

2-2-3 Basic Design Drawing

The Basic Design Drawings are shown as follows.

01: Single story buildings: floor plan, elevation, section plan

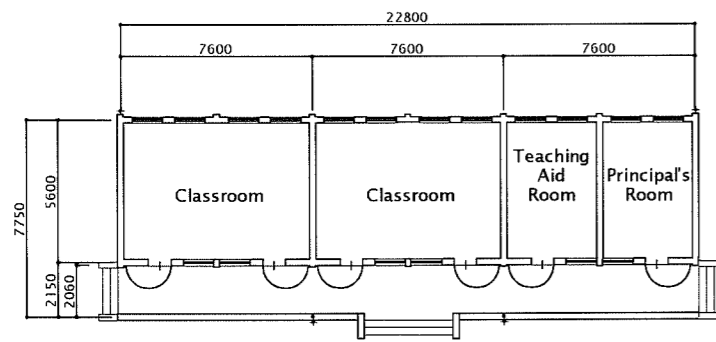
02: Two story buildings: floor plan (1)

03: Two story buildings: floor plan (2)

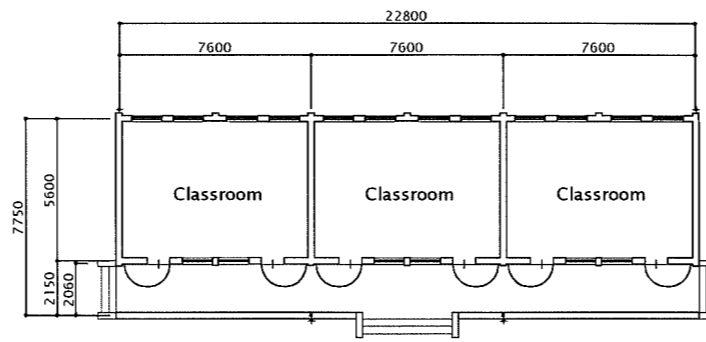
04: Two story buildings: floor plan, elevation, section plan

05: Toilets: floor plan, elevation, section plan

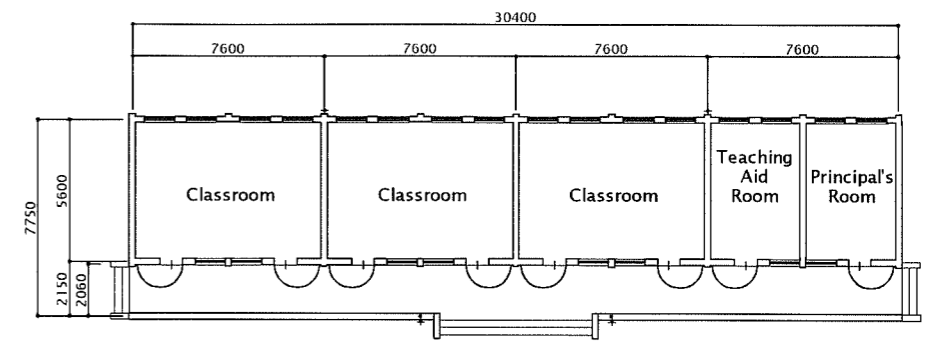
06: Furniture layout plan, furniture list



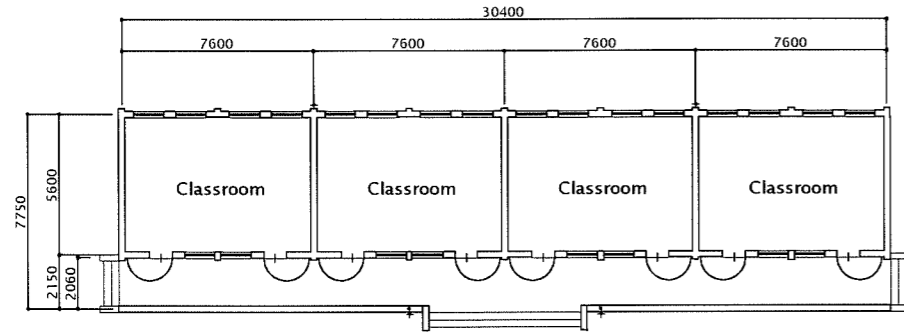
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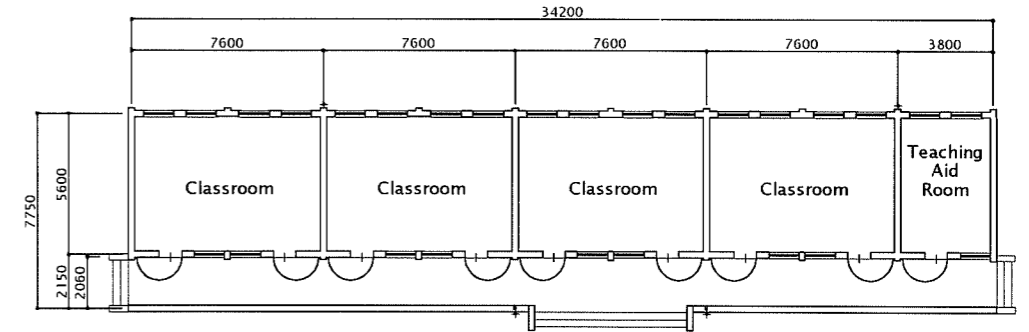
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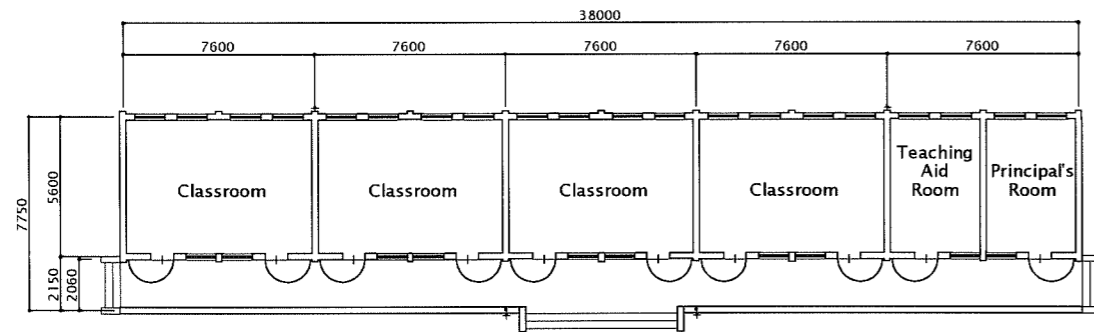
