	05.01. PRICED BILL OF QUANTITIES OF CONSTRUCTION AND FINISHING WORK				
	BUILDING: Reconstruction of Obrenovac Grammar School				
	INVESTOR: Republic of Serbia. Obrenovac Grammar School				
	FAÇADE AND ROOF				
A.	**CONSTRUCTION WORK**				
I	**PREPARATORY AND DEMOLITION WORK**	UoM	QUANTITY	PRICE	SUBTOTAL
1.1.	Mounting and dismounting of the façade metal scaffolding for works, fully according to standing regulations and PPE measures. The scaffold shall be structurally stable, anchored to the building and properly grounded. Plank platforms shall be placed at every 2.00m of height. Planks shall also be placed sideways from the side of the scaffold opposite the wall. The entire scaffold shall be covered in jute or PVC sheets. The scaffold shall be received and approved by the structural engineer via construction log. The scaffold shall be used throughout the duration of the work. Calculated per m2 of the mounted scaffold vertical projection.	m2	2,997.00		
1.2.	The construction site shall be cleaned of rubble and the rubble transported to the construction site landfill several times during work. Paid once regardless of the number of cleaning turns. Calculated per m2 of construction site.				
	-roof	m2	2,042.99		
1.3.	Chiselling plaster off the façade. The plaster shall be chiselled off and joints cleaned down to 2cm deep. Bricks shall be cleaned with steel brushes and walls washed with water. The rubble shall be collected, loaded onto a lorry and transported to the town landfill. The chiselling shall be done on the entire façade. Calculated per m2 of chiselled surface area, all holes deducted.	m2	2,920.00		
1.4.	Dismounting of the gutter together with apron flashing from the roof of the building. The gutter shall be transported to the town landfill. Calculated per m1 of dismounted gutter.	m1	177.05		
1.5.	Dismounting of 16 spouts from the building. The spouts shall be transported to the town landfill. Calculated per m1 of dismounted spout.	m1	119.00		

1.6.	Dismounting of SW 35cm window sill boards and sheet metal flashings from the building façade. The flashings shall be dismounted, loaded onto a lorry and transported to the town landfill. Calculated per m1 of dismounted sheet metal flashings.	m1	1,034.09		
1.7.	Dismounting sheet metal drip caps from the SW 42cm attic wall. The drip caps shall be removed, loaded onto a lorry and transported to the town landfill. Calculated per m1 of dismounted sheet metal drip cap.	m1	291.35		
1.10.	Stripping the flat roof layers down to the slab, in the following order and in line with the sketches: bitumen finishing coat, d=4-15cm lean concrete inclined coat, d=5cm sandwich panel and d-=15cm polyurethane coat. The rubble and stripped materials shall be taken down, loaded onto a lorry and transported to the town landfill. Calculated per m2 of roof surface area.				
	roof above the gymnasium and the locker room	m2	420.00		
1.11.	Dismounting sheet metal chimney caps with steel substructure. Calculated per chimney.	kom	11.00		
1.12.	Dismounting sewer vents above the roof, complete with ventilation caps. Calculated per piece.	kom	5.00		

1.13.	Demolishing the 40x40cm brick chimney on the gymnasium roof. After the chimney has been demolished the rubble shall be collected, loaded onto a lorry and transported to the town landfill up to 15km away.	kom	1.00		
1.14.	Dismounting air conditioner outdoor units from the façade of the building. The outdoor units shall be dismounted and moved to a location designated by the Investor. Calculated per piece.	kom	6.00		
	PREPARATION & DEMOLITION WORK TOTAL:				
II	**CONCRETE AND REINFORCED CONCRETE WORK**				
2.1.	Procurement of material and pouring of concrete C25/30 (MB 30) for vertical reinforced concrete small cross-section attic walls in required plank formwork on the building roof above the gymnasium. The price includes procurement and mounting of all required formwork. Calculated per m3.				
	concrete attic wall d=10 cm	m3	3.00		
	CONCRETE WORK TOTAL:				
III	**REBAR WORK**				
3.1.	Procurement, transportation, cutting, bending and mounting of B500B (GA 240/360, RA 400/500) reinforcement bars. Estimated quantity of rebar is 125kg/m3 concrete. The price shall include spacers to fix the reinforcement bars' distance against the formwork. Calculated per kilogram.				
	TOTAL GA 240/360 RA 400/500:	kg	375.00		
	REBAR WORK TOTAL:				
IV	**BRICKWORK**				
4.1.	Procurement of materials and patching (plasterwork) on the part of the façade that was damaged when the existing plaster was stripped, using lime plaster in 1:1:5 proportion, in a single coat and made with coarse, unsifted plaster. Prior to plastering the surfaces shall be cleaned of dust, washed down and sprayed with grout with added sifted sand. Calculated per m² of plastered surface area, with all required preparatory work and material and an estimate of up to 10% of the total façade surface area. Scaffolding shall be treated in a separate item.	m2	292.00		

