

BILL OF QUANTITIES

civil and specialist's works for rehabilitation of High School of Economics and Trade in Paraćin

Prices exclude VAT

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
01-00	DEMOLITION AND DISMANTLING				
01-01	Dismantling of metal doors, windows and partitions, including their removal outside the building and their stacking at a place designated by the Investor. Calculation per piece of completely performed item. 01. Openings from 2.0 - 4.0 m2	pcs	1		
01-02	Dismantling of plastered ceiling on reeds base on a wooden substructure, including the removal to the city landfill up to 15km of distance. Calculation per m2 of completely performed item.	m2	295.00		
01-03	Dismantling of wooden doors, door frames and windows, including their removal outside the building and their stacking on a construction site or off-site landfill if so designated by the Investor. Calculation per piece of completely performed item. 01. Openings from 0.0 - 2.0 m2 02. Openings from 2.0 - 4.0 m2	pcs pcs	13 52		
01-04	Demolition of brick walls on the ground floor, removal of debris and its transport to the city landfill up to 15 kilometers of distance. For walls tiled with ceramics and other materials, the price includes stripping of these layers. Calculation per m2 of completely performed item. Wall height h= 3.35m. 01. Walls d = 25 cm. 02. Walls d = 12 cm.	m3 m3	1.55 45.05		
01-05	Stripping of wall tiles with mortar. Tiles shall be stripped together with mortar and joints shall be cleaned by clamps to a depth of 2 cm, while brick surface shall be cleaned with a wire brush. Debris shall be collected, removed, loaded onto a truck and transported to the city landfill up to 15 kilometers of distance. Openings are deductible. Calculation per m ² of stripped surface.	m2	55.30		
01-06	Demolition of brick walls in the basement as follows: parapets and columns between the windows, 38cm thick, and the walls around shafts/skylights thickness of 25 cm, including removal and transport of debris to the city landfill up to 15 km of distance. Calculation per m3 of completely performed item.	m3	48.64		
01-07	Stripping of plaster from the walls, cleaning of joints, removal of debris outside the building to the construction site landfill, and after the works are completed to the city landfill up to 15km of distance. Calculation per m2 of completely performed item.	m2	202.24		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
01-08	<p>Cleaning the walls from dirt, mud or irregularities, before plastering. Joints shall be cleaned by clamps to depth of 2 cm. Brick surface shall be cleaned with a wire brush and the walls washed with water.</p> <p>Calculation per m2 of completely performed item.</p>	m2	202.24		
01-09	<p>Demolition of concrete sidewalks. Demolition shall be performed along with removal of the base. Separate hard material and transport it to the landfill specified by the Investor to 15 kilometer away. Debris shall be collected, removed and loaded onto a truck and transported to the city landfill.</p> <p>Calculation per m2 of completely performed item.</p>	m2	132.00		
01-10	<p>Demolition of floor structure on the ground floor made of plain concrete base d=8 cm, waterproofing and thermal insulation d=5.5 cm, plain concrete d=12 cm, and finish terrazzo floor d=7 cm, removal of debris out of the facility and transport to the building site landfill, and then to the landfill designated by the Investor to 15 kilometers away.</p> <p>Calculation per m2 of completely performed item.</p>	m2	308.00		
01-11	<p>Demolition of floor structure on the ground floor made of plain concrete base d=8 cm, waterproofing and thermal insulation d=5.5 cm, plain concrete d=12 cm, and floor with ceramic tiles d=7 cm, removal of debris out of the facility and transport to the building site landfill, and then to the landfill designated by the Investor to 15 kilometers away.</p> <p>Calculation per m2 of completely performed item.</p>	m2	72.90		
01-12	<p>Demolition of cement screed of floor structure in the basement down to waterproofing layer, cleaning of floors, removal of debris outside the facility and transport to the building site landfill, and then to the landfill designated by the Investor to 15 kilometers of distance.</p> <p>Calculation per m2 of completely performed item.</p>	m2	440.00		
01-13	<p>Dismantling of tin metal flashings, developed width 66cm, on the facade at the floor level of the ground floor and from horizontal sun shields on ground floor windows (south-east facade), their storing at construction site landfill and then to the landfill designated by the investor to 15 km of distance.</p> <p>Calculation per meter of completely performed item.</p>	m1	116.00		
01-14	<p>Dismantling of damaged and deformed downpipes, removal of debris and its stacking to storage place - at a construction site landfill and then to the landfill designated by the investor up to 15 km of distance.</p> <p>Calculation per meter of completely performed item.</p>	m1	25.00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
01-15	Dismantling of metal stairs in the basement. The structure is removed and stored on a construction site landfill up to 50m of distance. Lump sum calculation of completely performed item.	LS	1		
01-16	Partial stripping of cement plaster from the exterior facade walls of the ground floor and canopy at the southeast entrance. The Supervision and the Contractor shall determine in writing the areas from which plaster shall be stripped. Joints shall be cleaned with clamps to depth of 2 cm. Concrete surfaces shall be cleaned from mortar residues. Surfaces shall be cleaned with a wire brush and washed with water. Debris shall be collected, removed, loaded onto a truck and transported to the city landfill. Openings are deductible. Calculation per m2 of completely performed item.	m2	97.00		
01-17	Transport of remaining debris to the city landfill by truck, including loading, unloading and rough grading. Calculation per m3 of completely performed item. 01. Transport up to 10.0 km 02. Transport up to 1.0 km 03. Transport up to 15.0 km	LS LS LS	1 1 1		
DEMOLITION AND DISMANTLING			01-00	TOTAL:	
02-00	EARTHWORKS Land clearing within the basic scope was performed immediately after the floods in May 2014, so these works relate only to the rehabilitation of part of the building or rehabilitation of C block.				
02-01	Third category soil excavation, in bays, bulk excavation towards free space, side shoring so that existing foundations can support retaining walls of floor slab. Excavation shall be performed in grid of 4.5m for active zone of 3m. Once all reinforced-concrete works are completed, the next grid shall be excavated. Digging is done by hand and by machine, if possible, including soil removal outside of the building and its returning and compacting upon completion of all works in this area. The depth of excavation is on average 4.0-3.0 m. Excavation shall be done according to the Supervision's instructions and prescribed guidelines for this type of work. Calculation per m3 of completely performed item.	m3	1,073.57		
02-02	Third category soil excavation, up to foundation level, for waterproofing the external wall of basement at the level of vent shafts. Excavation shall be performed in grid of 4.5m for active zone of 3m. Once all insulation and reinforced-concrete works are completed, the next grid shall be excavated. Digging is done by hand and by machine, if possible, including soil removal outside of the building and its returning and compacting upon completion of all works in this area. The depth of excavation is 3.3 m. Excavation shall be done according to the Supervision's instructions and prescribed guidelines for this type of work. Calculation per m3 of completely performed item, measured in autochton state.	m3	243.20		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
02-03	<p>Transport from the temporary construction site landfill, backfilling and compaction of the selected crushed material from the excavation around the foundation walls and above foundations in layers of 20 centimeters, including necessary wetting and compaction, (95% per Proctor, if not otherwise specified by geo-mechanical elaborate).</p> <p>Calculation per m3 of completely performed item.</p>	m3	1,165.00		
02-04	<p>Supply, transport, spreading and compacting of natural gravel below the ground floor slab, d=10 cm, with compacting to the required compressibility modulus (95% per Proctor, if not specified differently by the geo-mechanical elaborate).</p> <p>Calculation per m3 of completely performed item.</p>	m3	38.10		
