

2-2-6 Contents of the Plan for Each Project School

Facility components for each school shall be as in table 2-5 :

Table 2-5 Components of Facilities of Each School

School name	Classroom					The shelf	Admin. Room					Service		
	Ordinary classroom for lower grades	Ordinary classroom for lower grades	Shared science laboratory	Shared Foreign Language Room	Total		Principals Room	Teacher's Room	Administration Room	First Aid Room	Small Kitchen	Entrance Hall	Toilet	Boiler/ Janitor's Room
FD														
FD-1	Varoska Rijeka	2	2	1	0	5	1	1	1	1	1	1		1
FD-2	Vida	6	5	1	0	12	1	1	1	1	1	1		1
FD-3	Sjenjak	6	5	1	0	12	1	1	1	1	1	1		1
FD-5	Ilija Jakovljevic	8	6	2	0	16	1	1	1	1	1	1		1
FD-6	21. Mart	3	3	1	0	7	1	1	1	1	1	1		1
FD-7	Edhem Mulabdic	2	1	1	0.5	4.5	1	1	1	1	1	1		1
FD-8	Ivo Andric	2	1	1	0.5	4.5	1	1	1	1	1	1		1
RS														
RS-1	No name	6	5	1	0	12	1	1	1	1	1	1		1
RS-2	Sveti Sava	3	1	2	0	6	1	1	1	1	1	1		1
RS-3	Sveti Sava	6	5	1	0	12	1	1	1	1	1	1		1
RS-5	Ostra Luka	2	1	1	0.5	4.5	1	1	1	1	1	1		1

Note:FD4 and RS4 were excluded from the Project.

2-2-7 Evaluation of Equipment Components

The materials to be provided in the Project are furniture and equipment and educational material.

(1) Furniture and Equipment

Based on the facility component, the minimal required furniture and equipment for facility operation shall be provided. Classroom furniture will comprise students' desks and chairs, teacher's desks and chairs, blackboards, bulletin boards, coat hangers and storage amenities. Basic furniture (desks, chairs, storage amenities and bulletin boards) shall also be provided for other rooms.

(2) Educational Material

a) Selection of Items

Demonstration equipment for teachers in the Science Laboratory, such as maps and an OHP, will be provided as educational equipment based on the concept of the Implementation Review. Within the science experimental equipment, the cheaper equipment excluded in the Basic Design Study, will be provided for the purpose of starting of classes after completion.

b) Examination of Quantities

As Physics, Chemistry, Biology, and Science experiments are mainly demonstrated by teachers, equipment provided under the Project shall be intended for teacher's use only, and the provision of experimental equipment for students shall not be considered. The number of maps and OHPs for each school will not consider any additional quantities.

2 -3 Basic Design

2 -3 -1 Design Concept

The objective of this Project is to better the quality of education in elementary schools through an improvement in facilities and equipment. After closely evaluating the requests of the government of B&H and considering the contents of the meetings held during field survey, this Basic Design for the facilities and equipment was determined. It shall adhere to the following:

(1) Policy for Natural Conditions

The middle and northern part of B&H share a continental climate with temperatures ranging from high in summer to low, with snowfalls, in winter. The southern part is Mediterranean in climate with mild temperatures all year round. Thus, the facilities should be designed in consideration of proper thermal insulation and be able to cope with natural hazards caused by heavy snowfalls. It is intended that the buildings be warmed by means of a central heating system in winter and that they take advantage of natural ventilation for cooling in summer. In addition as there was an earthquake at Banja Luka in 1969, the buildings should be designed in accordance with of anti-seismic principles.

(2) Policy for Social Conditions

Construction material will be procured locally where possible, and the buildings will be designed so as to harmonize with the natural surroundings. The facilities shall also be designed so that all ethnic groups are encouraged to share in their use, thus strengthening cross-cultural relations in the long run. Facilities shall further be designed so that physically disabled persons are able to join in their use.

(3) Policy for Local Construction Conditions

1) Rules and Regulations for Building

In B&H regulations stipulate that building permission be attained prior to the commencement of construction. In the first instance the general drawings are submitted for the approval of the relevant municipal authority. Following this detailed drawings are submitted for review by the Government. The Project facilities shall be designed in accordance with the Norm which stipulates the standards for educational facilities in B&H just as reference.

2) Local Consultants and Contractors

The technical standards of local consultants and contractors are of a high level and it is quite possible that they be employed under the supervision of Japanese firms. However, considering the sensitivity surrounding ethnic issues, separate local consultants and contractors should be selected from the Federation of B&H and Repbulika Srpska respectively.

3) Building Materials

Factories for the production, assembling and processing of structural materials, as well as finishing materials, exist near the project sites and it is therefore possible to attain all construction materials locally. To this end, the design of the Project facilities will make provision for materials to be 100% locally procurable. Sourcing materials locally will also ensure that operation and maintenance of facilities be easier after completion and turn over.

4) Labor

There exist a number of local construction workers who have been largely unemployed since the war and because these workers are able to function at a high level of proficiency, they can achieve much under proper guidance. These workers therefore comprise a labor force that the Project may utilize. During winter however, some workers in the employ of local construction firms, seek work abroad to avoid laboring in harsh conditions. Those that remain and who have employment, often choose to take paid vacation, guaranteed by social security, at this time. The tendency is thus towards fewer construction workers being available during the winter months and the construction plan shall take this into account.

(4) Policy for Project Implementing Agency's Operation and Maintenance Capabilities

Project schools will have the same functions as existing schools and so may be operated by shifting the students and teachers currently in employment. It should be possible, therefore, to attain school personnel relatively easily. With regard to costs there will not be a large increase in the financial burden of the Project's implementing organization. However, some hiring of teachers and school staff may be necessary to cater for the increased number of classrooms and schools and, as a result, a slight increase in personnel and utility costs may be unavoidable. Taking into account the limited budgetary funds of the Government of B&H, the design of the Project facilities shall consider accordingly minimal operation and maintenance costs.

(5) Policies for Setting the Scope of Facilities and Equipment and their Grades

In keeping with the Japanese Government's Grand Aid scheme and the Project's overall concept, the facility design and equipment plan for the requested school facilities will take into account strategies to meet the various conditions described in the previous section. As for the grades, Project school facilities are to be designed under specifications similar to those which are commonly used for school construction in B&H. The teaching materials for science & mathematics, music, arts, geography, workshop and also, audio-visual equipment for teachers, shall be readily available in the local market and similarly school furniture shall be locally procurable.

(6) Policy for Construction Period

It is difficult to construct all 11 schools within a period of 12 months, a single fiscal year of Japanese government, because the 11 sites are widely dispersed on a mountainous area measuring 300km by 300km. The construction schedule shall therefore be divided into 2 phases. A rational and effective construction strategy shall be prepared by dividing the whole project area into several smaller construction zones and establishing construction bases at each. This will allow simultaneous construction to take place within the entire area.

2 -3 -2 Basic Plan

(1) Facility Arrangement Plan

As conditions differ from site to site an appropriate arrangement plan must be drawn up by assessing shape, condition of infrastructure and the position of existing facilities. The points to be noted in the arrangement plan are as mentioned below.

- 1) If a site comes into contact with two or more roads, the school main entrance shall face the road bearing the least traffic.
- 2) The layout plan of the Project facilities shall be arranged in harmony with the natural configuration so that less site preparation is required.
- 3) In order to avoid direct sunlight, classroom buildings will be on an east to west axis if possible.
- 4) A rational arrangement plan will be made by taking into account the functional considerations between existing buildings, students and work vehicles during the project facilities construction period.
- 5) The space between buildings should be considered to maximize natural ventilation and light.
- 6) The maximum schoolyard space, in which to conduct outdoor activities, sports, etc., shall be secured. Allowance shall also be made, where possible, for additional construction in the future.

(2) Architectural Plan

1) Floor Plan

As the Project involves the building of thirteen different sized schools under different site conditions, floor plans shall be prepared to suit each school's individual requirements. The Project schools, however, are public schools and their curriculum and management methods will therefore be uniform. Rooms will correspond to a common function, size, and shape wherever possible. Hence, a standard design for each room type shall first be prepared. This design will then be modified and incorporated into the floor plan of each school as required.

a) Standard Design of Rooms

The standard design of rooms shall be based on the following principles:

The function, size, and shape of each room shall follow the facility standards of MOE as closely as possible and the size of each room shall be decided after careful examination of arrangement of furniture.

The size of ordinary classrooms shall be 7.5m by 7.5m adopted as a standard grid for designing other rooms. The sizes of main rooms for the Project facilities are shown below together with the sizes specified by the Norm.

Table 2-6 The Sizes of Main Rooms for the Project Facilities

Room	Span (m)	Floor Area (m ²)	Standard Area of Norm (m ²)
Ordinary C.R.	7.5 × 7.5	56.25	56
Shared Science Lab	10.07.5	75.00	72
Shared Foreign Language Room	5.07.5	37.50	32
The Shelf	Small	2.57.5	*
	Large	5.07.0	*

b) Building Floor Plan at each School Site

The following principles shall be followed during the preparation of each school site's building floor plan:

One side way type floor plan shall be adopted basically, a courtyard type floor plan, having the advantage of enabling natural light and air circulation, shall be adopted where the site has sufficient space.

To maximize effective land use, a basic school building will comprise two stories and allow for easy movement between levels. However, different sites require different approaches and a three tiered structure may also be employed

Two stairways shall be provided for all Project school buildings, securing two escape routes in case of an emergency.

Following the basic plan, prepared in accordance with the above-mentioned, the facility size of each school site shall be as shown:

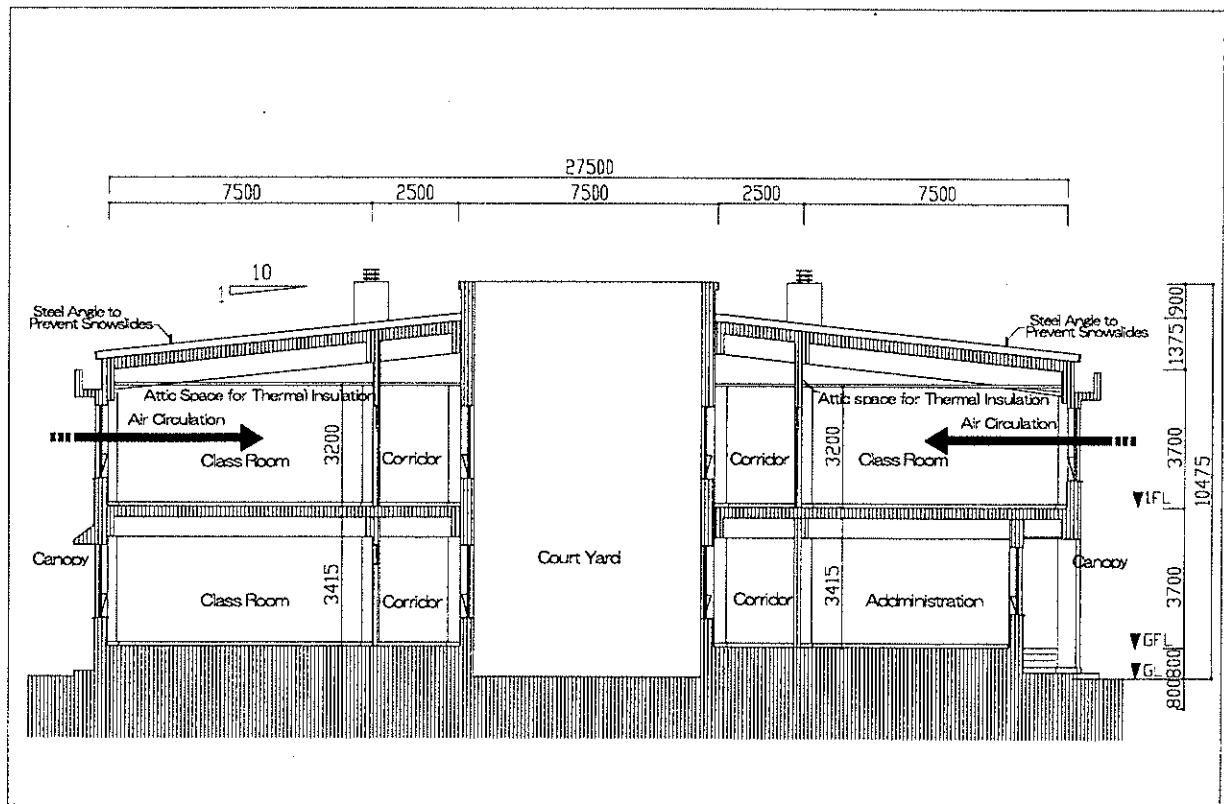
Table 2-8 Facilities Size of Each School Site (Area)