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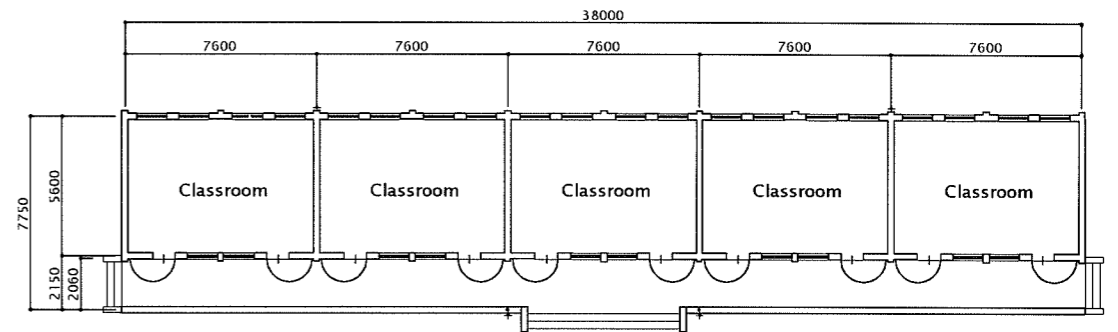
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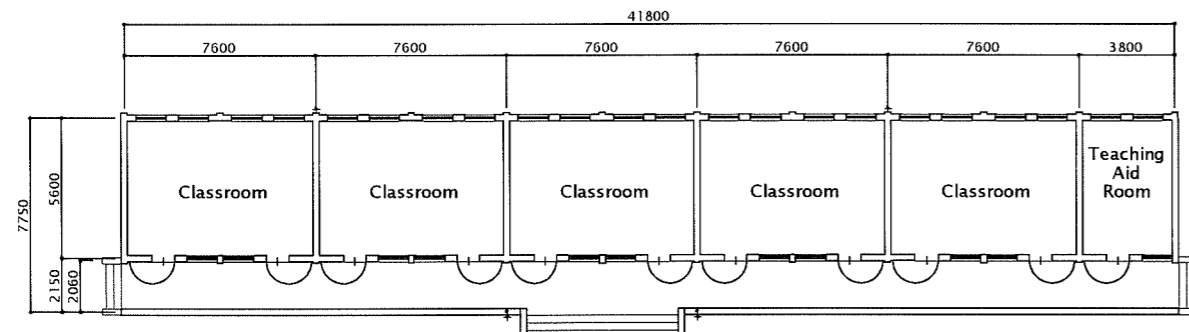
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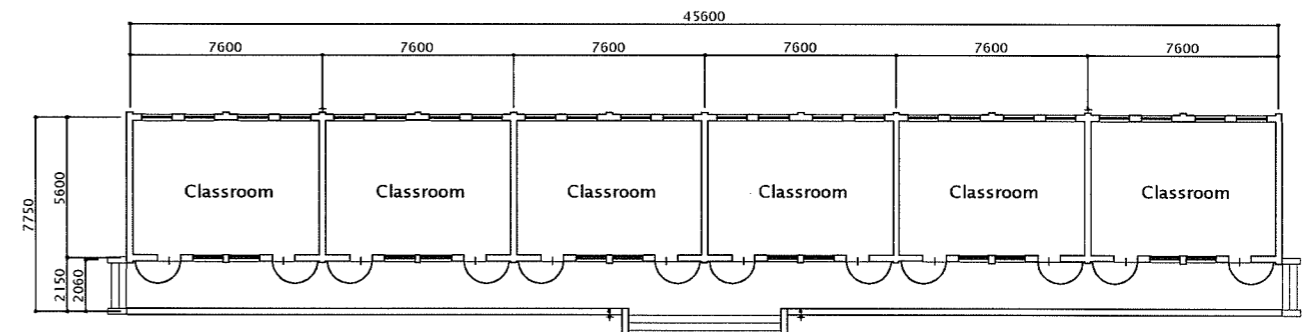
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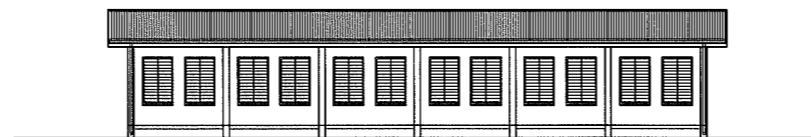
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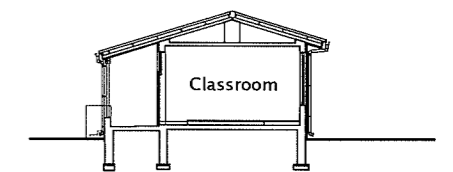
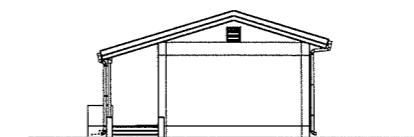
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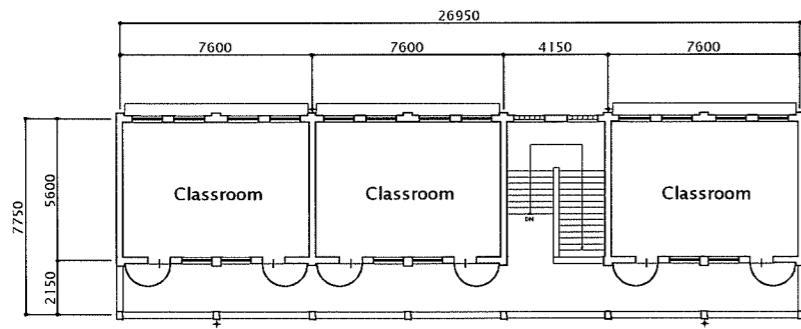
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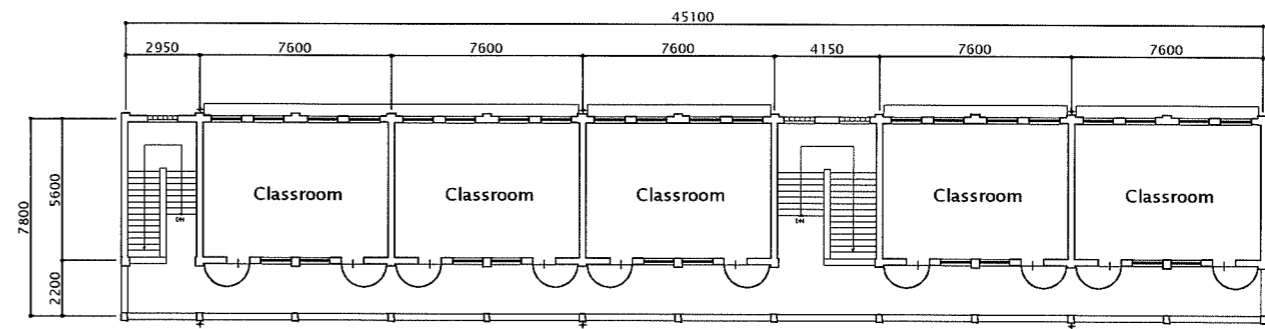
3C TYPE ELEVATIONS