02-05	<p>Supply, transport, spreading and compacting of natural gravel below the basement shafts/skylights, d=10 cm, with compacting to the required compressibility modulus (95% per Proctor, if not specified differently by the geo-mechanical elaborate).</p> <p>Calculation per m3 of completely performed item.</p>	m3	8.20		
02-06	<p>Transport of excess material from the excavation remaining after backfilling and compaction are completed, as well as materials unsuitable for backfilling. Truck will be used for transport up to 10 kilometers of distance.</p> <p>Calculation per m3 of completely performed item.</p>	m3	155.00		
EARTHWORKS		02-00	TOTAL:	_____	
03-00	CONCRETE AND REINFORCED-CONCRETE WORKS				
03-01	<p>Supply of materials, transport and concreting of reinforced concrete base, MB-15, under waterproofing layer of foundation slabs, d=10 cm.</p> <p>Calculation per m2 of completely performed item. 01. Layer d=6.0 cm</p>	m2	394.00		
03-02	<p>Supply of materials, transport and concreting of sidewalks around the building with reinforced concrete MB-20, d=10 cm. Footing shall be constructed at edges of sidewalks, made of plain concrete 20/20 cm. Joint 2x2 cm shall be performed at each 2m, grouted with bitumen. Sidewalks shall be carried out with 2% inclination.</p> <p>Calculation per m2 of completely performed item.</p>	m2	51.80		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
03-03	Supply of materials, transport and concreting of reinforced-concrete slab, walls, columns and ring beams supported by existing foundations in the corridor where the works are carried out. MB 30 Calculation per m3 of completely performed item. 1 Reinforced-concrete walls d= 16 cm, h=3.5 m 2. RC ground beams, dim. 0.3x0.25 m 3. RC slab d=16 cm. 4. RC columns, size with the use of standard formwork. 5. RC foundation cushions for supporting RC wall on the foundation.	m3 m3 m3 m3 m3	42.74 13.50 62.56 3.44 6.34		
03-04	Supply of materials, transport and concreting of reinforced-concrete slab – floor and walls of shafts/skylights by waterproof concrete MB20, with the use of standard formwork included by the price of item. Calculation per m3 of completely performed item.	m3	34.90		
CONCRETE AND REINFORCED-CONCRETE WORKS			03-00	TOTAL:	<hr/>
04-00	REINFORCING WORKS				
04-01	Supply, transport, straightening, cutting, cleaning, bending and installation of rebars, of all profiles and complexity, including accessory material, according to the design, the details of the structural analysis and the applicable regulations. The price includes any round and deformed rebars of small and large cross-sections. The amount of rebars is provided approximately, according to the amounts of concrete, while plans and specifications of rebars from the Final design shall be used for calculation to be presented to the Investor. Calculation per kilogram of installed rebar	kg	14,000.00		
REINFORCING WORKS			04-00	TOTAL:	<hr/>
05-00	MASONRY				
05-01	Supply of materials, transport and masonry of parapets in the basement, d=38 cm, solid brick MO-150, in flexible mortar 1:2:6, height h=150 cm, and of columns between the windows up to the height of window lintels.	m3	34.90		
05-02	Supply of materials, transport and masonry of partition walls, d=12 cm, with solid brick MO 150, in flexible mortar 1:2:6. RC ring beam shall be constructed at height of doors, 22 cm high, reinforced with four bars Ø 10 mm. Concrete MB 20. Calculation per m2 of finished wall with all necessary scaffolding for masonry works, reinforced concrete ring beams, formwork and rebars.	m2	280.70		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
05-03	Supply of materials, transport and masonry of protective wall over waterproofing in the ground, d=12cm. Masonry is done with solid brick in cement mortar 1:3, with construction of reinforced concrete ring beam. Calculation per m2 of finished wall with all necessary reinforced concrete ring beams, formwork and rebars.	m2	128.00		
05-04	Supply of materials, transport and plastering of stairs ceiling in the basement by mortar 1:2:6 in two layers, d=2.0 cm, rendering and plastering Calculation per m2 of completely performed item.	m2	18.30		
05-05	Supply of materials, transport and rendering of facade walls by flexible mortar in two layers. Façade surfaces shall be cleaned, washed with water, if necessary, and sprayed with cement slurry. Flexible mortar shall be prepared with sifted gravel, grain size 0-4mm, first coat shall be applied and then roughened. The second layer shall be prepared with fine clean sand without silt impurities and organic matter and applied over the first layer. It shall be floated including its wetting by small floaters. The plastered surfaces must be flat, without waves, while the edges shall be sharp and straight. Mortar shall be wetted to prevent rapid drying and dusting. The price includes accessory scaffolding. Item description includes plastering of damaged parts of canopy of external stairs towards the river. Calculation per m ² . Calculation per m2 of completely performed item.	m2	330.00		
05-06	Supply of materials, transport and plastering of internal side of exterior walls of the basement over the substructure made of lathing with flexible mortar 1:2:6 in two layers. Lathing is placed over the substructure made of reinforcing mesh Q 188. Before plastering, substructure should be sprayed by ground thin cement mortar, 1:1 ratio, made of sifted gravel. Calculation per m2 of completely performed item.	m2	339.00		
05-07	Supply of materials, transport and plastering of interior basement walls (not in contact with ground) with flexible mortar 1:2:6 in two layers. Before plastering, the surface should be primed with ground thin cement mortar 1:1 ratio, made of sifted gravel. Calculation per m2 of completely performed item.	m2	768.30		
05-08	Plastering of new walls on the ground floor with flexible mortar 1:2:6 in two layers. Before plastering, the base should be primed with ground thin cement mortar 1:1 made of sifted gravel. Calculation per m2 of completely performed item.	m2	480.50		
05-09	Supply of materials, transport and construction of cement screed as a base below the finish floor, and over waterproofing and thermal insulation. Calculation per m2 of completely performed item. 01. Cement screed d = 4.00 cm.	m2	440.00		
	01. Cement screed d = 5.00 cm.	m2	391.00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
05-10	Supply of materials, transport and construction of lightly-reinforced cement screed 1:3 as protection of waterproofing on the ground floor, 4 cm thick. Covings in creed shall be made at waterproofing bends and then made even with the surface. Calculation per m2 of completely performed item.	m2	440.00		
MASONRY			05-00	TOTAL:	<u> </u>
06-00	CARPENTRY / no carpentry				
CARPENTRY / no carpentry			06-00		
07-00	ROOFING WORKS / no				
ROOFING WORKS / no			07-00		
08-00	STEEL STRUCTURE / no				
STEEL STRUCTURE / no			08-00		
09-00	INSULATION WORKS				
09-01	Supply of materials, transport and construction of basement walls waterproofing, over completely dry and clean base. Cold coating bitulit "A" shall be applied by brush or spraying at a temperature higher than 10 degrees. Bitumen strips shall be welded by heating the strips by burner with open flame, softening of bituminous mass of the surface to be glued, and sticking to the base by its own mass. The strip shall be glued by its entire surface, with overlaps of 10 cm, and special attention shall be dedicated to joints welding. A. Welded layer of "Kondor 4". Waterproofing comprises: - cold coating by bitulite "A" - "Kondor 4", welded to the base. Calculation per m2 of waterproofing. 1. Wall towards shafts. 2. Internal wall at B axis	m2 m2	166.40 383.00		
09-02	Supply of materials, transport and construction of floor slab waterproofing, over completely dry and clean base. Cold coating bitulit "A" shall be applied by brush or spraying at a temperature higher than 10 degrees. Bitumen strips shall be welded by heating the strips by burner with open flame, softening of bituminous mass of the surface to be glued, and sticking to the base by its own mass. The strip shall be glued by its entire surface, with overlaps of 10 cm, and special attention shall be dedicated to joints welding. In basement, waterproofing shall be bent along the wall up to 10cm of height. A. Welded layer of "Kondorflex V4". Waterproofing comprises: - cold coating by bitulite "A" - "Kondorflex V4", welded to the base - two layers of PE foil.				