4.2.	Procurement of materials and manufacture of two-fraction (80:20% sand 1 to sand 2 fraction ratio) inclined cement screed with an inclination of 1:3, to be poured as a base for finishing the flat roof, min 5cm to 24cm thick the screed shall be made with added polypropylene fibre to enhance mechanical properties. The fibre shall be dosed according to the manufacturer's specifications. The screed shall be additionally reinforced by adding a Q188 reinforcement mesh. The top shall be finely floated and prepared for roof covering by way of floating with a power trowel. Calculated per m².				
	flat roof above the gymnasium and the locker room	m2	420.00		
4.3.	Procurement of materials and building with gas concrete thermal blocks similar to type 'Ytong' on the edges of the flat roof, in places where the gutter shall be hooked. Building shall be performed fully in accordance with the manufacturer's instructions and sketches attached to the design. The price shall include thermal block adhesive. Calculated per m3.				
	- thermoblock attic wall 20x20cm	m3	4.50		
	- thermoblock attic wall 12x44cm	m3	1.10		
	BRICKWORK TOTAL:				

V	**WEATHERPROOFING**				
5.1.	Procurement of materials and mounting PE foil between the thermal insulation and the gypsum cardboard panels on the protrusion and on the flat roof above the thermal insulation. Calculated per m2.				
	TOTAL:	m2	1,520.00		
5.2.	Procurement of materials and mounting of a vapour barrier under the roof thermal insulation panelling and over the existing slab. Bitumen tape with aluminium foil insert similar to type IZOTEKT Al V4 shall be placed as vapour barrier over a cold bitumen coat similar to type IBITOL. Calculated per m2.				
	TOTAL:	m2	1,470.00		
5.3.	Procurement of materials and mounting the flat roof insulation in the form of very hard mineral rock wool with 150kg/m3 density, D=20 CM, similar to type KNAUF DDP-RT. Calculated per m2.				
	flat roof above the gymnasium and the locker room, D= 20 cm	m2	420.00		
5.4.	Procurement of materials and mounting the flat roof insulation in the form of very hard mineral rock wool with two densities, 130kg/m3 for the bottom layer and 210kg/m3 for the top, total thickness 20cm, similar to type „Rockwool Duorock energy“. Calculated per m2.				
	flat roof above the classrooms and teachers' offices, D= 20 cm	m2	1,050.00		
5.5.	Procurement of materials and mounting of thermal insulation in the suspended ceiling of the protrusion, in the form of rock wool with 30kg/m3 density, similar to type KNAUF KRS. Mineral wool panels shall be placed over the suspended ceiling paneling. Calculated per m2.				
	protrusions D=15 cm	m2	62.00		

5.6.	Procurement of materials and mounting façade wall thermal insulation in the form of mineral rock wool and in places designed for fire protection. Horizontal placement at floor slab level d=50cm and vertical placement along the diameter and not wider apart than 20m and in the width of 0.50cm. mineral rock wool shall also be planned on the wall towards the cellar. Mineral wool 130 kg/m3 similar to type KNAUF FKD-S shall be placed on the wall by way of adhesion using polymer-cement adhesive applied on the panels in lines along the edges and in spots on the surface area and also fixing mechanically as well (6-8 anchors/m2). The item shall include fine treatment of thermally insulated surface areas with two coats of adhesive and embedding 135g/m3 PVC mesh into the first coat. PVC edge strips shall be placed at all corners and drip cap strips shall be mounted on the protrusions. Calculated per m2.				
	D= 8 cm	m2	246.00		
	D= 5 cm	m2	62.50		
5.7.	Procurement of materials and mounting d=8cm and d=5 cm thermal insulation on the façade by adhesion on individual lateral sides of the building. Window jambs of average height 25cm and average Styrofoam thickness were calculated separately. Thermal insulation shall be made by expanded polystyrene 100Kpa, similar to type Austrotherm EPS A 100. Mounted thermal insulation shall possess certain thermal and mechanical properties as stipulated in the civil engineering physics study. The item shall include fine treatment of thermally insulated surface areas with two coats of adhesive and embedding 135g/m3 PVC mesh into the first coat. PVC edge strips shall be placed at all corners and drip cap strips shall be mounted on the protrusions. Calculated per m2.				
	d=8cm	m2	2,400.00		
	d=5cm	m2	70.00		
	Jambs d=3cm	m1	1,451.40		
5.8.	Procurement and mounting of insulating panels similar to type *Austrotherm XPS 30* on the attic wall of the building. The panels shall be mounted on the wall by adhesion and anchoring, fully according to the design. Calculated per m2 of placed paneling.				
	D= 5cm attic wall	m2	165.00		
	WEATHERPROOFING TOTAL:				