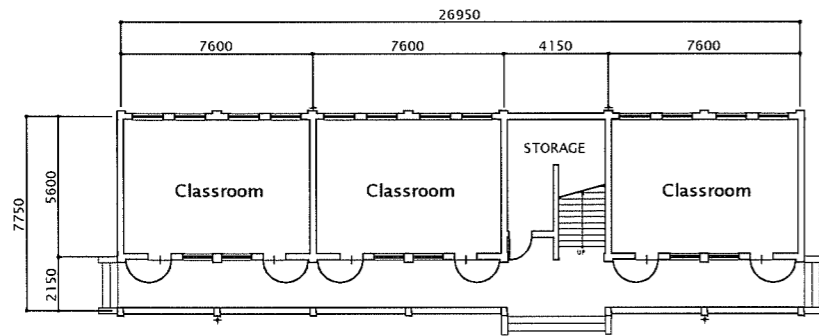
3C TYPE SECTION



FIRST FLOOR PLAN

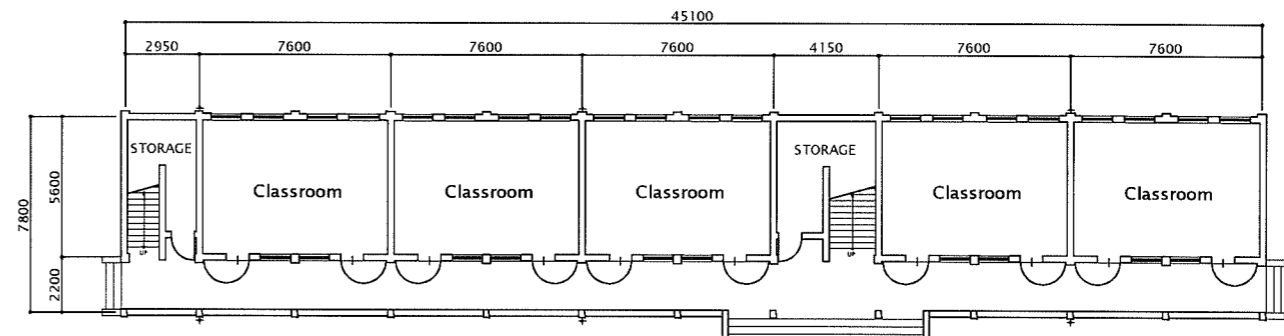


FIRST FLOOR PLAN



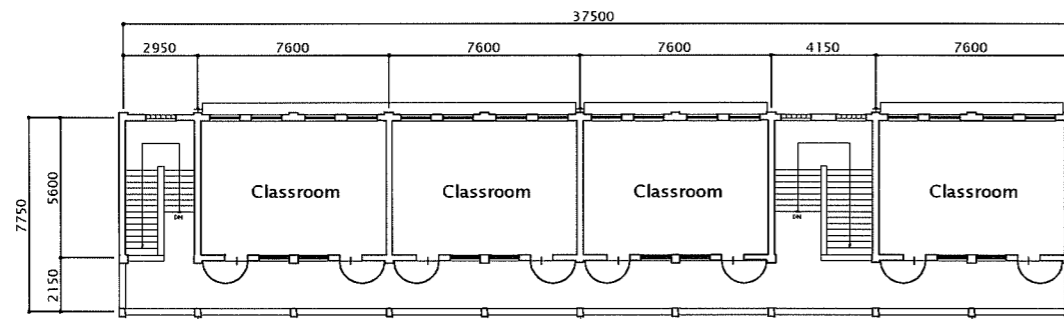
GROUND FLOOR PLAN

2-6C TYPE

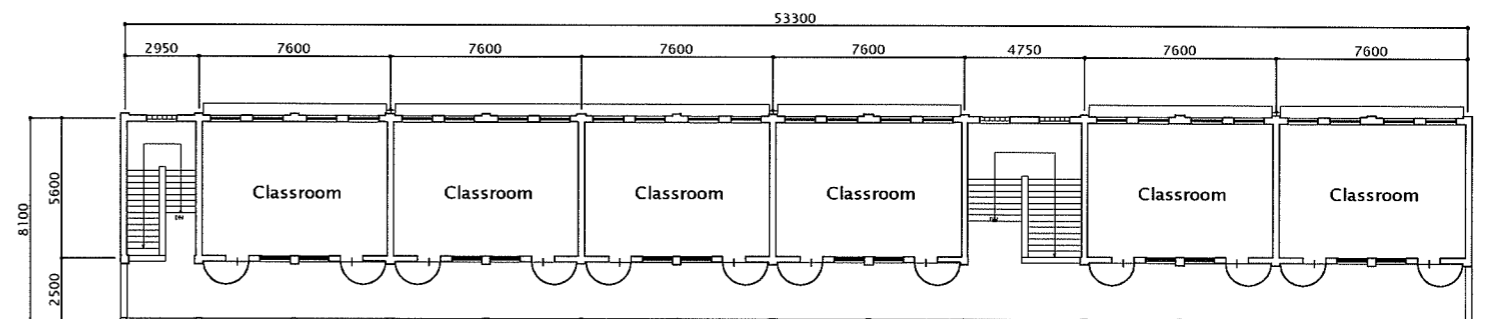


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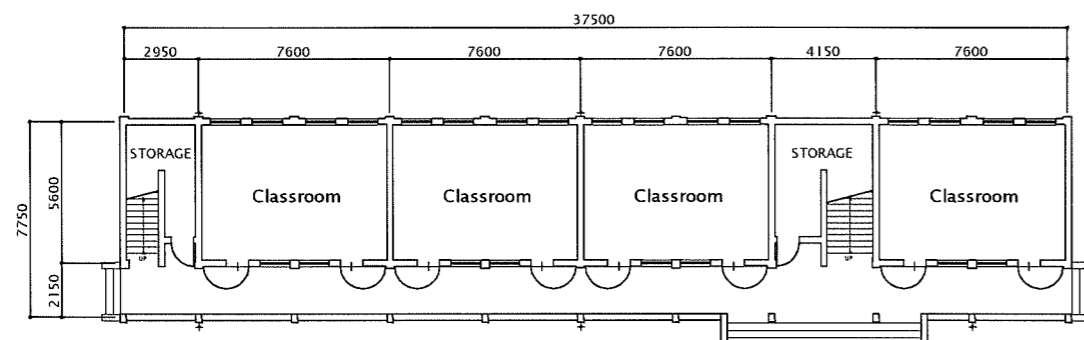
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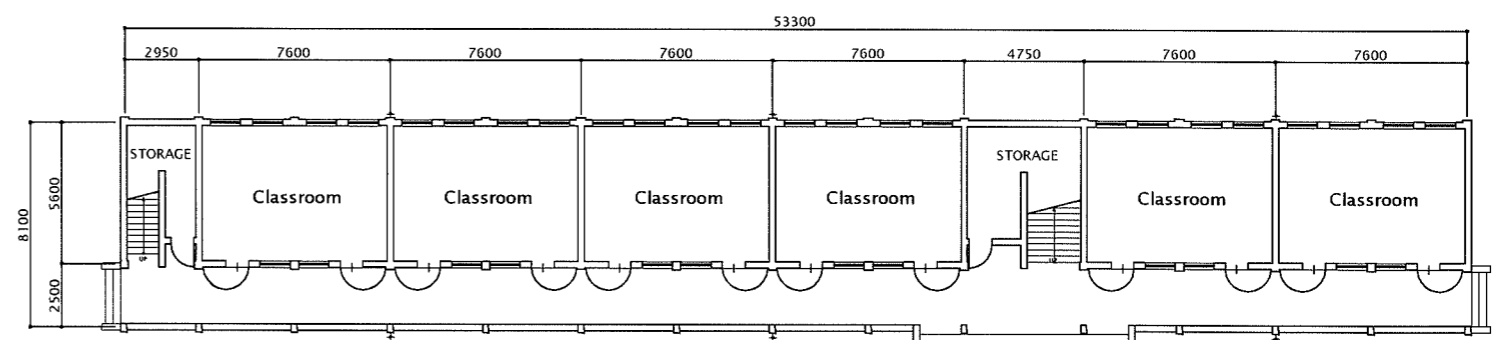


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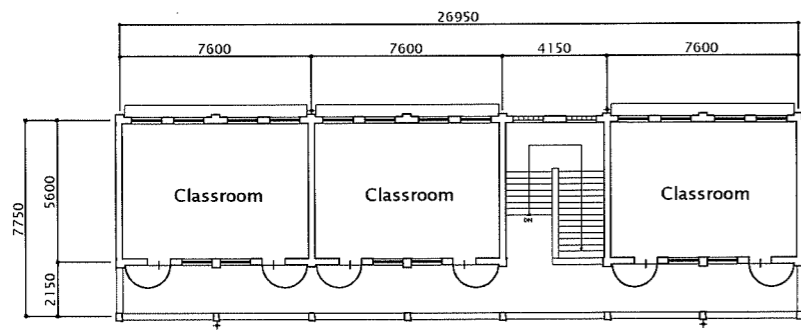
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2-8C TYPE

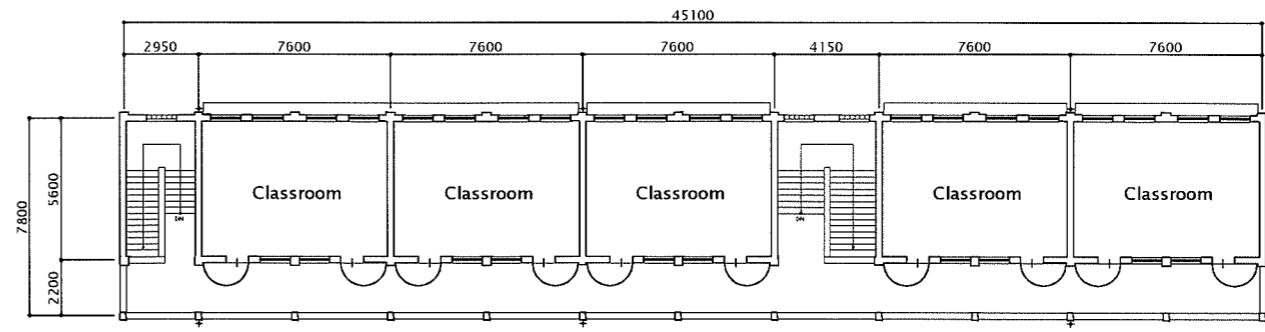


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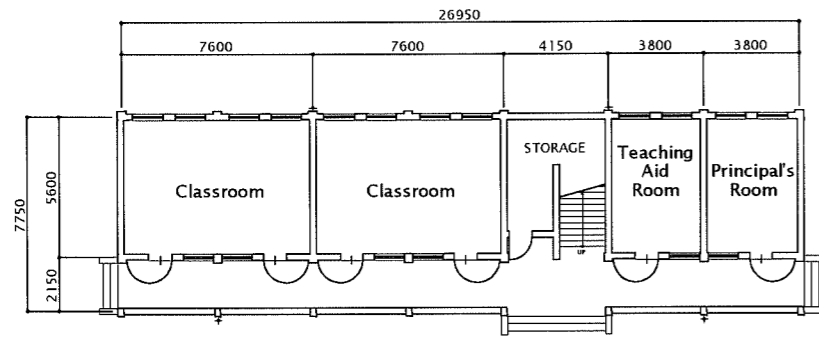
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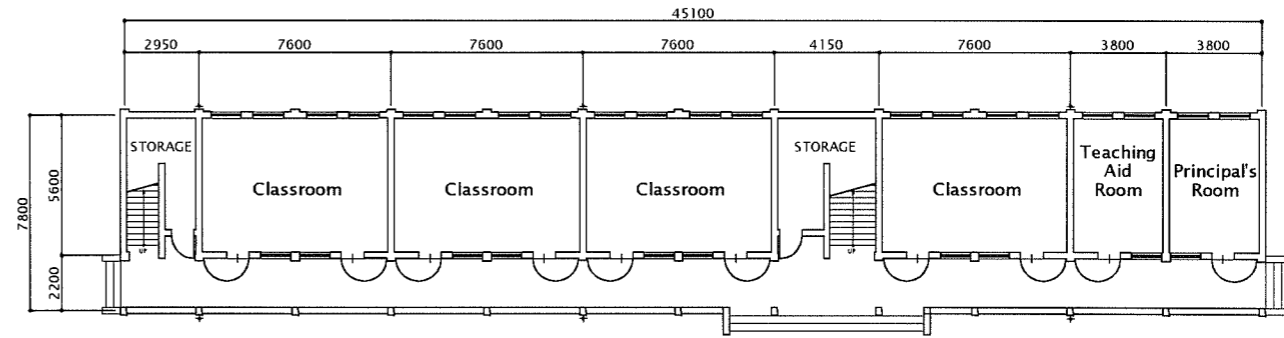