No	The name of school	Type of Construction	Type of Building	No. of Floors	Floor Area(m ²)	Remarks
FD-1	Varoska Rijeka	Additional	One sideway	2F+1BF	1,069.81	
FD-2	Vida	New	Central Corridor	2F	1,793.26	
FD-3	Sjenjak	New	Courtyard	2F	1,793.26	
FD-5	Ilija Jakovljevic	New	Courtyard	2F	2,200.51	
FD-6	21 Mart	Additional	Courtyard	2F	1,169.52	
FD-7	Edhem Mulabdic	Reconstruction	Courtyard	1F	802.69	
FD-8	Ivo Andric	New	Courtyard	1F	783.31	
Subtotal(FD)					9,612.36	
RS-1	Untitled	New	Courtyard	2F	1,793.26	
RS-2	Sveti Sava	Additional	One sideway	3F	1,228.12	
RS-3	Sveti Sava	Reconstruction	Courtyard	2F	1,793.26	
RS-5	Ostra Luka	Reconstruction	Courtyard	1F	802.69	
Subtotal(RS)					5,617.33	
Total					15,229.69	

2) Section Plan

So that foundations remain unaffected by the expansion of frozen soil, it is necessary that they be at least 80cm below ground level (the top 60cm of soil being susceptible to freezing.) In an average in B&H winter snow accumulates to a height of 80cm at the mountainous area and so the floor level should be above this meterage to avoid the potential hazard of melting snow. The space below the ground floor shall be utilized as a piping space for a water supply and drainage facility. The floor height of the Project building shall be 3.7m, average for B&H, to secure a sufficient volume of air in classrooms. The attic space shall be planned at the top floor of the building and thermal insulating sheets shall be laid above the suspended ceiling space for heat insulation for the building. In consideration of student safety, the roof angle will not be steep and steel frames will be installed to prevent snow-slides to the ground. Canopies at the top of windows of each room are also planned to prevent direct sunlight and rain entering rooms. A typical section of a Project facility is shown below.

Figure 2-1 A Typical Section of a Project Facility



3) Structure Plan

a) Subsoil Condition

A defining feature of B&H's geology is the mixture of sand and silt common to most of its soil. It was confirmed, through soil bearing capacity tests conducted during the field survey for the Basic Design, that almost all of the Project sites have a bearing capacity of 20 t/m². However, it is necessary to submit a report detailing the results of boring tests to the public services during the process period for the building permits. Thus, boring tests at all the Project sites shall be conducted during the field survey for the detailed design.

b) Structure Type of School Buildings

As the weight of a classroom building is relatively heavy (the wall being double-bricked) mat foundations shall be adopted for any three story classroom buildings and strip foundations for two story classroom buildings, boiler buildings and gymnasiums. A part of the space between the mat foundation and the floor slab shall be utilized for water supply and drainage facility piping. The upper structure shall be of reinforced concrete - the prevalent construction type in B&H. The basic grid of 7.5m by 7.5m for posts and beams shall be adopted for classrooms. Gymnasium building shall have either 4.5m by 15m or 4m by 12.5m grids for posts and beams, in addition to steel trusses with folded-sheet roofing on beams.

c) Materials

All the materials used will be procured locally.

Concrete:	Ready mixed concrete
Cement:	Portland cement
Aggregate:	Local crushed stone and river sand
Reinforcing Bars:	Deformed reinforcing bar
	Under D13: SD295A or equal
	Over D16 : SD345 or equal
Bricks:	Available locally

d) Design Load

Dead Load ;	Roof	150 Kg/m ²
	Floor	690 Kg/m ² for 1st floor 490 Kg/m ² for 2nd floor
	Wall	470 Kg/m ²
Live Load ;	Roof	200 Kg/m ²
	Floor	300 Kg/m ² for classrooms 400 Kg/m ² for corridors
Seismic Forces:	Horizontal seismic forces shall be calculated by the equation $Q=C_i \times W$ (Kg/) $C_i=0.15 \times A_i$	
Wind Load;	As there is no record of typhoons or powerful winds, the design wind load will be 35m/sec.	

4) Facility Plan

a) Electrical Facility Plan

It is possible to connect electrical supply lines at all Project school sites. The Project's electrical facility plan shall be established on the following principles:

Receiving Facility

200V 50Hz electricity supply lines shall be provided to the receiving pole in each Project site, by the B&H side, then connected to the distribution board (to be installed in the school buildings).

Lighting and Outlets

In B&H, double shift classes are generally conducted. Also, it is necessary to provide lighting for the winter season's short and rainy days. The lighting system should be of a direct ceiling mounted fluorescent type most common in B&H. Two outlet units shall be provided for each normal classroom, six to eight units or more if necessary for each special purpose room. In addition, emergency and guide lighting shall be installed in accordance with B&H laws and standards.

③Telephone Line

The B&H side shall connect lines for telephones at each site. The line shall then be connected the buildings, through underground conduits, then conduits and outlets in the principal's office, administration office, teacher's room and first aid room shall be installed. The installation of wiring and telephones shall be shouldered by the B&H side.

④Announcing Facility

An announcing system shall be installed in each Project school. The amplifier and other associated equipment shall be located in the staff office. The system will be used for general school announcements and to signify the start and finish of each class. No outdoor speaker units will be provided.

⑤TV Antenna Connection

Special classrooms and teacher's rooms shall be provided with TV antenna connection outlets. Antenna cable conduits shall be made available, but no antennas and actual cables will be installed. Costs for the installation of antennas, antenna cables and TV units shall be borne by the B&H side.

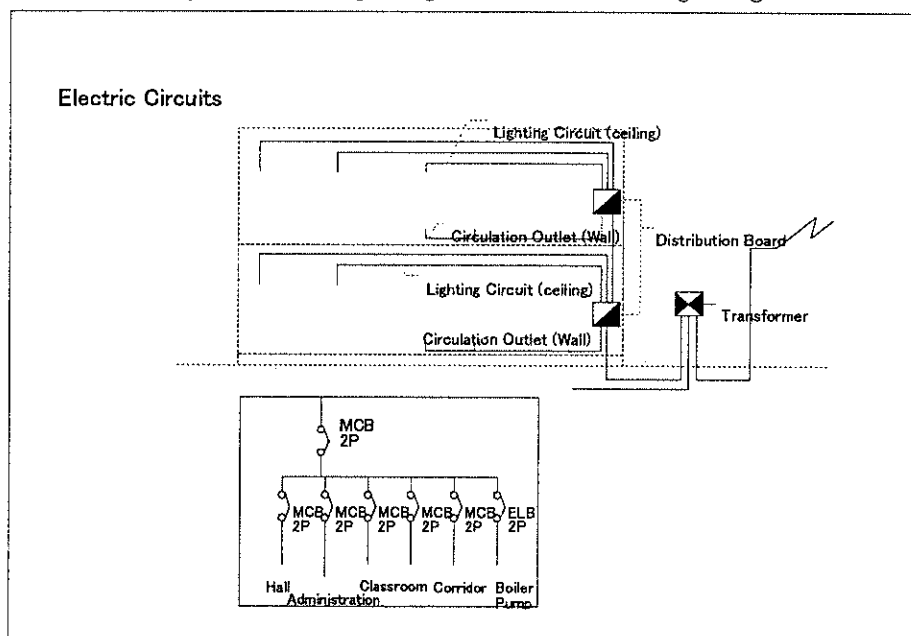
⑥Fire Alarm System

In accordance with the B&H laws for fire fighting, fire alarm systems shall be installed at all Project schools.

⑦Lightening Conductor

As lightening is very common in B&H, all of the school buildings, boiler oil tanks and fuel oil supply fittings shall be provided with lightening conductors to secure student safety.

Figure 2-2 Lighting and Outlet Wiring Diagram



b) Water Supply, Sewerage and Other Facilities

①Water Supply Facility

The water sources for Project schools can be classified into two categories: Well Water and City Water. The volume and pressure of City Water is sufficient at all Project school sites. As the pressure is approximately 3.0kg/cm^2 , water is obtainable through direct connection with the supply line. Regarding Well Water, the pressure is sufficient at FD-8 school site so that well water will be

connected directly. Well Water at the other Project sites dries up during the summer season. Therefore Well Water at those school sites (FD7 and RS5) should be collected in reservoir tanks, then distributed by means of pressure pumps. And then, BH herself shall manage the quality and the usage for drinking of well water. The type of supply at each Project school is listed in the following table.

Table 2-8 The type of water supply ay each Project school

Water Source	Supply Method	Project School No
City Water	Direct connection	FD-1, FD-2, FD-3, FD-5, FD-6, RS-1, RS-2, RS-3,
Well Water	Collecting tank and pressure pump	FD-7, RS-5
	Direct connection	FD-8

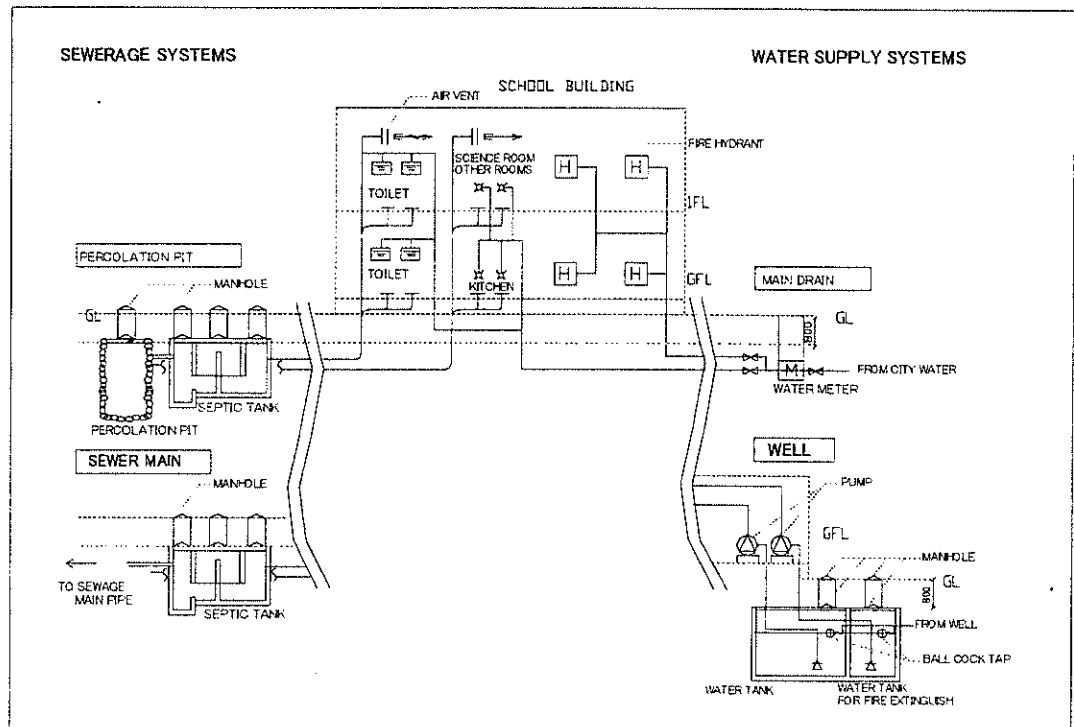
Sewerage Facility Plan

In areas where a public sewerage system is installed, sewerage from Project facilities shall be treated by septic tanks. The treated sewerage shall then be discharged directly into the public sewerage system. In areas where no public sewerage system is available, waste from Project facilities shall be treated by septic tanks then absorbed into the ground through infiltration tanks. Rainwater shall be directly discharged into surface drainage systems. Toilets shall be of the flush type. Staff toilets shall be western type toilet bowls. Student toilets shall be Turkish type toilet bowls, with the addition of urinals for male students.

