraction for incidental ventilation. Fan resistant to rust and resistant at 400°C for 2h complete with the sub-construction				
56	Sec C.6.31	HGHTV/4-1000-9/8-5,5kW 16980 m3/h 767 Pa	pcs	1	0	0
		Delivery and installation of axial fan for air supply in the elevator shaft in order to achieve product overpressur, product of S & P Spain or equivalent.				
57	Sec C.6.32	HXBR/2-200 385 m3/h 95 Pa	pcs	1	0	0
		Delivery and installation xial fan for air supply in the stairway in order to achieve product overpressure, product of S & P Spain or equivalent.				
58	Sec C.6.33	HCBB/4-355/H 825 m3/h 90 Pa	pcs	1	0	0
		Delivery and installation of filter sections for primary ventilation within (Γ4, H13, F7) for the following rooms. EQUIPMENT PROCURED FROM DONATIONS				
59	Sec C.6.34	Chemistry 2710 m3/h	pcs	1		
60	Sec C.6.35	Explosives 1270 m3/h	pcs	1		
61	Sec C.6.36	Fibre colors 3515 m3/h	pcs	1		
62	Sec C.6.37	Toxicology 5712 m3/h	pcs	1		
		Delivery and installation of overpressure shutters for the control of overpressure with incidental ventilation and secondary ventilation				
63	Sec C.6.38	200x100	pcs	21		0.00
64		Ø125	pcs	13		0.00
65	Sec C.6.39	Delivery and installation of insulation with vapor barrier thickness 9 mm halogen free	m2	550		0.00
66	Sec C.6.40	Delivery and installation of the electric heater with capacity 2.1 kW, product of the Systemair, diameter 150 mm complete with temperature controller and temperature sensor SVM 150-1	pcs	1		0.00
67	Sec C.6.41	Penetration of an opening Ø100 and installation of pre-current grids Ø100at the place of penetration on both sides	pcs	18		0.00
<b>TOTAL - V. AIR CONDITIONING</b>						<b>0.00</b>

**C Bill C -Thermo Technical Installations Facility**

NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
VI	Sec C. 6	VI. VENTILATION			
				<b>TOTAL</b>	<b>0.00</b>

### SUMMARY OF WORKS Bill C

Nr	Technical Specification Ref. number	TYPE OF WORKS	AMOUNT
<b>C.</b>	<b>Sec C</b>	<b>THERMO-TECHNICAL INSTALLATIONS</b>	
C1	Sec C. 1	I. PREPARATION AND FINISHING WORKS	<b>0.00</b>
C2	Sec C. 2	II. RADIATOR HEATING	<b>0.00</b>
C3	Sec C. 3	III. SUBSTATION (PART FOR THE RADIATOR HEATING AND UP TP THE KK ALTERNATOR)	<b>0.00</b>
C4	Sec C. 4	IV. PART OF THE SUBSTATION FOR KK ANDINSTALLATIONS FOR A/C CHAMBER HEATING	<b>0.00</b>
C5	Sec C. 5	V. AIR CONDITIONING	<b>0.00</b>
C6	Sec C. 6	VI. VENTILATION	<b>0.00</b>
		<b>TOTAL (Transfer to Summary of Bills)</b>	<b>0.00</b>



**BILL D**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

<b>A. DISMANTLING THE EXISTING INSTALLATION</b>					
<b>number</b>	<b>work position description</b>	<b>unit</b>	<b>quantity</b>	<b>unit price</b>	<b>total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
A.1	Dismantling distribution boxes on the building (with chase cutting and wall patching) with temporary depositing on site spoil tip and handover of the records to the Investor. The account is completely for all works	pcs	2		0.00
A.2	Dismantling supply lines on the building, PP00 4x(10-16)mm <sup>2</sup> , 100m, (with chase cutting and wall patching) with temporary depositing on site spoil tip and handover of the records to the Investor. The account is completely for all works	pcs	1		0.00
A.3	Dismantling lamps on the building with temporary depositing on site spoil tip and handover of the records to the Investor. The account is completely for all works	pcs	86		0.00
A.4	Dismantling installation switches and outlets on the building, with temporary depositing on site spoil tip and handover of the records to the Investor. The account is completely for all works	pcs	112		0.00
A.5	Dismantling installation and supply cables on the building, which turn out to be unnecessary in the course of works, with temporary depositing on site spoil tip and handover of the records to the Investor.	m	300		0.00
<b>A. DISMANTLING THE EXISTING INSTALLATION – TOTAL:</b>					<b>0.00</b>

<b>B. DIESEL AGGREGATE</b>					
	NOTE: Aggregate power selection is to be agreed with the Investor. Considering the fact that the existing aggregate power values are in deficit, agree the final aggregate power with the Investor. The aggregate is to be set next to the existing aggregate for the need of computer center, on the same concrete surface and it is to be grounded on the same grounding as the existing aggregate. The Investor is obliged to agree the micro location of the aggregate and cable route with the IT Management.				
	THE EQUIPMENT IS PROCURED FROM THE DONATIONS.				

B.1	Delivery and installation of the aggregate, type: SDMO, □250 kVA (200 kW) type GS 250K or equivalent in sound insulated case with ATS automatic control ATI 250 in the case. □The aggregate is container type and has the following technical properties: □- Power (StandBy mode): 250 kVA (200 kW) □- nominal voltage: 3x400/230V □- power maker: 0.80 □- frequency: 50Hz □- Operation type: automatic start, operation under changeable overcurrent. □Diesel electrical aggregate is delivered completely with: □- relevant rubber mechanical dampers □- command cabinet for automatic mode □(control, supervision and management generator set with manual and automatic start-up) □- transfer switch (ATS) for switching overcurrent network-aggregate with electromotive three-position switch in a separate electric cabinet □- tank for operation independence of min 10 hrs.(390l) □- electronic rev. regulator.				
	Stand-alone automatic control cabinet with equipment for switching overcurrent network-aggregate with electromotive three-position switch delivered with aggregate according to the single-pole scheme specified in the design. The account is to be made for complete materials and work.	comp.	1		
B.2	The Investor is obliged to agree with EDB and enable the connection for the newly designed cable type XP00 3x240 mm 2+120 mm <sup>2</sup> to the distribution box of the existing TC. Materials and work are paid to EDB after the bill is delivered.	comp.	1		
B.3	Discharging diesel aggregate, adjusting the voltage and frequency and 24 hrs test operation. The account is to be made in lump sum.	lump sum	1		
B.4	Charging diesel aggregate with fuel and lubricant according to the manufacturer's recommendation. The account is to be made for complete materials and work.	comp.	1		
B.5	Marking elements and cables on outlets and inlets with engraved plates. The account is to be made for complete materials and work.	comp.	1		
B.6	Executed state design with complete instructions for proper usage and maintenance of the respective diesel aggregate. The account is to be made in lump sum.	lump sum	1		
B.7	Delivery of the diesel aggregate maintenance book and handover to the Investor. The account is to be made in lump sum.	lump sum	1		
B.8	Testing of the installed diesel aggregate and proving manufacturer's technical properties as well as installed cables and grounding elements. The account is to be made in lump sum.	lump sum	1		
<b>B. DIESEL AGGREGATE – TOTAL:</b>					<b>0</b>

C. UNINTERRUPTIBLE POWER SUPPLY (UPS)					
	<b>NOTE: THE EQUIPMENT IS PROCURED FROM THE DONATIONS.</b>				
C.1	Procurement and installation of the uninterruptible power supply similar to type APC MGE Galaxy 3500, 20kVA, 400V, or equivalent. Built-In Maintenance Bypass, 2 battery modules, dimensions 1491x352x838, with all the necessary equipment. P/N: G35T20KH2B2S	pcs	1		
C.2	Procurement and installation of the uninterruptible power supply similar to type APC MGE Galaxy 3500, 40kVA, 400V, or equivalent. Built-In Maintenance Bypass, 4 battery modules, dimensions 1491x523x838, with all the necessary equipment. P/N: G35T40KH4B4S	pcs	1		
<b>C. UNINTERRUPTIBLE POWER SUPPLY (UPS) – TOTAL:</b>					<b>0</b>

D. DISTRIBUTION BOXES					
D.1	Delivery and installation in the existing N.N. distribution TC 3x1000kVA of the new aggregate outlet with the following equipment: 1 piece of base for three knife switches, completely with three knife switches of 400/300A, similar to type: ISFT250 "Schneider Electric" -1 piece of base for three knife switches, completely with three knife switches of 400/200A, similar to type: ISFT250 "Schneider Electric" - Cu rails and other minor materials	pcs	1		0.00
D.2	Delivery and installation of GRO (a) in steel sheet case made of double pickled sheet for the wall of protection rate of IP54, with equipment arrangement according to the single-pole scheme specified in the design. The cabinet is to be dimensioned to have 30% of available space for further installation of the additional equipment. Door is locked with a lock and a key. The cabinet is provided with the following equipment: -1 piece of switch similar to type: NS 400 (R300) with voltage of 230V, 50Hz with the possibility of remote turning off 'Schneider Electric' base for three knife switches, completely with three knife switches of 160A, similar to type: ISFT250 "Schneider Electric" -1 piece of base for three knife switches, completely with three knife switches of 125A, similar to type: ISFT250 "Schneider Electric" -3 pcs. of fusible switches EZ 25/16A				
	- 3 pcs. of signal kathetron lamp 230V, green, similar to type: NV5-AVM "Telemechanique" - Copper collectors 5 pcs., clamp terminals, support insulating conductors for scheming, schemes, notifying boards, data plates, grommets and all minor installation materials. It is to be paid completely delivered, installed, connected, tested according to the scheme of actually designed state.	pcs	1	0.00	0.00

A

D.3	<p>Delivery and installation of RT-1/I in steel sheet case made of double pickled sheet for the wall of protection rate of IP54, with equipment arrangement according to the single-pole scheme specified in the design. The cabinet is to be dimensioned to have 30% of available space for further installation of the additional equipment. Door is locked with a lock and a key. The cabinet is provided with the following equipment:</p> <p>network section:</p> <ul style="list-style-type: none"> <li>-1 piece of switch similar to type: NS 125 (R 63) with voltage of 230V, 50Hz with the possibility of remote turning off 'Schneider Electric'</li> <li>- 3 pcs. of automatic switch, similar to type: MC32 B2A, Ik=6000A "Minel"</li> <li>- 4 pcs. of automatic switch, similar to type: MC32 B10A, Ik=6000A "Minel"</li> <li>- 28 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</li> <li>- 12 pcs. of automatic switch, similar to type: MC32 B16A, 3p, Ik=6000A "Minel"</li> <li>- 1 pcs. of red bush button for emergency turning off (Ø40mm) with deblocking by turning, similar to type Legrand, category No. 23882</li> <li>-1 pcs. of 1NO + 1NC contact block for push button head similar to type Legrand, category No. 22976</li> <li>-3 pcs. of signal kathetron lamp 230V, green, similar to type NV5-AVM 'Telemecanique'</li> <li>- 1 pcs. of automatic switch, similar to type: MC32 B6A, Ik=6000A "Minel"</li> <li>- 6 pcs. of automatic switch, similar to type: MC32 B10A, Ik=6000A "Minel"</li> <li>- 4 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</li> <li>- 1 pcs. of automatic switch, similar to type: MC32 B32A, 3p, Ik=6000A "Minel"</li> <li>-3 pcs. of high performance switch, similar to type: NVO 125/80A, Ik=10000A</li> <li>-3 pcs. of high performance switch, similar to type: NVO 125/63A, Ik=10000A</li> <li>- 1 pcs. of red bush button for emergency turning off (Ø40mm) with deblocking by turning, similar to type Legrand, category No. 23882</li> <li>-1 pcs. of 1NO + 1NC contact block for push button head similar to type Legrand, category No. 22976</li> <li>-3 pcs. of signal kathetron lamp 230V, green, similar to type NV5-AVM 'Telemecanique'</li> </ul>				
	<p>Uninterruptible power supply (UPS)</p> <ul style="list-style-type: none"> <li>-1 pcs. of switch, similar to type: GS 80, Ik=10000A "R. Koncar"</li> <li>-3 pcs. of automatic switch, similar to type: MC32 B2A, Ik=6000A "Minel"</li> <li>-49 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</li> <li>-Copper collectors 5 pcs., clamp terminals, support insulating conductors for scheming, schemes, notifying boards, data plates, grommets and all minor installation materials. It is to be paid completely delivered, installed, connected, tested with the scheme of actually designed state.</li> </ul>	pcs	1		0.00

D.4	<p>Delivery and installation of RT-2/I in steel sheet case made of double pickled sheet for the wall of protection rate of IP54, with equipment arrangement according to the single-pole scheme specified in the design. The cabinet is to be dimensioned to have 30% of available space for further installation of the additional equipment. Door is locked with a lock and a key. The cabinet is provided with the following equipment:</p> <p>network section:</p> <ul style="list-style-type: none"> <li>-1 piece of switch similar to type: NS 125 (R 63) with voltage of 230V, 50Hz with the possibility of remote turning off 'Schneider Electric'</li>   <li>- 3 pcs. of automatic switch, similar to type: MC32 B2A, Ik=6000A "Minel"</li> <li>- 4 pcs. of automatic switch, similar to type: MC32 B10A, Ik=6000A "Minel"</li> <li>- 12 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</li> <li>- 3 pcs. of automatic switch, similar to type: MC32 B16A, 3p, Ik=6000A "Minel"</li> <li>- 1 pcs. of red bush button for emergency turning off (Ø40mm) with deblocking by turning, similar to type Legrand, category No. 23882</li> <li>-1 pcs. of INO + INC contact block for push button head similar to type Legrand, category No. 22976</li> <li>-3 pcs. of signal kathetron lamp 230V, green, similar to type NV5-AVM 'Telemechanique'</li> </ul> <p>aggregate section:</p> <ul style="list-style-type: none"> <li>-1pcs. of switch, similar to type: NS 250 (R 160) with voltage 230V; 50 Hz with the possibility of remote control turning off Schneider Electric</li> <li>-12 pcs. of automatic switch, similar to type: MC32 B2A, Ik=6000A "Minel"</li> <li>-1 pcs. of automatic switch, similar to type: MC32 B6A, Ik=6000A "Minel"</li>   <li>- 5 pcs. of automatic switch, similar to type: MC32 B10A, Ik=6000A "Minel"</li> <li>- 10 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</li> <li>- 1 pcs. of automatic switch, similar to type: MC32 B32A, 3p, Ik=6000A "Minel"</li> <li>-3 pcs. of high performance switch, similar to type: NVO 250/160A, Ik=10000A</li> <li>-3 pcs. of high performance switch, similar to type: NVO 125/40A, Ik=10000A</li> <li>-4 pcs. of GFCIs 25/0,3A, Legrand</li> <li>- 1 pcs. of red bush button for emergency turning off (Ø40mm) with deblocking by turning, similar to type Legrand, category No. 23882</li> </ul>				
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	<p>- 1 pcs. of 1NO + 1NC contact block for push button head similar to type Legrand, category No. 22976</p> <p>-3 pcs. of signal kathetron lamp 230V, green, similar to type: NV5-AVM 'Telemechanique'</p> <p>uninterruptible power supply UPS</p> <p>-1 pcs. of switch, similar to type: GS 40, Ik=10000A "R. Koncar"</p> <p>-3 pcs. of automatic switch, similar to type: MC32 B2A, Ik=6000A "Minel"</p> <p>-21 pcs. of automatic switch, similar to type: MC32 B16A, Ik=6000A "Minel"</p> <p>-Copper collectors 5 pcs., clamp terminals, support insulating conductors for scheming, schemes, notifying boards, data plates, grommets and all minor installation materials. It is to be paid completely delivered, installed, connected, tested with the scheme of actually designed state.</p>		1		0.00
D.5	<p>Delivery and installation of RO-H in steel sheet case made of double pickled sheet for the wall of protection rate of IP54, with equipment arrangement according to the single-pole scheme specified in the design. The cabinet is to be dimensioned to have 30% of available space for further installation of the additional equipment. Door is locked with a lock and a key. The cabinet is provided with the following equipment:</p> <p>network section:</p> <p>-1 pcs. of rugged switch, similar to type: GS 25 "R. Koncar"</p> <p>-3 pcs. of usable switches EZ 25/10</p> <p>-clamp terminals, support insulating conductors for scheming, schemes, notifying boards, data plates, grommets and all minor installation materials. It is to be paid completely delivered, installed, connected, tested with the scheme of actually designed state</p>	pcs	1		0.00
<b>D. DISTRIBUTION BOXES – TOTAL:</b>					<b>0.00</b>