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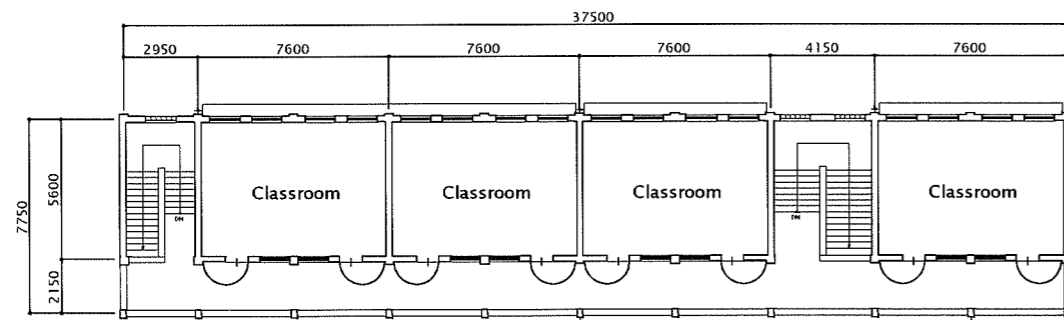
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2-5C+T+P TYPE

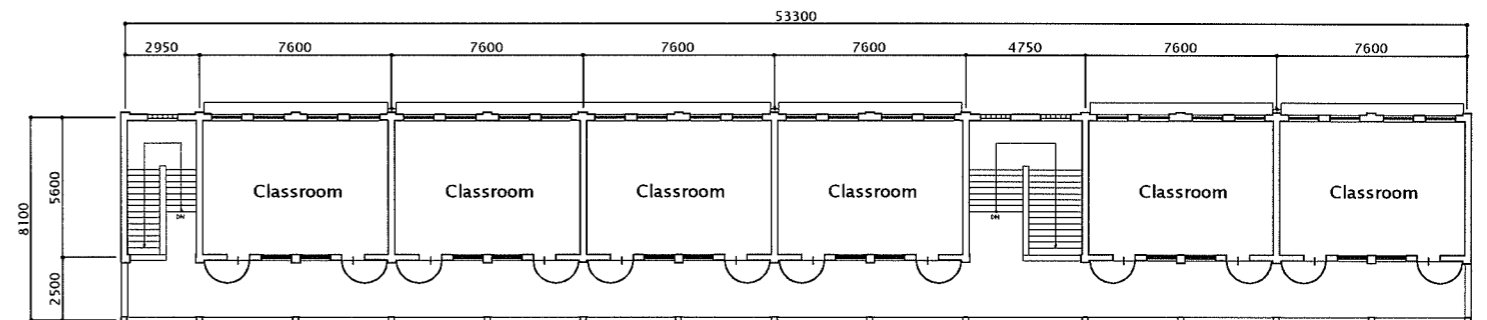


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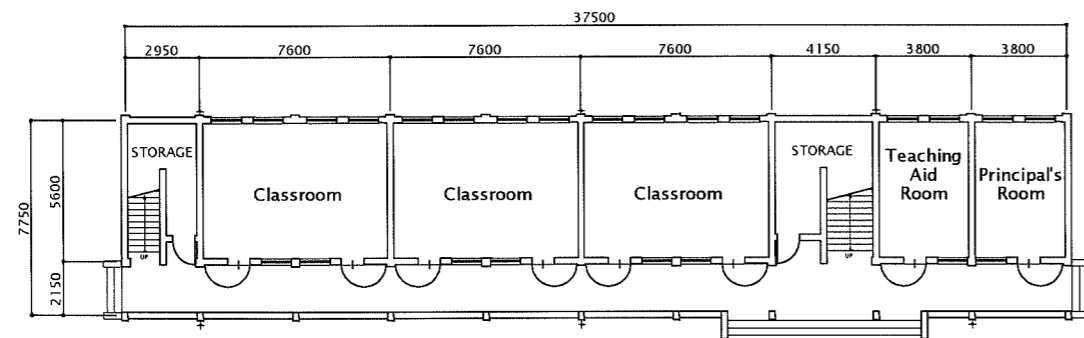
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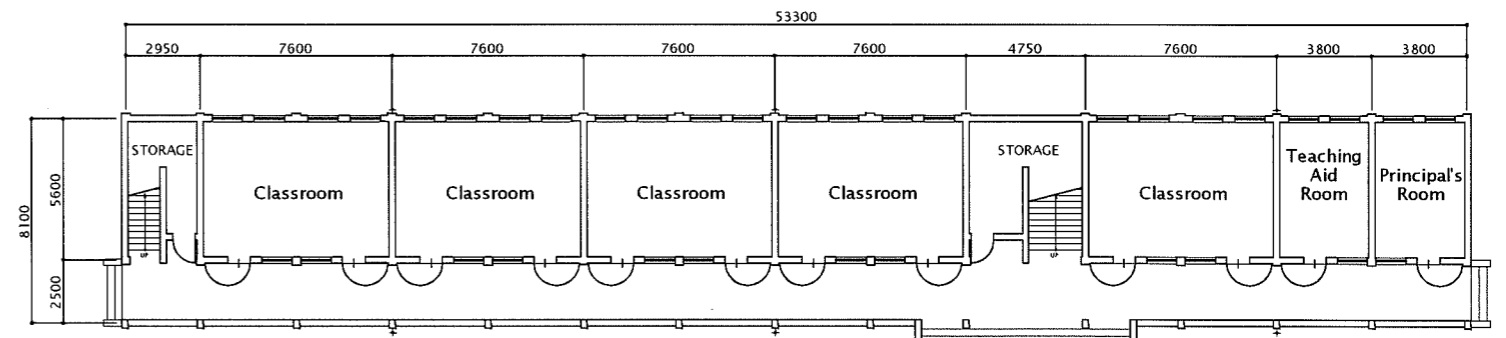


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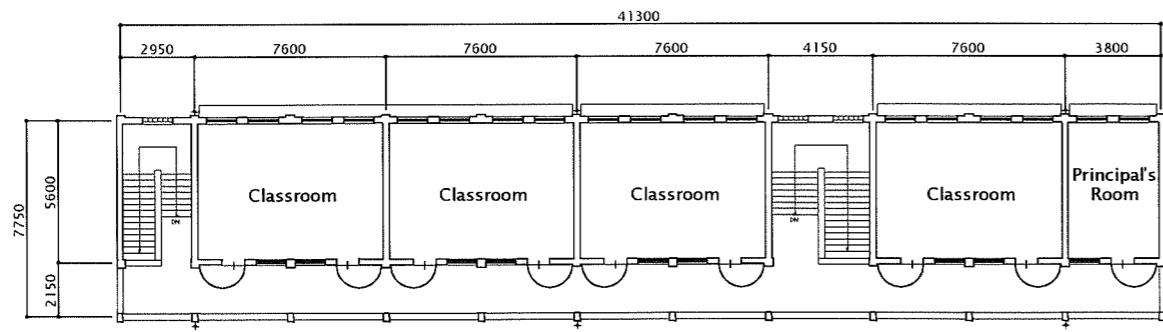
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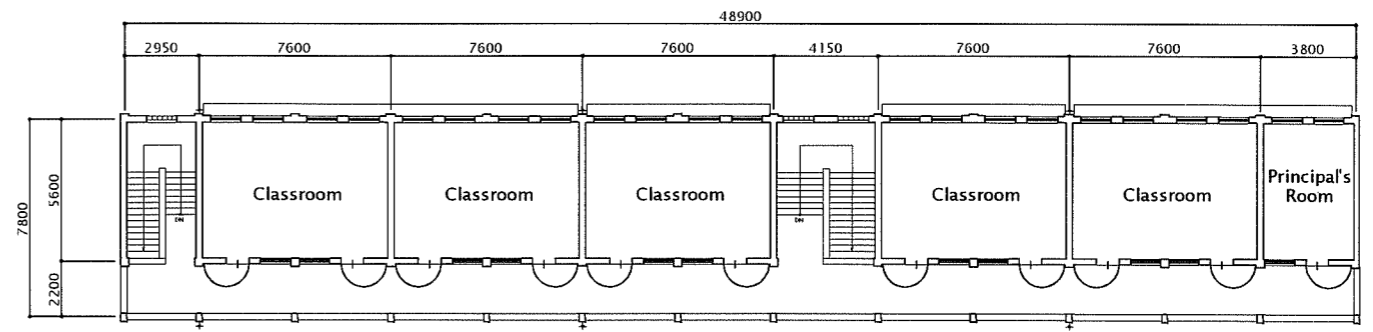