Indoor Fire Extinguishing Facility

In accordance with B&H laws for fire fighting, all Project facilities shall be provided with indoor fire fighting hydrants. In areas where City Water with sufficient pressure is available, the firefighting pipe shall be connected directly to the water supply line. In areas where Well Water is used, water-holding tanks shall be installed. The water shall then be distributed to each fire hydrant through means of a dedicated pump.

Figure 2-3 Water Supply and Sewerage System Diagram



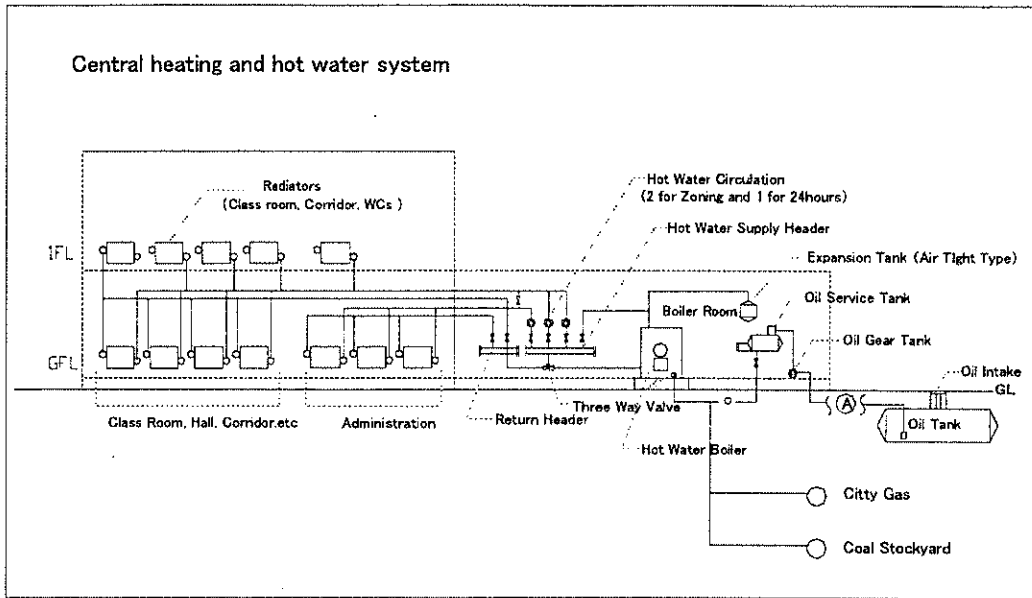
④ Heating Facility

Heating facilities are necessary during the severe winter season. All Project schools shall accordingly be provided with heating facilities. The heating medium shall be hot water. Indoor hot water pipes will not be insulated. Radiators shall be used as heaters. Boiler fuel should be oil, coal or City Gas. The boiler fuel for each Project school is listed in the following table:

Table 2-9 The boiler fuel for each Project school

Fuel Type	Project School No.
Oil	FD-1, FD-2, FD-3, FD-5, FD-6, FD-7, FD-8, RS-1, RS-2
Coal	RS-5
City Gas	RS-3

Figure 2-4 Heating System Diagram



(3) Construction Material Plan

The following table shows the finishing and construction methods adopted for the buildings in the Project, the reasons for their choice and a comparison with local methods.

Table 2 -10 Construction Methods to be Used in the Project and Reasons for Selection

Building Portion		Local Method	Project Method	Reason for Selection	
Foundation		Reinforced Concrete	Same	Corresponds to local method	
Column/ Beams		Reinforced Concrete	Same		
Floor	Base	Reinforced Concrete	Same		
	Finish	C. R.	Vinyl Sheets	Terrazzo Block Tiles	Strong durability
		Toilet	Ceramic tiles	Same as local	Corresponds to local method
Wall	Base	Bricks	Same as local	Corresponds to local method	
	Finish	Mortar coating	Same as local		
Roof	Base	Wooden/steel trusses	Concrete Slab	Strong durability	
	Finish	Tiles	Colored zinc coated steel folded sheet roof	Strong durability	
Ceiling		Mortar coating	Same as local / Cement boards w/ holes	Sound absorption	
Fixtures	Window	Alum.sash /double-glazing	Same as local	Corresponds to local method	
	Door	Wood	Same as local	Similar to local method	

(4) Equipment Plan

1) Educational Furniture and Appliances

The basic furniture and appliances will be based on the standard specifications of the MOE and will be procured locally. The contents for each Project room are shown in the following table 2-11:

2) Educational Equipment

The contents of the educational equipment for the Project schools shall be as shown in the table 2-12.

Table 2-11 Furniture and Appliances for Each Project School

Room	Item	Specification	Quantity
Classroom for Low Grade	Student's Desk	For 1 student, 65×50×70(H)	36
	Student's Chair	For 1 student, H=42	36
	Teacher's Desk	130×60×76(H), w/ drawers & keys	1
	Teacher's Chair	32×32×46	1
	Blackboard	390×120	1
	Bulletin Board	Made of Cork, 120×80	2
Classroom for High Grade	Student's Desk	For 2 students, 130×50×76(H)	18
	Student's Chair	For 1 student, H=46	36
	Teacher's Desk	130×60×76(H), w/ drawers & keys	1
	Teacher's Chair	32×32×46	1
	Blackboard	390×120-180	1
	Bulletin Board	Made of Cork, 120×80	2
Half Accommodated Classroom (For Language Class) FD-7,8 RS-5	Student's Table	For 2 students, 130×50×76(H)	9
	Student's Chair	For 1 high grade student, H=46	18
	Teacher's Desk	130×60×76(H), w/ drawers & keys	1
	Teacher's Chair	32×32×46	1
	Blackboard	390×120-180	1
	Bulletin Board	Made of Cork, 120×80	2
Shared Science Laboratory	Stool	W/ Steel pipe legs, H=50	36
	Experimental Table	180×80×80(H) w/ granite table top	6
	Demonstration Table	239×84×90(H) w/ drawers, keys & sink	1
	Teacher's Chair	w/ casters	1
	Blackboard	390×120-180	1
	Bulletin Board	Made of Cork, 120×80	2
Cabinet for SSL	Closet	to be considered	--
Library	FD-7,8, RS-5		
	2 side shelf	steel, 90×49×210(H)	4
	Wall Attached Shelf	steel, 90×27×210(H)	4
	Reception Desk w/Chair	160×70×76(H)	1
	FD-1,2,3,5,6, RS-1,2,3		
	2 side shelf	steel, 90×49×210(H)	8
	Wall Attached Shelf	steel, 90×27×210(H)	8
	Reception Desk w/Chair	160×70×76(H)	1
Principal's Room	Principal's Desk	160×80×76, w/ wooden table top	1
	Principal's Chair	Fabric finish w/ casters	1
	Closet	W/ 2 doors & keys, 90×35×210(H)	4
	Meeting Table	180×90×76(H), w/wooden table top	1
	Meeting Chair	40×40×46	4
Administration Room	Administrator's Desk	130×60×76(H) w/ drawers & keys	2
	Administrator's Chair	32×32×46	2
	Closet	W/ 2 doors & keys, 90×35×210(H)	2
	Shelf for P.A. System	Made of melamine, 70×45×80(H)	1
First Aid Space	Bed	180×60×60(H) for examination	1
	Desk	130×70×76(H) w/ drawers & keys	1
	Chair	W/ casters	1
	Closet	W/ 2 doors & keys, 90×55×180(H)	1
Teacher's Room (For every 4 teachers)	Meeting Table	180×80×76(H) w/ melamine table top	2
	Meeting Chair	40×40×46	4
	Teacher's Locker (A)	For documents, made of steel, 90×35×210	1
	Teacher's Locker (A)	For storage w/ shelves, made of steel,	1
Kitchenette	Cup Board	90×42×200(H)	2
	Table	150×75×76(H)	1
	Chair	46×42×46(H)	2
Janitor's Room	Table	150×75×76(H)	1
	Chair	46×42×46(H)	2
	Closet	W/ 2 doors & keys, 90×55×200(H)	2

Table 2-12 List of Educational Equipment (1)

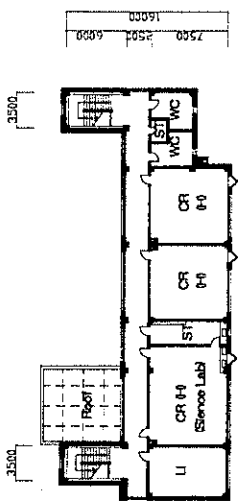
No.	Item	Qty. per School
1	Overhead Projector Standard	1
2	Projection Screen (150 150)	1
Geography (Grade 5 - 8)		
3	Map of World Physical	1
4	Map of Asia Physical	1
5	Map of Africa Physical	1
6	Map of North America Physical	1
7	Map of South America Physical	1
8	Map of Australia & Oceania Physical	1
Physics		
9	Mechanics (Experiments in Kinematics and Dynamics)	1
10	Equipment w/ Magnetic Holders for Experiments in Static	1
11	Precise Scales w/ Weights	1
12	Science Dealing w/ Heat	1
13	Electrostatics	1
14	Rectifiers(4, 6, 12, 24V)	1
15	Low Voltage Transformers (4, 6, 12, 24V)	1
16	Equipment for Providing the 2nd Newton's Law	1
17	Equipment for Demonstration of Action & Reaction	1
18	Equipment for Friction Testing	1
19	Equipment for Demonstration of a Falling Body	1
20	Oscillator (Mechanical)	1
21	Pendulum	1
22	Steep Board That Can Change Angle	1
23	Equipment for Proving the Pascal's Law	1
24	Hydrostatic Scale	1
25	Hydraulic Press Model	1
26	Equipment for Proving the Archimedes' Law	1
27	Calorimeter w/ Thermometer	1
28	Faraday's Cage	1
29	Model Condenser w/ Ability to Change Capacity	1
30	Condenser (Sheet, Electrolyte, Ceramic w/ Ability to Change Capacity)	1
31	Leclanche's Element	1
32	Equipment for Ersted's Experiment	1
33	Permanent Magnet (Bar, Horse Shoe, Magnetic Pin)	1
34	Decline/incline Measuring Device	1
35	Compass	1
36	Galvanometer	1
37	Micrometer	1
38	Chronometer	1
39	Dynamometer (1N, 2N, 5N, 10N, 20N)	1
40	Thermometer(R, C, F, K)	1
41	Laboratory Thermometer (0-100°C)	1
42	Mercurial Thermometer	1
43	Metallic Thermometer	1
44	Mercurial Barometer	1
45	Barometer - Aneroid	1
46	Metallic Manometer	1
47	Voltmeter (10A)	1
48	Ampere meter	1
49	Universal Measuring Device	1
50	Beaker	1
51	Deep Glass Tab	1
52	Connected Tubes (Various Radius)	1
53	Capillary Tubes	1
54	Glass Tube T Shape	1
55	Bimetal Tape	1

Table 2-12 List of Educational Equipment (2)