E. LOW VOLTAGE LINES					
E.1	<p>Delivery and installation of supply cable, from TS to ATC type XP00-A 3x240 +120 mm<sup>2</sup>; 1 kV ("FKZ"). The cable is to be set over the existing rack, completely with cable lugs on both ends. The account is to be made for complete materials and work per m1.</p>	m	77		0.00
E.2	<p>Delivery and installation of supply cable, from ATC to GRO (a), type NHXHX 3x 150+75 mm<sup>2</sup>/FE180/E120; 1 kV ("FKZ"). Cable is placed partly on the existing PCS racks and partly on the distance flanges, and partly over the newly designed PCS channel/E120, dimensions 100x50 mm, located in the old cinema and basement, to the cabinet connection completely with cable lugs on both ends. The account is to be made for complete materials and work per m1.</p>	m	120		0.00

E.3	Delivery and installation of supply cable, from TS to RO-kot., type NHXHX 3x 70+35 mm <sup>2</sup> /FE180/E120; 1 kV ("FKZ"). Cable is placed partly on the existing PCS racks and partly on the distance flanges, and partly over the newly designed PCS channel/E120, dimensions 100x50 mm, located in the old cinema and basement, to the cabinet connection completely with cable lugs on both ends. The account is to be made for complete materials and work per m l.	m	117		0.00
E.4	Delivery and installation of supply cables NHXHX-J 4x70 mm <sup>2</sup> ("FKZ") placed in suspended ceiling over PCS racks from GRO (m) to RT-2-A/I, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	37		0.00
E.5	Delivery and installation of supply cables NHXHX-J 4x50 mm <sup>2</sup> ("FKZ") placed in suspended ceiling over PCS racks from GRO (m) to RT-1-A/I and RT-2-A/I, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	50		0.00
E.6	Delivery and installation of supply cables NHXHX-J 4x50+35 mm <sup>2</sup> ("FKZ") placed in suspended ceiling over PCS racks from RT 2-A/I to RO-KS2, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	15		0.00
E.7	Delivery and installation of supply cables NHXHX-J 4x25+16 mm <sup>2</sup> ("FKZ") placed in suspended ceiling over PCS racks from RT 1-A/I to RO-KS1 and UPS, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	66		0.00
E.8	Delivery and installation of supply cables NHXHX-J 5x6 mm ("FKZ") placed in suspended ceiling over PCS racks from RT-1-A/I to UPS, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	45		0.00
E.9	Delivery and installation of supply cables NHXHX-J Fe 180/E90 5x6 mm ("FKZ") placed in partly suspended ceiling over PCS racks partly in vertical channel, from GRO (a) to RO-L i RO-H, with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	100		0.00
E.10	Delivery and installation of supply cables NHXHX-J 5x2,5 mm ("FKZ") placed in suspended ceiling over PCS racks and partly underneath the mortar, in gypsum cardboard (with chase cutting and patching wall channels), with making of cable ends with appropriate equipment. The account is to be made for complete materials and work per m l.	m	280		0.00
E.11	Delivery and installation of supply cables NHXHX-J 3x2,5 mm ("FKZ") placed in suspended ceiling over PCS racks and partly underneath the mortar, in gypsum cardboard (with chase cutting and patching wall channels), for installation of socket inlets, single-phase outlets, parapet distribution, hand dryer. The account is to be made for complete materials and work per m l.	m	2300		0.00

E.12	Delivery and installation of supply cables NHXHX-J 3x1,5 mm ("FKZ") placed in suspended ceiling over PCS racks and partly underneath the mortar, in gypsum cardboard (with chase cutting and patching wall channels), for installation of lighting, cameras, door, TV devices with installation and distribution boxes, material for fixing cables and connecting with lamps. The account is to be made for complete materials and work per m1.	m	1660		0.00
E.13	Delivery and installation of signal cable type NHXHX-J 3x1.5 mm2; 1kV from the hood device to the fan on drawing pipe from the hood mounted on the roof. The cable is placed in PCS channels over which there is installation for the needs of electromotive drive. Connecting cable on the hood side and the fan side is to be performed by the supplier of the equipment for the hoods or safety boxes and he is to provide the appropriate test certificate. The account of the entire material and work is to be made per piece of placed cable.	pcs	16		0.00
E.14	Closing cable penetrations between fire protection areas with fire resistant compound Termosil. The account is to be made for complete materials and work per opening capacity in dm3.	dm <sup>3</sup>	60		0.00
E.15	Coating cables in the length of 1m on both sides of the cable penetration through fire protection wall. The account is to be made for complete materials and work per piece.	pcs	2		0.00
<b>E. LOW VOLTAGE LINES – TOTAL:</b>					<b>0.00</b>

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F. LAMPS					
F.1	Delivery and installation of lamp S1 for anti-panic lighting with NiCd batteries (operation 3hrs) 1x8W, wit EXIT sign for installation in the ceiling, similar to type: EMERGENCY 2812 OMS. The complete materials and work are to be paid for per piece.	pcs	27		0.00
F.2	Delivery and installation of lamp S2 for anti-panic lighting with NiCd batteries (operation 3hrs) 1x8W, wit → sign for installation in the ceiling, similar to type: EMERGENCY 2811 OMS. The complete materials and work are to be paid for per piece.	pcs	6		0.00
F.3	Delivery and installation of fluorescent lamp S3, BUILT-IN FLUORESCENT LAMP, similar to type: ARCO DL 4 x T16 14 W code:1021 41112 BUCK for installation in the suspended ceiling completely with fluorescent pipes. The complete materials and work are to be paid for per piece.	pcs	67		0.00
F.4	Delivery and installation of fluorescent lamp S4, similar to type: OVERGROUND FLUORESCENT LAMP TORNADO PC/T8 PC CLIPS SUSPENSION 2X36W with protection of IP 65 OMS or equivalent. Completely with fluorescent pipes. The complete materials and work are to be paid for per piece.	pcs	4		0.00
F.5	Delivery and installation of fluorescent lamp S5, similar to type: OVERGROUND FLUORESCENT LAMP TORNADO PC/T8 PC CLIPS SUSPENSION 2X18W with protection of IP 65 OMS or equivalent. Completely with fluorescent pipes. The complete materials and work are to be paid for per piece.	pcs	1		0.00
F.6	Delivery and installation of lamp S6, similar to type: BUILT-IN LAMP DOWNLIGHT 212 MAT 2X26W IP44 EB OMS or equivalent. Completely with lights COMPACT 26W/840 G24D3 GE. The complete materials and work are to be paid for per piece.	pcs	23		0.00
F.7	Delivery and installation of fluorescent lamp S7 in Exn protection, zone 2, similar to type: OVERGROUND FLUORESCENT LAMP EXEN-236, 2X36W in protection II 3GD Ex nA II T4/T5, IP 66 'Cortem' or equivalent. Completely with fluorescent pipes, type TC-TSE 36W. The complete materials and work are to be paid for per piece.	pcs	2		0.00
F.8	Delivery and installation of fluorescent lamp S8 in Exn protection, zone 2, similar to type: anti-panic LAMP EVF-18EX, 1x8W, marking CE 0722 ExII 2GD Ex dIIC T5/T6-ExtDA21 in protection IP 66 'Cortem' or equivalent, with NiCd batteries (operation 2.5 hrs) The complete materials and work are to be paid for per piece.	pcs	1		0.00
<b>F. LAMPS – TOTAL:</b>					<b>0.00</b>

G. INSTALLATION ACCESSORIES					
G.1	Delivery and installation of switch, similar to type: Mosaic: 1M, switch, white, 10A, 250V for installation in the box Ø60, completely with the box, support and frame. LEGRAND or equivalent. The materials and work are to be paid for per piece.	pcs	24		0.00
G.2	Delivery and installation of switch, similar to type: Mosaic: 2M, 2 switches, white, 10A, 250V for installation in the box module, completely with the box, support and frame. LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	20		0.00
G.3	Delivery and installation of two-way switch, similar to type: Mosaic: 2M, 2 switches, white, 10A, 250V for installation in the box module, completely with the box, support and frame. LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	20		0.00
G.4	Delivery and installation of serial switch, similar to type: Mosaic: 2M, 1 switch, white, 10A, 250V for installation in the box module, completely with the box, support and frame. LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	2		0.00
G.5	Delivery and installation of socket, similar to type: Mosaic: energy socket, white, 16A, 250V AC for installation in the box Ø60, completely with mask and supports, LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	86		0.00
G.6	Delivery and installation of socket, similar to type: Mosaic: energy socket, red, 16A, 250V AC for installation in the box Ø60, completely with mask and supports, LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	220		0.00
G.7	Delivery and installation of socket, similar to type: Mosaic: double energy socket, white, 16A, 250V AC for installation in the box Ø60, completely with mask and supports, LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	16		0.00
G.8	Delivery and installation of socket, similar to type: Mosaic: double energy socket, red, 16A, 250V AC for installation in the box Ø60, completely with mask and supports, LEGRAND or equivalent. The complete materials and work are to be paid for per piece.	pcs	16		0.00
G.9	Delivery and installation of a three-phase socket, similar to type: connection III 602.000 PRESTIGE completely with mask and supports ALING or equivalent. The complete materials and work are to be paid for per piece.	pcs	19		0.00

G.10	Delivery and installation of single-phase wall socket in Exn protection, zone 2, similar to type: PY216B, 16A, 230V AC (1+N+E) , CE 0722 EX II2GD Ex dIIC T5- EX tD A21, IP 66 manufactured by Cortem, completely with mask and supports. The materials and work are to be paid for per piece.	pcs	5		0.00
G.11	Delivery and installation of single-phase socket inlet in Exn protection, zone 2, similar to type: SPY216B, 16A, 230V AC (1+N+E), CE 0722 EX II2GD Ex dIIC T5- EX tD A21, IP 66 , Cortem. The materials and work are to be paid for per piece.	pcs	5		0.00
G.12	Potential equalization box in PS-49 with delivery and installation.	pcs	18		0.00
<b>G. INSTALLATION ACCESSORIES – TOTAL:</b>					<b>0.00</b>

<b>H. CHANNEL, FLOOR DISTRIBUTION AND INSTALLATION PIPES</b>					
H.1	Delivery and installation of perforated fire resistant cable supports resistant to fire for 90 min, completely with straight elements, with angle, branched and cross elements, with joints, with holders set at each 1m, with console supports and rest of the elements necessary for the execution of entire configuration of the rack, width: 400mm. The complete materials and work are to be paid for per m1.	m	66		0.00
H.2	Delivery and installation of a cover of perforated fire resistant cable supports resistant to fire for 90 min, for the racks of width: 400mm. The complete materials and work are to be paid for per m1.	m	66		0.00
H.3	Delivery and installation of perforated fire resistant cable supports resistant to fire for 30 min, completely with straight elements, with angle, branched and cross elements, with joints, with holders set at each 1m, with console supports and rest of the elements necessary for the execution of entire configuration of the rack, width: 300 mm. The complete materials and work are to be paid for per m1.	m	32		0.00
H.4	Delivery and installation of perforated fire resistant cable supports resistant to fire for 120 min, completely with straight elements, with angle, branched and cross elements, with joints, with holders set at each 1m, with console supports and rest of the elements necessary for the execution of entire configuration of the rack, width: 100x50 mm. Channels are placed in premises of the old cinema and through the basement to the newly set GRO A. The complete materials and work are to be paid for per m1.	m	60		0.00
H.5	Delivery and installation of a cover of perforated fire resistant cable supports resistant to fire for 90 min, for the racks of width: 300 mm. The complete materials and work are to be paid for per m1.	m	32		0.00
H.6	Delivery and installation of DLP PVC parapet system 150x50mm, 2m, overground, on internal walls, completely with the base, cover and accessories: connectors, end caps, angles etc., similar to Legrand The complete materials and work are to be paid for per piece.	pcs	22		0.00

H.7	Delivery and installation of DLP PVC parapet system 150x50mm, 2m, built-in, in the external wall mask, completely with the base, cover and accessories: connectors, end caps, angles etc., similar to Legrand product The complete materials and work are to be paid for per piece.	pcs	19		0.00
H.8	Delivery and installation of DLP double PVC parapet system 195x50mm, 2m, overground, on internal wall, completely with the base, cover and accessories: connectors, end caps, angles etc., similar to Legrand product The complete materials and work are to be paid for per piece.	pcs	6		0.00
H.9	Delivery and installation of mechanism supports with 4 modules in Al parapet system. The complete materials and work are to be paid for per piece.	pcs	128		0.00
H.10	Delivery and installation of PVC hard pipe Ø23 in the floor for device connection. The materials and work are to be paid for per m.	m	8		0.00
<b>H. CHANNEL, FLOOR DISTRIBUTION AND INSTALLATION PIPES – TOTAL:</b>					<b>0.00</b>

<b>I. POTENTIAL EQUALIZATION INSTALLATIONS</b>					
I.1	Executing installation for potential equalization in rooms with antistatic floor and plumbing fixtures with NHXHX-J 1x6 mm cable, in PVC 11 mm pipe, boxes PS49, as well as flanges for pipes of appropriate section. Complete wire set P/F, flanges and work are to be paid.	comp.	9		0.00
I.2	Connecting boxes for potential equalization with the grounding rail for grounding the nearest RO cable NHXHX-J 1x16 mm in PVC pipe Ø11mm, in the wall, average length 19m. The complete materials and work are to be paid for per piece.	pcs	9		0.00
I.3	Execution of installation for REK potential equalization and connecting with the rail for grounding of the nearest RO cable NHXHX-J 1x16 mm in PCS channel, average length of 10 m. The complete materials and work are to be paid for per piece.	pcs	1		0.00
I.4	sExecution of installation for PCS rack potential equalization and connecting with the rail for grounding of the nearest RO cable NHXHX-J 1x16 mm, with average length of 20 m. The position includes interconnection of all segments of PCS rack. The complete materials and work are to be paid for per piece.	pcs	2		0.00
<b>I. POTENTIAL EQUALIZATION INSTALLATIONS – TOTAL:</b>					<b>0.00</b>

<b>J. GROUNDING</b>					
J.1	Delivery and installation of cross tapes (NGO-52) Elind. The complete materials and work are to be paid for per piece.	pcs	16		0.00