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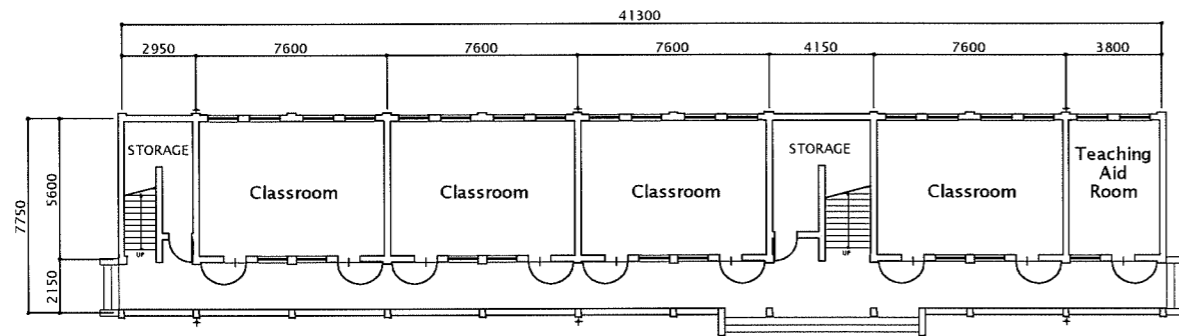
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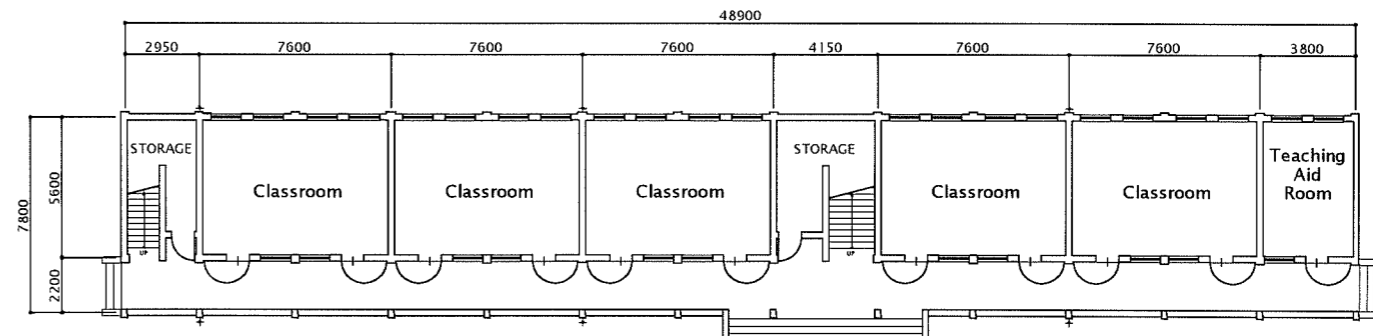


FIRST FLOOR PLAN



GROUND FLOOR PLAN

2-8C+T+P TYPE

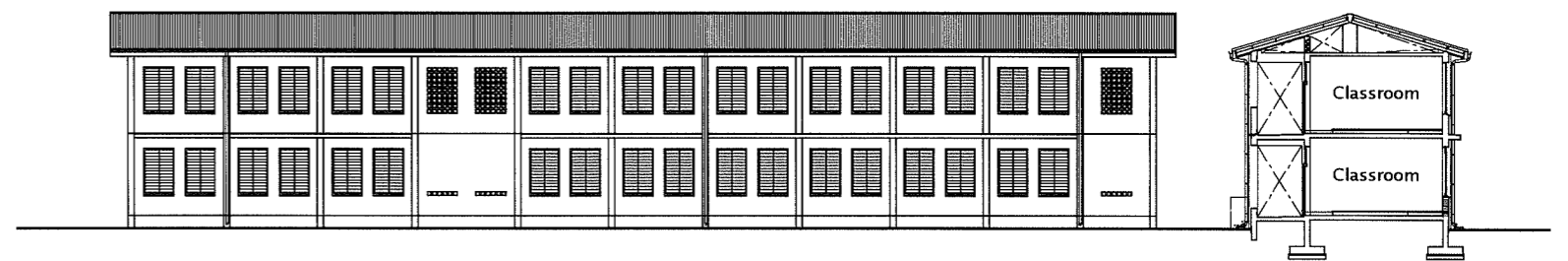


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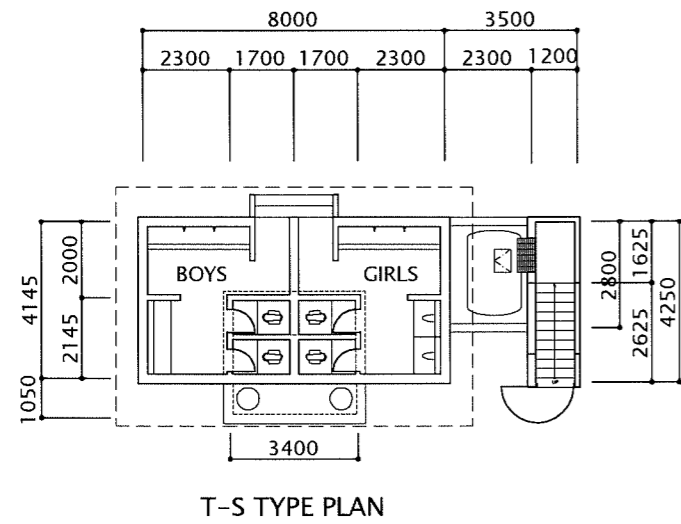
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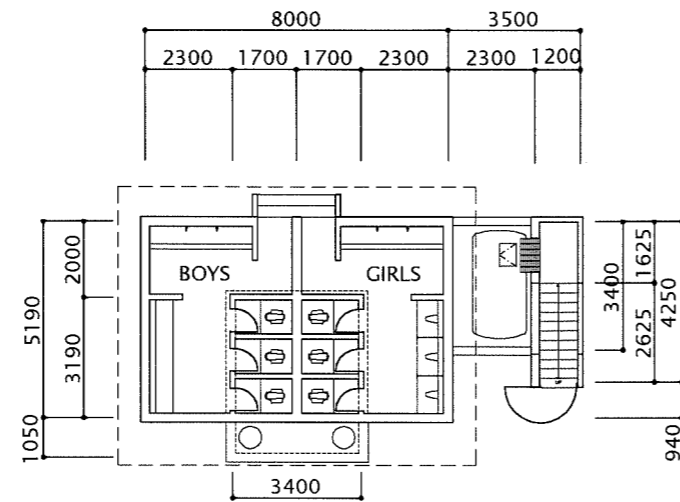
2-8C+T+P TYPE ELEVATIONS



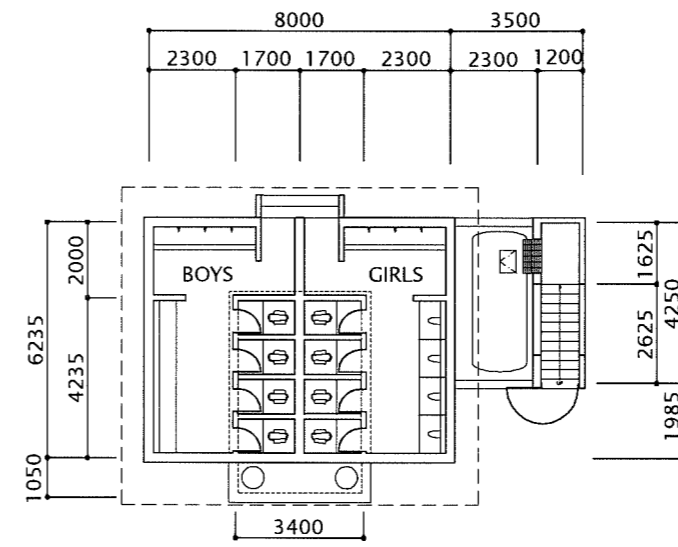
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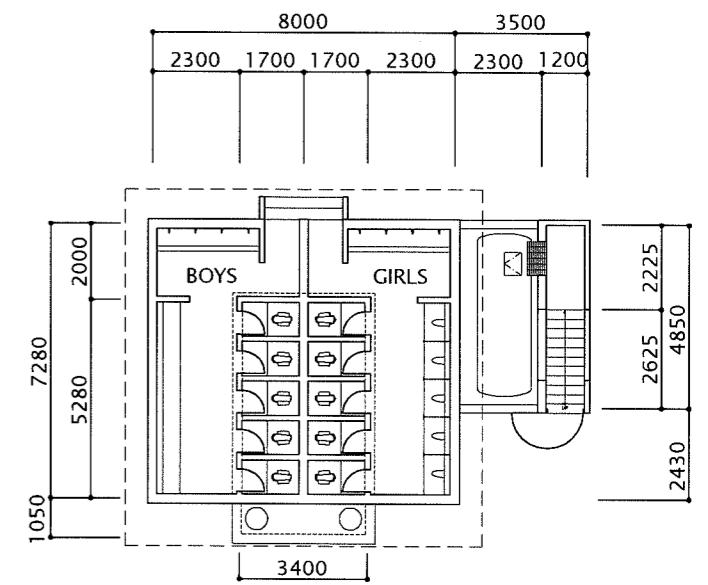
T-S TYPE PLAN



