Bill of Quantities

Construction of wooden roof structure

No.	Description	Unit	Quantities	Unit price	Lump-sum price
I	PREPARATORY WORKS				
1	Before starting of any works the contractor is obliged to prepare the organisational chart of the building site and Plan of preventive measures, all in line with the "Occupational Health and Safety Regulations in the Construction Industry". In this documents the contractor has to define all particular measures for securing the site and providing the safe access to the school, having in mind that the works will be carried out simultaneously with teaching activities. The contractor is obliged to obtain the approval from the authorized supervisor on the prepared documentation. Fencing of construction site is overwritten by law and must be performed at each position where the need arises in order to prevent unemployed persons, especially school students, to approach the working area. Fencing is made from steel mesh stretched over the perforated PVC protective net, or where necessary, divider screens from perforated metal. The setting up of the protective screen assembly of perforated sheet metal at upper floors, as a preventive protection measures, should prevent eventual fall of the constr. material from the roof story into the school yard.	lump sum			
2	Removing the existing protection layers and the lazers of thermal insulations and waterproofing, to the loadbearing structure of flat roof on the entire building. These works are carried out manually ,carefully and precisely monitored from qualified person. It is necessary to avoid unnecessary shattering and further damage to the support structure. The removed material should be carefully let into the yard and take it to the dump. Calculation per m^2.	m^2	2,832.0		0.0
3	Removing the existing non'structural reinforced concrete wall on the roof of the ground floor dim. 600x160x25cm positioned on the direction of new designed drainage route. All according to the design documentation. Removed material should be transported to the dump. Calculation per piece.	pcs.	1		0.0
4	Ensuring the protection of the support structure with foil d= 0.15mm, width 4m', from rain and eventual leakage, after the removal of the covering layers. Calculation per m2.	m2	2,832		0.0
5	Removal of existing windows in the gym and some windows on two school cabinet and on the stairs. All according to the design documentation. Calculation per piece of removed windows.	pcs.	24		0.0
6	Dismantling of the plexiglas lanterns and demolition of the part of their concrete base with rough facing of the remain structure, on the positions where the slope of new roofing requires. All according to the design documentation. Calculation per piece of removed lanterns.	pcs.	5		0.0
				Total:	0.0

II	MASONRY AND BRICKLAYING WORKS				
1	Construction of walls d=25 cm using hollow clay blocks in flexible mortar 1:3:9 with use of working scaffolds, which is included in the price. Calculation per m^3 of completed walls	m^3	58.2		0.0
2	Construction of the sub-wall using Giter-blocks d=12cm in flexible mortar 1:3:9, 40cm high and 21m1 long on order to expand the width of the tail race, all in line with the detail drawing in cross-section 3-3. Calculation per m2.	m^2	8.8		
3	Construction of a dip layer in tail race , using cement mortar 1:3, average thickness of 10 cm. Calculation per m1 of the completed dip layer	m^1	169.0		0.0
4	Re-plastering of the window opening sites after removal of the existing windows on the both sides of the wall with the flexible mortar. Final painting of the exterior site in the existing wall colour; interior site should be smoothened and painted with white polycolor paint, all in line with design documentation. Calculation per m1 of the completed window site.	m^1	180.0		0.0
				Total:	0.0
III	REINFORCED CONCRETE WORKS				
1	Construction of reinforced concrete ring beams and columns in the required formworks ,all according designee. Reinforcement according to the drawings, calculated separately. Calculation per m^3.	m^3	15.3		0.0
2	Construction of reinforced concrete tail race in the required formworks, all according the designee. Reinforcement according to the drawings, calculated separately. Calculation per m^3 .	m^3	15.2		0.0
				Total:	0.0
IV	REINFORCEMENT WORKS				
1	Supply, stretching, cutting, bending, binding and installation of the reinforcement RA 400/500, according to the static calculation and reinforcement details. Calculation per kg installed reinforcement.	kg	2,040.0		0.0
				Total:	0.0
V	CARPENTRY WORKS				
1	Construction of the wooden roof structure of dry fir timber II class, the price contain construction of bonding elements for roof wooden supporting structure according to the rules of craft with using nails, screws and other steel elements for bonds reinforcing , installing steel anchors in the reinforced concrete structure and fixing roof construction for reinforced concrete construction with screws , the anchors must be protected with two anticorrosion layers, all according designee, structural analysis and details, hipped roof wit slope from 4° to 12°. All wooden parts of roof construction protected with coating against fungi and wormholes. Dimensions of the wooden structure elements are: top plate 14x16cm, rafter 8x14cm, purlin 14x16cm, column 14x14cm, column bolster (8-14)x14x60 cm, collar ties 2x4x25cm. Calculation per m^2 of the horizontal projection as measured by the outer edges of the roof	m^2	2,631.0		0.0
				Total:	0.0