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
	Calculation per m2 of waterproofing. Basement slab.	m2	440.00		
	Ground floor slab.	m2	391.00		
09-03	Supply of materials, transport and construction of vertical waterproofing on toilet walls. The wall surfaces to be insulated must be previously prepared and cleaned. Concrete surfaces shall be cut off, as needed, and holes and dents shall be filled. On such a prepared base, waterproofing is applied in the following layers: - Cold coating by bitulite B - Hot coating by bitumen PK-85/25 - Bituminous strip with infill made of woven roving covered by bitumen mass on both sides, min. d=4 mm without sand rubbing - Hot coating by bitumen PK-85/25 The protection of waterproofing is calculated separately. Calculation per m2 of completely performed waterproofing.	m2	13.20		
09-04	Supply of materials, transport and construction of waterproofing on toilets floors over prepared and cleaned base, in the following layers: - cold coating with bitulite A - hot coating by bitumen PK-85/25 - bitumenous strip min. d=4 mm with infill of glassfibre fleece or woven roving with sand rubbing - hot coating with bitumen PK-85/25 Waterproofing shall go up the walls min. 20 cm, which is included in the price. Calculation per m2 of completely performed waterproofing.	m2	24.10		
	THERMAL INSULATION				
09-05	Supply, transport and installation of styrodur plates d=5.0 cm below floors on the ground. Calculation per m2 of completely performed item. The item for floor slab on the ground floor.	m2	391.00		
	The item for floor slab in the basement.	m2	440.00		
09-06	Supply of materials, transport and construction of thermal insulation on the basement ceiling. Calculation per m2 of completely performed item. Thermal insulation made of wood fibre insulating slabs ("taropor") d = 10 cm (8+2 cm).	m2	430.00		
09-07	Supply of materials, transport and providing watertightness of concrete base by penetrative coating or similar agent, on the surface of all old walls in the basement. Calculation per m2 of completely performed item.	m2	33.60		
INSULATION WORKS			09-00	TOTAL:	<u> </u>

