



Development Proposals for:

Lookout Primary School
Brades Primary School
Montserrat Secondary School

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Department for International Development
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Any views expressed in this report are those of the consultant and do not represent policy or commitment to action by either DFID or the Government of Montserrat.

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CONTENTS

1. INTRODUCTION	1
1.1 Background	1
1.2 Purpose	1
1.3 Meetings	1
1.4 Site Visits	2
2. SUMMARY OF REPORT	3
2.1 Introduction	3
2.2 The Development of Existing Primary Schools	3
2.2.1 <i>Lookout Primary School</i>	3
2.2.2 <i>Brades Primary School</i>	4
2.2.3 <i>Montserrat Secondary School</i>	5
3. PRIMARY SCHOOL DEVELOPMENT PLANS	7
3.1 Introduction	7
3.2 Lookout Primary School	8
3.2.1 <i>Present Situation</i>	8
3.2.2 <i>Future Development of the School</i>	12
3.3.3 <i>Cost Estimates</i>	21
3.3 Brades Primary School	22
3.3.1 <i>Present Situation</i>	22
3.3.2 <i>Future Development of the School</i>	25
3.3.3 <i>Cost Estimates</i>	39
4. MONTSERRAT SECONDARY SCHOOL PROPOSALS	40
4.1 Present Situation	40
4.2 Design Guidelines	40
4.2.1 <i>General</i>	40
4.2.2 <i>Design Criteria</i>	41
4.2.3 <i>Factors Affecting the Design of Facilities</i>	41
4.3 Proposals for the New Secondary School	44
4.3.1 <i>Introduction</i>	44
4.3.2 <i>Siting</i>	45
4.3.3 <i>Design Concept</i>	45
4.3.4 <i>Phasing of Construction</i>	50
4.3.5 <i>Construction</i>	50
4.3.6 <i>Proposals for Facilities</i>	51
4.3.7 <i>Details of Individual Buildings</i>	55
4.3.8 <i>Preliminary Cost Estimate</i>	67
ANNEX 1: Terms of Reference: Design Consultancy for Education Infrastructure Programme	68

1. INTRODUCTION

1.1 Background

Until the early 1990s, Montserrat was largely self-sufficient but the volcanic crisis of 1995-1997 destroyed much of the social and economic fabric of the island, devastated nearly all its key infrastructure and caused a substantial population exodus.

Substantial DFID assistance (some £250m from the start of the crisis to date) has been provided to restore basic infrastructure and to maintain essential services for the remaining population.

Montserrat's education system is broadly based on the English system. Both universal primary and secondary education have been achieved and the early childhood programme expanded. Provision is made for every child from the age of three to attend nursery school. There are three government nursery schools, two primary schools (Lookout and Brades), one secondary school (Montserrat Secondary School) and two privately owned primary schools.

Since the volcanic disturbances, families have increasingly moved north across the island. Lookout Primary School was purpose built in response to the evacuation and is now over-subscribed and Brades Primary School is in urgent need of renovation and development. Montserrat Secondary School, sited in the ash shadow of the volcano, is prone to impromptu closure because of ash falls. The Government's intention is for a phased relocation of the secondary school to a new site in the north.

1.2 Purpose

The consultant architect visited Montserrat from Sunday November 9th to Saturday November 15th 2008.

The purpose of the consultancy was to provide a design for the redevelopment of Brades Primary School and the scoping, initial design and costing for a new secondary school on the Island.

The consultant was also to provide a development proposal for the expansion of Look Out Primary school to ensure that there is some consistency in the island's education infrastructure.

See Annex 1 for full details of the consultant's terms of reference.

1.3 Meetings

Meetings were held by the consultant with: HE the Deputy Governor; the Hon Chief Minister; the Hon Minister of Education and Labour; the PS of the Ministry of Education and Labour; the Director of Education; the DFID Representative; the Head Teacher and staff at Brades Primary School; the Head Teacher and staff at Lookout Primary School; the Principal and staff at Montserrat Secondary School including the Change Manager; the PS of Development; the Director of Physical Planning and his staff and the Director and the Community Liaison Officer of Caribbean Development Bank.