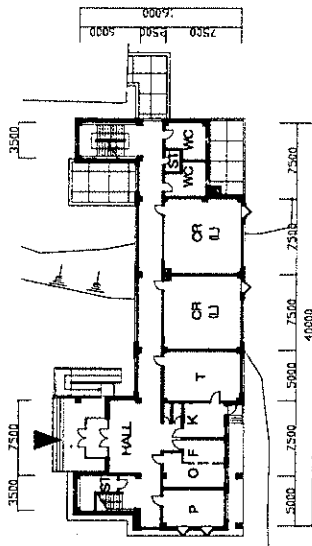
No.	Item	Qty. per School	
Chemistry			
56	Precise Scale w/ Weights	1	
57	Thermometers (-10-360°C)	1	
58	Universal Holder, Set w/ Parts	1	
59	Clamps	1	
60	Tripod	1	
61	Asbestos Net	1	
62	Laboratory Tweezers	1	
63	Tongs	1	
64	Metal Spoon for Burning	1	
65	Alcohol Lamp	1	
66	Magnet	1	
67	Plastic Syringe Bottle	1	
68	Metal & Plastic Spoons for Chemicals	1	
69	Rubber Lids Various Sizes	1	
70	Cork Lids Various Sizes	1	
71	Drill for Lids, Set	1	
72	Wooden Pincers for Test Tubes	1	
73	Test Tube Holder	1	
74	Trays (Plastic or Wood)	1	
75	Brush for Washing Test Tubes	1	
76	Rubber Hose(5, 7mm)	1	
77	Filter Paper	1	
78	Candle	1	
79	Dust Bottles w/ Lid	1	
80	Reagent Bottle (100cm)	1	
81	Reagent Bottle (250cm)	1	
82	Brown Reagent Bottle (100m)	1	
83	Porcelain Cup (70mm)	1	
84	Porcelain Mortar w/ the Pestle (100mm)	1	
85	Glass Bell w/ Tubes & without Tubes	1	
86	Libig's Cooler	1	
87	Balloon w/ a Flat Bottom (100cm)	1	
88	Burette (25cm)	1	
89	Potbellied Pipette w/ Measuring Scale	1	
90	Measuring Bottle Various Sizes	1	
91	Regular Dish (100cm)	1	
92	Regular Dish (1 dm)	1	
93	Conical Flask (100, 250cm)	1	
94	Glass Funnel (70mm)	1	
95	Funnel for Pouring	1	
96	Watch Glass (60, 80mm)	1	
97	Ordinary Test Tube	1	
98	Test Tube w/ Lateral Drain	1	
99	Test Tubes Made of Heat Resistant Glass	1	
100	Dropper	1	
101	Glass Hose (3, 5, 7mm)	1	
102	Glass Wands	1	
103	Distributing Hoses	1	
104	Laboratory Glasses: Short 100, 250	1	
105	Laboratory Glasses: 1 dm	1	
106	Round Bottom Flask	1	
Biology			
107	Microscope & Projector or w/ Accessories	School Microscope	1
108		Microscope Lamp	1
109	Equipment for Dissection & Vivisection (Tab, Scalpel, Tweezers, Scissors, Lancet, Pin)		1

(5) Basic Design Drawings

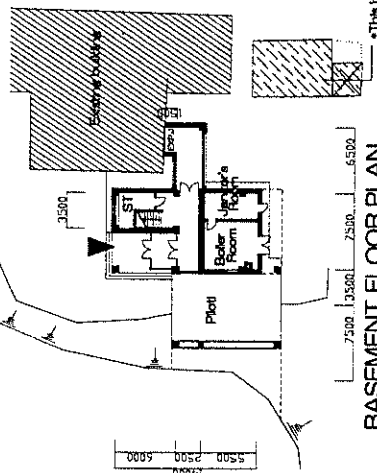
LEGEND	
CR	Classroom
H-H	High Grade
LJ	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
LI	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



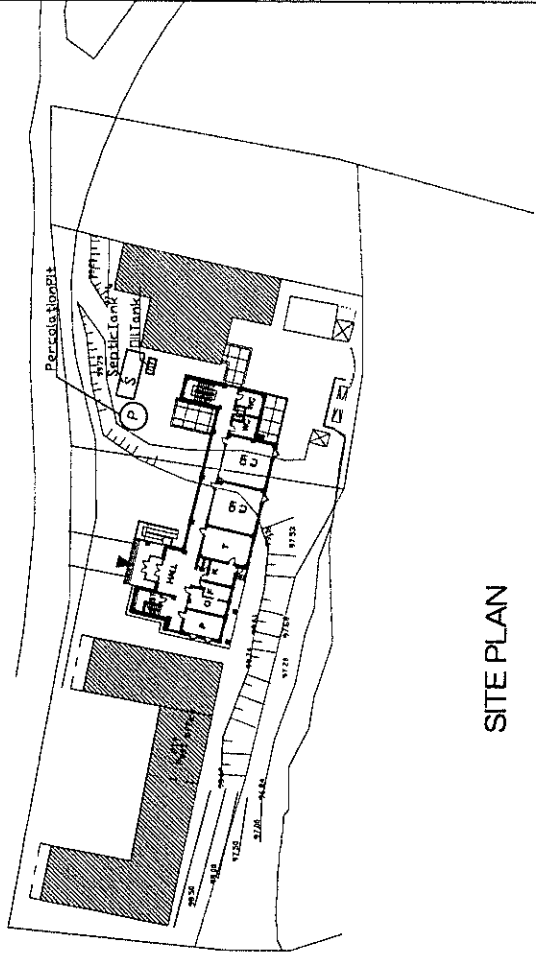
FIRST FLOOR PLAN



GROUND FLOOR PLAN



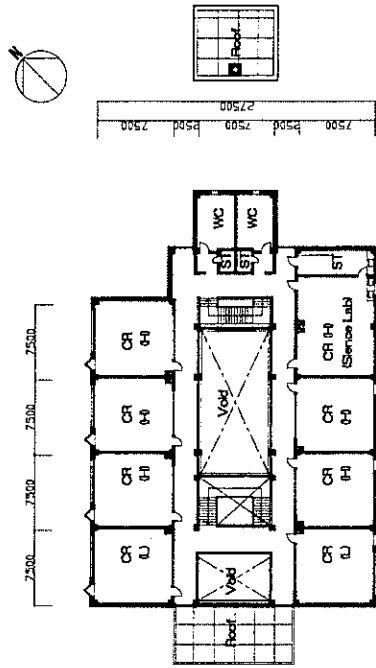
BASEMENT FLOOR PLAN



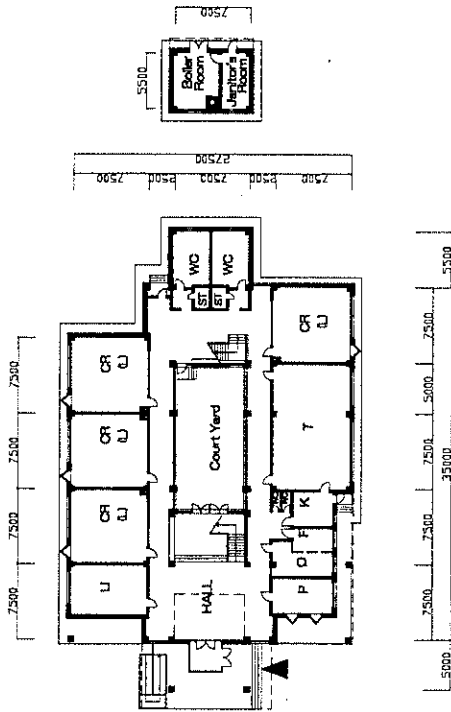
SITE PLAN

SITE NUMBER	FD-1	SITE TITLE	Varoska Rijeka	SCALE	1:1
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THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA					

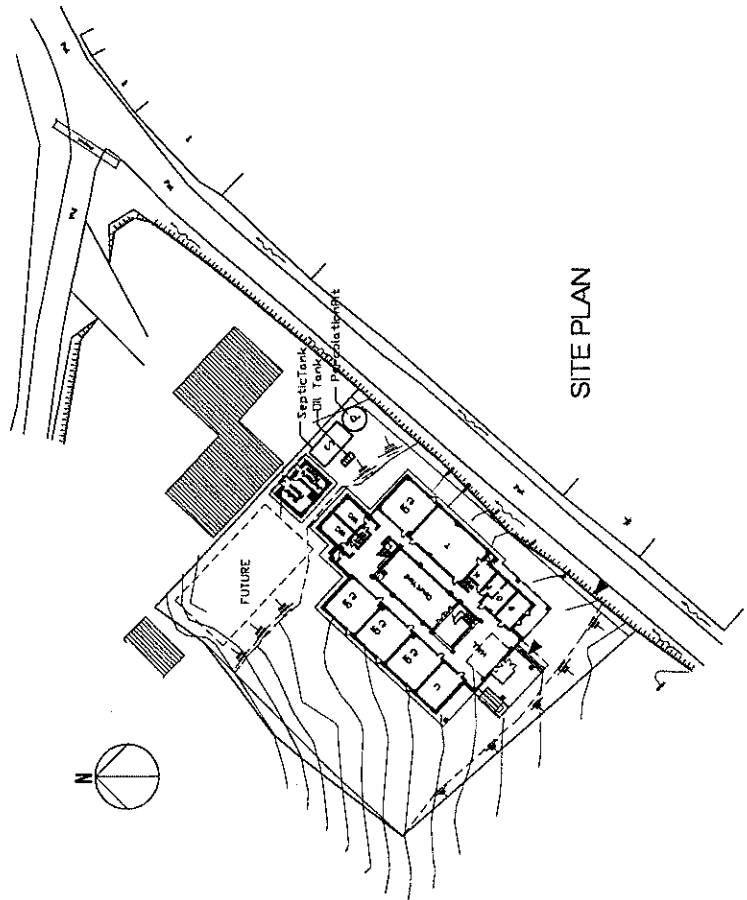
LEGEND	
CR	Classroom
H-H	High Grade
LJ	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
U	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



FIRST FLOOR PLAN



GROUND FLOOR PLAN



SITE PLAN

THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

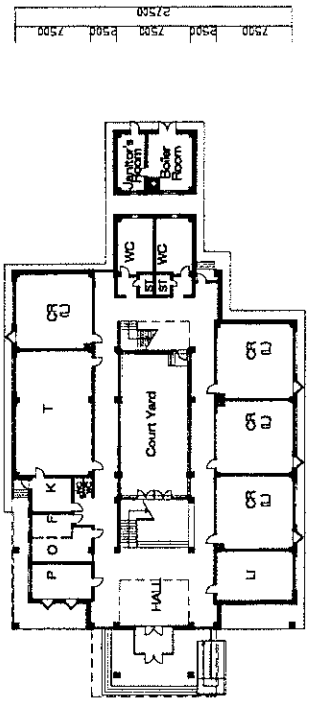
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FD-2

DRAWN TITLE
Vida

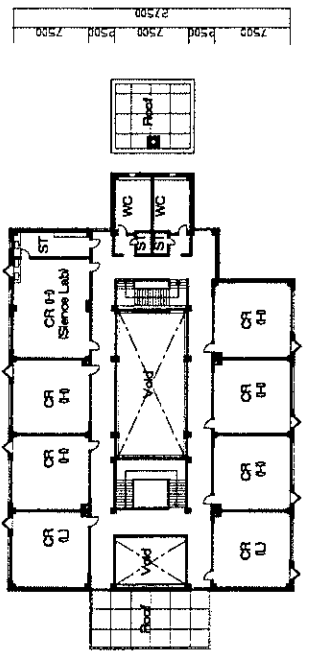
SCALE
SITE PLAN AND FLOOR PLAN

NO.