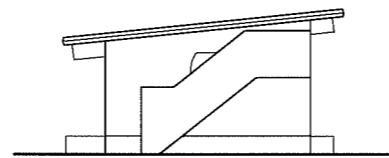
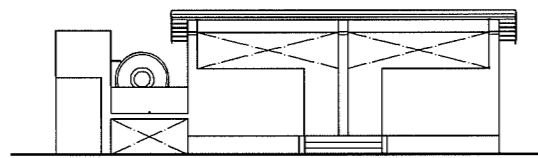
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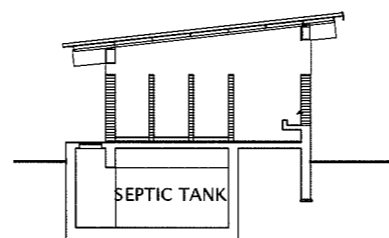
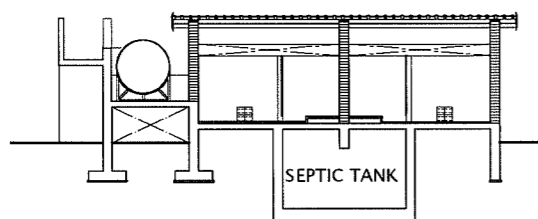
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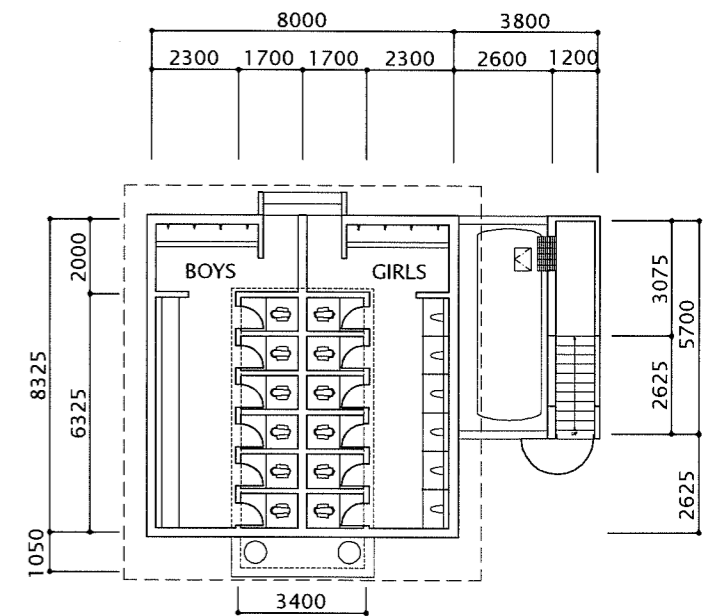
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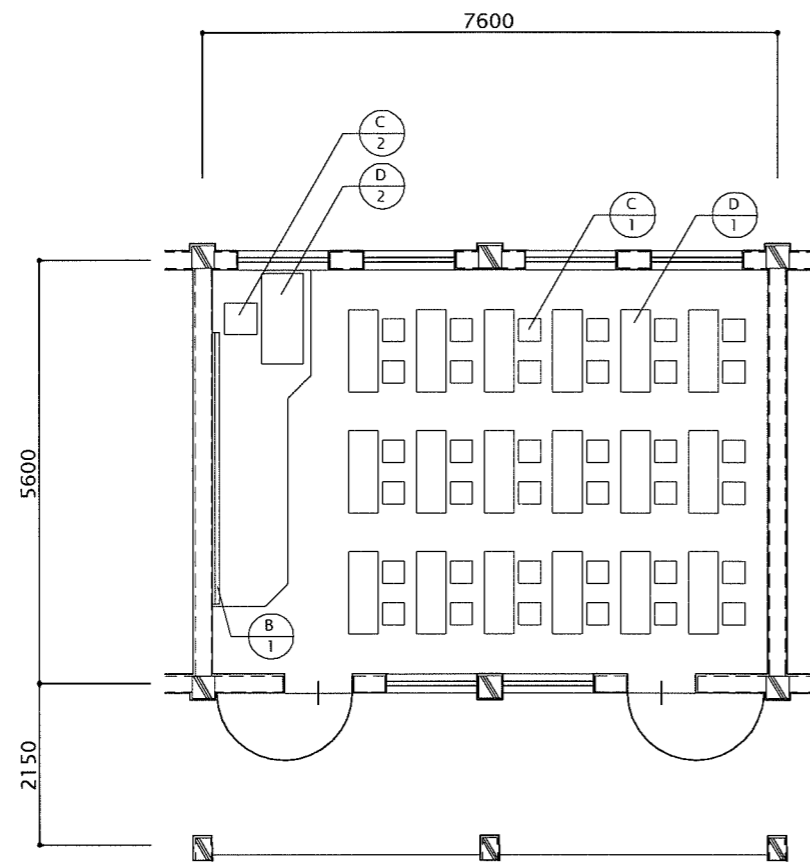
T-M TYPE ELEVATIONS



T-M TYPE SECTIONS

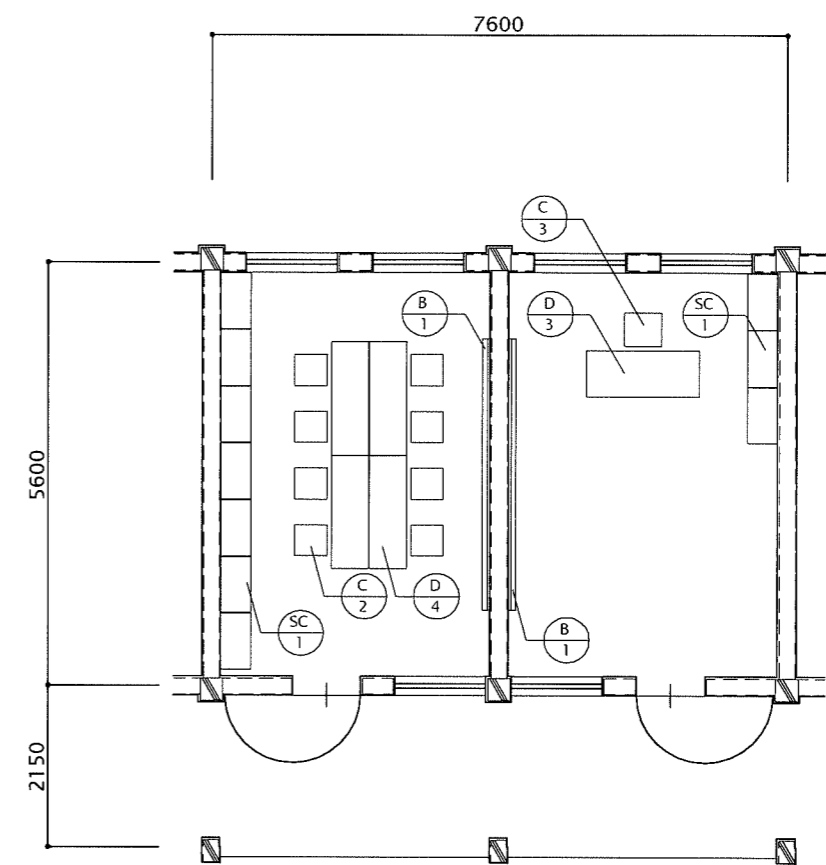


T-XXL TYPE PLAN



CLASSROOM

FURNITURE LAYOUT



TEACHING AID ROOM

PRINCIPAL'S ROOM

FURNITURE SCHEDULE

LOCATION	SYMBOL	ITEM	DIMENSION	QUANTITY	REMARKS
CLASSROOM	(D/1)	STUDENT'S DESK (FOR 2 STUDENTS)	1100W×525(590)H×400D	18	SMALL DESK:LARGE DESK=1:2
	(D/2)	TEACHER'S DESK	1200W×750H×558D	1	
	(C/1)	STUDENT'S CHAIR	325(375)H	36	SMALL CHAIR:LARGE CHAIR=1:2
	(C/2)	TEACHER'S CHAIR	430H	1	
	(B/1)	BLACK BOARD	3600W×1200H	1	
PRINCIPAL'S ROOM	(D/3)	PRINCIPAL'S DESK	1500W×750H×625D	1	
	(C/3)	PRINCIPAL'S CHAIR	430H	1	
	(SC/1)	STORAGE CABINET	750W×1800H×400D	3	
	(B/1)	BLACK BOARD	3600W×1200H	1	
TEACHING AID ROOM	(D/4)	MEETING TABLE	1500W×750H×500D	4	
	(C/2)	TEACHER'S CHAIR	430H	8	
	(SC/1)	STORAGE CABINET	750W×1800H×400D	7	
	(B/1)	BLACK BOARD	3600W×1200H	1	