Numerous meetings were held with the DFID Resident Engineer, the Acting Government Chief Architect and the Government Architect who designed the Lookout Primary School extension to discuss the existing proposals for both primary schools, the possible sites for the Montserrat Secondary School and the consultant's preliminary proposals.



1.4 Site Visits

Several visits were made to Brades and Lookout Primary Schools to inspect the existing facilities and review possibilities for extending the facilities on the present sites. Visits were also made to the Montserrat Secondary School site to inspect the existing facilities there and to two possible sites for the new secondary school at Pastures Piece and at Blakes.

2. SUMMARY OF REPORT

2.1 Introduction

There are two government primary schools on the island, Lookout and Brades Primary Schools and a government secondary school, Montserrat Secondary School.

The two primary schools are at present single-stream entry schools and neither have sufficient space on their sites to be developed as two-stream schools.

Both schools will require additional buildings and renovations and/or extensions to existing buildings to bring them up to modern standards and because of funding constraints, both schools will probably need to be developed and extended in phases.

Proposals for the phased extension and renovation of both schools are set out in Section 1: Primary School Development Plans. It should be noted that these are preliminary proposals that have been developed in order to produce development plans for both schools and that the budgets are based on current PWD estimates for new construction with no allowance for inflation. Both the proposals and the budgets will therefore require further work before final designs and accurate budgets can be produced.

The secondary school used to be one of two junior secondary schools both serving a senior secondary school and was converted into the island's only secondary school after the volcanic eruption. The school is situated on an unsuitable site close to the exclusion zone in the centre of the island and a new school on a new site is urgently needed.

While the consultant's brief asks for a concept design only for the proposed new secondary school, it has been necessary to prepare detailed designs for the school buildings in order to establish a preliminary budget and to ascertain the area of land required for the new school. However, it must be emphasised that these are preliminary proposals only and that a great deal of work remains to be done on the detail design of the buildings when a site has been selected, the new curriculum is finalised and a time-table is available.

2.2 The Development of Existing Primary Schools

2.2.1 Lookout Primary School

Present Situation

Lookout Primary School is a single-stream primary school with 174 pupils in kindergarten and grades 1 to 6. The school was constructed in 1997 as a secondary school and was converted into a primary school in 2001. The site is fairly large, falls from south to north and has been terraced to form several flat areas on which sit the entrance and parking area, the school buildings and the school playing field.

The existing school facilities consist of three buildings on two different levels connected by covered links with a small paved yard between them. Building 1 is at a higher level than the other two and is oriented to face north/south. The other two buildings are at a lower level and are oriented to face east/west. Access between all three buildings is via steps and there is no provision for disabled access.

There is a proposal developed by PWD for a two-storey extension to the school behind Building 1, to the rear of the present parking area. There are however a number of design and accommodation issues with this proposal and it is recommended that it does not go ahead without some major changes.

Future Development of the School

In order to develop this school to accommodate and teach the maximum number of pupils, additional facilities will be required and the existing facilities will have to be renovated and modified. Proposals have therefore been made to develop the school in two phases.

In the first phase it is proposed that the design for the PWD building is amended and the location changed to behind, parallel to and to the east of the existing Building 1. The library/resource centre, IT room, small group room, SEN classroom and creative space should be moved to the ground floor and the three classrooms moved to the first floor. The head teacher's office and teachers' room should be relocated to a new staff/administration building that it is proposed to include in the second phase of development.

In the second phase of development it is proposed that the three existing buildings are renovated and re-planned to provide four large classrooms in Buildings 2 and 3 and a music/dance studio and a classroom in Building 1. In this phase it is also proposed that a new staff/administration building will be built with a head teacher's office, a meeting room, a general office, a store, a teachers' resource room, a staff room, a caretaker's office, a sick bay, a counselling room and a parents/community room. This building will be at the front of the site and will control the entrance to the school.

It is also proposed that a new multipurpose hall is constructed at the rear of the site in Phase 2 and that this will contain a hall for dining, performances, meetings, etc together with two stores, changing rooms and toilets and a kitchen.