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
10-00	JOINERY				
	Note: All measures shall be taken on the spot.				
	A. FAÇADE JOINERY				
10-01	Supply, transport and installation of single casement windows, double casement windows, double entry door with fanlight made of PVC section.				
	Windows shall be installed through a blind frame of fir wood, in the area of thermally insulated wall, with sealed joints around the window frame.				
	PVC joinery is glazed with thermally insulating glass 4+12+4 mm. Joints between sash and frame are fitted with elastic rubber sealing strips. Larger openings such as double front doors shall have a mandatory steel sections for stiffening.				
	Window sills are purpose made of a suitable profile.				
	Calculation per piece of completely installed item, which will be protected with PVC until the end user decides to use the building.				
	Single casement window.				
	Item XI a - Dim. 90/40 cm	pcs	1		
	Double casement window.				
	Item Ia - Dim. 187/120 cm (the same as shown existing wooden window, dimensions shall be measured after a new opening is created)	pcs	28		
	Double doors with fanlight				
	Item IX a - Dim 175/240+70	pcs	1		
	INTERIOR JOINERY				
10-02	Supply, transport and installation of single solid doors.				
	Door frames are made of solid wood - fir wood, leaves are part of the wooden laths structure or leaf frame is made of solid wood, wooden laths, hollow core, (glass door), or door with honeycomb core, hollow core.				
	Door finish is two coats of oil paint in colour chosen by the designer, including all necessary preparation. Ventilation leaves are perforated for openings ϕ 25mm, or industrial louvers, cross-section min. 250cm ² , which provide air flow. Hardware is standard with three hinges, door handles are made of powder-coated metal and "Wertheim" lock with three keys.				
	Door stops are made of hard rubber. Where necessary, oak threshold is installed and varnished twice.				
	Calculation per piece of completely performed item.				
	01. Single solid door with threshold.				
	Item 2a Dim. 105/205 cm.				
	In the wall 38 cm.	pcs	4.00		
	02. Single solid door with threshold.				
	Item 3a Dim. 65/205 cm.				
	In the wall 16 cm.	pcs	8.00		
	03. Single solid door.				
	Pos 4a Dim. 95/205				
	In the wall d = 38 cm.	pcs	1.00		
	04. Single door with threshold				
	Pos 5a Dim. 85/220 cm.				
	in the wall d = 12 cm.	pcs	10.00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
	05. Single door with threshold Pos 5´ Dim. 90/220 cm. In the wall d = 12 cm.	pcs	1.00		
	06. Single door with threshold Pos 6a Dim. 110/205 cm. In the wall d = 38 cm.	pcs	6.00		
	07. Single door Pos 8a, dim. 125/205 cm. In the wall d = 38 cm.	pcs	1.00		
	08. Single door Pos 10a, dim. 80/200 cm. In the wall d = 38 cm.	pcs	3.00		
JOINERY			10-00	TOTAL:	<u> </u>
11-00	METAL WORK Note: All measures shall be taken on the spot. EXTERNAL CUSTOM METAL WORK				
11-01	Fabrication, transportation and installation of multipart fixed window of box steel sections with reinforced double glazed glass d=6 mm. Supply of materials, transport, construction and installation of substructure for covering light shafts in the basement made of supporting structure of box metal sections welded to the concrete structure of the building and basement shaft. Over the substructure, in one part, reinforced glass is placed as cover, while fixed aluminum blinds will be installed in the upper zone of the opening. Before installation, sections shall be cleaned and painted by protective paint in a color chosen by the designer. The item includes all fittings, accessories and sealants necessary for metal work, and for joints between metal work elements and construction element. Work is performed according to the design details and the measures taken on the spot. Calculation per piece of completely performed item. 01. Dim. 450/120 cm. 02. Dim. 215/120 cm.	pcs pcs	13 2		
	INTERNAL CUSTOM METAL WORK				
11-02	Supply, fabrication and installation of staircases made of steel girders, with steel pipe fence, diameter Φ 50 mm with a filling made of sections Φ 30 mm horizontally placed at 12 cm, treads made of corrugated sheet metal d=5+1mm over the boxes 50/50mm. Work shall be executed according to the Contractor's calculations and details. Joints and welds shall be performed, cleaned and sanded as good as possible. Before its erection, the structure shall be cleaned against corrosion and dust, impregnated and primed, and after erection, perform touch up paint. The price also includes anchors, bolts, washers, scaffolding, as well as the certification of structure and welds. Calculation per kilogram.	kg	150.00		
METAL WORK			11-00	TOTAL:	<u> </u>

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
12-00	SHEET METAL WORK				
12-01	Supply and transport of materials, fabrication and installation of drain downpipes made of galvanized sheet d= 0.70 mm, developed width of 66 cm, in places of disassembled downpipes. It is necessary to provide for the protection of downpipes against physical damage by metal structure. (It is possible to provide for another concept of anti-vandal protection). Calculation per meter of completely performed item. 01. Developed width 66 cm	m1	25.00		
12-02	Supply and transport of materials, flashing of window sills in the basement and the edges of shafts/ skylight by powder-coated sheet d= 0.55 mm. Calculation per meter of completely performed item. 01. Developed width 30 cm	m1	126.00		
12-03	Supply and transport of materials, and flashing of concrete beams of façade frame at places of old dismantled flashings on the south facade, at the height of the ground floor, with galvanized sheet d=0.55 mm Developed width 66 cm. Calculation per meter of completely performed item.	m1	58.00		
12-04	Supply and transport of materials, and flashing of sun shields of façade windows in classrooms, with galvanized sheet d=0.55 mm Developed width 40 cm. Calculation per meter of completely performed item.	m1	174.00		
SHEET METAL WORK			12-00	TOTAL:	<u> </u>
13-00	FAÇADE WORKS				
13-01	Supply of materials, transport and plastering - patching of façade surfaces over lathing with flexible mortar 1:2:6 in two layers, in places where the facade is stripped off due to damage. Surface shall be primed with ground thin cement mortar 1:1 ratio, made of sifted gravel. Substructure is included by the price. Calculation per m2 of completely performed item.	m2	160.00		
13-02	Supply of materials, transport and finish of plastered and concrete surfaces with plastic mortar - BAVALIT in the color chosen by the designer. Calculation per m2 of completely performed item.	m2	430.00		
13-03	Transport, erection and dismantling of tubular scaffolding around the building. Calculation per m2 of vertical projection of scaffolding.	m2	430.00		
FAÇADE WORKS			13-00	TOTAL:	<u> </u>