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J.2	Delivery and installation of Fe/Zn 25 x 4 mm in the ground for installation of aggregate plateau grounding completely with excavation and backfilling Fe/Zn 25 x 4 mm, with aggregate grounding elements and connecting to the system of the existing aggregate. It is to be paid for completely executed work per m.	m	40		0.00
J.3	Measurement and test certificate of grounding with issuing proper test. The payment is to be made in lump sum.	lump sum	1		0.00
<b>J. GROUNDING – TOTAL:</b>					<b>0.00</b>

<b>K. PRELIMINARY-FINAL WORKS</b>					
K.1	Electrical cabinet supply review and local operation start-up, with adjustments of consumer's nominal currents.	comp.	1		0.00
K.2	Clearing rooms from waste and taking it outside the building. Provide the Investor with all the necessary test certifications and verifications of the result values. Provide written guarantee for the executed works and all the installed materials, as well as necessary instructions for further maintenance of the installation. Review by inspection and testing the installation in accordance with the articles 192 and 193 of the 'Rulebook on technical norms for low voltage electrical installations'.	comp.	1		0.00
K.3	Measurement and test certificate of installation with issuing proper test: -resistance of the installed cable isolation -continuity of the protective line -failure loop resistance -grounding element transition resistance The payment is completely to be made in lump sum.	comp.	1		0.00
K.4	Executed state design for all installations. The payment is completely to be made in lump sum.	lump sum	1		0.00
<b>K. PRELIMINARY-FINAL WORKS – TOTAL:</b>					<b>0.00</b>



SUMMARY ELECTRICAL INSTALLATIONS		
A.	DISMANTLING	0.00
B.	DIESEL AGGREGATE	0.00
C.	UNINTERRUPTIBLE POWER SUPPLY (UPS)	0.00
D.	DISTRIBUTION BOXES	0.00
E.	LOW VOLTAGE LINES	0.00
F.	LAMPS	0.00
G.	INSTALLATION ACCESSORIES	0.00
H.	CHANNEL, FLOOR DISTRIBUTION AND INSTALLATION PIPES	0.00
I.	INSTALLATION ACCESSORIES	0.00
J.	GROUNDING	0.00
K.	PRELIMINARY-FINAL WORKS	0.00
TOTAL ELECTRICAL INSTALLATIONS (Transfer to Summary of Bills):		0.00

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**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>I</b>	<b>Sec E. 1</b>	<b>I. AUTOMATIC FIRE DETECTION</b>				
1	Sec E. 1.1	<p>The microprocessor addressable fire central for fire signalization for the construction of an interactive, fully redundant, SecuriFire alarm system, capacity of 4 addressable loops, with 127 addressable interactive SecuriLine detectors in each loop and with the possibility of extending. The Central contains a power supply unit including accumulator batteries 2x12v, 18Ah for reserve power supply at least 72 hours in a quiet and 30 minutes in alarm mode, in case of failure of power supply. – The Central has the ability to perform software selection of sensitivity and criteria of work of fire detectors (smoke, temperature or a combination). The Central contains a relay module with 16 freely programmable bistable foldable contacts (outputs) 24V/3A for the needs of disconnection of dampers, electricity, fire fighting (FF) doors or equivalent in case of fire, equivalent to the type of B5-MRI16. The Central has the capability to network with other centrals, control panels, parallel tableaux etc. The Central has VdS attest and meets the standard SRPS EN54-2. It is equivalent to the type of B6-SCP3020 Securiton Switzerland</p> <p>Delivery of all elements of management and servicing the Central,, as well as the CD with the addresses of all the elements and access codes to all levels</p> <p>EQUIPMENT PURCHASED BY DONATION</p>	kom.	1		0.00
2	Sec E. 1.2	<p>The network module for connection of SecuriFire control panels in the SecuriLine through RS485 and/or Ethernet IP Technology (RS 485 /100 Base TX interface board, 2x RS485, 1x 100Base-TX), equivalent to the type of B6-NET2-485 Securiton Switzerland</p> <p>EQUIPMENT PURCHASED BY DONATION</p>	piece	1		0.00
3	Sec E. 1.3	<p>The operative management console to handle the system with TFT display of 5.7" and with SecuriWheel. to navigate through menus. All states of the system are shown in text form on the display. It is possible to choose print in 2 languages, one of which is Serbian. It is possible to change the language during the work of the Central. On the console there are 3 function keys and 7 LEDs for showing priority status, equivalent to the type of B5-MIC711 Securiton Switzerland</p> <p>EQUIPMENT PURCHASED BY DONATION</p>	piece	1		0.00
4	Sec E. 1.4	<p>The parallel console with LCD display with 6 lines of 40 characters and 8 LED diodes and buttons, freely programmable, to indicate the status of fire detection system, equivalent to the type of B5-MMI-FIP Securiton Switzerland.</p> <p>EQUIPMENT PURCHASED BY DONATION</p>	piece	1		0.00
5	Sec E. 1.5	<p>The automatic telephone alarm call point with 3 inputs to forward alarm messages to up to 12 phone numbers, equivalent to the type of TVOX</p> <p>EQUIPMENT PURCHASED BY DONATIONS</p>	piece	1		0.00

## BILL E

## Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
6	Sec E. 1.6	The interactive addressable combined fire detector (multi-criteria smoke and temperature detector), that combines the advantages of temperature and smoke detection in a single detector. Intelligent logic ensures reliable detection with the least possibility of occurrence of false alarms, sensitivity of detector is automatically adjusted to the ambient temperature, with the possibility to examine the state of contamination of the software profile settings (smoke, temperature, or a combination), with integrated loop insulator that in the event of a short circuit or line interruption ensures uninterrupted operation of detectors (call points), with the universal foot for mounting on the suspended ceiling or the ceiling. The detector has VdS attest and meets the standards SRPS EN54-7 and SRPS EN54-5, equivalent to the type of MCD573X-USB 501 Securiton Switzerland. EQUIPMENT PURCHASED BY DONATIONS	pieces	103		0.00
7	Sec E. 1.7	The parallel light indicator for automatic fire detectors mounted in the space of suspended ceiling, equivalent to the type of RAL720X Securiton Switzerland. EQUIPMENT PURCHASED BY DONATIONS	pieces	77		0.00
8	Sec E. 1.8	The addressable manual call point for indoor installation, equivalent to the type of MCP521/SDI 82 Securiton Switzerland, which consists of: a detector housing for wall mounting with protective plastic lid, a micro switch protected by front glass, connection clams and an addressable module. The addressable module should have an integrated loop insulator that in the event of a short circuit or line interruption ensures uninterrupted operation of detector. The detector should meet the standard EN54-11, equivalent to the type A. The addressable module should have a VdS attest.	pieces	9		0.00
9	Sec E. 1.9	The alarm siren for indoor installation in IP42 protection with the possibility of selecting 32 different tones, 41mA, 24V, equivalent to the type of Sonos 450 Klaxon.	pieces	3		0.00
10	Sec E. 1.10	The addressable input/output module with 1 supervised input and 1 supervised output in a box for installation, equivalent to the type of BX-IOM Securiton Switzerland.	pieces	2		0.00
11	Sec E. 1.11	The addressable module with 4 relay outputs in a box for installation, equivalent to the type of BX-REL4 Securiton Switzerland.	pieces	2		0.00

**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
12	Sec E. 1.12	The addressable module with 4 inputs in a box for installation, equivalent to the type of BX-IM4 Securiton Switzerland.	pieces	2		0.00
13	Sec E. 1.13	The addressable input/output module with 1 relay output ( for control of e.g. elevators) 2 supervised inputs, in a box for installation, equivalent to the type of BX-O13 Securiton Switzerland.	pieces	2		0.00
14	Sec E. 1.14	The label to indicate the detector (pack of 10)	pieces	20		0.00
15	Sec E. 1.15	Replacement of the outdated elements: EQUIPMENT PURCHASED BY DONATION				
16		Dismantling of existing elements and their delivery to the Investor	set	1		0.00
17		Checking the existing installations and equipment of the existing fire alarm system	set	1		0.00
18		Optical detector (change only detectors and bases remain the same ) MCD573X	pieces	165		0.00
19		Thermal detector (only the detectors are changed and bases remain the same ) MCD573X	pieces	2		0.00
20		Detectors in ventilation ducts	pieces	6		0.00
21		Manual call point (only the addressable modules are changed) MCP 521	pieces	8		0.00
22		EX detector: - Addressable input module for binding collective elements in the loop, equivalent to the type of BX-AIM Securiton Switzerland - Safety Zener barrier for accepting and connecting Exi fire detectors, equivalent to the type of Pepperl+Fuchs Z787 for installation outside of the potentially explosive area in a distribution cabinet or box - Optical fire detector in Exi version, with the foot for mounting, equivalent to the type of MMD130Exi/USB501-7 Exi Securiton Switzerland.	pieces	1		0.00
23		Siren equivalent to the type of Sonos 450 Klaxon	kom.	10		0.00
24		The addressable module with 4 inputs in a box for mounting, for bonding of existing centrals for activation of fire extinguishing SFP 512 on SecuriFire central, equivalent to the type of BX-IM4 Securiton Switzerland..	pieces	3		0.00
25	Mounting and connection of new elements to the already installed installation.	set	1		0.00	

**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
Equipment for the closing of firefighting (FF) double doors in case of fire:						
26	Sec E. 1.16	Electromechanical door handle in the open position, is used for FF double door width of 1250 – 2500mm, used with two hydraulic shutters DC 240 or DC 250, provides secure closing of double doors, first the inactive wing and then the active one, and has inside itself the coordinator to closing the doors, max. door opening angle is 130°, equivalent to the type of FD 464	pieces	2		0.00
27		Automat with power EN 2-6 according to the standard EN 1154 for doors up to 120 kg and up to 1400mm width, with operating temperature of - 35°C to + 45°C, with possibility to adjust the speed of closing and locking, the standard option is BACK CHECK instead of stopper, can optionally be ordered with delayed closure, cover is gray, white, brass, black and brown. with FF certificate EN 1634-3, equivalent to the type of DC 240.	piece.	4		0.00
28		<ul style="list-style-type: none"> <li>• Distribution cabinet with addressable input/output module equivalent to the type of BX-OI3 Securiton, with power supply unit 220VAC/24VDC and necessary small installation material</li> <li>• Necessary cables for connection</li> </ul>	pieces	2		0.00
29	Sec E. 1.17	Delivery and installation of the cable JH(St)H 2x2x0.8mm to connect system elements to each other and with the Central. It is placed in flexible halogen free installation PVC pipes.	m	665		0.00
30	Sec E. 1.18	Delivery and installation of the cable JH(St)H 1x2x0.8mm to connect the parallel indicators with optical detector. It is placed in flexible halogen free installation PVC pipes.	m	450		0.00
31	Sec E. 1.19	Delivery and installation of the cable JE-H(St)H 2x2x0.8mm FE180/E30 to connect sirens with the Central. It is placed in flexible halogen free installation PVC pipes.	m	100		0.00
32	Sec E. 1.20	Delivery and installation of the cable JE-H(St)H 5x2x0.8mm FE180/E30. It is placed in flexible halogen free installation PVC pipes.	m	80		0.00
33	Sec E. 1.21	Delivery and installation of the cable NHXHX 3x1.5mm <sup>2</sup> , for the power supplying of the unit from the nearest cabinet, from a separate circuit	m	10		0.00
34	Sec E. 1.22	Delivery and installation of the cable NHXHX 3x1.5mm <sup>2</sup> FE180/E30, for executive functions of the Central.	m	110		0.00
35	Sec E. 1.23	Delivery and installation of regleta (strip) 10x2 into existing distribution cabinets of fire detection.	pieces	6		0.00
36	Sec E. 1.24	Delivery and installation of conductor for earthing of the distribution cabinet, N2XH-J 1x16mm <sup>2</sup>	m	10		0.00
37	Sec E. 1.25	Delivery and installation of the flexible halogen free installation PVC pipe ø25mm.	m	1,100		0.00

**BILL E**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
38	Sec E. 1.26	Installation and connection of the base of automatic and manual fire detectors, parallel indicators and sirens to already performed installation.	set	1		0.00
39	Sec E. 1.27	- Checking of proper function of the performed installation, of mounted and connected bases of detectors, parallel indicators, door holders and sirens, - Insertion of detectors into bases and labeling, - Installation of signal lines from the detectors to the Central, - Programming and putting into operation of the Central, - Delivery of documentation (manual for handling and programming, diary of devices and attests). - Handover and preparation of the minutes of safety and functional testing.	set	1		0.00
40	Sec E. 1.28	Preparation of the project of as-built status in printed and electronic form.	set	1		0.00
<b>AUTOMATIC FIRE DETECTION TOTAL:</b>						<b>0.00</b>
<b>Bill E -Telecommunication Installations</b>						
<b>Facility</b>						
NR	Technical Specification Ref. number	TYPE OF WORKS				Total Amount
I	Sec E. 1	I. AUTOMATIC FIRE DETECTION				
<b>TOTAL</b>						<b>0.00</b>
<p><b>This Bill of Quantities provides for:</b></p> <ul style="list-style-type: none"> <li>- delivery of basic material specified in positions,</li> <li>- delivery of auxiliary mounting material necessary for completion of installations and systems,</li> <li>- installation of basic material in the manner described in positions with the use of prefabricated material,</li> <li>- connecting, installation and system testing and putting into correct operation,</li> <li>- reconditioning of all damaged spots on installations and constructions which are already performed</li> </ul>						
<p><b>The cost of each position includes:</b></p> <ul style="list-style-type: none"> <li>- purchase price, transportation and insurance to the site of basic mounting material,</li> <li>- purchase price, transportation and insurance to the site of auxiliary mounting material,</li> <li>- cost of installation works with all taxes and contributions,</li> <li>- elaboration of eventually necessary workshop documentation done by Contractor,</li> <li>- connecting, testing and putting into correct operation of all the elements of installations and plants referred to in positions,</li> <li>- if the Investor himself acquires the basic material, e.g. imports foreign equipment, then the prices of the position include everything, except transportation costs and the insurance of basic material.</li> </ul>						
<p>All installed and used material has to be of premium quality and meet Serbian standards or internationally recognized standards. All works must be carried out by specialized work force and in full compliance with the RS technical regulations valid to the subject types of work.</p>						
<p>Quoted types and manufacturers of individual pieces of equipment or installation materials are given as closer data and are not binding. The Contractor can install other equipment, i.e. material, provided that it has the same electrical and structural characteristics as the mentioned one, which is confirmed and certified by an expert of Investor-Supervisory Authority. Technical Description with Technical Requirements make integral part of the Bill of Quantities.</p>						
<p>Technical Description with Technical Requirements make integral part of the Bill of Quantities.</p>						



**BILL E**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>II</b>	<b>Sec E. 2</b>	<b>II. TV ISTALLATION</b>				
1	Sec E. 2.1	Delivery and installation of a metal cabinet with dimensions: 200x200x225mm to house dividers and broadband amplifiers.	piece.	1		0.00
2	Sec E. 2.2	Delivery and installation of the broadband amplifier, equivalent to the type of SPAUN HLV 40/65 UPE	piece.	1		0.00
3	Sec E. 2.3	Splitter 1/2 Televes 4530	piece.	1		0.00
4	Sec E. 2.4	Splitter 1/4 Televes 4531	piece.	1		0.00
5	Sec E. 2.5	Splitter 1/6 Televes 4534	piece.	1		0.00
6	Sec E. 2.6	Final resistor Televes 4061	piece.	1		0.00
7	Sec E. 2.7	RTV socket Televes 5270 Z	piece.	9		0.00
8	Sec E. 2.8	Cable T100 LSFH 215101 halogen free	ml	290		0.00
9	Sec E. 2.9	Delivery and installation of halogen free PVC pipes Ø32MM with a sufficient number of delivery boxes with lids, including the leveling of walls with plaster, smoothing and painting the place above the pipe.	ml	280		0.00
10	Sec E. 2.10	Small installation material	flat rate	1		0.00
11	Sec E. 2.11	Delivery and installation	flat rate	1		0.00
12	Sec E. 2.12	Starting up the system, issuing of required measurement lists and attests	flat rate	1		0.00
13	Sec E. 2.13	Preparation of the project of as-built design in printed and electronic form.	flat rate	1		0.00
<b>TV INSTALLATION TOTAL:</b>						<b>0.00</b>