B.	**FINISHING WORK**				
VI	**SHEET METAL WORK**				
6.1.	Procurement, manufacture and mounting of spouts made of galvanized and plasticized steel sheet metal, spread width of 50cm, cross section 12x12cm, thickness 0.6mm. The spout shall finish with a bend to allow rain water to pour out freely across the terrain. All connecting materials shall be typical and included in the manufacturer's palette. Plasticized in tone as selected by the Designer. Calculated per m¹ .				
	-SW=50 cm, spouts	m1	117.40		
6.2.	Procurement, manufacture and mounting of gutters made of galvanized and plasticized steel sheet metal, cross section 12x12cm, thickness 0.6mm and spread width SW 41.5cm. All connecting materials shall be typical and included in the manufacturer's palette. Plasticized in tone as selected by the Designer. The gutters shall be delivered with carriers made of 25x5mm galvanized flat iron bars spaced at 70cm apart. Calculated per m¹ of mounted gutters.				
	-SW=41,5 cm, gutters	m1	118.24		
6.3.	Procurement of materials and mounting apron flashing on the gutter; the flashing shall be made of 0.6mm thick steel plasticized sheet metal, spread width SW25cm. Calculated per m1.				
	-Rš=25 cm,	m1	118.24		
6.4.	Procurement, manufacture and flashing attic walls with 06mm thick galvanized, plasticized steel sheet metal, SW 50cm. The sheet metal shall be placed on the attic wall with a 3% inclination. Calculated per m1.				
	-Rš= 50 cm, attic wall flashings	m1	291.35		
6.5.	Procurement of materials, manufacture and flashing of window sills and façade protrusions using 0.6mm thick plasticized galvanized sheet metal, spread width 33cm. the price shall include all preparatory work and materials, a screw to screw in to the profile under the window rail, adhesion with polyurethane adhesive and the manufacture of a drip cap. The window will shall be made with a 2cm inclination away from the window and the drip cap to the façade plain, fully according to details from the architecture design. Calculated per m'.				

		m1	1,034.09		
6.6.	Procurement of materials, manufacture and mounting of 80x40cm sheet metal chimney caps made of 1mm thick galvanized sheet metal. The substructure shall be made of 50x10mm galvanized flat iron bars. Caps shall be made as exact copies of existing dismounted caps. Calculated per piece.				
		kom	13.00		
6.7.	Procurement of materials, manufacture and mounting of a gutter outlet on the annex verticals into which the rain gutter pipe from the flat roof shall be inserted. The outlet shall be made of 0.6mm thick plasticized galvanized sheet metal. Outlet dimensions shall be 40x30x30cm. the price shall contain all elements required for manufacture and mounting. Calculated per piece.	kom	5.00		
	SHEET METAL WORK TOTAL:				

VII	**METALWORK**				
7.1.	Procurement of materials and mounting of 40x30x3mm steel L profiles on the edge of protrusions. The steel profiles shall serve as substructure to fix OSB panels to carry the façade mounted rock wool. Mounting shall be done fully in accordance to sketches and design details. The steel profile shall be coated with primer twice; this shall be included in the price. Calculated per kg.				
	- L profile 40x40x3 mm	kg	86.00		
7.2.	Procurement of materials and mounting of 18mm OSB panels as the substructure for the façade thermal insulation on the building protrusions; the panels shall be fixed to the L profiles by self-drilling screws (calculated in a separate item), fully according to sketches. Calculated per m2.				
		m2	8.00		
	METALWORK TOTAL:				
VIII	**GYPSUM CARDBOARD PANEL WORK**				
8.1.	Procurement of materials and manufacture of a suspended ceiling made of gypsum board panels similar to 'Rigips' system on the protrusions and canopies. Ceiling structure shall be made of UD and CD profiles; the profiles shall be spaced according to the manufacturer's instructions. The ceiling shall be suspended from the existing ceiling. The ceiling shall be panelled with single 12.5mm thick gypsum board panels, all joints filled and mesh applied, fully according to the manufacturer's instructions. The ceiling shall be suspended at the height specified in the sketches and design detail. Calculated per m2.				
	- protrusions, canopies	m2	87.44		
	GYPSUM CARDBOARD PANEL WORK TOTAL:				
IX	**PAINTWORK**				
9.1.	Procurement of materials and skim coating of protrusion gypsum board ceilings with prior application of a base coat. Surfaces shall be sanded down, cleaned and neutralised. The area shall be checked for cracks and minor flaws and cracks shall be puttied. The wall shall then be impregnated and skim coated in cement free adhesive three times. Calculated per m2 of skim coated ceiling surface area.				