VI	ROOF COVERING WORKS				
1	Supply and installation OSB wooden plates d=2cm, over the new constructed roof structure for setting of plank surface .All according the designee. Calculation per m² of the inclined surface of the installed board formwork.	m^2	3,025.0		0.0
2	Supply and installation vapor permeable waterproof roof foil similar to the type "Wurth TOP 132" over the plank roof surface, all according designee. Calculation m2 of the inclined surface.	m^2	3,025.0		0.0
3	Supply and roof lathing in the two direction , longitudinal with laths dim. 3x2cm and cross direction with laths dim. 5x3cm, for installing self matching tin panels of ventilated roof, all according designee. The battens installed on the distance of approximately 40cm. Calculation m2 of the inclined surface	m^2	3,025.0		0.0
4	Supply and installing galvanized and plasticized steel self matching tin plates similar to the type "Piano" d= 0,70 mm. Width of one piece 475mm, length according to the basin level (from one piece without splicing and over laping series basin level). Tin plates hatching in before placed wooden beams. Jointing carried out with sealing screws or blind rivets (fi 4.8x8.3), in both case with neoprene airproof washer hidden in switching "falcu", at the distance 30-50cm.The price also includes all the finishing work on covering the bays and reefs, fitting the ventilation vertical penetrations and connections with walls, as well as free endings and everything else, and all in accordance with the project documentationi.Calculation m2 of the inclined surface.	m^2	3,025.0		0.0
5	Supply and installation of roof lying trapdoor dim.80x100 cm, made of galvanized sheet steel thickness 0,70mm. The price includes its necessary flashing made of galvanized steel sheet, with a unbraced width to 40cm, thickness 0,60mm. Cover craft with the necessary hinges and handle to open, and fully in accordance with the project documentation. Calculation per pcs.	pcs.	2.0		0.0
6	Supply and installation of the corresponding liner snow guards 2000mm in length, and from the same production programe. Snow guards are fastened with the matching brackets compatible with the applied metal roof plates, and they are included in the price of the snow guards. Snow guards are set in two staggered rows in "zig-zag" order, all in accordance with the project documentation. Calculation per pcs. mounted snow guards.	kom.	450.0		0.0
				Total:	0.0
VII	JOINERY WORKS				
	Supply, transport and installation of windows constructed from standard multi-chamber PVC profiles for the gym and the first floor staircase vertical. For the windows size 80.0x140.0cm and 80.0x120.0cm there is no division of the window pane; the 360.0x180.0cm windows are devided in six parts (2 wertikal and 3 horizontal divisions). All are supplied with fittings for opening about a horizontal axis with a lever to open the high windows and handle at a height h = 1.60m from the floor gym. Double rubber gaskets on the extent wings. Thermal pane glazing 4mm+16mm+4mm with low emission glass, U=1.50W/m2K. All in line with drawings for facade joinery. Calculation per piece.				
1	Window dim. *360.0x140.0cm* all in accordance with the above description. - POS 1	pcs.	6.0		0.0
2	Window dim. 80.0x140.0cm all in accordance with the above description. - POS 2	pcs.	2.0		0.0
3	Window dim. 360.0x120.0cm all in accordance with the above description. - POS 3	pcs.	2.0		0.0
4	Window dim. 360.0x180.0cm all in accordance with the above description. - POS 4	pcs.	6.0		0.0
5	Window dim. 80.0x120.0cm all in accordance with the above description. - POS 5	pcs.	2.0		0.0