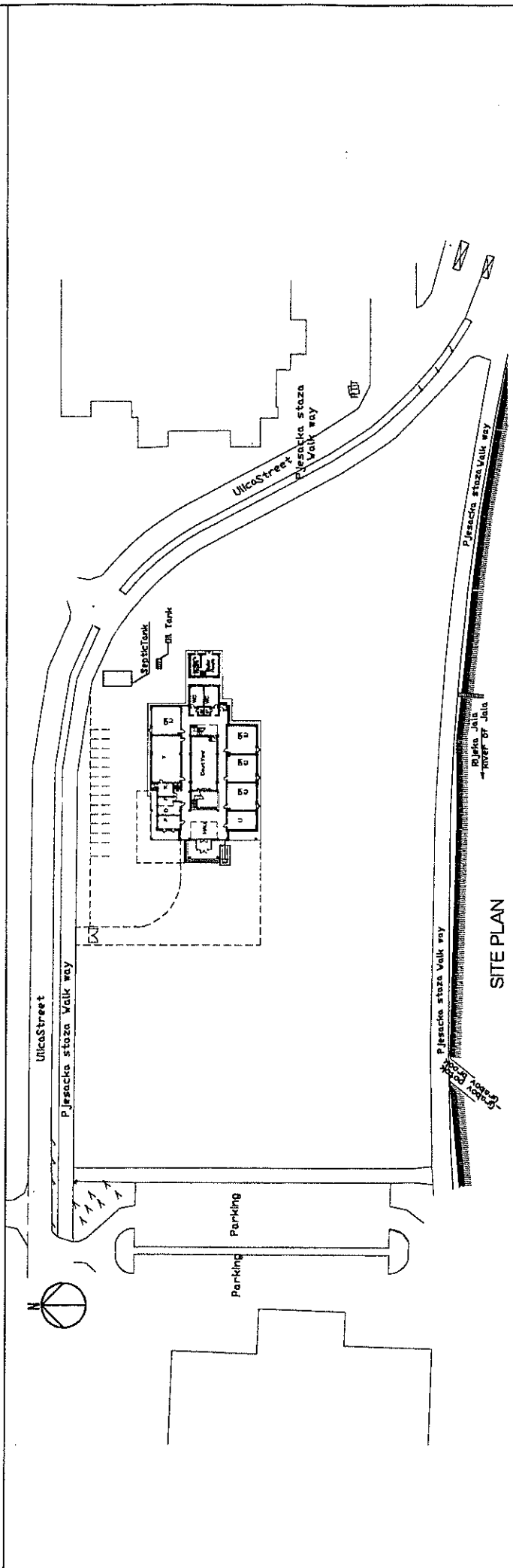
LEGEND	
CR	Classroom
H-H	High Grade
U	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
LI	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



GROUND FLOOR PLAN



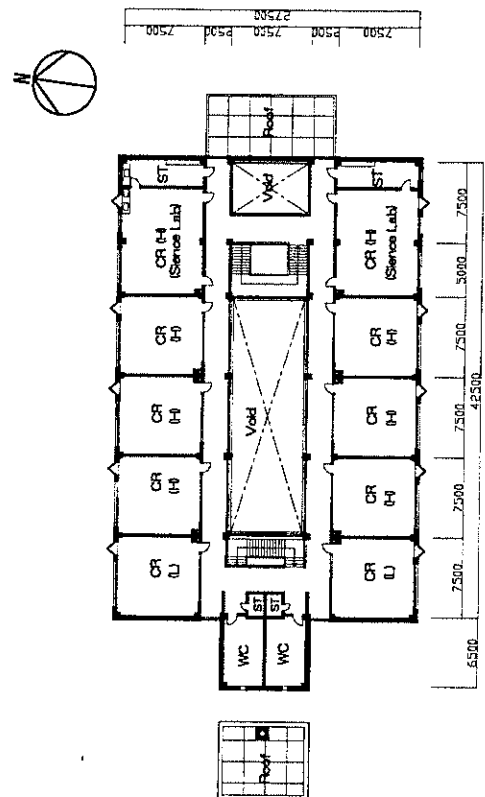
FIRST FLOOR PLAN



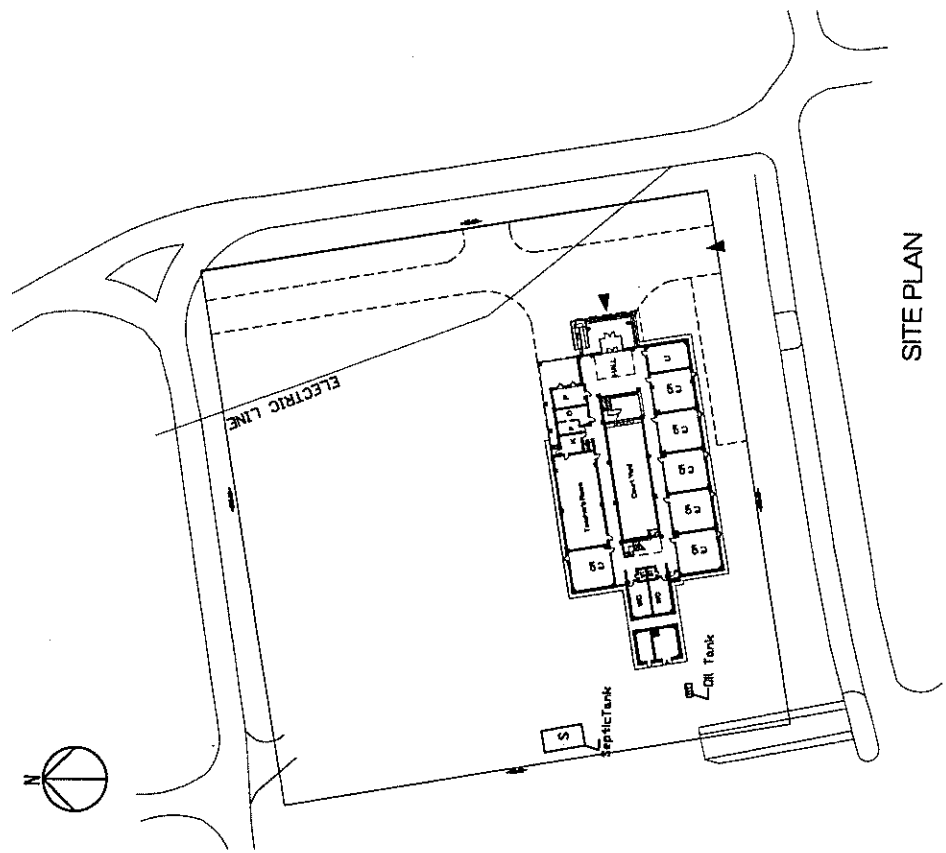
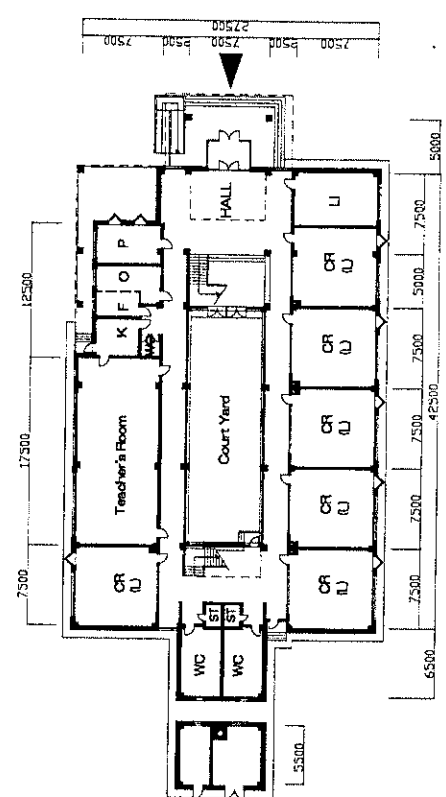
SITE PLAN

SCALE	SITE PLAN AND FLOOR PLAN
SITE NAME	Serljak
SITE NO.	FD-3
THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA	

LEGEND	
CR	Classroom
H.G	High Grade
LJ	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
L	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



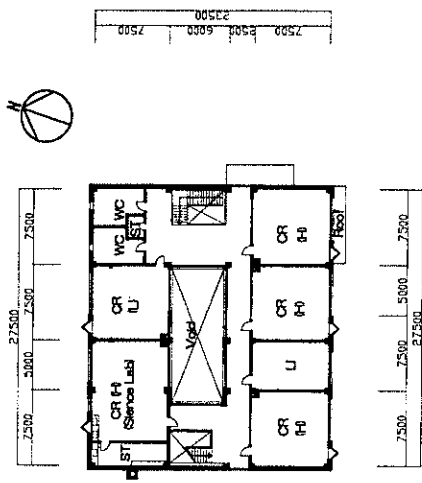
FIRST FLOOR PLAN



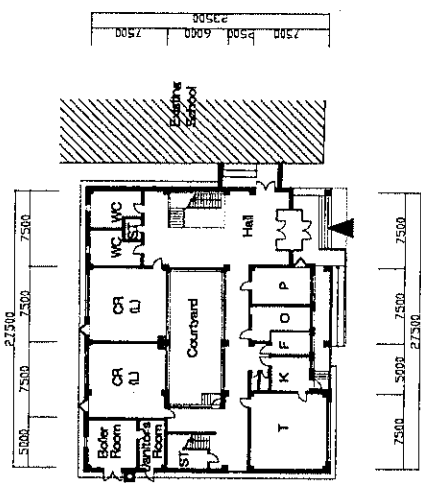
SITE PLAN

SCALE	1:500
DATE	2010
PROJECT TITLE	SITE PLAN AND FLOOR PLAN
DESIGNER	Ilija Jakovljević
SITE NO.	FD-5
PROJECT DESCRIPTION	THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

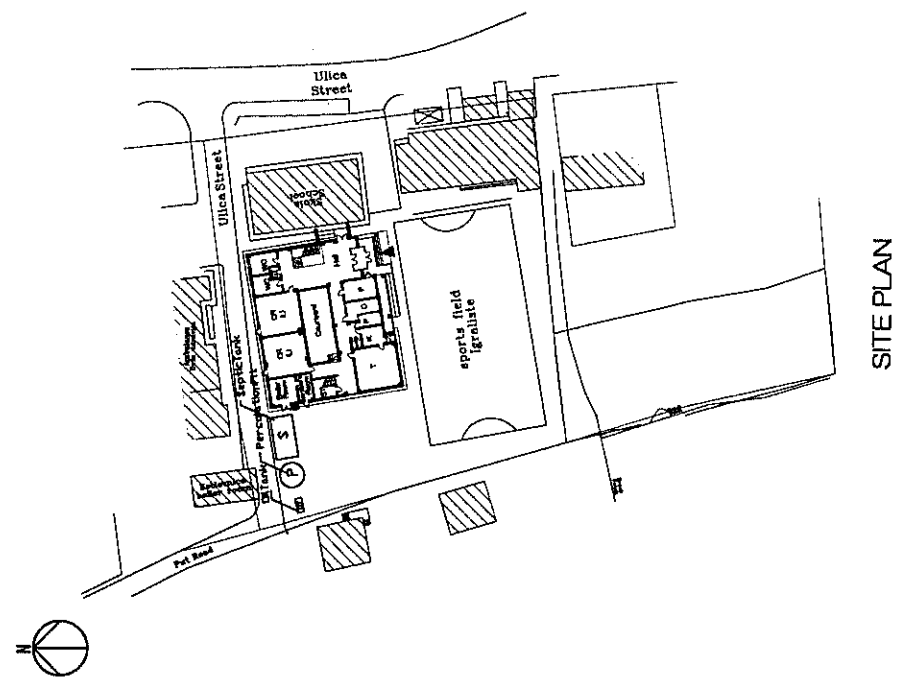
LEGEND	
CR	Classroom
(H)	High Grade
(L)	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
U	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