	- outdoor protrusion ceiling – outdoor use base coat + skim coat	m2	62.00		
9.2.	Procurement of materials and painting skim coated ceilings with two coats vapour permeable silicone resin emulsion façade paint. Calculated per m2 of the painted surface area.				
	- protrusion ceiling	m2	62.00		
	PAINTWORK TOTAL:				
X	**FAÇADE WORK**				
10.1.	Procurement of materials and application of façade silicate mortar. After the previously applied adhesive (calculated in weatherproofing work) has completely dried: impregnation sublayer and thin-coat façade silicate trowelled mortar-1.5mm, all included in the item price. The tone shall be selected by the Investor. Mounting and dismounting of the façade scaffolding required for work execution shall be treated separately. After application the façade shall be protected from precipitation for not less than 24 hours. Calculated per m2.				
		m2	3,030.00		

10.2.	Procurement of materials and manufacture of skirting on the building façade using acrylic-based emulsion decorative plaster and natural stone, resistant to all external influences, photostable and water repellant. Application: 1. Not less than 12h prior to applying the material to the surface the sublayer shall be coated with acrylic primer to provide a homogenized and impregnated surface. 2. Prior to application the acrylic marble render shall be mixed thoroughly to the bottom in each individual bucket and then several buckets shall be poured into a larger vessel and mixed to obtain a homogenous mass and tone. 3. The acrylic marble render shall not be mixed too long so that it does not become too thin and difficult to apply; it is sufficient to mix the entire quantity top to bottom to stir up the stones that have settled on the bottom. 4. The acrylic marble render shall be trowelled with a steel trowel in a uniform upward direction, equally thick (cca 3mm) and always in the same direction continuously. 5. After application the surface shall be evened out with uniform floating to embed the grains.	m2	175.00		
	Calculated per m2.				
	FAÇADE WORK TOTAL:				
XI	**ROOFING WORK**				
11.1.	Procurement of materials and installation of 300g/m2 geotextile between the TPO membrane and the flat roof inclined coat. Calculated per m2.				
		m2	1,575.00		

11.2.	Procurement of materials and covering flat roofs with the 1.5mm TPO membrane similar to type FATRA. The membrane shall be placed over the geotextile and fastened into the RC slab with screws similar to type EJOT, welded in connections with the gutters and drip caps over the standard plasticized sheet metal strip (treated in a separate item), fully according to the manufacturer's instructions. In connections with vertical surfaces of the attic wall the membrane shall be raised to the entire height of the wall, bent under the sheet metal drip cap and placed on the standard plasticized sheet metal welding strip, welded, poured over with silicone sealant, fully according to the manufacturer's instructions. The geotextile shall be treated in a separate item. Calculated per m2.				
		m2	1,575.00		
11.3.	Procurement of materials and working the circumference of the chimney and vent breaches on the roof of the building using the TPO membrane on vertical surfaces. The TPO membrane shall be raised up chimney ducts to the height of 50cm above the roof, a standard plasticized sheet metal strip shall be placed and the membrane shall be welded to it, the connection shall be poured over with silicone sealant, fully according to the manufacturer's instructions. Calculated per m1.				
		m1	32.00		
11.4.	Procurement of materials and mounting of standard plasticized sheet metal strips to weld TPO membranes onto vertical and horizontal surfaces (attic walls, roof edge apron flashing). The price shall include all adhesives according to the manufacturer's instructions. Calculated per m1 of mounted strips.				
		m1	323.00		
11.5.	Procurement of materials and mounting of anti-slip walkway for the TPO membranes placed for walking along the flat roof next to the laid lightning rod. Walkway width shall be 1m and it shall be placed by welding onto the TPO membrane. The price shall include all required material and work for a high-quality connection between the strip and the TPO membrane, fully according to the manufacturer's instructions. Calculated per m1.				
		m1	120.00		
	ROOFING WORK TOTAL:				

SUMMAR OF CONSTRUCTION & FINISHING WORK					
A.	CONSTRUCTION WORK				
I	PREP WORK				
II	CONCRETE & REINFORCED CONCRETE WORK				
III	REBAR WORK				
IV	BRICKWORK				
V	WEATHERPROOFING				
	CONSTRUCTION WORK TOTAL:				
B.	FINISHING WORK				
VI	SHEET METAL WORK				
VII	METALWORK				
VIII	GYPSUM BARDBOARD WORK				
IX	PAINTWORK				
X	FAÇADE WORK				
XI	ROOFING WORK				
	FINISHING WORK TOTAL:				
	FAÇADE AND ROOF CONSTRUCTION & FINISHING WORK TOTAL:				