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
14-00	TILING WORKS				
14-01	Supply and transport of materials and floor tiling with non-slip granite ceramic tiles 40x40 cm, in the layer of cement mortar 1:3. Granite tiles of I class shall be placed in cement mortar, in bonding chosen by the designer. Surface shall be previously sprayed with cement slurry. Tiling shall be performed in straight line and grouted by cement slurry. Tile joints shall be pointed and the floor cleaned by sawdust. Calculation per m2 of completely performed item.	m2	391.00		
14-02	Supply and transport of materials and tiling of all steps from the basement to the ground floor by anti-slip granite ceramic tiles 40x40 cm, including their trimming at width of the tread in the layer of cement mortar 1:3. Tiles are made with all fittings. Surface shall be stripped of, smoothed by applying alignment layer and place the tiles on the adhesive. If necessary, manually grind tile edges. The tiled surfaces must be flush. Tiling joints shall be pointed and cleaned with sawdust. Calculation per m2 of completely performed item.	m2	81.90		
14-03	Supply and transport of materials and tiling of wall surfaces with ceramic tiles of I class, domestic manufacturer, in cement mortar. Surface shall be sprayed with cement slurry, I class tiles shall be placed in butt joint. If necessary, tile edges shall be manually ground. The tiled surface must be flat and vertical. Tiling joints shall be pointed and cleaned with sawdust. Calculation per m2 of completely performed item.	m2	77.90		
14-04	Supply and transport of materials and construction of flat plinth, 10 cm high, made of glazed ceramic floor tiles, domestic manufacturer. Tiles are placed on adhesive. The base must be flat and prepared. Tiling joints shall be pointed and plinth cleaned. Calculation per meter of completely performed item.	m1	261.80		
14-05	Supply and transport of materials and tiling of landing, step riser and treads with stringers and upper surface of parapet, with non-glazed anti-slip granite ceramic tiles in a layer of cement mortar 1:3 at the stairs of southeastern entrance and windshield. The tiled surfaces must be flat. Tiling joints shall be pointed and cleaned by sawdust. Calculation per m2 of completely performed item.	m2	18.00		
TILING WORKS			14-00	TOTAL:	<u> </u>
15-00	TERRAZZO WORKS / no				
TERRAZZO WORKS / no			15-00		
16-00	STONE CUTTING WORKS / no				
STONE CUTTING WORKS / no			16-00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
17-00	SUSPENDED CEILING				
17-01	<p>Supply and transport of materials and installation of suspended ceilings made of pressed mineral fibers, "Armstrong" type.</p> <p>Work is done according to the choice of the designer and manufacturer's instructions. Type substructure shall be used for this type of ceiling. Cascades are not calculated separately, but the price is increased by 20% on behalf of cascades.</p> <p>Calculation per m2 of finished and installed suspended ceiling with substructure and necessary scaffolding.</p>	m2	572.00		
SUSPENDED CEILING			17-00	TOTAL:	<u> </u>
18-00	FLOORING WORKS				
18-01	<p>Supply and transport of materials and floor covering with PVC flooring. Laying is done by gluing the flooring at the entire surface to the already prepared base with welding of joints. Acrylic dispersion adhesives shall be used. PVC "L" strips next to the walls shall not be separately calculated.</p> <p>Calculation per m2 of completely performed item.</p>	m2	432.00		
18-02	<p>Supply, transport and installation of profiled aluminum plinth next to the walls. Plinth is 1/7 cm.</p> <p>Calculation per meter of completely performed item. Rooms with PVC flooring.</p>	m1	381.00		
FLOORING WORKS			18-00	TOTAL:	<u> </u>
19-00	PAINTING WORKS				
19-01	<p>Supply and transport of materials and skimming of walls in three coatings and complete surface preparation for painting. The work shall be carried out according to general description and all necessary preparation.</p> <p>Calculation per m2 of completely performed item, including scaffolding.</p>	m2	1,945.00		
19-02	<p>Supply and transport of materials and skimming of plastered ceiling in three coatings and complete surface preparation for later painting. The work shall be carried out according to general description and all the necessary preparation. Skimming is calculated only in areas that remain visible and for additional 10 cm behind the suspended ceiling.</p> <p>Calculation per m2 of skimmed surface including scaffolding.</p>	m2	105.00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
19-03	Supply and transport of materials and painting of visible ceilings on the ground floor and basement by distemper on a prepared base. Calculation per m2 of painted surface, including necessary scaffolding.	m2	95.00		
19-04	Supply and transport of materials and finish of basement walls by dispersive paints in the color chosen by the designer over a prepared base. Calculation per m2 of completely performed item.	m2	1,055.00		
19-05	Supply and transport of materials and finish of the ground floor walls by dispersive paints in the color chosen by the designer over a prepared base. Calculation per m2 of skimmed surface including scaffolding.	m2	890.00		
19-06	Supply and transport of materials and painting of cast iron and aluminum radiators, by paint for metal. Before painting, radiators shall be stripped of corrosion by chemical and physical agents, and then all surfaces shall be sanded and cleaned. Radiators shall be impregnated and primed, and then painted twice with paint for metal. Calculation per m2 of painted radiators.	m2	64.00		
19-07	Supply and transport of materials and painting of heating pipes with paint for metal. Before painting, pipes shall be stripped of corrosion by chemical and physical agents, and then all surfaces shall be sanded and cleaned. Pipes shall be impregnated and primed, and then painted twice with white paint for metal. Calculation per meter of painted pipes.				
	1. Ø 1/2"	m1	46.00		
	2. Ø 3/4"	m1	50.00		
	3. Ø 1"	m1	35.00		
	4. Ø 5/4"	m1	14.00		
	5. Ø 6/4"	m1	20.00		
	6. Ø 2"	m1	18.00		
	7. Ø 3"	m1	78.00		
PAINTING WORKS			19-00	TOTAL:	<u> </u>
20-00	SUNDRIES				
20-01	Supply and transport of materials and paving of plateau on the northwestern side of the C block, from the sidewalk to the playground by "Behaton" paving blocks laid on sand mixed with cement in the ratio 1:3, with plateau inclined at least 0.5%. Inclination toward the playground. Calculation per m2 of completely performed item.	m2	148.00		