E	<b>Bill E -Telecommunication Installations</b>				
	<b>Facility</b>				
NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
II	Sec E. 2	II. TV ISTALLATION			
				<b>TOTAL</b>	<b>0.00</b>



## BILL E

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>III</b>	<b>Sec E. 3</b>	<b>III. STRUCTURED CABLING SYSTEM</b>				
1	Sec E. 3.1	The fan panel with three fans and thermostat for installation in the roof of a free standing cabinet	piece	1		0.00
2	Sec E. 3.2	Power supply rail with 7 sockets and switch 230Vac 50Hz	piece	1		0.00
3	Sec E. 3.3	Patch panel 19", 1 HU, sa 24xRJ45 конектора Cat.6 STP, еквивалентан типу R305120, Reichle&De Massari	piece	7		0.00
4	Sec E. 3.4	PhoneVOICE panel 19", 1HU, with 50xRJ45 4-pin module, Cat.3 UTP, equivalent to the type of R35115 + 5xR35116, Reichle&De Massari	piece	1		0.00
5	Sec E. 3.5	Cable tray, horizontal cable management, patch guide, with 5 large rings, 19", 1HU, equivalent to the type of R306179, Reichle&De Massari	piece	4		0.00
6	Sec E. 3.6	Patch kabl Cat.6 S/FTP with RJ45 connectors at both ends, with halogen free coating 2m long, gray,, equivalent to the type of R302334, Reichle&De Massari	piece	155		0.00
7	Sec E. 3.7	Telecommunication outlet, with 2xRJ45 connectors, modular, aslant for installation in the parapet canal: - 2x RJ45 Modul Cat.6 STP, shielded + Dual slanted bracket 45x45mm for 2 RJ45 modules, 2M, equivalent to the type of 2xR304327 + R313332, Reichle&De Massari - A framework for the bracket 45x45mm (2M) for the appropriate size of the parapet. DLP Legrand	piece	68		0.00
		Delivery and installation of halogen free aluminum parapet system equivalent to the product of DLP "Legrand" Note:These sections apply only to the parts of premises where the parapet distributors are not foreseen in the framewok of the power project built in, in radiator masks of the outer wall				
8	Sec E. 3.8	base 105x50MM, cover and distribution divider	m'	10		0.00
9		optional accessories: couplings, end caps, corners	piece	10		0.00
		supersturctural, on the inner walls				
10		base 105x50MM, cover and partition divider	m'	16		0.00
11		optional accessories: couplings, end caps, corners	piece	16		0.00
12	Sec E. 3.9	S/FTP installation cable, Cat.6a, 4x2xAWG23, 650MHz, with halogen free coating (LSFRZH), equivalent to the type of R305649, Reichle&De Massari	m'	4,300		0.00
13	Sec E. 3.10	Delivery and installation halogen free PVC pipes Ø32MM with sufficient number of distribution boxes with lids, with the leveling of walls with plaster and smoothing and painting over the laid pipes	m'	3,800		0.00

**BILL E**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
14	Sec E. 3.11	switch 24xRJ45 equivalent to the type of Cisco SG500-28 24-Port Managed Stackable Gigabit Switch w/ 2x Combo & 2x 1GE/5GE SFP Ports, 500 Series	piece	1		0.00
12	Sec E. 3.12	switch 48xRJ45 equivalent to the type of Cisco SG500-52 48-Port Managed Stackable Gigabit Switch w/ 2x Combo & 2x 1GE/5GE SFP Ports, 500 Series	piece	1		0.00
16	Sec E. 3.13	Delivery and installation halogen free PNK 200x50mm, with cover,, brackets and couplings	m	35		0.00
17	Sec E. 3.14	Device for uninterrupted power supply of active equipment in the communication cabinet equivalent to the type of EATON, PW9130I-2000R-XL2U Online UPS, RM (2U), 2000VA/1800W, 6/16 min, 6xIEC-C13 EQUIPMENT PURCHASED BY DONATION	piece	1		0.00
18	C.15	Marking of cables, connectors and patch panels – per line with the material at both ends.	piece	136		0.00
19	C.16	Attesting of the line with preparation of protocol – per line	piece	136		0.00
20	C.17	Preparation of the project of as-built status in printed and electronic form	flat rate	1		0.00
<b>STRUCTURED CABLING SYSTEM TOTAL:</b>						<b>0.00</b>

E	<b>Bill E -Telecommunication Installations</b>					
	<b>Facility</b>					
NR	Technical Specification Ref. number	TYPE OF WORKS			<b>Total Amount</b>	
III	Sec E. 3	III. STRUCTURED CABLING SYSTEM				
			<b>TOTAL</b>			<b>0.00</b>

**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
<b>IV</b>	<b>Sec E. 4</b>	<b>IV. SURVEILLANCE VIDEO SYSTEM</b>				
1	Sec E. 4.1	Camera for indoor installation 1.3 Megapikslna 1/3 inch Fixdome kolor IP camera SXGA 1280x960 (max. 12 ips), VGA 640x480 i QVGA 320x240 (max. 25 ips); Integrated lens3.0-90mm, F1-2; mechanical IR filter; Integrated Web Server; duplex two-way audio G.726; Minimum illumination 0.4 Lux; Auto electric shutter between 1/25 i 1/10,000 sek; Back-light compensation (BLC); 1xBNC, 1xEthernet 10/100Mbps, Audio jack 3,5mm, 1 alarm input, 1 alarm output, RS485 connector; Multi-user environment; Motion detection and e-mail notification; Signal/noise ratio greater than 50 dB; Alarm input; Supply 12VDC/24VAC or PoE; Supported protocols TCP/IP, UDP/IP, DHCP, DNS, HTTP, RTP (RTCP, RTSP), SMTP, NTP, IGMP v3, UPnP; Comes with 2GB SD card, equivalent to the type of CFMC1315-LP, Siemens EQUIPEMENT PURCHASED BY DONATION	pieces	12		0.00
2	Sec E. 4.2	Computer server for video surveillance and access control system- with the operating system to start SeeTec software to control, and manage video surveillance, with the operational processing capabilities to 16 stream signals of video surveillance EQUIPEMENT PURCHASED BY DONATION	pieces	1		0.00
3	Sec E. 4.3	Workstation PC with required characteristics for client software video surveillance system equipped with a graphics card with outputs and network card 10/100Mb. EQUIPEMENT PURCHASED BY DONATION	pieces	2		0.00
4	Sec E. 4.4	TFT LCD Monitor 22" equivalent to the type of HP L2208w EQUIPEMENT PURCHASED BY DONATION	pieces	4		0.00
5	Sec E. 4.5	Poe Switch 24x 10/100/1000 AT-POE RJ45 ports, 4x combo SFP ports, 2x dedicated stacking ports and external RPS connector, equivalent to the type B5G124-24P2, Enterasys EQUIPEMENT PURCHASED BY DONATION	pieces.	1		0.00

## BILL E

## Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
6	Sec E. 4.6	Softver for video surveillance SeeTec 5 Enterprise Edition package Basic license with 5 cameras Licence database capacity 2500 photos/sec 1 Master client and 1 Just View client SO200B0 EQUIPEMENT PURCHASED BY DONATION	pieces	1		0.00
7	Sec E. 4.7	Softver for video surveillance SeeTec 5 Enterprise Edition package Basic license with 5 cameras Licence database capacity 2500 photos/sec 1 Master client and 1 Just View client SO200B0 EQUIPEMENT PURCHASED BY DONATION	pieces	7		0.00
8	Sec E. 4.8	Programming and parameterizing of See'lec software, input of logic connecting elements, communication networks, testing of the system EQUIPEMENT PURCHASED BY DONATION	set	1		0.00
9	Sec E. 4.9	Telecommunications outlet for 1xRJ45 connector - 1x RJ45 Modul Cat.6 STP, shielded + single plane mount 22.5x45 mm, for 1 RJ45 module, 1M, equivalent to the type of 1xR304327 + R307835, Reichle&De Massari - Framework for mount 22.5x45mm (1M)	pieces.	12		0.00
10	Sec E. 4.10	Patch panel 19", 1 HU, with 24xRJ45 connectors Cat.6 STP, equivalent to the type of R305120, Reichle&De Massari	pieces.	1		0.00
11	Sec E. 4.11	Patch kabl Cat.6 S/FTP with RJ45 connectors at both ends, with halogen free coating, 2m long, gray, equivalent to the type of R302334, Reichle&De Massari	pieces.	15		0.00
12	Sec E. 4.12	Patch kabl Cat.6 S/FTP with RJ45 connectors at both ends, with halogen free coating, 0,5m long, gray, equivalent to the type of R302331, Reichle&De Massari	pieces.	12		0.00
13	Sec E. 4.13	S/FTP installation cable, Cat.6a, 4x2xAWG23, 650MHZ, with halogen free coating (LSFRZH), equivalent to the type of R305649, Reichle&De Massari	m'	285		0.00
14	Sec E. 4.14	Delivery and installation of halogen free PVC цевн Ø32MM with a sufficient number of distribution boxes with lids, with leveling of walls with plaster, smoothing and painting over the installed pipes,	m'	250		0.00

**BILL E**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
15	Sec E. 4.15	Labeling of cables, connectors and patch panels -per line with material-at both ends	pieces.	12		0.00
16	Sec E. 4.16	Attesting of lines with the preparation of protocol -per line	pieces.	12		0.00
17	Sec E. 4.17	System programming, putting the system into operation and its handover to the user with the training of personnel	set	1		0.00
18	Sec E. 4.18	Preparation of the project of as-built status in printed and electronic form	flat rate	1		0.00
<b>VIDEO SURVEILLANCE SYSTEM TOTAL:</b>						<b>0.00</b>

E	<b>Bill E -Telecommunication Installations</b>				
	<b>Facility</b>				
NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
IV	Sec E. 4	IV. SURVEILLANCE VIDEO SYSTEM			
				<b>TOTAL</b>	<b>0.00</b>



**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
<b>5</b>	<b>Sec E. 5</b>	<b>V.ACCESS CONTROL SYSTEM AND VIDEO INTERPHONE</b>				
	E.1	The central device of access control system, with the possibility of programming of the system, according to customer requirements, with the possibility to establish a connection to the computer with the power supply and rechargeable battery, 12V/26Ah,with the necessary software support. Equivalent to the type of Siemens AC5100 EQUIPMENT PURCHASED BY DONATION	kom.	1		0.00
	E.2	Dual interface module (DRJ) in housing with inlets, protection category IP66: Input/output reader or two independent readers, relay output for lock, REX key input 3 additional inputs, input for gate control, additional relay output , LEDs diodes for status monitoring, 12-32Vdc power supply, Equivalent to the type of ADD5160 EQUIPMENT PURCHASED BY DONATION	piece	6		0.00
	E.3	Proximity reader with additional integrated encoder: Miro/Hitag1/Hitag2/Sipass cards, 125 KHz, read range up to 7cm, RS485, Clock/Data, Wiegand interface, protection category IP65, Equivalent to the type of AR6182-RX EQUIPMENT PURCHASED BY DONATION	piece.	12		0.00
	E.4	Registration reader: Mifare reader registration card, the ability to input and to read data from the sector and card blocks, equivalent to the type of AR6201-MX EQUIPMENT PURCHASED BY DONATION	piece.	1		0.00
	E.5	Electromagnetic acceptor, 12VDC, FaFix, unlocked in case of power failure (safety for humans) for DIN left and right doors, equivalent to the type of 37 EffEff	piece.	6		0.00
	E.6	Magnetic contact for monitoring the openness of the door,for heavy iron door MKK2, Permanent magnet, MKM2 – comes with MKK2	piece.	6		0.00
	E.7	mechanical equipment for doors				
		Door closer EN 2-6 class BC+DC doors up to 100kg with articulated aluminum arm, brown, white and RAL colors.	piece.	6		0.00
		The three-stage door lock FEB type 7661/35	piece.	6		0.00
		Safety fetter for opening/closing of the doors and a rosette for cylinder in aluminum color	piece.	6		0.00
		Abloy cylinder type CY322N, length 35/50 with three keys	piece.	6		0.00

**BILL E****Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
	E.8	Proximity PVC proximity card type Mifare 13,56 MHZ EQUIPMENT PURCHASED BY DONATION	piece.	100		0.00
	E.9	Server of access control system – computer of appropriate characteristics EQUIPMENT PURCHASED BY DONATION	piece.	1		0.00
	E.10	Software license for SiPass access control system for its control and full management, complete with a software package for the development of relational databases and graphic description pages of events, historical database, interaction with other systems, equivalent to the type of Siemens Sipass ASL5000-SE, ASE5100-WS, ASE5300-GP, ASE5300-ME EQUIPMENT PURCHASED BY DONATION	piece.	1		0.00
	E.11	Delivery and installation of the cable JH(St)H 2x2x0.8mm. It is pulled through flexible halogen free installation PVC pipes.	m	70		0.00
	E.12	Delivery and installation of the cable JH(St)H 5x2x0.8mm. It is pulled through flexible halogen free installation PVC PIPES.	m	120		0.00
	E.13	Delivery and installation of the cable NHXHX 2x1.5mm <sup>2</sup> , to supply power unit from the nearest cabinet, with a separate power circuit.	m	50		0.00
	E.14	Delivery and installation of the cable NHXHX 2x1.5mm <sup>2</sup> , to supply power unit from the nearest cabinet, with a separate power circuit.	m	20		0.00
	E.15	Video interphone set 1 call panel with 1 key and a day-night color camera with auto iris with 420 TV lines, 0,2 Lux, microphone and speaker, and 1 video intrphone with TFT monitor with 480x243 pixel- resolution, a diagonal 4", Handsfree, with a loud-speaker and keys to open the doors	piece.	2		0.00
	E.16	Delivery and installation of the cable JH(St)H 5x2x0.8mm. to connect video interphone. It is pulled through flexible halogen free installation PVC pipes	m	15		0.00
	E.17	Delivery and installation of halogen free PVC pipes Ø32MM with sufficient number of distribution boxes with lids, with leveling of walls with plaster, and smoothing .and painting above the placed pipes.	m'	250		0.00
	E.18	Installation of the elements of the access control system: card readers, REX keys, magnetic contact, emergency keys door controllers, central controllers, and their connection to the marked and tested installation	set	1		0.00
	E.19	Installation of electromagnetic acceptors	piece.	6		0.00
	E.20	Installation and connection of video interphone set	piece.	2		0.00
	E.21	Programming of the access control system, putting it into operation, and its handover with the training of personnel. PURCHASED BY DONATION	set	1		0.00

**BILL E**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
	E.22	Preparation of the project of as-built status in printed and electronic form	flat rate	1		0.00
<b>ACCESS CONTROL SYSTEM AND VIDEO INTERPHONE TO</b>						<b>0.00</b>

E	<b>Bill E -Telecommunication Installations</b>				
	<b>Facility</b>				
NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
5	Sec E. 5	V.ACCESS CONTROL SYSTEM AND VIDEO INTERPHONE			
				<b>TOTAL</b>	<b>0.00</b>