	Supply, transport and installation of fixed windows of standard PVC profiles, for the gym and the first floor staircase vertical, with 2 glass fields (for 145.0x140.0cm i 180.0x140.0cm windows) and with 3 fields for 255.0x140.0cm windows. One field of each window is supplied with fittings for opening about a vertical axis ,with a standard handle to open, double rubber gaskets on the extent wings. Glazing the same as in previous items. Calculation per piece				
6	Window dim. 180.0x140.0cm all in accordance with the above description. - POS 6	pcs.	2.0		0.0
7	Window dim. 145.0x140.0cm all in accordance with the above description. - POS 7	pcs.	2.0		0.0
8	Window dim. 255.0x140.0cm all in accordance with the above description. - POS 8	pcs.	4.0		0.0
	Supply, transport and installation of PVC door profiles, to enter the attic space of the roof of the gym. Calculation per piece				
9	Door dim. 100.0x120.0cm all in accordance with the above description. - POS 9	pcs.	1.0		0.0
				Total:	0.0
VIII	SHEET METAL WORKS				
1	Installation of rectangular eaves gutters from plasticized metal sheet, with a full width 55 cm, dim.16x16 cm and a thickness of 0.70 mm. Gutters merge pop rivets, one line with a maximum spacing of 3 cm and to glue (affix) with silicone. Holders hanging guttering work from 25x5 mm plastic-coated metal frames and rivet from the front of the gutter pop rivets at a distance of 80 cm. Calculation per m1.	m^1	240.0		0.0
2	Installation of "lying"(exposed)rectangular gutters in reinforced concrete collector with slope . from the plasticized metal sheet, a full width 65 cm, thickness 0.70 mm. Gutters merge pop rivets, one line with a maximum spacing of 3 cm and affix with silicone. Calculation per m1.	m^1	170.0		0.0
3	Drilling the holes 20x20cm in the concrete eaves of the floor slab above the ground floor for connection to the rain down-pipes Ø16cm. After the drilling, the hole has to be corrected and the edges treated with plaster. Calculation per piece of the drilled hole.	pcs.	16.0		0.0
4	Installation of downpipes metal sheet, with a full width to 65 cm, cross-section 14x14cm thickness 0.80 mm. Certain parts of the flume pipe sneak into each other a minimum of 50 mm and glue barsilom. Plastic-coated clamps with brackets set at intervals of 200 cm. Over the clamp to set a plastic trim strip. The pipes must be removed from the wall at least 20 mm. Completion pipes after detail. Calculation per m1.	m^1	145.0		0.0
5	Installation of downpipes metal sheet, with a full width to 65 cm, cross-section 16x16cm, thickness 0.80 mm. Certain parts of the flume pipe sneak into each other a minimum of 50 mm and glue barsilom. Plastic-coated clamps with brackets set at intervals of 200 cm. Over the clamp to set a plastic trim strip. The pipes must be removed from the wall at least 20 mm. Completion pipes after detail. Calculation per m1.	m^1	75.0		0.0
6	Reseaming of the newly constructed gable walls and atics with galvanized metal sheets, full with 40cm, tickness 0.60mm. The overhang is 3cm. One layer of bitumenized paper is spreat under the metal, which is included in the price. Calculation per m1.	m^1	22.0		0.0
				Total:	0.0
IX	WATERPROOFING WORKS				
1	Coating of constructed reinforced concrete collector with waterproofing penetrator similar to the type "Dramit", in a three-layer coating, and all in accordance with the manufacturer's instructions. Calculation per m2.	m^2	260.0		0.0
				Total:	0.0