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
20-02	<p>Disassembly and reassembly of cast iron and panel radiators on black pipes with adequate repair of the connection, due to construction works, including all manipulations for finish of adjacent building elements and painting of radiators and pipes (painting is subject to a separate item in BoQ). The works must be carried out in accordance with the applicable regulations, standards and technical requirements, with a skilled workforce, and all damaged or missing parts shall be replaced with new ones - valves, lockshield valves, racks, brackets, possible cutting, welding and all the necessary elements and works for making radiators functional.</p> <p>After reassembling, radiator's functionality shall be checked, hydraulic test for pressure and tightness in the presence of the Supervision.</p> <p>Calculation per piece of completely performed item.</p> <p>1. cast iron radiators 182/27/12cm, 30 panels</p> <p>2. cast iron radiators 110/60/12cm, 14 panels</p> <p>3. cast iron radiators 140/60/12cm, 17 panels</p> <p>4. cast iron radiators 130/90/12cm, 16 v</p> <p>5. cast iron radiators 170/70/12cm, 28 panels</p> <p>6. Aluminium panel radiators 110/30/20cm</p>	<p>pcs</p> <p>pcs</p> <p>pcs</p> <p>pcs</p> <p>pcs</p> <p>pcs</p> <p>pcs</p>	<p>6</p> <p>6</p> <p>2</p> <p>1</p> <p>1</p> <p>5</p>		
20-03	<p>Final cleaning of the facility and washing of windows, doors and floors. Lump sum calculation, one time regardless of the number of cleaning.</p> <p>The total area includes the cleaning of stairs, access and driveway, yard, terrace, basement, etc. and shall not be paid separately.</p>	<p>LS</p>	<p>1</p>		
20-04	<p>Fabrication and installation of site board, site fencing and other costs of site establishment are not subject to this project and the contractor must plan and calculate them as its organizational costs. This item shall be used for approximate, lump sum calculation of these costs.</p>	<p>LS</p>	<p>1</p>		
SUNDRIES		20-00		TOTAL: _____	

NO.	DESCRIPTION	UoM	QUANTITY	UNIT PRICE	TOTAL
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S U M M A R Y

01-00 DEMOLITION AND DISMANTLING

02-00 EARTHWORKS

03-00 CONCRETE AND REINFORCED-CONCRETE WORKS

04-00 REINFORCING WORKS

05-00 MASONRY

06-00 CARPENTRY / no carpentry

07-00 ROOFING WORKS / no

08-00 STEEL STRUCTURE / no

09-00 INSULATION WORKS

10-00 JOINERY

11-00 METAL WORK

12-00 SHEET METAL WORK

13-00 FAÇADE WORKS

14-00 TILING WORKS

15-00 TERRAZZO WORKS / no

16-00 STONE CUTTING WORKS / no

17-00 SUSPENDED CEILING

18-00 FLOORING WORKS

19-00 PAINTING WORKS

20-00 SUNDRIES

TOTAL:

**BILL OF QUANTITIES FOR WATER AND SEWAGE INSTALLATIONS
IN HIGH SCHOOL OF ECONOMICS AND TRADE IN PARAĆIN**

Note: The price includes all necessary materials, tools and labour necessary for the completion of the item.

Prices exclude VAT

VIII	WATER AND SEWAGE
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	Description	UoM	Quantity	Unit price	Total
1	Careful dismantling of sanitary elements with associated equipment, in the toilets. All dismantled materials shall be removed, loaded to a truck and transported to landfill or a place designated by the investor up to 10 km of distance. Calculation per piece.				
1.1.	squatting closet with cistern and trap	pcs	6		
1.2.	urinal with valve and trap	pcs	3		
1.3.	floor drain with trap	pcs	3		
1.4.	upstand tray with tap and trap	pcs	1		
1.5.	boiler 80l	pcs	2		
2	Careful dismantling of wash basins, lever taps for cold water for wash basins and flexible PVC drainage pipes in toilets, and reassembly of wash basins at new positions after completion of civil and specialist's works in the toilets. Wash basins shall be carefully dismantled and neatly stored on site, without damage until the reinstallation. The dismantled taps and PVC pipes shall be transported to the landfill or a place designated by the investor up to 10 km of distance. Calculation per piece.				
		pcs	6		
3	Supply, transport and installation of bracket wash basin made of ceramic, size 60x40 cm, domestic manufacturer, I class. Wash basin shall be wall-mounted by adequate plugs and brass screws over rubber washers . Calculation per piece of wash basin.				
		pcs	2		
4	Supply, transport and installation of chrome trap for wash basins, diameter 5/4", with a rosette, plug and chain. The item includes all the works on trap adjustment and connecting to the existing sewage, all necessary fittings, according to the existing and newly designed state showed at the drawings. Calculation per piece of trap.				
		pcs	7		

- 5 Supply, transport and installation of ergonomic wash basin with bracket, made of ceramics for people with disabilities, dim.66x52 cm, with rounded concave anterior edge and special supports for elbows. Wash basin shall be placed at the height of the upper edge 80 cm from the floor. The item includes supply, transport and installation of the appropriate chrome trap, diameter 5/4" with a rosette, plug and chain, located in or next to a wall. The work shall comply with Rulebook on Technical Accessibility Standards, Official Gazette of RS, no. 46/2013.

The item includes all works on adjustment and connection of wash basin, i.e. trap to the existing sewer, all necessary fittings, according to the existing and newly-designed state showed in the drawings.

Calculation per piece of wash basin. pcs 1

- 6 Supply, transport and installation of chrome lever tap for wash basin, with movable outlet. Rosettes shall be placed between the wall and tap.
The item includes all the works on tap adjustment and connecting to the existing water supply system, all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece.