2-2-4 Implementation / Procurement Plan

2-2-4-1 Implementation / Procurement Policies

(1) Basic Matters for Project Implementation

Project will be carried out in accordance with the Basic Design. After the review of the Basic Design by Japanese agencies related to the Project, an approval by the Cabinet of the Government of Japan is required for the Project implementation. After the approval, both countries will sign the Exchange of Notes for the Project. Then Project will begin in accordance with the following principles:

- 1) The Project shall use the funds financed by the taxes of Japanese people and it will be implemented under the budgetary system of Japan.
- 2) The Government of Vietnam shall sign a contract agreement with a Japanese national consulting firm and entrust the firm with preparing the detailed design of the Project based on this Basic Design, assisting the Vietnam side to select contractors for Project construction and conducting construction supervision work for Project construction.
- 3) The Government of Vietnam shall select a Japanese national prime contractor through competitive bidding with a pre-qualification evaluation process under the assistance of the above-mentioned Japanese consulting firm and sign a contract agreement with the contractor.

(2) Structure for Project Implementation

MOET will take overall responsibility of the project. The implementing organizations are the International Relations Department, Planning and Finance Department and Primary Education Department. The PMU(Project Management Unit), of the Support Program for Primary Education Development will act as the coordinator. In the Provincial level, DOETs of Bac Giang, Thai Nguyen, Tuyen Quang and Phu Tho will be in charge of actual contact with each Project school. In the school level, principal will be a contact person.

(3) Use of Local Consultants and Contractors

For the sake of safe and smooth Project implementation and supervision at the Project sites scattered throughout four different provinces, local staff, who are well acquainted with the social and local construction conditions, should be employed as much as

possible.

(4) Implementation Plans

The Project aims to construct 48 schools which stretch in four different provinces with no artery between the provinces. Therefore, the project base will be planned to set in Hanoi.

- 1) The construction plan should consider the availability of local laborers, construction methods and other related customs and practices of Vietnam;
- 2) Since construction work will be done at more than one Project school simultaneously, a construction implementation plan that will need no re-scheduling should be made. This should be decided in advance through the holding of several meetings with persons in charge at each school;
- 3) As construction work will be done on existing school properties, effects on school activities and the security of students will be sufficiently considered;
- 4) Adequate security should be ensured throughout the construction period to prevent problems like theft, etc. at the construction sites;
- 5) The detailed implementation schedule will be regularly reported on, to MOET, DOET, JICA Vietnam office, and Embassy of Japan during the construction period to assure smooth implementation of the Project.

(5) Dividing Construction Stages

The construction of Project schools are to be divided into three stages based on the following principles:

- 1) One province should not extend over two stages.
- 2) Special attention shall be paid to the convenience of transportation of materials and supplies.
- 3) Access to Tuyen Quang and Phu Tho Province will use the same arterial road from Hanoi, therefore, these two provinces will be included in the same stage.

Based on the above conditions, the number of Project schools, and number of facilities to be constructed in each of the construction stages are shown in Table 2–10.

Table 2-10 Number of Project Schools and Project Components for each Construction Stage

Stage	Province	School	Classrooms	Toilets (Number of toilet buildings)	Principal's rooms	Teaching Aid rooms
First Stage	Bac Giang Province	16	158	20	3	4
Second Stage	Thai Nguyen Pro vince	14	106	16	8	12
Third Stage	Tuyen Quang Province	9	54	9	2	3
	Phu Tho Province	9	86	10	4	4
	Sub Total	18	140	19	6	7
Total		48	404	55	17	23

2-2-4-2 Implementation Conditions

(1) General Conditions Regarding Local Construction

The Project Area is in the middle of an economic and social development stage. Construction industries and construction material related industries in the region are also in the developing stage. Thus, for the procurement of main construction materials, it is necessary to select those construction materials that are manufactured under careful quality control. In particular, it is not possible to procure ready-mixed concrete in the Project Area. Making of concrete at each construction site must be conducted under strict quality control. As for recruiting general laborers, there will be no problems at each construction site. However, skilled workers shall be recruited in Hanoi for securing necessary numbers and quality levels. As for subcontractors, the prime consultants for the Project shall transfer an organized construction supervision method to them.

(2) Schedule Management

Considering the capability and efficiency of local contractors, and because the number of Project sites is quite large and they are scattered over a wide area, it is recommended not to begin construction at all Project sites simultaneously. Project construction should proceed in stages by dividing the sites into several groups with each group starting its building construction in intermittent succession according to a sliding time scale. The sites with two storied buildings should begin construction earlier than those with single storied buildings because of the longer construction

period required. Strict schedule control of work to be undertaken by the Vietnamese side is key for smooth Project implementation. In particular, if site preparation work at a Project site is not adequately carried out on time, building construction cannot start. For this reason, it is absolutely necessary for the Vietnamese side to understand that their part of the site preparation work must begin and complete without delay.

2-2-4-3 Scope of Works

Table 2—11 shows the division of work between the Vietnamese and Japanese sides.

Table 2—11 Scope of Works

Work Item	Japanese side	Vietnamese side
1 . Site clearing, cut and fill, and retaining walls before school building construction takes place		○
2 . Removal/demolishing of existing facilities at school sites before school building construction takes place		○
3 . Removal of rocks, obstructions, and trees at school sites, which affect the construction works, before school building construction takes place		○
4 . Associated exterior works such as landscaping, fencing, and school gates		○
5 . Preparation of access roads to Project sites before school building construction takes place		○
6 . Construction of classrooms and toilets	○	
7 . Water supply work up to the cistern tanks (covered by Japanese side), if necessary		○
8 . Electric power connection up to integrating wattmeter		○

Figure 2-4 and 2-5 show boundary of works between Vietnamese and Japanese side for water supply work and electrical work and respectively.

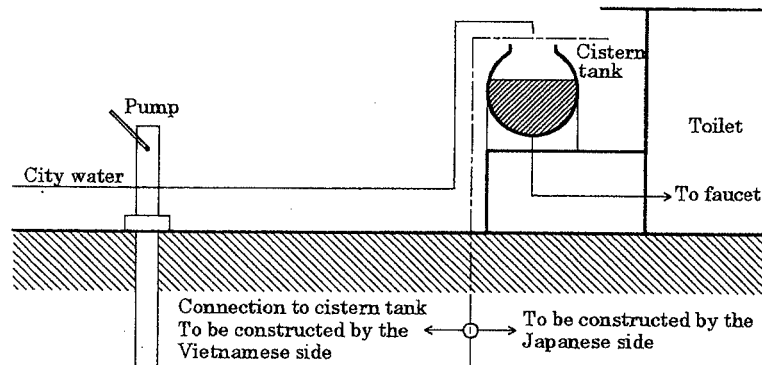


Figure 2-4 Boarder Line of Water Supply Work Between Vietnamese and Japanese Sides

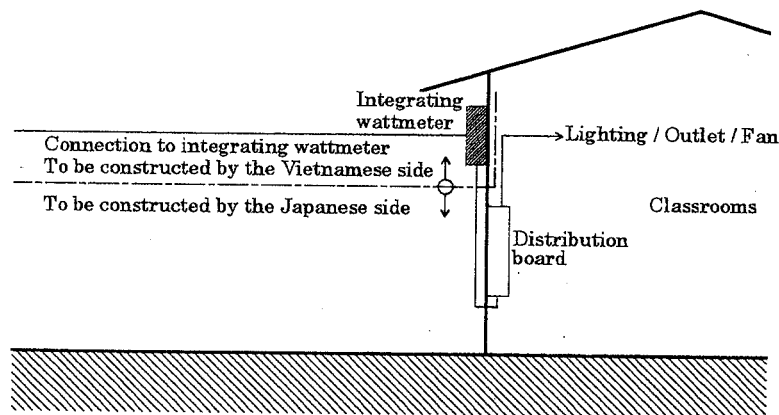


Figure 2-5 Scope of Electric works between Vietnamese and Japanese sides

2-2-4-4 Consultant Supervision

The Project's many construction sites are scattered over four provinces. In addition, most of the Project schools are located in areas which are difficult to access. Thus, in order to sufficiently maintain the required construction schedule and work quality, two types of supervision shall be conducted simultaneously: (1) General supervision - to be carried out in Japan with periodic travel to Vietnam, and (2) Site supervision - to be carried out by the resident architects or engineers.