FIRST FLOOR PLAN



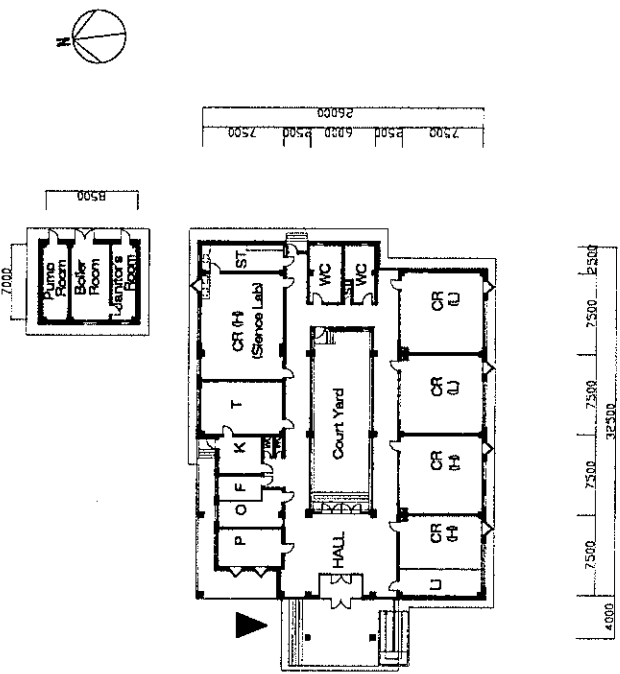
GROUND FLOOR PLAN



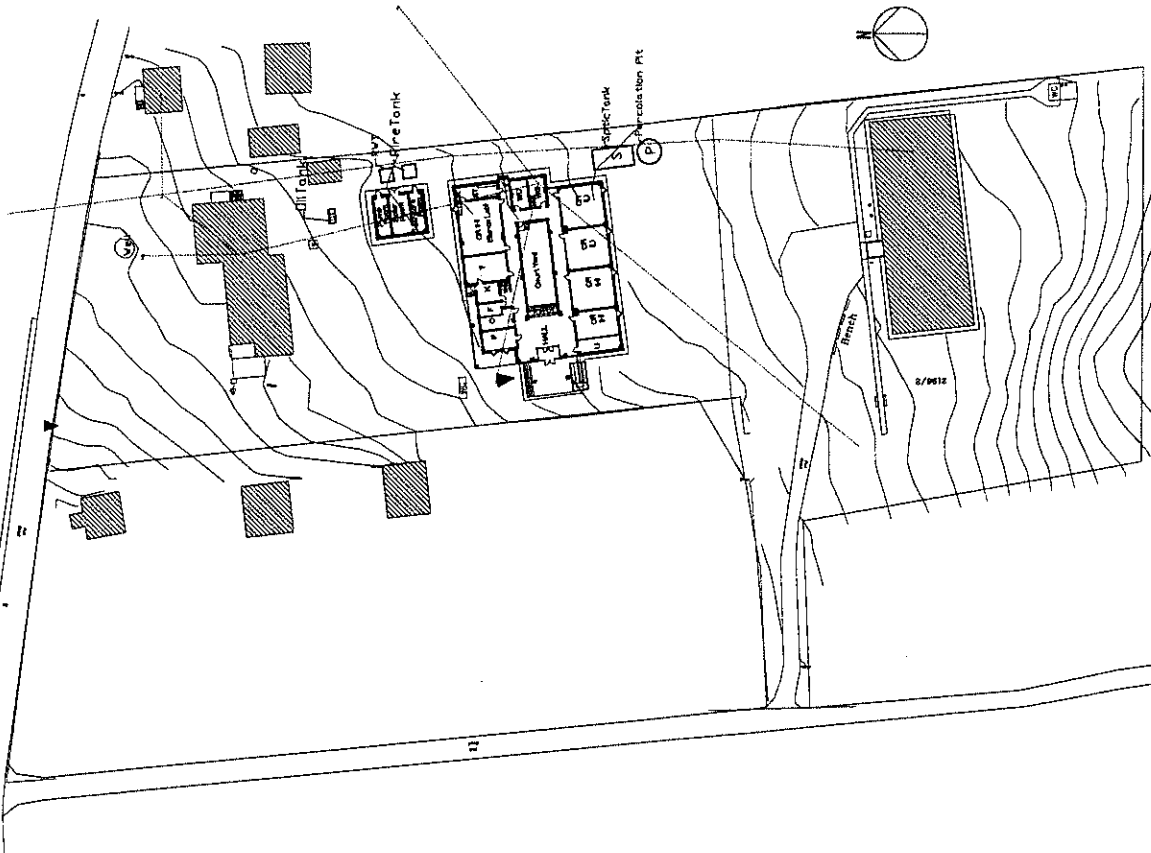
SITE PLAN

PROJECT TITLE	SITE NUMBER	SITE NAME	21. Mart	SCALE
			FD-6	
THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNA AND HERZEGOVINA				

LEGEND	
CR	Classroom
(H)	High Grade
(L)	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
LJ	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



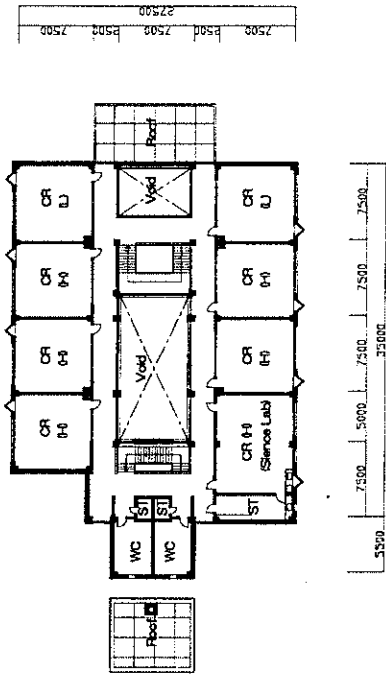
GROUND FLOOR PLAN



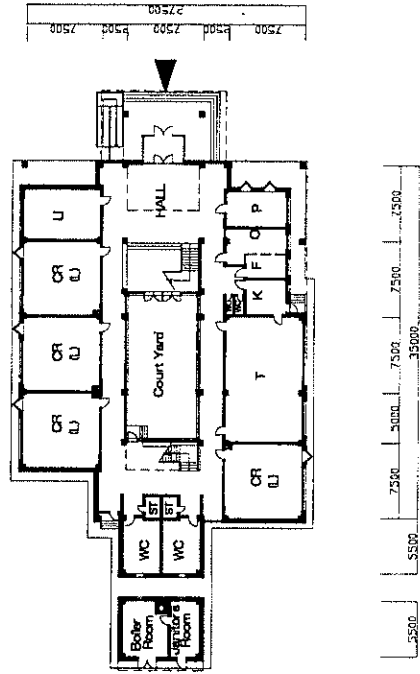
SITE PLAN

SITING NUMBER	FD-7	SITING NAME	Edhem Mulabdic	MAIN TITLE	SITE PLAN AND FLOOR PLAN	SCALE	1:1
	THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA						

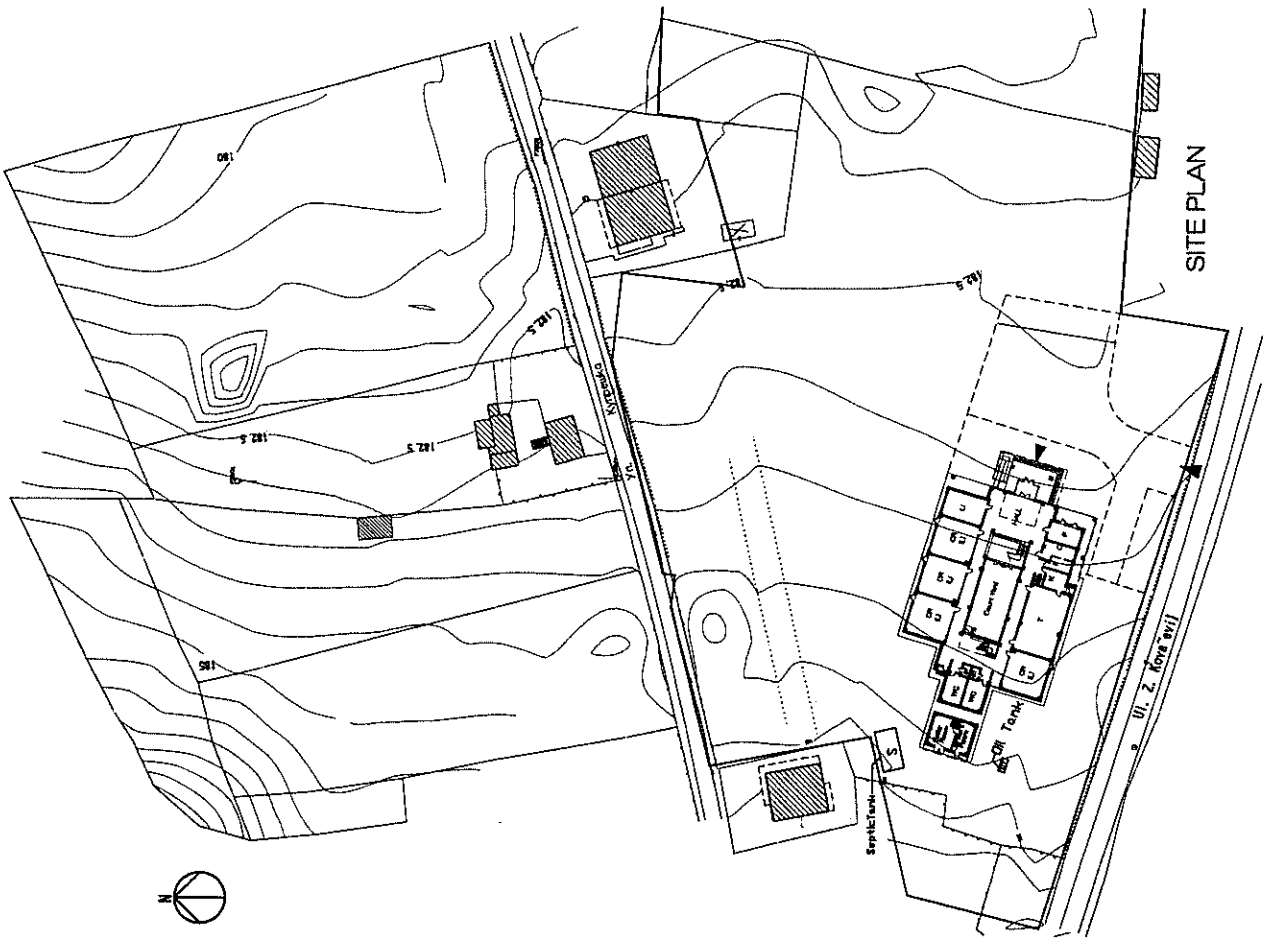
LEGEND	
CR	Classroom
I-H	High Grade
I-L	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
U	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