- 6.1. lever tap for cold water pcs 7
6.2. lever tap for cold and hot water pcs 3

- 7 Supply, transport and installation of ceramic WC pan, "Simplon" type, domestic manufacturer, I-class, including cistern. WC pan connector shall be used for connecting WC pan to sewerage system and it shall be 100% sealed with adequate putty. Brass screws shall fix WC pan over rubber pads. Enamel cistern will be placed with rope, connected to water supply network by chrome valve and high-quality hose, while WC pan shall be connected to hose and rubber cuff. PVC seat with cover shall be placed on the WC pan.

The item includes all the works on WC pan adjustment and connecting to the existing sewage, and connecting cistern to existing water supply system, with all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece. pcs 7

- 8** Supply, transport and installation of ceramic WC pan for people with disabilities, with a water discharge device. Brass screws shall fix WC pan over rubber pads. The initiator device for discharging water shall be placed 70cm above the floor surface. WC pan shall be provided with two grab rails, 90cm long, one of which must be folding, and the other is fixed. Connection to water supply network by chrome valve and high-quality hose, while WC pan shall be connected to hose and rubber cuff. MDF or solid wood seat with cover shall be placed on the WC pan.
The work shall comply with Rulebook on Technical Accessibility Standards, Official Gazette of RS, no. 46/2013.

The item includes all the works on WC pan adjustment and connecting to the existing sewage, and connecting cistern to existing water supply system, with all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece. pcs 1

- 9** Supply, transport and installation of ceramic wall-mounted urinal, domestic manufacturer, I class, with chrome gate valve and trap. Urinal shall be fixed over rubber pads with appropriate plugs and brass screws.

The item includes all the works on urinal adjustment and connecting to the existing water supply and sewage, with all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece. pcs 3

- 10** Supply, transport and installation of acrylic upstand tray, dim. 80x80cm, domestic manufacturer, I class, including outlet trap diameter 5/4", with plug and chain.

The item includes all the works on upstand tray adjustment and connecting to the existing sewage, with all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece. pcs 1

- 11** Supply, transport and installation of universal angular shower enclosure, dim.80x80 cm, "Kolpa san". Shower enclosure is made of aluminum sections in white and tempered glass. Angular door opening, two wings, sliding and closure with magnetic sections. Enclosure is 180 cm high.

Calculation per piece. pcs 1

- 12** Supply, transport and installation of wall-mounted lever tap for upstand tray, with wall bar, hose and shower hand and rosettes, manufactured by "ROSAN" - collection KING-QUADRO, or equivalent product from another manufacturer.

Calculation per piece. pcs 1

- 13** Supply, transport and installation of 80 l electric boiler, heater 2000 W, for vertical wall-mounting. The price includes chrome pipes for connecting the boiler to water supply installations with rosettes and a safety valve. Complete installation, connected to the water supply system, with two-year warranty.

Calculation per piece. pcs 1

- 14** Supply, transport and installation of PVC floor drain Ø70mm with horizontal trap, with a chrome grille 15x15cm.

The item includes all the works on drain adjustment and connecting to the existing sewage, with all necessary fittings, according to the existing and newly designed state showed at the drawings.

Calculation per piece. pcs 4

15 Supply, transport and installation of chrome doors on inspection eyes for sewage installations 15x15 cm and similar small sanitary ware.

Calculation per piece. pcs 5

16 Supply, transport and installation of sanitary ware.
Calculation per piece.

16.1. mirror dim. 50x40cm pcs 7

16.2. inclined, tilted mirror, mounted by its lower edge at the height of 100 cm, dim.50x40cm pcs 1

16.3. PVC wall-mounted dispenser for liquid soap 500ml pcs 6

16.4. wall-mounted PVC holder of paper towels pcs 6

16.5. wall-mounted PVC holder of toilet paper rolls pcs 8

16.6. wall-mounted PVC holder of WC toilet brush pcs 8

16.7. nickel lattice holder for soap next to the tub pcs 1

16.8. large nickel holder of towels next to the tub pcs 1

TOTAL WATER SUPPLY AND SEWAGE

No	DESCRIPTION	UNIT OF MEASURE AND QUANTITY	UNIT PRICE IN RSD	TOTAL
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GENERAL REMARKS

This specification provides for the delivery of all equipment and materials specified in the items and all fine unspecified materials needed for a complete construction, installation, testing and commissioning, as well as reinstatement of all damaged parts of already completed works.

The price includes the cost of materials specified in items and all fine unspecified material, transport, labor cost and all taxes and contributions to materials and labor. The price includes development of necessary shop documentation, testing and commissioning of all elements listed in the items, as well as provision of certificates and certificates of compliance according to the following structure:

- Unit price of "delivery" includes the cost of equipment and/or materials Ex-Works manufacturer's plant or place of purchase, and shall cover:
 - Transport and insurance to the site
 - Special equipment and tools for the operation and maintenance of production equipment, if any, with instructions for use
 - Packaging and protection of equipment and/ or materials
 - Documentation of equipment and/ or materials (certificates, drawings, lists of spare parts. and wear and tear parts, list of maintenance tools, necessary descriptions, shop documentation, provided the equipment is not standard, various instructions for installation, operation and maintenance, etc.).
- Unit price of "installation" includes everything else not included in the price of "delivery", i.e. any operation by machinery and labor including any preparation and finishing works and sundries.

Prices exclude VAT

1 DISMANTLING WORKS

1.1	Dismantling of the existing electrical equipment: lighting, switches, sockets, cables, etc.	LS	1.00
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1 TOTAL 1

2 POWER SUPPLY DISTRIBUTION AND SWITCHBOARDS

2.1	Distribution cabinet is the existing one and in accordance with the installation of new electrical equipment and installations in the rehabilitated and renovated area. Any electrical installations shall be connected to the existing distribution cabinet.	LS	1.00
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2 TOTAL 2

3 LUMINAIRES

GENERAL NOTE:

Description and characteristics are provided for any proposed type of luminaire. These characteristics were used for calculations of brightness, in line with manufacturer's data and program. Luminaires shall be delivered along with appropriate light sources. The item also includes the installation of luminaires. If luminaire type should be changed, quantity of luminaires has to be re-checked according to the defined brightness. However, it is possible to change the manufacturer of luminaires, if they have similar technical characteristics. The item includes light sources and mounting. BEFORE LUMINAIRES ARE ORDERED, THE CONTRACTOR SHALL ONCE AGREE THE TYPES OF LUMINAIRES WITH THE ARCHITECT. POSSIBLE BIDDERS ARE OBLIGED TO SPECIFY THE TYPE AND NAME OF THE MANUFACTURER FOR ANY OFFERED LUMINAIRE.