At the end of Phase 2 of the development, the school should have all of the facilities required to bring it up to a standard similar to those of other countries in the region. For more details of the development plans, buildings, cost estimates etc see Section 1 below.

2.2.1 Brades Primary School

Present Situation

Brades Primary School is a single-stream primary school with 151 pupils in kindergarten and grades 1 to 6. The original school buildings were constructed in 1966 by the Methodist Church and the school has had later additions constructed by the government.

The school is situated next to a minor road on a fairly large sloping site that has been terraced in parts to accommodate the buildings. The site falls from south to north and there are some large changes in level.

The existing school facilities consist of four permanent buildings (one a toilet block) on different levels some of which are connected by narrow covered ways. There are also three semi-permanent timber-framed buildings that are used by the school and other agencies and it is proposed to eventually replace these and remove them from the site. Access to the buildings at the higher level is difficult and there is no disabled access to the toilets.

There is a proposal to construct a two-storey extension to the school (to be funded by the Caribbean Development Bank) on a steeply sloping site below the existing playing field although there is not as yet a definitive design.

Future Development of the School

In order to develop this school to accommodate and teach the maximum number of pupils, additional facilities will be required and the existing facilities will have to be renovated and modified.

It is proposed that some of the additional facilities that are required will be provided in the first two phases of the development of the school and that the modifications of the existing buildings

and further new facilities will be provided in Phase 3. Phases 1 and 2 have been split because of budget considerations but it would be more economic if they were implemented at the same time.

It is proposed that two 2-storey buildings are constructed in Phases 1 and 2 of the expansion and renovation of this school. The buildings will be similar in design and size and will be located on the northern edge of the existing playing field. The buildings will have access from the playing field level to an upper ground floor and a lower ground floor.

The Phase 1 building will contain three classrooms, a small group room and an SEN classroom. The Phase 2 building will contain two classrooms, a base for the special educational needs unit and pupils' and staff toilets.

When these two buildings are completed it will be possible to remove the three semi-permanent timber buildings freeing up a large area of the site for playing fields and further extensions.

In Phase 3, the three main existing buildings will be renovated and adapted to different uses. The building closest to the main entrance will be converted into a staff/administration building and the building behind it will be converted to provide a music/dance studio, a room for the school's pan steel orchestra, two small group rooms and a classroom in the basement for the adjacent nursery school. The third existing building will be renovated and extended to provide a library/resource centre, an IT room, a creative space and two large classrooms.

It is also proposed that a new Multipurpose Hall is constructed on the lower level of the site in Phase 3 and this will contain a hall for dining, performances, meetings, etc together with two stores, changing rooms and toilets and a kitchen.

At the end of Phase 3 of the development, the school should have all of the facilities required to bring it up to a standard similar to those of other countries in the region.

For more details of the development plans, buildings, cost estimates etc see Section 1 below.

2.2.3 Montserrat Secondary School

Present Situation

The existing Montserrat Secondary School campus is located towards the centre and on the western side of the island at Salem not far from the northern boundary of the exclusion zone.

The present site is vulnerable to ash falls and has to be abandoned when these are very heavy; the site is steep with very little space for recreation or expansion and the existing facilities are limited in scope. It should also be noted that while the present site is convenient for the families living in the Salem area it is a long way from the new population centres that are developing in the north of the island.

It is imperative therefore that a more suitable permanent site is found probably in the north of the island away from the exclusion zone. Two possible sites have been identified but one is too small and the other while large enough, seems to have ownership problems. Any new site should have adequate space for the facilities required by the present school population with sufficient space for future expansion if it is ever required.

Future Development of the School

While it is not possible to arrive at a definitive design for the new school without an actual site, it is possible to define an approach to the design of the new school. The proposals that are illustrated in this report set out possible design strategies that could be adopted when designing the new school facilities.

Preliminary designs have been prepared for the facilities that will probably be required in the new school and a notional site layout has also been prepared that illustrates how these facilities could be arranged on a site.