FIRST FLOOR PLAN



GROUND FLOOR PLAN

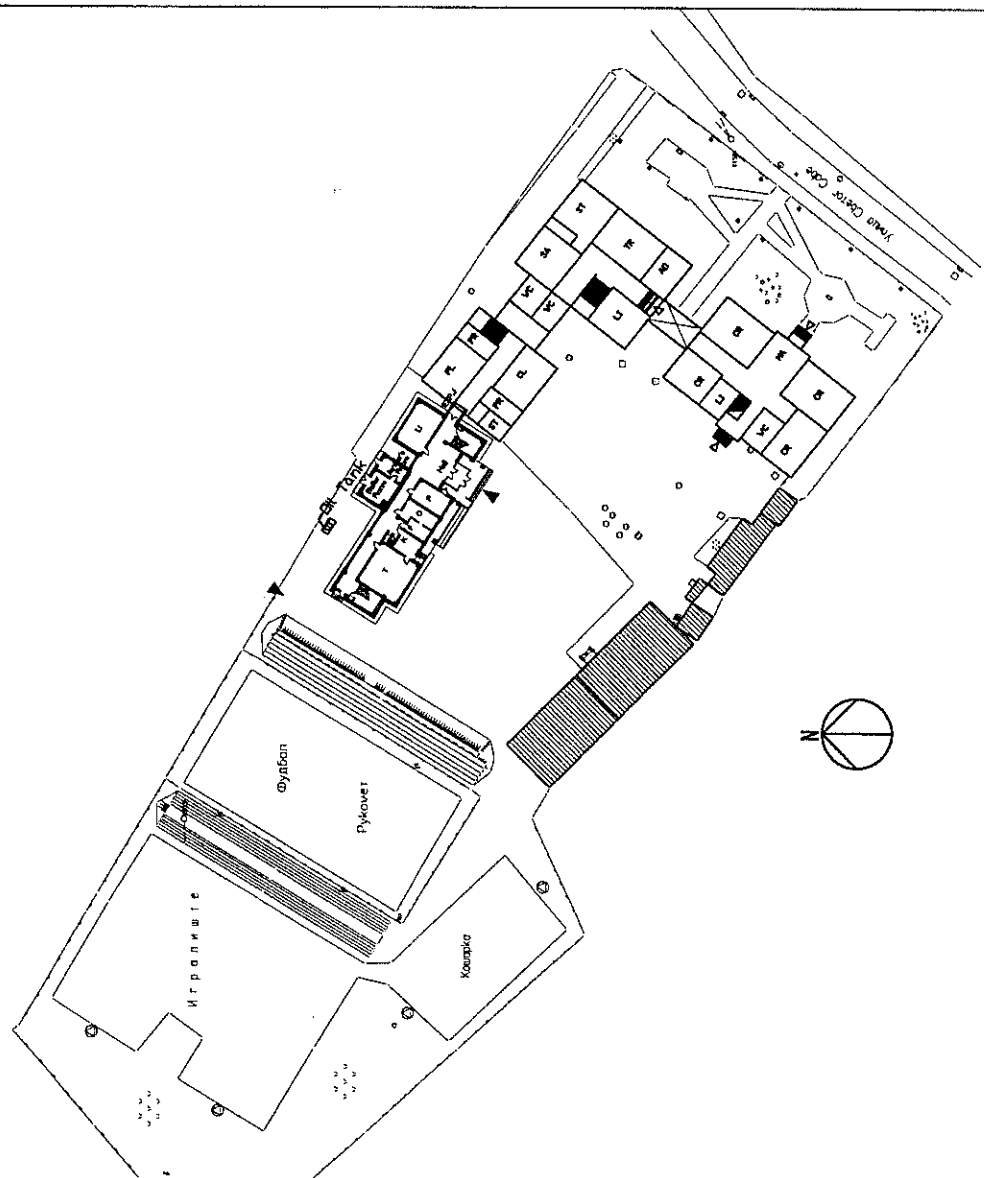
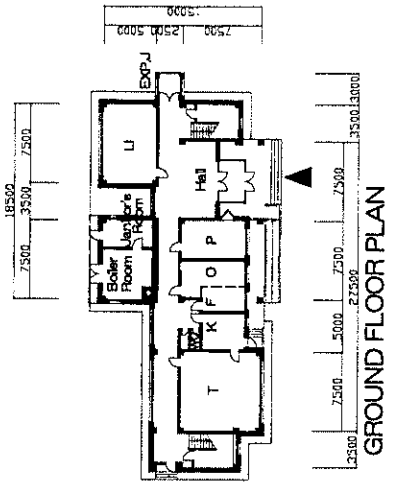
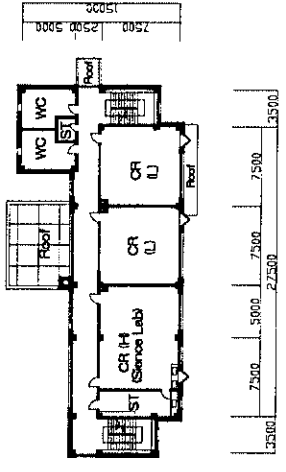
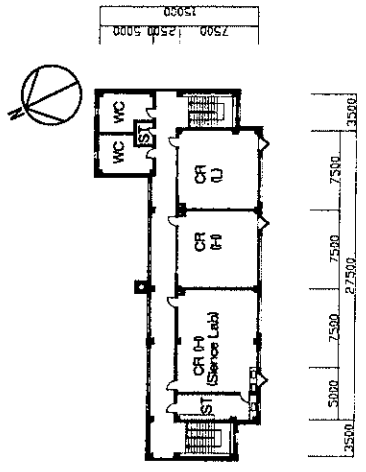


SITE PLAN

SITE NUMBER	RS-1
SITE NAME	Banja Luka
DATE	2011
SCALE	1:1000
PROJECT	SITE PLAN AND FLOOR PLAN
NO.	1

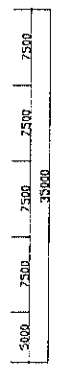
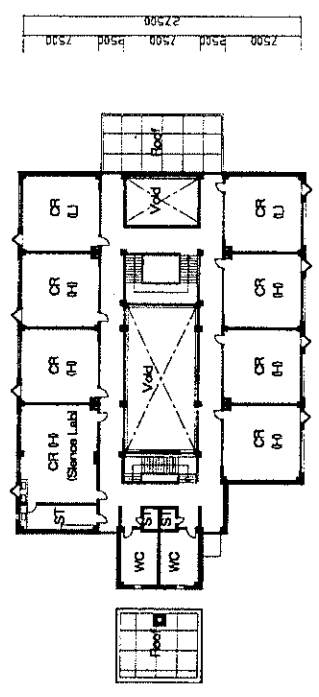
THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

LEGEND	
CR	Classroom
(H)	High Grade
(L)	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
U	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen

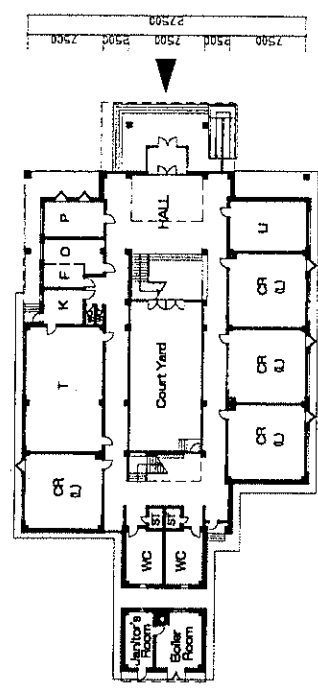


THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA		SITE NAME	Sveti Sava	SCALE
SITE NUMBER		RS-2	SITE PLAN AND FLOOR PLAN	

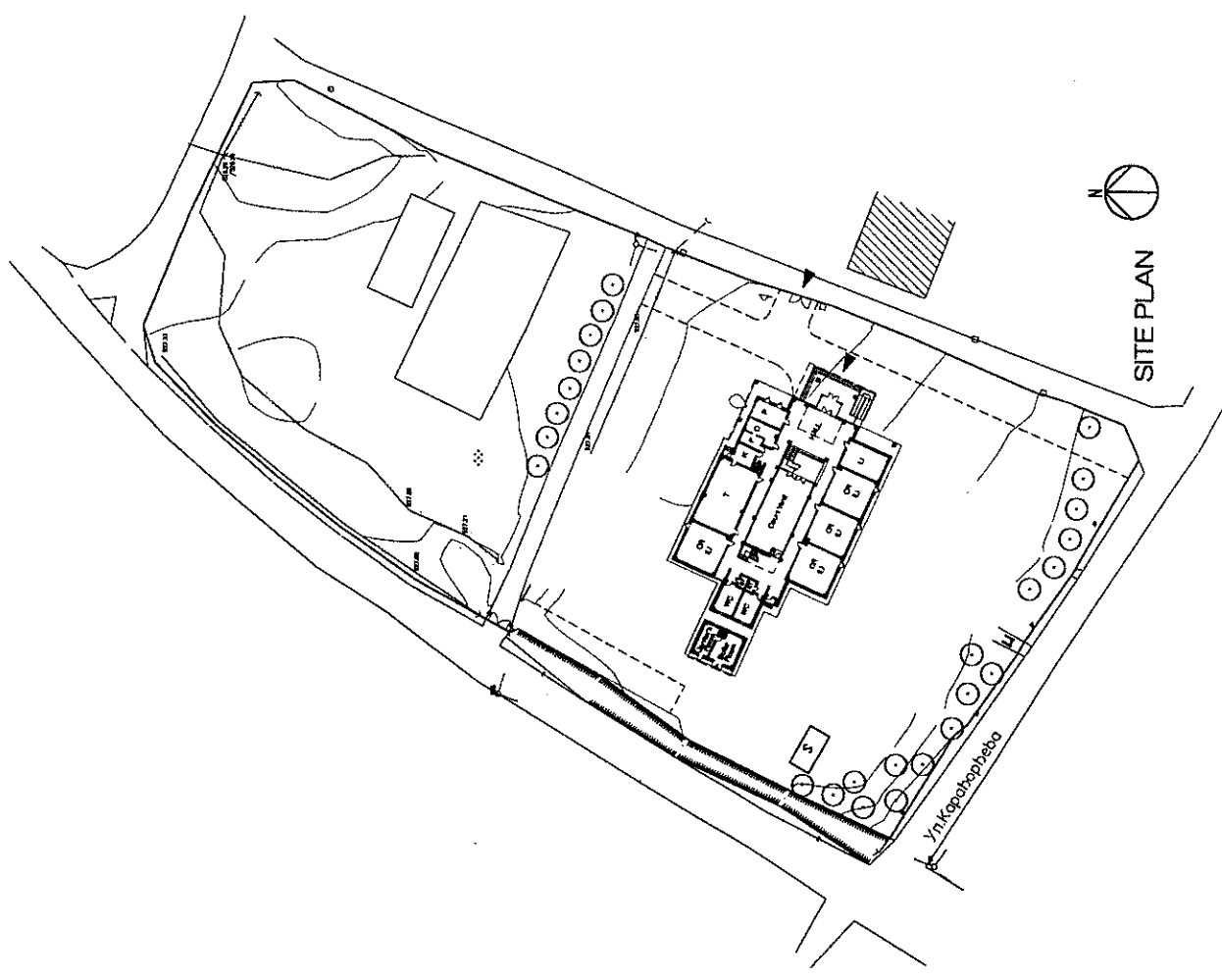
LEGEND	
CR	Classroom
(H)	High Grade
(L)	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
LI	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchenette



FIRST FLOOR PLAN



GROUND FLOOR PLAN

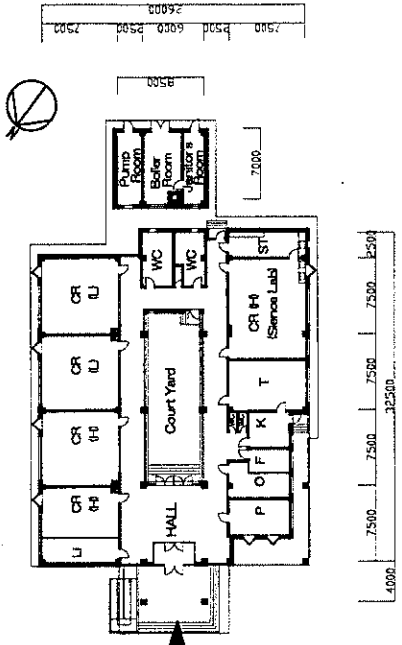
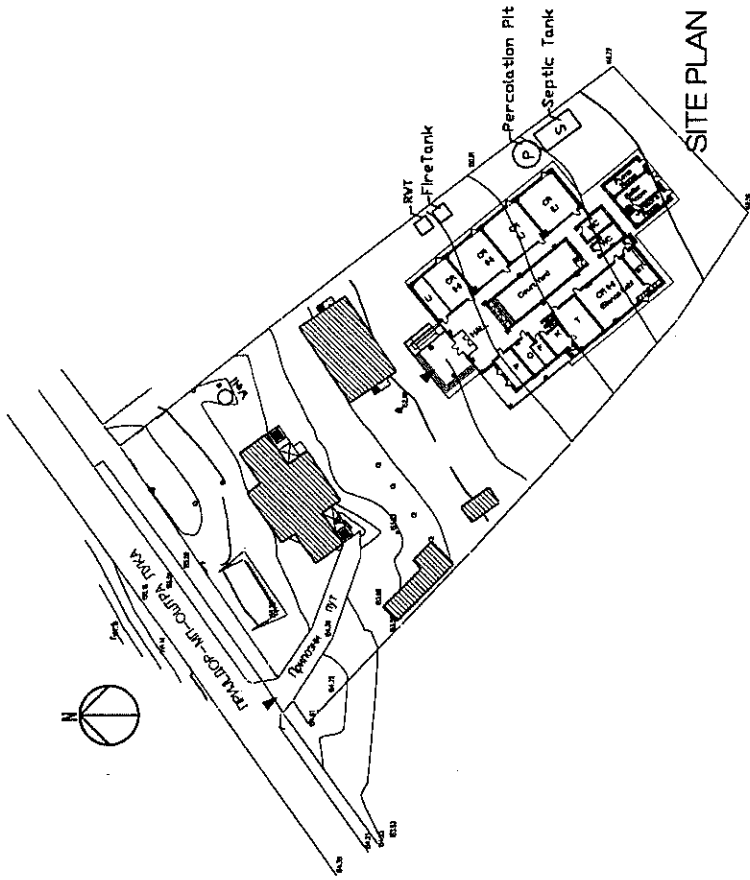