3

**SUMMARY OF WORKS Bill E**

Nr	Technical Specification Ref. number	TYPE OF WORKS	AMOUNT
<b>E.</b>	<b>Sec.E</b>	<b>TELECOMMUNICATION INSTALLATIONS</b>	
E1	Sec E. 1	I. AUTOMATIC FIRE DETECTION	0.00
E2	Sec E. 2	II. TV INSTALLATION	0.00
E3	Sec E. 3	III. STRUCTURED CABLING SYSTEM	0.00
E4	Sec E. 4	IV. SURVEILLANCE VIDEO SYSTEM	0.00
E5	Sec E. 5	V.ACCESS CONTROL SYSTEM AND VIDEO INTERPHONE	0.00
		<b>TOTAL (Transfer to Summary of Bills)</b>	<b>0.00</b>



**BILL F**

**Reconstruction and adaptation of part of the facility UKP NKTС laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
I	Sec F. 1	<b>F.ELEVATORS</b>				
		PARTS OF THE PLANT ACCORDING TO THE FOLLOWING DESCRIPTION:				
1	Sec F.1.1	Capacity: Q = 400 kg/ 5 persons				
		Riding speed: v = 1.00 m/s				
		Elevation height: H= 17.71 m				
		Number of stations/access points: 6/6 (2 from the same side and 4 at the 90 degree angle)				
		Operation group:SIMPLEX, collecting in both directions, microprocessor with a code card	pcs	1		0.00
		Signalization:Confirmation of call reception, riding direction indicator, cabin position indicators at stations and in the cabin				
		"Power cut" mode:the elevator descends to the first lower station and the door opens				
		Fire program:in case of fire, the cabin is automatically driven to the main,station and turned off from further operation				
		Electrical connection:3 x 360 V / 220 V, 50 Hz				
		Electrical installation:for dry space				
		Type of drive:special electromotor drive for VVVF regulation				
		Driving machine position:up, at the top of the shaft				
		Cable transmission rate:2:01:00 AM				
		Elevator to be installed:in the built driving shaft, with concrete ring beams				
		Driving shaft dimensions:1700 x 1500 mm				
2	Sec .F.1.2	Type of cabin:metal, INOX coated, passing at 90 degree angle	pcs	1		0.00
		Cabin equipment: mirror, handrail, ventilator, interphone-telephone				
		Cabin lighting:indirect in a suspended ceiling and emergency light				
		Cabin dimensions:0.95 x 1.1 x 2.2 m				
3	Sec .F1.3	Cabin door:double, automatic, telescopic door, 800 x 2000 mm	pcs	2		0.00
4	Sec .F1.4	Driving shaft door:double, automatic, telescopic door, 800 x 2000 mm	pcs	6		0.00
5	Sec .F1.5	Counterweight:cast concrete in steel framework	pcs	1		0.00
		Counterweight position:between the cabin frame and the right wall of the driving shaft				
		Number of cables:z=6 Cable diameter:d= 6.5 mm				
6	Sec .F1.6	Cabin guide rails:T 70x65x9 mm; cold drawn profiles, l = 5m	pcs	10		0.00
7	Sec .F1.7	Counterweight guide rails:T 50x50x5mm; cold drawn profiles, l = 5m	pcs	10		0.00
<b>F. ELEVATORS TOTAL :</b>						<b>0.00</b>

F

**Bill F -ELEVATORS**

**Facility**

NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
I	Sec F. 1	F.ELEVATORS			
				<b>TOTAL</b>	<b>0.00</b>



**SUMMARY OF WORKS Bill F**

Nr	Technical Specification Ref. number	TYPE OF WORKS	AMOUNT
F.	Sec F	ELEVATORS	
F1	Sec F. 1	F.ELEVATORS	
<b>TOTAL (Transfer to Summary of Bills)</b>			0.00

This Bill of Quantities provides:

- delivery of basic materials specified in the positions,
- delivery of auxiliary assembly materials needed for a complete production of installations and the systems,
- installation of the base material as described in the positions and with the use of prefabricated materials,
- connecting, testing the installation and the system and commissioning,
- bringing into original state all damaged spots on the already performed installation and structures.

Price of each position includes:

- purchase price, transport and insurance to the site of primary mounting material
- purchase price, transport and insurance to the site of auxiliary prefabricated materials,
- cost of assembly works with all taxes and contributions,
- if needed, production of the workshop documentation done by the contractor
- connecting, testing and commissioning of all elements of the installations and facilities specified in the positions,
- if the investor is procuring the basic material himself, such as imports foreign equipment, then the prices of the positions include everything else, except for transportation costs and insurance of the base material.

All installed and used material should be of premium quality and match the SRPS or recognized international standards.  
All works must be carried out by skilled labor power and fully in compliance with the Serbian technical regulations applicable for this type of works.

The mentioned types and manufacturers of certain pieces of equipment or installation materials are provided as more specific information and are not binding.

The contractor may install other equipment or materials, provided that it has the same electrical and structural characteristics as specified, what is confirmed and certified by professional person of the investor-supervisory authority.

Technical description with the technical requirements is an integral part hereof.



## BILL G

## Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
		<b>Facility</b>				
<b>I</b>	<b>Sec G.1</b>	<b>I. AUTOMATIC GAS DETECTION EQUIPMENT PROCURED FROM DONATIONS</b>				
1	Sec G.1.1	<p>Procurement, delivery and installation into the distribution cabinet of a switchboards for reporting increased concentrations of toxic or explosive vapours and gases, with the following characteristics:</p> <p>Central unit for gas detection for placement of the control modules for connection of designed gas detectors and place for subsequent extensions. The central unit is intended for mounting on a wall, with door, lock and key (dim WxHxD 600x800x300mm), with 35 inlets PG 13.5 and 30 inlets PG 11. The central device contains:</p> <ul style="list-style-type: none"> <li>-control module for gas detector connection, equivalent to the <i>GMC 8364 Bieler+Lang</i>, with capacity of 32 detectors, expandable up to 64 detectors, with two input cards with 16 analog inputs AI 16, with one output card DIO 32 and alarm relays with switching contacts. The module has an LCD display for alternate display of the measured gas concentrations in detectors, LED indicators for alarms, faults and power.</li> <li>-charging unit 220VAa/24Vdc,3A with rechargeable batteries 2x12V/7,2Ah for charging the control module, gas detector and alarm devices.</li> <li>-6 relay cards with three relays each 24V/2A</li> <li>-internal buzzer</li> <li>-30 pcs. of VS terminals; -8 pcs. of end VS terminals</li> <li>-melting fuse 10A;</li> </ul> <p>Complete with accessories for connecting the equipment and mounting on the wall</p>	pcs	1	0	
	Sec G.1.2	<p>Procurement, delivery and installation of detectors for toxic and explosive gases:</p> <p>Detector type: <i>ExDetector HC-150</i></p> <p>Explosive protection and certificates:</p> <p>II 3G EEx nA IIC T4</p> <p>tests: II 2G EEx d IIC T4 PTB 00 ATEX 1076U</p> <p>SIL 1 capability</p> <p>Detection principle: catalytically by combustion</p> <p>Gas measuring: explosive gases and vapours</p> <p>Measuring range: 0 – 100% LEL</p> <p>Signal exit: 4 – 20 mA</p> <p>Operating temperature: -40 +55°C</p> <p>Charging voltage: 24V DC</p> <p>Protection level: IP 54</p> <p>Construction: Stainless steel sensor, aluminum housing, Detector calibration: at <b>H2</b>.</p> <p>The item includes the installation of supports and re-certification of detectors</p>	pcs	12	0	
2	Sec G.1.3	<p>Procurement, delivery and installation of illuminated board, one-sided, for inside installation, with inscription "GAS! DO NOT ENTER!".</p> <p>Installed at the entrance of the protected premises above the entrance door.</p>	pcs	8	0	
3	Sec G.1.4	<p>Procurement, delivery and installation illuminated board, one-sided, for inside installation, with inscription "GAS! LEAVE THE ROOM!", for installation at the entrance of the protected premises above the entrance door.</p>	pcs	7	0	
4	Sec G.1.5	<p>Procurement, delivery and installation alarm sirens with yellow flash for internal installation on the wall, 24V, 46mA, equivalent to the type Sonos 504 Klaxon Great Britain</p>	pcs	9	0	

Bill G-AUTOMATIC GAS DETECTION - ok.xls G1.AUTOMATIC GAS DETECTION

5	Sec G.1.6	Relay modules 22V or 360V for interruption of the gas flow at the main system supply line. Delivery and installation.	pcs	1	0	
6	Sec G.1.7	Procurement, delivery and installation of cable type NHXHX 4x1.5mm <sup>2</sup> - detector connection	m	280	0	
7	Sec G.1.8	Procurement, delivery and installation of cable type JE - H(St)H 2x2x0.8mm FE180/E30 - connection of signal elements and executive function	m	390	0	
8	Sec G.1.9	Procurement, delivery and installation of cable type NHXHX 3x1.5mm <sup>2</sup> FE180/E30 - connection of EM valve	m	80	0	
9	Sec G.1.10	Delivery and installation of <i>halogen free</i> elastic PVC hose ø25MM.	m	280	0	
10	Sec G.1.11	Commissioning. The service includes: - inspection of correctness of the performed installation, - switchboard programming and commissioning, - delivery of documents (operation and programming manual, list of devices and certificates), - transfer and composition of a report on the correctness and functional testing.	set	1	0	
11	Sec G.1.12	Preparation of as-built design in printed and electronic form	lump sum	1	0	
<b>AUTOMATIC GAS DETECTION TOTAL :</b>					<b>0</b>	

G

**Bill G -Construction and finishing works  
Facility**

NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
1	Sec G. 1	I. AUTOMATIC GAS DETECTION EQUIPMENT PROCURED FROM DONATIONS			
		<b>TOTAL (Transfer to Summary of Bills)</b>			<b>0.00</b>

**SUMMARY OF WORKS Bill G**

Nr	Technical Specification Ref. number	TYPE OF WORKS	AMOUNT
G.	Sec G	AUTOMATIC GAS DETECTION	0.00
G1	Sec G. 1	I. AUTOMATIC GAS DETECTION EQUIPMENT PROCURED FROM DONATIONS	0.00
<b>TOTAL</b>			0.00



**BILL H**

**Reconstruction and adaptation of part of the facility UKP NKTC laboratories for physical and chemical properties and toxicological expertise.**

No.	Technical Specification Ref. number	Description of works	Unit	Quantity	Unit price	Total Price
<b>Facility</b>						
<b>I</b>	<b>Sec H. 1</b>	<b>I. Equipment and pipelines in substations and pipeline distribution network EQUIPMENT PROCURED FROM DONATIONS</b>				
		The construction building of the substation is existing, as well as the equipment for the connection of bottles and primary pressure reduction, referred to under section 6 hereof. Relocation of primary parts of the regulation panels, disassembly of copper piping and connection of new pipelines made of stainless steel is being done in the substation, what is involved in the installation works.				
1	Sec H.1.1	Control panels for primary reduction BM 65 – 2UK, for gas purity up to 6.0, for active and spare bottle, with automatic switchover, relief valve, contact pressure gauges and bottle holders on the wall with a chain, Inlet P max = 300 bar, Outlet P =max 10 bar.	pcs	5	existing	0.00
2	Sec H.1.2	Flexible connections made of stainless steel for connection of bottles and panels to the primary pressure reduction.	pcs	10	existing	0.00
3	Sec H.1.3	Solenoid valve 2/2 for hydrogen, normally closed, ΔP = 0 - 20 bar, Ex protection: II 2 G/D Ex d IIC T6, threaded connections G1/4", 230VAC 50 Hz.	pcs	1	existing	0.00
4	Sec H.1.4	Flowalarm for the signalization of bottle emptying, four-channel.	pcs	3	existing	0.00
5	Sec H.1.5	Electric barrier for hydrogen in Ex-performance.	pcs	2	existing	0.00
6	Sec H.1.6	Fire protection cartridge for hydrogen	pcs	1	existing	0.00
7	Sec H.1.7	Solenoid valve connections for ∅12x1 mm pipe EQUIPMENT PURCHASED BY DONATION	pcs	2		0.00
8	Sec H.1.8	Inlet/outlet connections for connection of primary panels with main pipes, material - stainless steel, connections with indenting rings. EQUIPMENT PURCHASED BY DONATION	pcs	15		0.00
9	Sec H.1.9	Control panels for secondary reduction EM 65-1; Inlet P max = 40 bar, Outlet P max = 10 bar for: nitrogen 5.0, synthetic air without hydrocarbon 5.0, hydrogen 5.0, argon 5.0 and helium 5.0. EQUIPMENT PURCHASED BY DONATION	pcs	16		0.00
10	Sec H.1.10	Fire protection cartridge for hydrogen (in the distribution network). EQUIPMENT PURCHASED BY DONATION	pcs	17		0.00
11	Sec H.1.11	Seamless stainless steel pipes, quality 1.4435 / X2CrNiMo 18-14-3 (316/316L), SRPS EN 10216-5, degreased, EQUIPMENT PURCHASED BY DONATION				0.00
		fi12x1 mm	ml	485		0.00
		fi8x1 mm	ml	400		0.00

Bill H-DISTRIBUTION OF SPECIAL GASES - ok.xls DISTRIBUTION OF SPECIAL GASES

12	Sec H.1.12	Elbows, T-pieces, couplings with the connections with indenting rings, for the connection of pipes of the pipeline distribution network. PURCHASED BY DONATION EQUIPMENT				0.00
		fi12x1 mm	pcs	120		0.00
		fi8x1 mm	pcs	120		0.00
13	Sec H.1.13	Connectors for connecting the pipeline to the secondary control panels. PURCHASED BY DONATION EQUIPMENT	pcs	86		0.00
14	Sec H.1.14	Aluminum channels for pipeline guidance, two-piece (with a lid), 15 cm wide, with elements for attachment to the building structure. Price is given per meter . EQUIPMENT PURCHASED BY DONATION	m1	60		0.00
15	Sec H.1.15	Plastic pipe holders for pipeline guidance				0.00
		fi12x1 mm	pcs	330		0.00
		fi8x1 mm	pcs	330		0.00
16	Sec H.1.16	Pipe holders made of perforated galvanized strap with clips.EQUIPMENT PURCHASED BY DONATION	pcs	16		0.00
17	Sec H.1.17	Small installation and spear material: screws, nuts, washers, grinding wheels, welding material.EQUIPMENT PURCHASED BY DONATION	set	1		0.00
18	Sec H.1.18	Assembly of the subject distribution pipeline installation of. Includes the assembly works in the substation EQUIPMENT PURCHASED BY DONATION	set	1		0.00
19	Sec H.1.19	Electric cable for signaling. Price is given for assembly works on the relocation of the cable and signal units and connection. EQUIPMENT PURCHASED BY DONATION				0.00
20	Sec H.1.20	Testing and commissioning of the installation with the issuance of the testing report. EQUIPMENT PURCHASED BY DONATION	set	1		0.00
						0.00
		<b>DISTRIBUTION OF SPECIAL GASES TOTAL :</b>				<b>0</b>

H

**Bill H -Construction and finishing works**

**Facility**

NR	Technical Specification Ref. number	TYPE OF WORKS			Total Amount
1	Sec H. 1	<b>DISTRIBUTION OF SPECIAL GASES TOTAL :</b>			
			<b>TOTAL</b>		<b>0.00</b>

**SUMMARY OF WORKS Bill H**

Nr	Technical Specification Ref. number	TYPE OF WORKS	AMOUNT
H	Sec H	DISTRIBUTION OF SPECIAL GASES	
H1	Sec H. 1	DISTRIBUTION OF SPECIAL GASES TOTAL :	0.00
		<b>TOTAL (Transfer to Summary of Bills)</b>	0.00



**BILL I**  
**Reconstruction and adaptation of part of the facility UKP NKTC**  
**laboratories for physical and chemical properties and toxicological**  
**expertise.**

This bill of quantities includes installation, connection, testing and starting-up, test operation and taking over of all materials and equipment specified in separate positions.