(1) General Supervision

The Japanese Project Manager at the consulting firm's headquarters will oversee the

overall construction schedules, make comprehensive technical judgments and support the resident architects or engineers in Vietnam regarding general matters. The Japanese consultants involved in the detailed design of the Project will assist in this work, especially in areas of technical knowledge that may be out of the expertise of the resident architects or engineers.

(2) Supervision by the Resident Architects and Engineers

The resident architects and engineers who conduct construction supervision in Vietnam will be selected from the consultants with sufficient experience for architectural design and construction supervision. They will carry out the following tasks by instructing the local consultants:

1) Controlling the detailed construction schedule, 2) Attending the various tests such as slump tests, concrete compression tests, etc, 3) Checking of shop drawings, 4) Approving construction materials, 5) Examining construction methods, 6) Conducting mid-term and final inspection, 7) Gathering information related to construction, 8) Preparing monthly construction supervision reports, 9) Reporting to the MOET/DOET from time to time, 10) Conducting construction committee meetings, 11) Confirming the progress of work to be undertaken by the Vietnam side, 12) Reporting construction status to the Japanese Embassy and the JICA office in Vietnam, etc.

Under the resident Japanese architects or engineers, the local consultants will carry out construction supervision work. The number of Japanese consultant for the supervision is 1 for each stage. The number of local consultant is 2 for each stage.

The contractors' construction offices and consultants' supervision offices shall be located in Hanoi due to its convenient access to all the Project sites in four provinces for the first, second and third stages of the Project construction, so that Project construction can be comprehensively managed. Figure 2-5 is the organization chart for construction supervision by the consultant and construction management by the contractor.

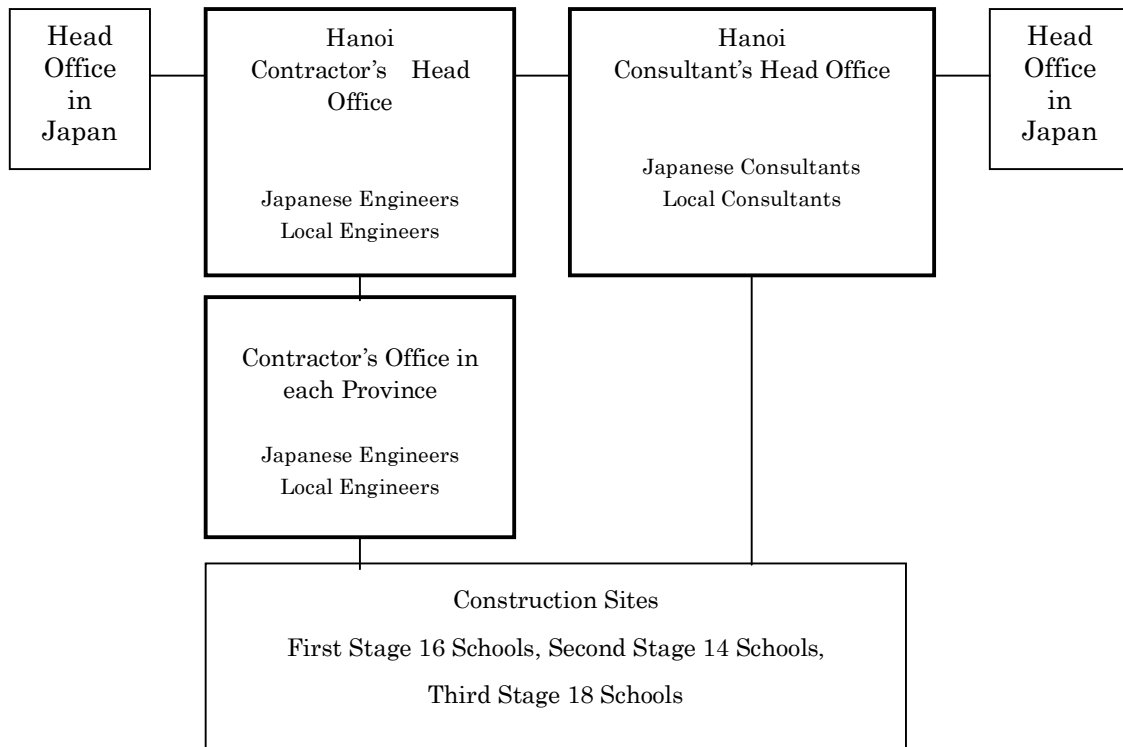


Figure 2-6 Project Construction Management Organization Chart

2-2-4-5 Quality Control Plan

Quality control for the Project's construction shall be based on those items specified in the design documents and the construction supervision plan. Quality control during the construction period includes: 1) Checking the shop drawings and construction plans and documents, 2) Evaluating the various samples of materials, 3) Conducting the various tests and, 4) Attending the various site inspections. Table 2-12 shows the major items of quality control during structural works' stage of construction.

Table 2-12 Major Quality Control Items During Structural Work Stage

Work	QC Item	Method of Examination	Frequency of Examination
Earth Work	Confirmation of soil condition of finish grade	Observation	Once per site
Re-bar and Form Works	Re-bar material	Checking Mill sheets	Upon procurement
	Re-bar arrangement	Inspection for re-bar arrangement	Before concrete casting
	Form work	Inspection for form work	Before concrete casting
Concrete Work	Materials	Cement : Quality test results Aggregates : Sieve analysis test Water : Quality test result	At every batch plant
	Mixing	Trial mixing	At every batch plant
	Casting	Slump test, Concrete temperature measurement, Air content test, Chloride test	Upon concrete casting
	Concrete Strength	Compression test for test pieces	Once per concrete casting
Concrete Hollow Blocks	Materials and Capacity of factory	Factory inspection	Every factory
	Strength	Compression test	Every factory

As there are many tests in a large number of the Project sites, the highly-experienced Japanese architects or engineers may not be able to attend all of them. Because of this, the use of a checklist may be useful. A checklist for each job task, based on the construction supervision plan, should be prepared for each construction stage. For example, for the concrete works following checklists shall be provided;

- a) Confirming aggregates, cement, water quality and trial mixing tests either at a batch plant or at a construction site;
- b) Checklists for slump tests, air amount tests, test piece sampling, chloride tests and temperature measuring during concrete placing work;
- c) Checklists for the results of compression tests of test pieces at a public laboratory.

Either the consultants or contractors' site managers should make the rounds at the construction sites or manufacturing plants and complete the checklists according to the tasks and timetables set up. Through the use of this kind of checklist method, the quality of various materials, etc for construction can be uniformly controlled. As

mentioned earlier, it is very effective for good quality control to have all the local consultants and contractors trained at model schools or building mock-ups so that everyone possesses the same knowledge, techniques and skill levels.

2-2-4-6 Procurement Plan

(1) Material and Equipment Procurement

In this Project, all construction materials and educational equipment like furniture, should be procured locally for cost reduction purposes and ease of maintenance of the Project facilities after implementation is complete.

(2) Transport of Materials and Storage Plans

Most of the construction materials will be procured in Hanoi and transported and stored in the stockyard in Hanoi. Some of them will be transported to Stockyard in each province and they will be transported to each site by land transportation according to construction progress. The procurement and transportation plan of materials is shown in Figure 2-7.

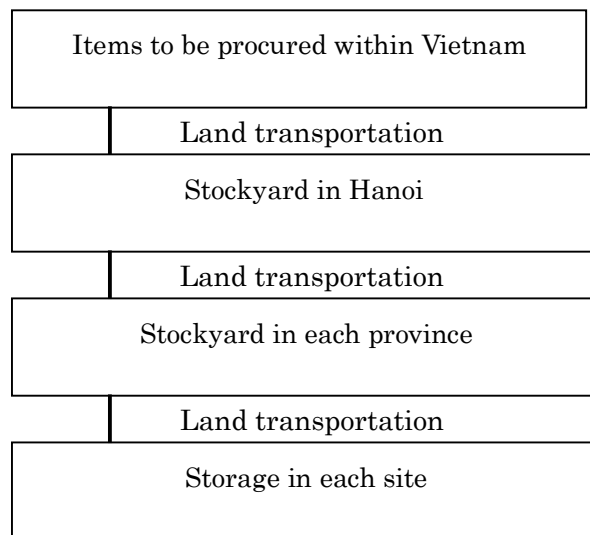


Figure 2-7 Transportation Plan for Procured Equipment and Material