3.1	Fitted luminaire for direct lighting, square, dim.60x60mm with opal diffuser and LED light source, power 51, similar to KTM 840 2 600.LED 5000lm OPAL, manufactured by E.Y.System S.A., or equivalent.	pcs	14.00
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3.2	Surface mounted luminaire for direct lighting, square, LED light source, power 19W, similar to PALETA LED 307.LED830 1200lm OPAL, manufactured by E.Y.System S.A., or equivalent.	pcs	10.00
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3.3	Surface mounted luminaire for direct lighting, square, LED light source, power 30W, similar to REGLUX 540.LED840 3200lm OPAL, manufactured by E.Y.System S.A., or equivalent.	pcs	35.00
3.4	Surface mounted luminaire for direct lighting, square, LED light source, power 50W, similar to REGLUX 1040.LED840 6000lm OPAL, manufactured by E.Y.System S.A., or equivalent.	pcs	58.00
3.5	Surface mounted luminaire with opal diffuser, IP40 protection, electronic ballast and fluorescent tube of 24W, similar to SLOTLIGHT, manufactured by E.Y.System S.A., or equivalent.	pcs	4.00
3.6	Luminaire for anti-panic lighting, box for wall-mounting, non-maintained with autonomy 3x, fluorescent compact tube 1x11W. IP40 protection, similar to STAR MNEL20-A, "COOPER-MENVIER", or equivalent. Set of luminaire with installation fittings.	pcs	34.00

3 TOTAL 3

4 INSTALLATION MATERIAL

Installation material, similar to "Vimar Plan", or equivalent, IP20 protection, mounted in wall finish, including installation module box, holder and mask, operation at 250 V. Delivery, installation and connection:

4.1	Standard switch 10A, in 1M module	pcs	17.00
4.2	Alternating switch 10A in 1M module	pcs	4.00
4.3	dimmer 16A in 1M module	pcs	4.00
4.4	Motion sensor	pcs	4.00
4.5	Single-phase "Schuko" plug socket L+N+PE 250V 16A, in 2M module, white for installation in modular wall box. Socket is produced by "Vimar Plana" or similar.	pcs	35.00
4.6	Three-phase "Schuko" plug socket L+N+PE 250V 16A, in 2M module, white for installation in modular wall box. Socket is produced by "Vimar Plana" or similar.	pcs	2.00
4.7	Delivery of modular switch boxes for wall-mounting, 1M module. Bracket for 1M module and 1M mask.	pcs	32.00
4.8	Delivery of modular switch boxes for wall-mounting, 2M module. Bracket for 2M module and 2M mask.	pcs	37.00
4.90	Other small material (junction boxes, cable ties, plugs, etc.).	LS	1.00

4 TOTAL 4

5 WIRING

5.1	Material delivery and development of wiring for bulb point, by laying cables N2XH-J 2, 3 and 4 x 1.5mm ² . The cable is laid on the false ceiling.	m	1,450.00
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5.2	Material delivery and development of wiring for single-phase connection point for sockets, with cable N2XH-J 3x2.5mm ² . The cable is laid in the false ceiling and in the wall beneath mortar. The average length of the cable is 15m.	pcs	50.00
5.3	Material delivery and development of wiring for three-phase connection point for sockets, with cable N2XH-J 5x2.5mm ² . The cable is laid in the false ceiling and in the wall beneath mortar.	m	50.00
5.4	Material delivery and development of wiring for single-phase connection point for split system unit, with cable N2XH-J 3x2.5mm ² . The cable is laid in the false ceiling and in the wall.	m	35.00

5 TOTAL 5

6 EARTHING AND EQUIPOTENTIAL BONDING

6.1	Delivery of cable N2XH-J 1x16 mm ² , laying and connecting of metal elements and wiring inside the building (W&S, heating, LV installations, etc.) to the main busbar for equipotential bonding.	m	50.00
6.2	Material delivery and development of equipotential bonding inside the building by conductor N2XH-J 1x6mm ² , the average length 25m.	pcs	10.00
6.3	Copper braiding 16mm ² for bridging connections on movable or removable parts of equipment, equipotential bonding of non-electric metal parts of equipment so as to form a galvanic unit. Braiding is 10-50cm long, with lugs on the ends. Bridging can be alternatively performed by FeZn 20x3 mm strip.	pcs	10.00
6.4	Unspecified installation material	LS	1.00
6.5	Testing and commissioning, and verification and control of wiring in accordance with applicable standards.	LS	1.00

6 TOTAL 6

7 TELECOMMUNICATIONS INSTALLATIONS

1.0	Supply and laying of cable JH-St-H 3x2x0.6 mm through flexible corrugated tubes for telephone installation.	m	650
2.0	Delivery and installation of telephone terminal	m	22
3.0	Wiring connection and testing	LS	1

7 TOTAL 7

SUMMARY

- 1.0 **POWER SUPPLY**
- 2.0 **POWER SUPPLY DISTRIBUTION AND SWITCHBOARDS**
- 3.0 **LUMINAIRES**
- 4.0 **INSTALLATION MATERIAL**
- 5.0 **WIRING**
- 6.0 **EARTHING AND EQUIPOTENTIAL BONDING**
- 7.0 **TELECOMMUNICATIONS INSTALLATIONS**

TOTAL Dinars

SUMMARY

I CIVIL AND SPECIALIST'S WORKS

II WATER SUPPLY AND SEWAGE

III ELECTRICAL INSTALLATIONS

TOTAL ALL WORKS