SITE PLAN

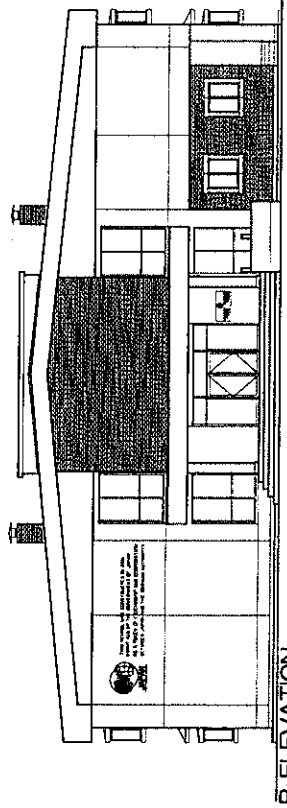
SITE NUMBER RS-3	SITE NAME Sveti Sava	DRAWN TITLE SITE PLAN AND FLOOR PLAN	SCALE
			SCALE

THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

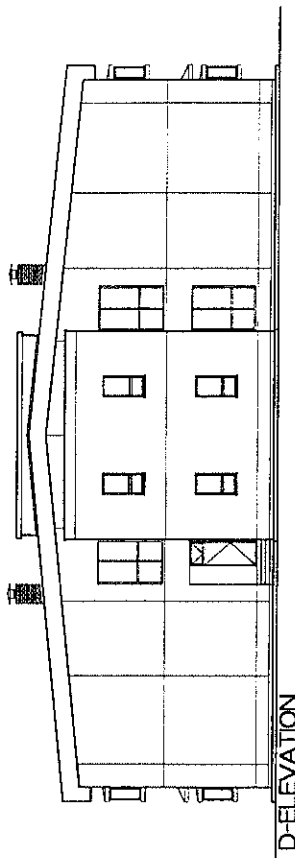
LEGEND	
CR	Classroom
(H)	High Grade
(L)	Low Grade
CA	Cabinet
ST	Storage
WC	Toilet
U	Stack Room
P	Principal's Room
F	First Aid Room
O	Administration Office
T	Teacher's Room
K	Kitchen



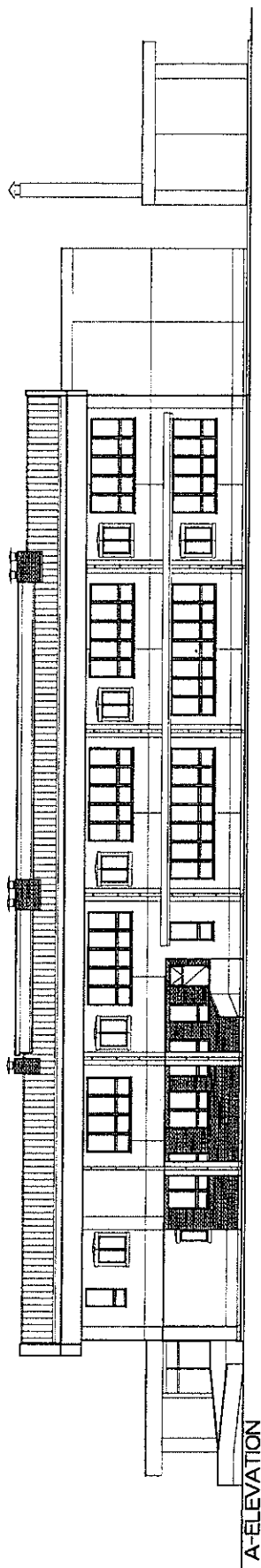
RS-5	Ostra Luka	SITE PLAN AND FLOOR PLAN	K3
THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA			



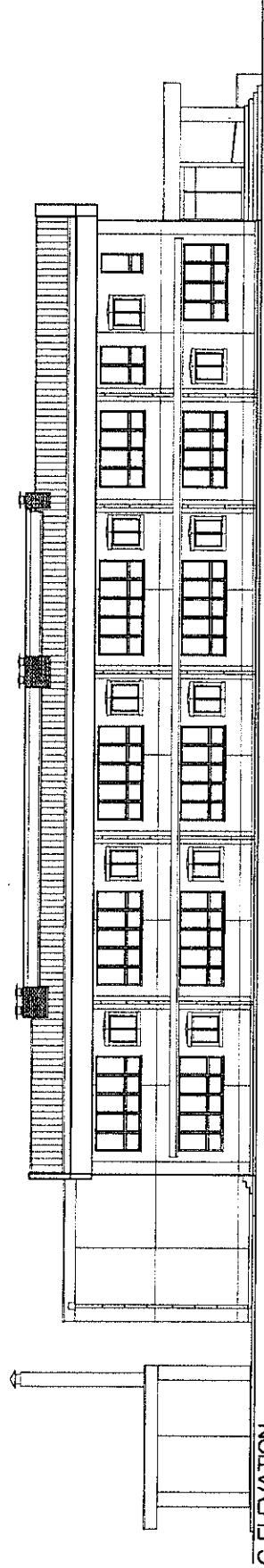
B-ELEVATION



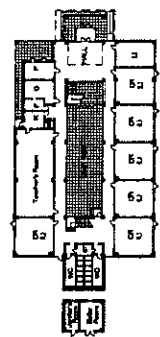
D-ELEVATION



A-ELEVATION



C-ELEVATION



A
B
D
C

THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION
OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

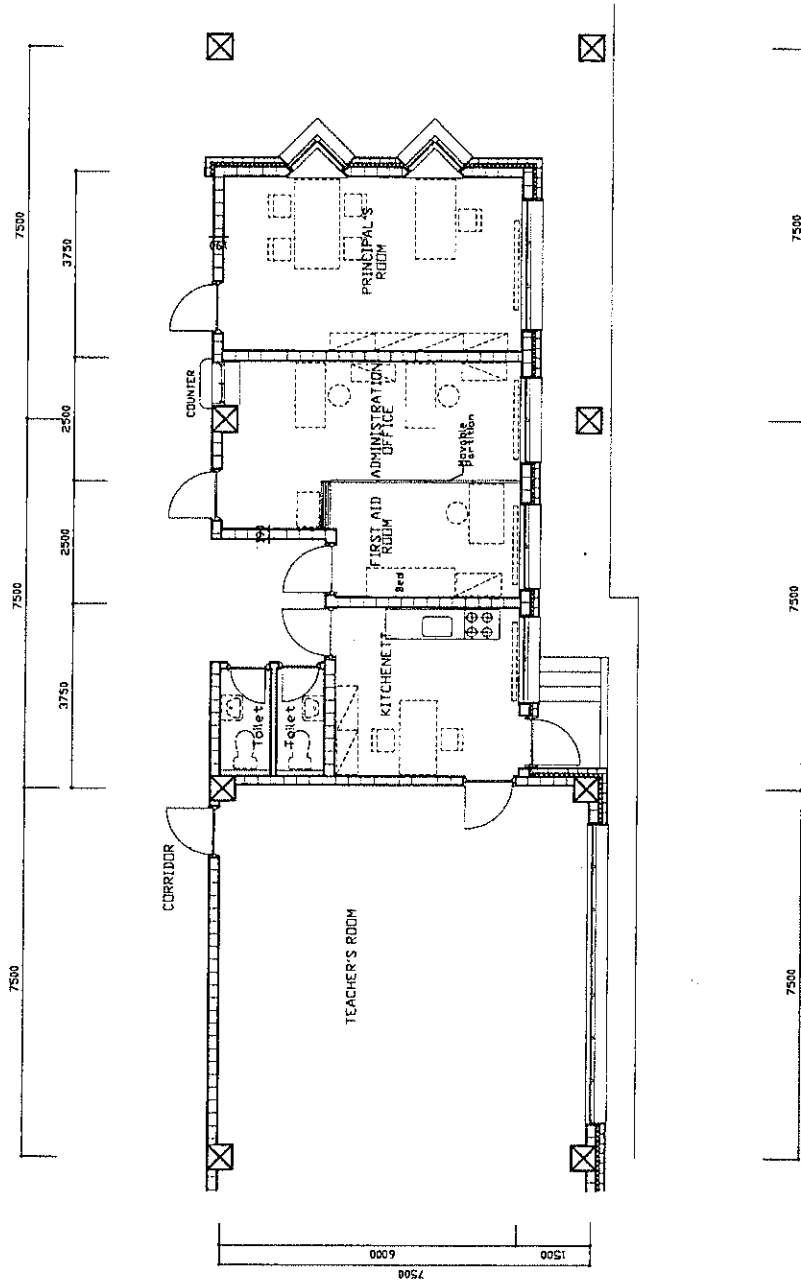
SITE NUMBER
FD-5

DATE MADE
Iliya Jakovljevic

DISCIPLINE
ELEVATIONS

NO.

ADMINISTRATION



THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION
OF BASIC SCHOOLS IN BOSNIA AND HERZEGOVINA

SITE NUMBER

SITE NAME

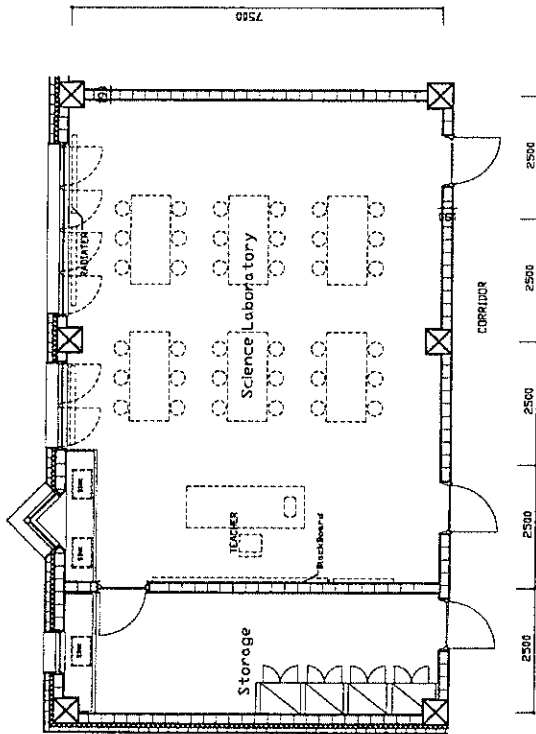
UNIVERSITY

DETAILED OF ADMINISTRATION

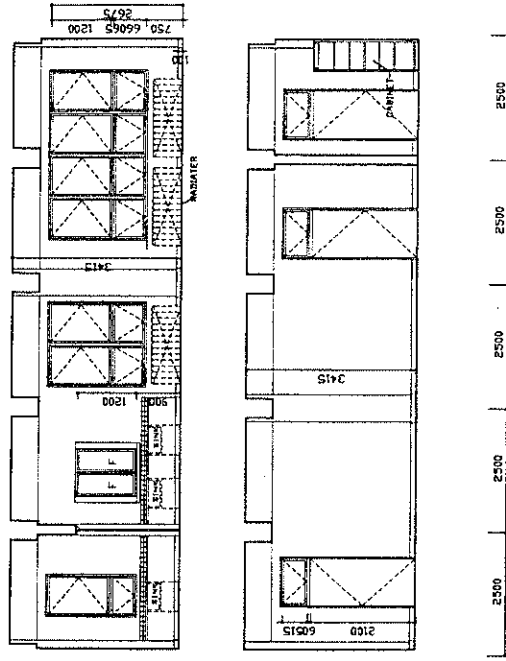
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SCIENCE LABORATORY

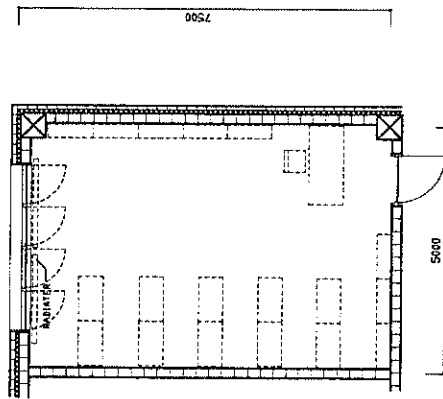
PLAN



INTERIOR ELEVATION



LIBRARY
2 SPAN



1 SPAN LIBRARY + HALF SIZED CLASS ROOM

FD7
FD8
RS5