The costs include costs of materials, labour, transportation, all taxes and benefits for materials, as well as potential insurance. The costs also include delivery and installation of all minor, non-specified materials necessary for completing the equipment and works, as well as for restoring other works damaged in the course of execution of installations specified herein.

The costs also include all the necessary workshop specifications for production, installation, testing, starting-up and maintenance of the equipment.

All the materials used must be of the first class quality and must meet the standards. All the works must be executed by professional labour and in full accordance with the applied technical regulations of Serbia for the works stated herein.

Listed equipment manufacturers are not exclusive.

The Contractor is allowed to install other equipment and materials provided that the equipment and materials are of the same electrical and structural properties as well as the ones listed, which is to be approved by the professional party (supervisor).

number	work position description	unit	quantity	unit price	total price
1	2	3	4	5	6
1	<b>ELECTROMOTIVE DRIVE CABINETS</b>				
	NOTE: All equipment of the existing electrical installations in the first floor area to be dismantled is envisaged in the electrical installation works.				
	All the equipment listed is to be of the same type and by the listed manufacturer or by other manufacturer of the same or better properties.				
	The cost of cabinet includes all the necessary work on making, testing, transporting, installing, connecting and starting-up. Installation materials and accessories are also included (connecting terminals with terminal and fillet marking, intermediate plates, end plates, scheming wire with all ends marked, wire sleeves, perforated raceways, cable grommets of appropriate section, DIN rails for installation of electrical elements, copper rails with insulation supports and appropriate connecting elements for cables, marking for all elements according to schemes, engraved adhesive PVC plates etc.).				

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<b>1.1</b>	<b>AIR CONDITIONING SYSTEM CABINET RO-KS1</b>				
<b>1.1.1</b>	Delivery of the cabinet for automatic control (PLC type Sauter, marking listed in the schemes or equivalent) and electromotive distribution for compartment air-conditioning KK-3 and KK-4, electrical connection to previously set electrical installation and starting-up. Note: - The cabinet includes incorporated automatic control equipment communicating with other equipment on the Building (MITSUBISHI), with BUS/net/IP protocol (cooling machines, supervision system...) - Incorporated automatic control equipment is provided with Web Server enabling access for the user via WEB browser (Internet Explorer...) - The cabinet includes all the necessary signalization, command relay logic and rest of the materials necessary for proper operation of the installation, - along with the cabinet, three-pole schemes of executed condition are delivered, - this position excludes delivery and cabling.				
	Apart from the above mentioned, the specified cabinet is to include the following equipment as well:				
<b>1.1.2</b>	Automatic switch, 100A, 25kA, 3p, with fixed short (10 In) and overcurrent protection R16, ABB	pcs.	1		0.00
<b>1.1.3</b>	Voltage trip, 220/250B, 50Xz, for the switch specified in the previous position	pcs.	1		0.00
<b>1.1.4</b>	Voltmeter, 0-500V, 72x72 mm	pcs.	1		0.00
<b>1.1.5</b>	Voltmeter selector switch, 7 positions, for reading phase and interphase voltage values	pcs.	1		0.00
<b>1.1.6</b>	Command voltage convertor 230/24VAC, 160 A, Moeller	pcs.	1		0.00
<b>1.1.7</b>	Automatic switch 6A, 1p, C, 10kA, ABB	pcs.	39		0.00
<b>1.1.8</b>	Block of additional contacts 1c/o for installation on the automatic switch side, ABB	pcs.	1		0.00
<b>1.1.9</b>	Motor protective switch with fixed short (13 lth) and adjustable overcurrent protection 1.5-2A, Moeller	pcs.	2		0.00
<b>1.1.10</b>	Motor protective switch with fixed short (13 lth) and adjustable overcurrent protection 20-24A, Moeller	pcs.	1		0.00
<b>1.1.11</b>	Contacto 3p, 50A (AC3), for command voltage 230B, 50Xz, with 1n/o additional contact, Moeller	pcs.	1		0.00
<b>1.1.12</b>	Block of additional contacts 2n/o + 2n/z for installation on motor protective switch side, Moeller	pcs.	3		0.00
<b>1.1.13</b>	Adaptor for direct installation to rail distribution of motor protective switch and contactor, Woehner	pcs.	3		0.00
<b>1.1.14</b>	Contacto 3p, 9A (AC3), for command voltage 230B, 50Xz, with 1n/o additional contact, Moeller	pcs.	23		0.00
<b>1.1.15</b>	Block of additional contacts, for side installation to contactor, with 4n/o+4n/z additional contacts, Moeller	pcs.	23		0.00
<b>1.1.16</b>	Block of additional contacts, for front installation to contactor, with 3n/o+1n/z additional contacts, Moeller	pcs.	2		0.00
<b>1.1.17</b>	Mini relay, with 4 change-over contacts for command voltage 24VAC, Finder	pcs.	18		0.00

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1.1.18	Mini relay, with 4 change-over contacts for command voltage 230VAC, Finder	pcs.	55		0.00
1.1.19	Block of additional contacts, for side installation to contactor, with 4n/o+4n/z additional contacts, Moeller	pcs.	55		0.00
1.1.20	Block of additional contacts, for side installation to contactor, with 4n/o+4n/z additional contacts, Moeller	pcs.	18		0.00
1.1.21	Mini relay base with 4 change-over contacts, Finder	pcs.	92		0.00
1.1.22	Time relay with time shift for make, 0.5s...300x, for command voltage 230VAC, with 1c/o contact, Moeller	pcs.	5		0.00
1.1.23	Push button body, with black push button, for installation into the distribution box door and opening of 22.5 mm, Moeller	pcs.	8		0.00
1.1.24	Mushroom push button, with red push button, diameter 40 mm, in the case IP55 for wall installation, Moeller	pcs.	4		0.00
1.1.25	Push button body, with red mushroom push button, diameter 40 mm, for installation into the distribution box door and opening of 22.5 mm, Moeller	pcs.	3		0.00
1.1.26	Contact block for push buttons, with 1n/o contact, Moeller	pcs.	8		0.00
1.1.27	Contact block for push buttons, with 1n/c contact, Moeller	pcs.	7		0.00
1.1.28	3-module holder for push buttons and signal lamps, 225N, Moeller	pcs.	4		0.00
1.1.29	Selector switch 1-0-2, 16A, for installation in electric cabinet door, 2p, Moeller	pcs.	4		0.00
1.1.30	Selector switch 1-0, 16A, for installation in electric cabinet door, 1p, Moeller	pcs.	9		0.00
1.1.31	Signal LED lamp with test signalization module for connecting to 230VAC, red	pcs.	46		0.00
1.1.32	Signal LED lamp with test signalization module for connecting to 230VAC, green	pcs.	44		0.00
1.1.33	Signal LED lamp with test signalization module for connecting to 230 VAC, yellow	pcs.	3		0.00
1.1.34	Fluorescent lamp for cabinet interior lighting, 15W, 230VA, with a switch, Strela, FEP	pcs.	1		0.00
1.1.35	Installation materials and accessories (according to the introductory description)	comp.	1		0.00
1.1.36	1-pole automatic switch, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=6 A	pcs	39		0.00
1.1.37	3-pole automatic switch, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=16 A	pcs.	2		0.00
1.1.38	1-pole automatic disconnecter, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=10 A	pcs.	3		0.00
1.1.39	3-pole automatic disconnecter, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=10 A	pcs.	5		0.00
1.1.40	Timer, 10A, 230B, with adjustments	pcs	2		0.00
	<b>TOTAL – AIR CONDITIONING CABINET RO-KS-1</b>	<b>comp.</b>	<b>1</b>		<b>0.00</b>

<b>1.2</b>	<b>AIR CONDITIONING SYSTEM CABINET RO-KS2</b>				
	Delivery of the cabinet for automatic control and electromotive distribution for compartment air-conditioning KK-1 and KK-2, electrical connection to previously set electrical installation and starting-up. Note: - The cabinet includes incorporated automatic control equipment (PLC TYPE Sauter) communicating with other equipment on the building (MITSUBISHI), with BUS/net/IP protocol (cooling machines, supervision system...) - Incorporated automatic control equipment is provided with Web Server enabling access for the user via WEB browser (Internet Explorer...) - The cabinet includes all the necessary signalization, command relay logic and rest of the materials necessary for proper operation of the installation, - along with the cabinet, three-pole schemes of executed condition are delivered, - this position excludes delivery and cabling.				
	Apart from the above mentioned, the specified cabinet is to include the following equipment as well:				
1.2.1	Automatic switch, 150A, 25kA, 3p, with fixed short (10 In) and overcurrent protection R16, ABB	pcs.	1		0.00
1.2.2	Voltage trip, 220/250V, 50Hz, for the switch specified in the previous position	pcs.	1		0.00
1.2.3	Voltmeter, 0-500V, 72x72 mm	pcs.	1		0.00
1.2.4	Voltmeter selector switch, 7 positions, for reading phase and interphase voltage values	pcs.	1		0.00
1.2.5	Command voltage convertor 230/24 VAC, 160BA, Moeller	pcs.	1		0.00
1.2.6	Automatic switch 6A, 1p, C, 10kA, ABB	pcs.	42		0.00
1.2.6a	Automatic switch 20A, 3p, C, 10kA, ABB	pcs.	2		0.00
1.2.6b	Automatic switch 16A, 3p, C, 10kA, ABB	pcs.	1		0.00
1.2.7	Block of additional contacts 1c/o for installation on the automatic switch side, ABB	pcs.	1		0.00
1.2.8	Motor protective switch with fixed short (13 In) and adjustable overcurrent protection 1.5-2.0A, Moeller	pcs.	2		0.00
1.2.9	Motor protective switch with fixed short (13 In) and adjustable overcurrent protection 20-24 A, Moeller	pcs.	1		0.00
1.2.10	Block of additional contacts 2n/o + 2n/z for installation on motor protective switch side, Moeller	pcs.	3		0.00
1.2.11	Adaptor for direct installation to rail distribution of motor protective switch and contactor, Woehner	pcs.	3		0.00
1.2.12	Contactor 3p, 9A (AC3), for command voltage 230V, 50Hz, with 1n/o additional contact, Moeller	pcs.	20		0.00
1.2.13	Contactor 3p, 35A (AC3), for command voltage 230V, 50Hz, with 1n/o additional contact, Moeller	pcs.	1		0.00
1.2.14	Contactor 3p, 16A (AC3), for command voltage 230V, 50Hz, with 1n/o additional contact, Moeller	pcs.	1		0.00
1.2.15	Block of additional contacts, for side installation to contactor, with 1n/o+1n/z additional contacts, Moeller	pcs.	18		0.00
1.2.16	Block of additional contacts, for front installation to contactor, with 4n/o+4n/z additional contacts, Moeller	pcs.	4		0.00
1.2.17	Mini relay, with 4 change-over contacts for command voltage 24 VAC, Finder	pcs.	21		0.00
1.2.18	Mini relay, with 4 change-over contacts for command voltage 230VAC, Finder	pcs.	74		0.00
1.2.19	Mini relay base with 4 change-over contacts, Finder	pcs.	95		0.00

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1.2.20	Time relay with time shift for make, 0.5s...300x, for command voltage 230VAC, with 1c/o contact, Moeller	pcs.	4		0.00
1.2.21	Push button body, with black push button, for installation into the distribution box door and opening of 22.5 mm, Moeller	pcs.	2		0.00
1.2.22	Mushroom push button, with red push button, diameter 40 mm, in the case IP55 for wall installation, Moeller	pcs.	4		0.00
1.2.23	Push button body, with red mushroom push button, diameter 40 mm, for installation into the distribution box door and opening of 22.5 mm, Moeller	pcs.	6		0.00
1.2.24	Contact block for push buttons, with 1n/o contact, Moeller	pcs.	6		0.00
1.2.25	Contact block for push buttons, with 1n/c contact, Moeller	pcs.	4		0.00
1.2.26	3-module holder for push buttons and signal lamps, 225N, Moeller	pcs.	6		0.00
1.2.27	Selector switch 1-0-2, 16A, for installation in electric cabinet door, 2p, Moeller	pcs.	5		0.00
1.2.28	Selector switch 1-0, 16A, for installation in electric cabinet door, 1p, Moeller	pcs.	6		0.00
1.2.29	Signal LED lamp with test signalization module for connecting to 230VAC, red	pcs.	46		0.00
1.2.30	Signal LED lamp with test signalization module for connecting to 230VAC, green	pcs.	45		0.00
1.2.31	Signal LED lamp with test signalization module for connecting to 230 VAC, yellow	pcs.	6		0.00
1.2.32	Fluorescent lamp for cabinet interior lighting, 15W, 230 VAC, with a switch, Strela, FEP	pcs.	1		0.00
1.2.33	Installation materials and accessories (according to the introductory description)	comp.	1		0.00
1.2.34	1-pole automatic switch, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=6 A	pcs	27		0.00
1.2.35	3-pole automatic switch, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=16 A	pcs.	4		0.00
1.2.36	1-pole automatic disconnecter, properties 'C', 240V, AC, 10kA, for installation on the rail EN 50 022, In=10 A	pcs.	4		0.00
1.2.37	Delivery and installation of timers, 1p, 230V, 10A, 24 - hr program, 'Legrand'	pcs	2		0.00
	<b>TOTAL – AIR CONDITIONING CABINET RO-KS2</b>	comp.	1		<b>0.00</b>
	<b>TOTAL ELECTROMOTIVE DRIVE CABINETS</b>				<b>0.00</b>