X	THERMALINSULATION WORKS				
1	Supply and installation of PVC foil across the surface of the slab, before the rock wool is laid down. Calculation per m2	m^2	2,631.0		0.0
2	Purchase and installement - laying no impregnated (soft) rock wool, thermal coefficient ʎ=0.035-0.039 W/mK, density 60kg/m3, fireproof standard A1, in 10cm layers, all in line with the detail drawings in the design documentation. Calculation per m2	m^2	2,631.0		0.0
3	Supply and installation of PVC foil across the surface of the slab, before the rock wool is laid down. Calculation per m2	m^2	2,631.0		0.0
4	Supply and laying styrodur 5cm on the propagation paths of AB drain channels (gutters) below the collector above heated area of the ground floor, over the already set PVC foil, and then overlapping PVC foil as protection from concrete, all in accordance with the detail of the design documentation. Styrodur quality λ=0,035 W/mK, 2% compressibility (130 kPa - 13 t/m2). Calculation per m2.	m^2	40.0		0.0
				Total:	0.0
XI	EXTERNAL PLASTERING WORKS				
1	All newly built walls are plastered with lime mortar and manufactures the facade of facade acrylic mortar type "bavalit" in the appropriate color depending on the position, walls leveled and saturate previous coatings. The necessary scaffolding is included in the price. Calculation per m2.	m^2	156.0		0.0
				Total:	0.0
XII	INSTALATION OF LED CEILING PANELS				
1	Supply, transport and installation of ceiling light panels saving LED technology dim.60x60cm quadratic forms, which are installed inside the skylight window in a pre-assembled and secured housing isolated casing done in in plasterboard system or another. The electricity supply is provided from the existing ceiling lights, through the plastic ducts. Calculation per piece.	pcs.	54.0		0.0
				Total:	0.0
XIII	RECONSTRUCTION OF FLAT ROOF				
	Setting up new layers of waterproofing and thermal insulation, as well as a new sloping layer on the existing base structure. Layers placed over completely dry and clean bed , previously cleaned of dust and pebbles. All elements (layers) of the flat roof to ask precise grade and in accordance with the manufacturer's instructions.				
1	Dismantling of the existing plexiglas lanterns from the roof surface above the atrium, claening and reparation. Re-installment of the same lanterns after the new roof layers are installed. Calculation per piece of the cleaned and repaired lantern.	pcs.	18.0		0.0
2	Replacement of existing and installation of new outlets adequate. Cleaning, removal of blockages and generally complete resuscitation of the existing drainage system. After completion examine the flow of the drainage system, and then set off with further works. Calculation per piece (supply line). reconstructed and tested drainage systems	pcs.	2.0		0.0
3	Supply and installation of a vapor barrier with a layer for equality vapor pressure, type similar to Wurth Reflex 90. Switch vapor barrier must be glued with adhesive tape, while placing a vapor barrier must not be any mechanical or chemical damage. Calculation per m2.	m^2	226.0		0.0
4	Supply and installation of thermal insulation Stirodur with curved edges and a thickness of 8cm, quality λ=0,035 W/mK, 2% compressibility (130 kPa -13 t/m2). Calculation per m2.	m^2	226.0		0.0
5	Supply and installation of PVC foil Calculation per m2.	m^2	226.0		0.0
6	Creating a sloping layer from lightweight concrete thickness 4-16cm on the surfaces that are no on the decline. At the other sections create a layer of constant thickness of 4-5 cm, according to the project documentation. Calculation per m2.	m^2	226.0		0.0

7	Supply and production of waterproofing membrane, polyurethane coatings Sikalastic 612 type or a similar product with the same characteristics, applying two coats in hand with the previous coating concrete surfaces with "prajmerom" of the range of the same manufacturer for better adhesion to the substrate. At the critical hard arable places , cracks and voids must pay particular attention and act in accordance with the instructions provided in the manufacturer's design. Calculation per m2	m^2	226.0		0.0
				Total:	0.0
XIV	OTHER WORKS				
1	Supply and installation of PVC sewer pipes fi-110mm for the extension of the existing ventilation vertical and performing above new constructed roof. Flashing breakthrough galvanized plasticized metal sheet included in roofing works. Calculation per m1	m1	48.0		0.0
2	Supply and installation of ventilation head of galvanized sheet steel fi-110mm / 150mm, as well as the completion of extended ventilation vertical above new sloping roof. Calculation per pcs.	pcs.	14.0		0.0
3	Supply and installation of PVC sewer pipes fi-250mm for the extension of the existing ventilation ducts ventilation of the locker room of the gym and performing above the sloping roof. Flashing breakthrough included in roofing works. Calculation per m1	m1	6.0		0.0
4	Supply and installation of new electric fan turbine type Dospel WK 250 or similar, together with the new protective casings, at the ends of the ventilation ducts from the locker room of the gym extended above the sloping roof. Calculation per pcs.	pcs.	3.0		0.0
5	Relocation of existing lines grounding placed on the flat roof, over the implementation of the newly designed roof and connect with the existing vertical lines on the walls. The tape is taken by the newly designed at an appropriate carriers which are attached to the roof at an appropriate distance of 1-1.5m. The price includes carriers and all supporting material. Calculation per m '.	m'	25.0		0.0
				Total:	0.0

RECAPITULATION

I	PREPARATORY WORKS	0.0
II	MASONRY AND BRICKLAYING WORKS	0.0
III	REINFORCED CONCRETE WORKS	0.0
IV	REINFORCEMENT WORKS	0.0
V	CARPENTRY WORKS	0.0
VI	ROOF COVERING WORKS	0.0
VII	JOINERY WORKS	0.0
VIII	SHEET METAL WORKS	0.0
IX	WATERPROOFING WORKS	0.0
X	THERMALINSULATION WORKS	0.0
XI	EXTERNAL PLASTERING WORKS	0.0
XII	INSTALATION OF LED CEILING PANELS	0.0
XIII	RECONSTRUCTION OF FLAT ROOF	0.0
XIV	OTHER WORKS	0.0
	TOTAL	0.0