A

<b>2.</b>	<b>EQUIPMENT IN THE FIELD FOR RO-KS1 and RO-KS2</b>				
<b>2.1.</b>	<b>EQUIPMENT IN THE FIELD FOR RO-KS1</b>				
	Equipment in the field referring to delivery and installation (fire valves, smoke valves, secondary air-conditioning, over-compressive air-conditioning) is provided in the mechanical engineering design specifications. In the appendix of the design specified herein is the specification for the equipment delivered by the company SAUTER.				
	Equipment in the field not specified in the mechanical engineering design and referring to electromotive drive need for compartment air-conditioning KK-3 and KK-4 made by Sauter. Note: Prior to ordering the equipment, match the equipment in the field with the mechanical equipment. Equipment in the field listed below includes installation according to the graphics.				
<b>2.1.1</b>	Activator of shutters/faucets, voltage 230V, protection IP54, type ASM 105F120, made by Sauter or similar.	pcs.	2		0.00
<b>2.1.2</b>	Differential pressure switch, regulation range of 20-300 Pa, type DDL 103F001, made by Sauter or similar.	pcs.	6		0.00
<b>2.1.3.</b>	Frost protection pressure switch with 6 m long capillary and connector, regulation range of -5..15C, type TFL 201F601, manufactured by Sauter or similar.	pcs.	2		0.00
<b>2.1.4</b>	Three-way regulation valve for cold water, hot water and air in closed systems, temperature of medium -10...150C, mechanical thread connection PN16, DN25, Kvs010m3/h, type BUN025F300, Sauter or similar.	pcs.	2		0.00
<b>2.1.5</b>	Male thread joint with flat sealant DIN 25, code 0361951025, or similar	pcs	6		0.00
<b>2.1.6</b>	Electromotive valve activator in SUT technology with positioner and handle for manual operation, adjustment properties linear, voltage 24, command signal from 0-10B with feedback on valve position, type AVM 115SF132, Sauter, or similar.	pcs.	2		0.00
<b>2.1.7</b>	Bar temperature sensor, measuring element NI 1000 according to DIN 43760, measuring range -30...130C, type EGT 347F101, Sauter or similar.	pcs.	2		0.00
<b>2.1.8</b>	Flange for sensor installation on the channel type 0368839000.	pcs.	2		0.00
<b>2.1.9</b>	Delivery and installation of differential pressure convertor for sub-pressure and overpressure measurement, type EGP100F111, manufactured by Sauter. The convertor is provided with two tubes; IP65, output signal 0...10V, supply 24V, measuring range 0-150 Pa. - Material and work to be paid per piece.	pcs.	4		0.00
	Flow rate regulators equivalent to type ASV115CF132D SAUTER, installed on regulation shutters for inserting and extracting air from the laboratories are specified in the mechanical engineering design and delivered along with the shutters.	pcs	11		0.00
<b>2.1.10</b>	Differential pressure switch, regulation range 100...10000Pa, equivalent to type DDL110F001	pcs.	11		0.00
<b>2.1.11</b>	Differential air pressure sensor, measuring range 0..10007160072500 pA, supply voltage 13.5..33 Vdc or 24 Vdc, output signal 0..10V, 0..20Ma, properties linear/square, with installation accessories and 2 m of PVC hose, equivalent to type DDLU 225F001-SAUTER.	pcs.	4		0.00
<b>2.1.12</b>	Installation materials and accessories (according to the introductory description)	pcs	1		0.00

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2.1.13	Delivery and installation of three-phase frequency regulator for exhaust fan speed adjustment, type FC-102, 2.2 KW, 5.6A,VLT. HAVAC drive. Regulators are installed in the cabinet RO-KS1. - It is to be paid per piece of delivered and installed regulator.	pcs.	1		0.00
2.1.14	Delivery and installation of three-phase frequency regulator for exhaust fan speed adjustment, type FC-102, 3.0 KW, 7.2A,VLT. HAVAC drive. Regulators are installed in the cabinet RO-KS1. - It is to be paid per piece of delivered and installed regulator.	pcs.	1		0.00
2.1.15	Delivery and installation of three-phase frequency regulator for exhaust fan speed adjustment, type FC-102, 1.5 KW, 4.1A,VLT. HAVAC drive. Regulators are installed in the cabinet RO-KS1. - It is to be paid per piece of delivered and installed regulator.	pcs.	1		0.00
	<b>Total – equipment in the field for the need of RO-KS1</b>				<b>0.00</b>
<b>2.2.</b>	<b>EQUIPMENT IN THE FIELD FOR RO-KS2</b>				
	Equipment in the field not specified in the mechanical engineering design and referring to electromotive drive need for compartment air-conditioning KK-1 and KK-2 made by Sauter. Note: Prior to ordering the equipment, match the equipment in the field with the mechanical equipment. Positions for the equipment in the field listed below include the installation according to the graphics.				
2.2.1	Activator of shutters/faucets, voltage 230V, protection IP 54, type ASM 105F120, made by Sauter or similar.	pcs.	2		0.00
2.2.2	Differential pressure switch, regulation range of 20-300Pa, type DDL 103F001, made by Sauter or similar.	pcs.	6		0.00
2.2.3	Frost protection pressure switch with 6 m long capillary and connector, regulation range of -5..15C, type TFL 201F601, manufactured by Sauter or similar.	pcs.	2		0.00

2.2.4	Three-way regulation valve for cold water, hot water and air in closed systems, temperature of medium -10...150C, mechanical thread connection PN16, DN25, Kvs=010m3/h, type BUN025F300, Sauter or similar.	pcs.	2		0.00
2.2.5	Male thread joint with flat sealant DIN 25, code 0361951025, or similar	pcs	6		0.00
2.2.6	Electromotive valve activator in SUT technology with positioner and handle for manual operation, adjustment properties linear, voltage 24, command signal from 0-10B with feedback on valve position, type AVM 115SF132, Sauter, or similar.	pcs.	2		0.00
2.2.7	Bar temperature sensor, measuring element Ni1000 according to DIN 43760, measuring range -30...130C, type EGT 347F101, Sauter or similar.	pcs.	2		0.00
2.2.8	Flange for sensor installation on the channel type 0368839000.	pcs.	2		0.00
2.2.9	Differential air pressure sensor, measuring range 0..10007160072500 pA, supply voltage 13.5..33 Vdc or 24 Vdc, output signal 0..10V, 0..20Ma, properties linear/square, with installation accessories and 2 m of PVC hose, equivalent to type DDLU 225F001-SAUTER.	pcs.	4		0.00
2.2.10	Differential pressure convertor for sub-pressure and overpressure measurement, properties. Two connectors for measurement tubes of 6 mm internal diameter, IP 65, output voltage 0...10V, power supply 24VAC/DC, measuring range -75..+75Pa, LCD display indicating measured value, equivalent to type EGP100F111 SAUTER.	pcs	4		0.00
2.2.11	Differential pressure switch, regulation range 100...10000Pa, equivalent to type DDL110F001	pcs.	16		0.00
2.2.12	Flow rate regulators equivalent to type ASV115CF132D SAUTER, installed on regulation shutters for inserting and extracting air from the laboratories are specified in the mechanical engineering design and delivered along with the shutters.	pcs	11		0.00
2.2.13	Delivery and installation of three-phase frequency regulator for exhaust fan speed adjustment, type FC-102, 2.2 KW, 5.6A, VLT. HAVAC drive. Regulators are installed in the cabinet RO-KS2. - It is to be paid per piece of delivered and installed regulator.	pcs.	2		0.00
	Equipment in the field referring to delivery and installation (fire valves, smoke valves, secondary air-conditioning, over-compressive air-conditioning) is provided in the mechanical engineering design specifications. In the appendix of the design specified herein is the specification for the equipment delivered by the company SAUTER.				
	Note: Frequency regulators on the pressure side for the compartments KK-1, KK-2, KK-3 and KK-4 are part of the pressure fans themselves and are included in the bill of quantities for the mechanical installations.				
	<b>Total – equipment in the field for the need of RO-KS1</b>	comp.			0.00
	<b>Total – equipment in the field for the need of RO-KS2 and RO-KS2</b>				0.00

<b>3</b>	<b>SERVICES AND WORKS</b>				
<b>3.1.</b>	<b>SERVICES REGARDING PERIPHERAL ELEMENTS IN THE SYSTEMS RO-KS1 AND RO-KS2</b>				
<b>3.1.1</b>	Marking locations for peripheral elements of automatic control in the field with the element type specification (prior to cabling).	comp.	1		0.00
<b>3.1.2</b>	Inspection of set and addressed cables according to the type and route.	comp.	1		0.00
<b>3.1.3</b>	Setting the desired parameters on on/off elements, activator stroke calibration and separate inspections of all installed elements of the automatic control for the proper operation determination.	comp.	1		0.00
<b>3.1.4</b>	Electrical connecting of the automatic control elements in the field.	comp.	1		0.00
<b>3.1.5</b>	Minor, non-specified materials, organization of external and internal transportation of the equipment, site and storage organization.	comp.	1		0.00
<b>3.1.6</b>	Training for user's staff regarding basic service and interventions on the automatic control elements in the field as well as introducing the user's technical service with the completed installation.	comp.	1		0.00
<b>3.1.7</b>	Starting-up works on the complete installation as well as matching operations of the automatic control equipment in the field with rest of the installation.	comp.	1		0.00
	Note: Services do not refer to installation of valve bodies and other tubular elements (bushes etc.) which is the responsibility of the contractor for thermal and mechanical installations, -the service does not include cabling and cable marking -the service does not include installation of armoured hose, heat butsplice or any other element for carrying or routing the cables, which is the responsibility of the electrical installation contractor.				
	<b>TOTAL – SERVICES REGARDING PERIPHERAL ELEMENTS IN THE SYSTEMS</b>				<b>0.00</b>

A

<b>3.2.A</b>	<b>COMMAND CENTER (OPTIONAL)</b>				
	<b>NOTE: THIS POSITION IS PROVIDED AS OPTIONAL AND IT IS NECESSARY TO BE ADDITIONALLY APPROVED BY THE INVESTOR</b>				
	<b>NOTE: THE EQUIPMENT IS PROCURED FROM THE DONATIONS</b>				
	<b>HARDWARE</b>				
	<b>PC nPO 120101</b>				
<b>3.2.A1</b>	PC (no brand name) of the following (or better) properties -Processor INTEL Core i5-2400 3.1 GHz -MB Asus Socket 1155 P8P67 (B3) -RAM 4 GB DDR3 1600 Mz -HD 1TB -DVD-RW -Graphic card 1GB -USB -Ethernet network card -Case Midi-Tower with power supply -Monitor Philips TFT 23" -Keyboard and mouse -Windows 7 Professional				
	<b>TOTAL – HARDWARE</b>	<b>pcs.</b>	<b>1</b>		<b>0.00</b>
	<b>SOFTWARE</b> -YZP410F001 -Basic program pack 'nova Pro Open' -Basic program pack provides visualization -Time programming -Driver for EY -modules 2 series -5 Web clients -Report generation -PLC functionality -OPC server and client YZP416F311 -novaPro Open driver native BACnet				
<b>3.2.A2</b>	<b>TOTAL – SOFTWARE</b>	<b>pcs.</b>	<b>1</b>		<b>0.00</b>
	<b>TOTAL – COMMAND CENTER</b>				
<b>3.2.</b>	<b>SERVICES REGARDING THE AUTOMATIC CONTROL</b>				
	Services regarding the automatic control cabinet and				
	Service specifications: -Cabinet installation on the building -Electrical connecting of the previously marked cables on the cabinet side -Starting-up the cabinet -Service of the automatic stations (AS) programming in accordance with the appropriate designs for thermal-technical, electrical and other installations, for the proper and safe operation of all installations managed in the building. -Service of the automatic stations (AS) starting up.				
	Note: -Services only refer to the cabinets specified in the design herein, -Services do not include cabling nor marking -Services do not include electrical cabling on the other end. <b>COST OF SUCH SERVICES IS INCLUDED IN COST OF THE EQUIPMENT WHICH IS PART OF THE OFFER SPECIFIED HEREIN.</b>				

B

3.2.1	Application software for programming of micro processor sub-stations with all the necessary program modules for proper operation of the system with approximately 250 addresses.	comp.	1		
3.2.2	Programming of all regulators in order to provide functional operation of all systems according to the requirements determined by the mechanical engineering design and electrical engineering design.	comp.	1		
3.2.3	Training for user's staff regarding basic service and interventions on the automatic substation elements and manual terminal operation as well as introducing the user's technical service with the completed installation.	comp.	1		
3.2.4	<b>SERVICES OF COMPOSING DOCUMENTATION FOR THE SAUTER SYSTEM END USER</b>				
3.2.A	Services include making the documentation for the delivered Sauter equipment regarding equipment in the field and automatic stations. The documentation is to include the following sections: -description of the complete automatic control, -manual for command managing unit, -system application schemes -list of the equipment in the field -list of signals with addresses				
3.2.B	<b>USER TRAINING SERVICES FOR AUTOMATIC CONTROL SYSTEM SAUTER</b> -The position includes on site training of the end user representative. -Necessary pre-condition for the successful training is that the participants own certain pre-knowledge and experience regarding measuring-regulating technique and automatic control system. After completing the training, the end user's representatives are capable of managing the system. -The training effect is to be higher should the user's representatives are on site during start-up with Sauter service staff. -training lasts for one work day -The cost of training is included in the cost of other services.	pcs.	1		

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	<p><b>SERVICES REGARDING COMMAND CENTER</b></p> <p>-Services of programming the work station in the command center (CC) in accordance with the appropriate design for thermal-technical, electrical and other installations and programs in automatic stations (AS) for the proper and safe operation of all installations managed on site, providing graphic screens for process data display and selecting commands, navigation and trends.</p> <p>Note:</p> <p>-The service refers to Suater, specified herein.</p> <p>-The service of command center (CC) start-up</p> <p>-The service includes:</p> <p>-Checking functionalities of all signals (AI, AO, DI, DO) connected to AS, regarding CC</p> <p>-Checking and adjusting all functionalities CC with completed installations,</p> <p>-Providing time program, work protocols and CC users' group, according to the user's request,</p> <p>-NOTE:</p> <p>-This position applies only in case that the Investor accepts the option of building the Command center.</p>				
		pcs.	1		
	<b>SERVICES REGARDING COMMAND CENTER</b>	pcs	1		0.00
	<b>TOTAL – SERVICES REGARDING THE AUTOMATIC CONTROL CABINETS RO-KS1 and RO-KS2</b>				0.00
<b>4</b>	<b>CABLES AND INSTALLATION MATERIALS</b>				
	<p>Delivery and installation of cables type NHXHX-J partly placed in suspended ceiling over PCS channels envisaged for the electromotive drive of RO-KS2 and RO-KS1 partly through mortar into gypsum cardboard walls (with chase cutting and patching wall channels), drawing in already prepared PVC pipes and finishing cables on both ends.</p> <p>-Materials and work to be paid per m1</p>				
<b>4.1.</b>	<b>Energy cables type NHXHX-J</b>				
<b>4.1.2.</b>	-----3 x 1.5 mm2	m	4100		0.00
<b>4.1.3</b>	4 x 1.5 mm2	m	230		0.00
<b>4.1.3A</b>	4 x 4 mm2	m	45		0.00
<b>4.1.4</b>	4 x 2.5 mm2	m	310		0.00
<b>4.1.5</b>	7 x 1.5 mm2	m	650		0.00
<b>4.1.6</b>	2 x 1.5 mm2	m	450		0.00
<b>4.1.7</b>	3 x 2.5 mm2	m	120		0.00
<b>4.1.8.</b>	<p>Delivery and installation of signal cable type NHXHX-J 3x1.5 mm2; 1 kV of the hood device, safety box device and extract consoles to their fan on the drawing pipes and differential pressure switch installed on filters on drawing pipes from the hoods, safety box devices and extract consoles, mounted on the roof. The cable is placed in PCS channels over which there is installation for the needs of electromotive drive. Connecting cable on the hood side and the fan side is to be performed by the supplier of the equipment for the hoods or safety boxes and he is to provide the appropriate test certificate.</p> <p>The account of the entire material and work is to be made per piece of placed cable.</p>	pcs	27		0.00

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<b>4.2.</b>	<b>Energy cables type NHXHX-J/FE180/E90</b>				
4.2.1	4 x 2.5 mm <sup>2</sup>	m	80		0.00
4.2.2	7 x 1.5 mm <sup>2</sup>	m	650		0.00
<b>4.3.</b>	<b>Telecommunication cables type J-H(St)H</b>				
4.3.1	2×2×0.8 mm (halogen-free)	m	320		0.00
4.3.2	LIHCH 2X2X0.8 mm	m	80		0.00
<b>4.4</b>	<b>Perforated cable supports</b>				
	Delivery and installation of perforated fire resistant cable supports resistant to fire for 90 min, completely with appropriate elements, with angle branched and cross elements, with joints, with holders set at each 1 m, with console supports, with necessary hangers and resto of the elements necessary for the execution of entire configuration of the rack, width: -The entire material and work are to be paid for per m1.				
4.4.1	PCS 200 mm/E90	m	140		0.00
4.4.2	PCS 400 mm/E90	m	60		0.00
4.4.3	PCS 100 mm/E90	m	220		0.00
	Delivery and installation of perforated cable supports with cover for installation on the external façade side and over the roof, completely with straight elements, with angle branched and cross elements, with joints, with holders set at each 1 m, with console supports, with necessary hangers and rest of the elements necessary for the execution of entire configuration of the rack, width: -The entire material and work are to be paid for per m1				
4.4.4	PCS 200 mm	m	60		0.00
4.4.5	PCS 100 mm	m	150		0.00
4.4.6	<b>Flexible steel pipes of internal diameter with necessary flanges</b> - Work and material to be paid per m1				
4.4.7	16 mm	m	120		0.00
4.4.8	13 mm	m	20		0.00
4.4.9	PVC pipes, Ø 16 mm for placing into gypsum cardboard walls with drilling and penetrating through walls as well as with their finishing and skimming. - Material and work to be paid per m1.	m	450		0.00
4.4.10	Varios minor installation materials and work	lump su	1		0.00
4.4.11	Delivery and installation of a rugged switch type 1-0-2 in distribution box for turning on/off of the compartment air-conditioning KK-3 for the rooms 17, 16, 18. The switch is to be installed in agreement with the user. Above the switch, it is necessary to place plastic or metal engraved plate with the following text: 'Compartment air conditioning for rooms 17, 18, 16". The switch 6A, 230 V, type Moller or similar.	pcs.	1		0.00
4.4.12	Delivery and installation of a rugged switch type 1-0-2 in distribution box for turning on/off of the compartment air-conditioning KK-4 for the rooms: 20, 21, 22, 24, 25, 26. The switch is to be installed in agreement with the user. Above the switch, it is necessary to place plastic or metal engraved plate with the following text: 'Compartment air conditioning for rooms 20,21, 22, 26 27 24 25". The switch 6A, 230 V, type Moller or similar.	pcs.	1		0.00

4.4.13	Delivery and installation of a rugged switch type 1-0-2 in distribution box for turning on/off of the compartment air-conditioning KK-1. The switch is to be installed in agreement with the user. Above the switch, it is necessary to place plastic or metal engraved plate with the following text: 'Compartment air conditioning for rooms 4, 8, 7, 9, 10, 11, 13, 14, 15". The switch 6A, 230 V, type Moller or similar.	pcs.	1		0.00
4.4.14	Delivery and installation of a rugged switch type 1-0-2 in distribution box for turning on/off of the compartment air-conditioning KK-2. The switch is to be installed in agreement with the user. Above the switch, it is necessary to place plastic or metal engraved plate with the following text: 'Compartment air conditioning for rooms 38,39, 40, 41, 42, 43, 44, 45". The switch 6A, 230 V, type Moller or similar.	pcs.	1		0.00
4.4.15	Delivery and installation of a rugged switch type 0-1 in distribution box for turning on/off the movable extract systems. The switch is to be installed in raceways if the rooms are the same or in wall and in case in agreement with the user. The switch 6A, 230 V, type Moller or similar.	pcs	8		0.00
4.4.16	Preliminary-final works, making the executed condition design, making of takeover documentation	pcs	1		0.00
4.4.17	Protection from fire spreading by insulating cables at cable penetrating points through fire protection walls and ceilings (according to SRPS.U..J.1.160/86). Closing the opening after the cables are placed is to be performed with fire protection resistant compound as well as the wall on the fire sector boundary, as well as cable coating in at least two layers in thr the length of 2 m for both side of the fire protection wall and on every 5 m along the route for cable coating in the length of 2 meters. For the material applied as fire transmission protection through cable insulation it is necessary to provide the certificate of the authorized institution proving its fire resistance. -Payment is to be made per kg of the installed material.	kg	30		0.00
	<b>TOTAL – 3. CABLES AND INSTALLATION MATERIALS</b>				0.00
4.5.	<b>POTENTIAL EQUALIZATION</b>				0.00
4.5.1.	Potential equalization of metal elements on the roof. Provide delivery and installation of galvanized steel tape, section 20x3 mm, on the roof of the building. The same tape is to be used for connecting all metal elements on the roof of the building. - Material and work to be paid per m1	m	50		0.00
4.5.2.	Delivery of all necessary materials and installation of decorative piece placed on all spots of the tape interconnection. After joints are made, all the spots are to be coated with protective agent against corrosion. It is to be paid for work and material completely installed for the proper operation – SRPS N.B4.936/III.	pcs	30		0.00

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4.5.3.	<p>Potential equalization in connecting metal elements, conductor N2XH-J 1x16 mm<sup>2</sup> with lugs, with bypass of each flange in mechanical part, on critical spots – placing the protective cable in metal flexible hose, with its connection to the protection. Connecting the air conditioning compartments, exhaust fan, hood and hood ventilator, all the air conditioning channels are provided with 2 coupling spaces.</p> <p>-Work and materials are to be paid for per installed piece.</p>	pcs	60		0.00
4.5.4.	<p>Delivery and installation of newly designed pump in the area of exiting boiler room to handle pressure from the substation to the roof of the building. The pump is to be connected to the existing automatic control cabinets.</p> <p>Delivery of all the necessary materials (cables, metal hoses, grounding service switches, testing and connecting and starting-up).</p> <p>-The entire materials and work are to be paid for</p>	comp.	1		0.00
<b>CABLES AND INSTALLATION MATERIALS</b>					<b>0.00</b>

5.	<b>HEAT TERMINAL ELECTRICAL INSTALLATION</b>				
	Electrical boiler manufactured by Mikroterm TH 100 is envisaged by the mechanical engineering design and the boiler supplier is responsible for connecting and starting-up, as well as to provide authorized certificate regarding its function.				
5.1.	<b>DISTRIBUTION BOX</b>				
	Delivery and installation of the automatic control distribution box marked with RO-TP for the needs of electrical boiler options. The cabinet may be overground or stand-alone. It is made of 2 mm sheet and coloured with RAL as selected by the Investor, with a lock and a key. Physical dimensions of the cabinet are to be adjusted on site with the building parameters. The Contractor is obliged to create installation spot in the wall and, after the cabinet is mounted, removes the remaining debris, plaster and skim areas around the cabinet if necessary. The cabinet is to be visibly marked and within protection IP 54.				
5.1.1.	The cost of cabinet includes all the necessary work on making, testing, transporting, installing, connecting and starting-up. Installation materials and accessories are also included (connecting terminals with terminal and fillet marking, intermediate plates, end plates, scheming wire with all ends marked, wire sleeves, perforated raceways, cable grommets of appropriate section, DIN rails for installation of electrical elements, copper rails with insulation supports and appropriate connecting elements for cables, marking for all elements according to schemes, engraved adhesive PVC plates etc.). Pay special attention to making collectors for the electricity of 160 amperes, as well as installation of the main switch of 200A.	pcs	1		0.00
	The following equipment is to be located in the cabinet:				0.00
5.1.2	Rugged switch on the cabinet door, type 1-0, 3p, 200A power,	pcs	1		0.00
5.1.3.	1 piece of base for three knife switches, completely with three knife switches of 200/160A, similar to type Schneider Electric.	pcs	2		0.00
5.1.4.	Rugged switch on the cabinet door, type 1-0, 1p, 10A power, for the mode Summer/Winter.	pcs	1		0.00
5.1.5	Command voltage convertor 230/24VAC, 250BA, Moeller	pcs.	1		0.00
5.1.6.	Automatic switch 6A, 1p, C, 10kA, ABB	pcs.	4		0.00
5.1.7.	Motor protective switch with fixed short (13 lth) and adjustable overcurrent protection 0.2-0.4 A, Moeller	pcs.	8		0.00
5.1.8.	Block of additional contacts 2n/o + 2n/z for installation on motor protective switch side, Moeller	pcs.	8		0.00
5.1.9.	Adaptor for direct installation to rail distribution of motor protective switch and contactor, Woehner	pcs.	8		0.00
5.1.10	Contactor 3p, 9A (AC3), for command voltage 230V, 50Hz, with 4n/o additional contact, Moeller	pcs.	9		0.00
5.1.11	Mini relay, with 4 change-over contacts for command voltage 230VAC, Finder	pcs.	4		0.00

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5.1.12	Mini relay, with 4 change-over contacts for command voltage 24 VAC, Finder	pcs.	4		0.00
5.1.13	Mini relay base with 4 change-over contacts, Finder	pcs.	8		0.00
5.1.14	3-module holder for push buttons and signal lamps, 225N, Moeller	pcs.	2		0.00
5.1.15	Signal LED lamp with test signalization module for connecting to 230VAC, red	pcs.	12		0.00
5.1.16	Signal LED lamp with test signalization module for connecting to 230VAC, green	pcs.	13		0.00
5.1.17	Fluorescent lamp for cabinet interior lighting, 15W, 230VAC, with a switch, Strela, FEP	pcs.	1		0.00
5.1.18	Installation materials and accessories (according to the introductory description)	comp.	1		0.00
	<b>TOTAL – CABINET EQUIPMENT</b>				<b>0.00</b>
5.2.	<b>PERIPHERAL ELEMENTS IN THE FIELD</b>				
5.2.1.	Bar temperature sensor, measuring element NI 1000 according to DIN 43760, measuring range '30...130C, bar length 120 mm, equivalent to type EGT346F101	pcs.	1		0.00
5.2.2.	LW& protective brass bush NP 16, thread P12, max. temperature 200 C, length 120 mm, equivalent to type 0364439120	pcs	1		0.00
5.2.3.	Electromagnetic valve, type A44W2F001, SAUTER	pcs	2		0.00
	<b>TOTAL – PERIPHERAL EQUIPMENT</b>				<b>0.00</b>
5.3.	<b>SERVICES REGARDING PERIPHERAL ELEMENTS IN THE SYSTEMS</b>				
5.3.1	Marking locations for peripheral elements of automatic control in the field with the element type specification (prior to cabling).	comp.	1		0.00
5.3.2.	Inspection of set and addressed cables according to the type and route.	comp.	1		0.00
5.3.3.	Setting the desired parameters on on/off elements, activator stroke calibration and separate inspections of all installed elements of the automatic control for the proper operation determination.	comp.	1		0.00
5.3.4	Electrical connecting of the automatic control elements in the field.	comp.	1		0.00
5.3.5	Minor, non-specified materials, organization of external and internal transportation of the equipment, site and storage organization.	comp.	1		0.00
5.3.6	Application software for programming of micro processor sub-stations with all the necessary program modules for proper operation of the system with approximately 250 addresses.	comp.	1		0.00
5.3.7	Programming of all regulators in order to provide functional operation of all systems according to the requirements determined by the mechanical engineering design and electrical engineering design.	comp.	1		0.00
5.3.8	Delivery of PLC for controlling, type EYR 203F001, SAUTER, or similar.	comp.	1		0.00
5.3.9	Analog-digital encoder with 4DI KAD-C12 for conversion from digital to analog inputs	pcs.	2		0.00

5.3.	<b>TOTAL – SERVICES REGARDING THE AUTOMATIC CONTROL CABINETS</b>				<b>0.00</b>
5.4.	<b>CABLES AND INSTALLATION MATERIALS</b>				
	<b>Energy cables type NHXHX -J</b>				
5.4.1.	4×95 mm <sup>2</sup>	m	15		0.00
5.4.2.	4×1,5	m	30		0.00
	<b>Telecommunication cables type J-H(St)H</b>				
5.4.3.	1×2×0,8	m	25		0.00
5.4.4.	2×2×0,8	m	25		0.00
	<b>Perforated cable supports</b>				
	The position includes supports, consoles, screws and all the materials and accessories necessary for placing the supports				
5.4.5.	PCS 50 mm	m	10		0.00
	<b>Flexible steel pipes of internal diameter min.</b>				
5.4.6.	16 mm	m	50		0.00
5.4.7.	Various minor installation materials and work	lump su	1		0.00
5.1.8.	Delivery and installation of cable type J-H(St)H-2x2x0.8 mm, previously drawn in 16 mm flexible metal hose. Cable with hose is placed partly over the wall on distance flanges, partly over the channel and serves for interconnection of all AS (automatic stations) in the system, (BUS connection between RO-TP, RO.KS1, RO-KS2).	m	80		0.00
5.4.9.	Preliminary-final works, making the executed condition design, making of takeover documentation	lump su	1		0.00
	<b>TOTAL – 3. CABLES AND INSTALLATION MATERIALS</b>				
5.4.10	Boiler grounding with tape FE/Zn 25x4 mm on the existing ring	m	20		0.00
5.4.11	Grounding of distributor pumps and other metal elements to the existing grounding with a cable N2XH-J 1x16 mm <sup>2</sup>	m	10		0.00
	<b>TOTAL CABLES AND INSTALLATION MATERIALS</b>				<b>0.00</b>
	<b>TOTAL – HEAT TERMINAL ELECTRICAL INSTALLATION</b>				<b>0.00</b>
6	<b>FINAL WORKS:</b>				
	After completed works on the afore listed installations, the Contractor is obliged to proceed as follows:				
	close all openings on locations of penetration of installations and racks through walls and ceilings				
	- remove potential technical aesthetic errors regarding the installations executed in the building				
	- clear rooms from debris and take it outside the building.				
	After performing inspections of the executed works, conduct all the tests envisaged by the regulations, such as:				
	- measuring of the resistance of the cable insulation, electrical equipment and devices of separately and entirely completed installation				
	- testing functionality of certain devices and equipment as well as functionality of the entire installation,				

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	- testing protection from contact voltage in the installation,				
	- measuring of voltage drop at the consumer connection				
	- measuring of transient grounding resistance and similar.				
	After completion of measurements, the Contractor is to provide protocol and deliver all the necessary test certificates to the Investor along with the value verification.				
	For all executed works and installed materials he provided by himself for executing such installation, the Contractor is obliged to provide written guarantee in accordance with the applied regulations SRPS in the existing contract commitments.				
	After execution of all works, the Contractor is obliged to take out all the waste and clear the area in sections where the electrical installation works had been executed.				
	Providing all the instructions necessary for additional maintenance is also the Contractor's responsibility.				
	Provide the executed state design based on the verified copy recorded in the course of the execution of installations. The analysis is to include all changes occurred during the execution and must be verified by official stamp by the work organization that had performed necessary recordings as well as by the Investor.				
	Review by inspection and testing the completed electrical installation in accordance with the article 192, 193, 194, 195, 196, 197 of the 'Rulebook on technical norms for low voltage electrical installations'.				
	In the course of installation, it is necessary to note all changes in one copy of the analysis and eventually make three copies of a design of the completed building. The changes must be verified by the Contractor and supervisor.				
<b>6.1.</b>	<b>TOTAL – FINAL WORKS:</b>	<b>comp.</b>	<b>1</b>		<b>0.00</b>

B

I. ELECTROMOTIVE DRIVE SUMMARY			
1	ELECTROMOTIVE DRIVE CABINETS		0.00
2	EQUIPMENT IN THE FIELD		0.00
3	SERVICES AND WORKS		0.00
4	CABLES AND INSTALLATION MATERIALS		0.00
5	TOTAL - HEAT TERMINAL ELECTRICAL INSTALLATION		0.00
6	FINAL WORKS:		0.00
I.	TOTAL ELECTROMOTIVE DRIVE (Transfer to Summary of Bills)		0.00

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