The school as proposed consists of a group of separate buildings linked by covered ways running from north to south. Each building has a covered veranda running its full length giving access to all rooms and there are thus a series of north/south and east/west covered routes connecting all rooms and buildings.

The organisation of the school around the north/south covered ways gives flexibility in the layout of the buildings and depending upon the size and proportions of the site that is eventually selected the school buildings can be arranged in a number of ways around these covered ways. The organisation shown on the present proposal is therefore only one of a number of possible layouts for the buildings.

The proposed layout gives the buildings the north/south orientation necessary to reduce solar penetration into windows and rooms and thus improve comfort. It should also minimise the amount of cut and fill in the foundations should the selected site slope from east to west and it will provide for any future expansion of the school facilities which could happen by extending the covered ways and constructing additional buildings to the north of the buildings presently proposed.

All buildings have been designed to provide as much cross-ventilation as possible to all rooms in order to make them as comfortable as possible in a situation where both average temperatures and humidity are high.

The communal buildings that are likely to be used by the community such as the Sports Hall and the Multipurpose Hall are placed at the eastern end of the school complex with a paved external assembly and informal hard play area in front of the Sports Hall and a series of paved and planted courtyards leading from there to the western end of the complex.

The courtyards separate the teaching buildings in order that noise between buildings is not a nuisance. They also provide informal soft play and social meeting areas and allow free movement of air through the buildings on each side of the courtyards.

The rooms likely to generate the most noise, the Music and Drama Studios and the Design and Technology Workshops are placed at the western end of the complex away from the majority of the other teaching rooms.

For more details of the development plans, buildings, cost estimates etc see Section 2 below.

3. PRIMARY SCHOOL DEVELOPMENT PLANS

3.1 Introduction

There are two government primary schools on the island, Lookout and Brades Primary Schools. Both are at present single-stream entry schools and neither have sufficient space on their sites to be developed as two-stream schools.

The facilities that are required in a single-stream primary school based on UK standards (see UK Building Bulletin 99) are as follows:

Class bases

- One infant class base (57/63m²/616/680ft²)
- Six junior class bases (57/63m²/616/680ft²)
- Pupils' toilets (8 boys' toilets and 8 girls' toilets)

Central Resources

- Library Resource Centre (42m²/454ft²).
- IT Suite (38m²/410ft²)
- IT technician/store (4.5m²/49ft²)
- Creative Space: food/D&T/science/art (38m²/410ft²)
- Store (12m²/130ft²)
- Main hall (140m²/1,512ft²)
- Two stores off main hall for chairs and equipment (2 x 12m²/2 x 130ft²)
- Changing rooms (2 x 12m²/2 x 130ft²)
- Toilets (2 x 12m²/2 x 130ft²)
- Kitchen/servery (40m²/432ft²)
- Music/dance room (54m²/583ft²)
- Two small group rooms (2 x 20m²/2 x 216ft²)
- SEN classroom (20m²/216ft²)

Staff and Administration

- Head teacher's office (12m²/130ft²)
- Meeting room (12m²/130ft²)
- General office (8m²/86ft²)
- Store (12m²/130ft²)
- Teachers' Resource/Photocopier (20m²/216ft²)
- Staff room (48m²/518ft²)
- Caretaker's office and store (8m²/86ft²)
- Sick bay (4.5m²/49ft²)
- Counselling room (8m²/86ft²)
- Parents/community room (12m²/130ft²)
- Entrance/reception (4.5m²/49ft²)
- Staff/visitors' toilets (12m²/130ft²)

Both schools will require additional buildings and renovations and/or extensions to existing buildings in order to bring them up to these standards and because of funding constraints, both schools will probably need to be developed and extended in phases. Proposals for the phased extension and renovation of both schools are set out below.

It should be noted that these are preliminary proposals that have been developed in order to produce development plans for both schools and that the budgets are based on current PWD estimates for new construction with no allowance for inflation. Both the proposals and the

budgets will therefore require further work before final designs and accurate budgets can be produced.

3.2 Lookout Primary School

3.2.1 Present Situation

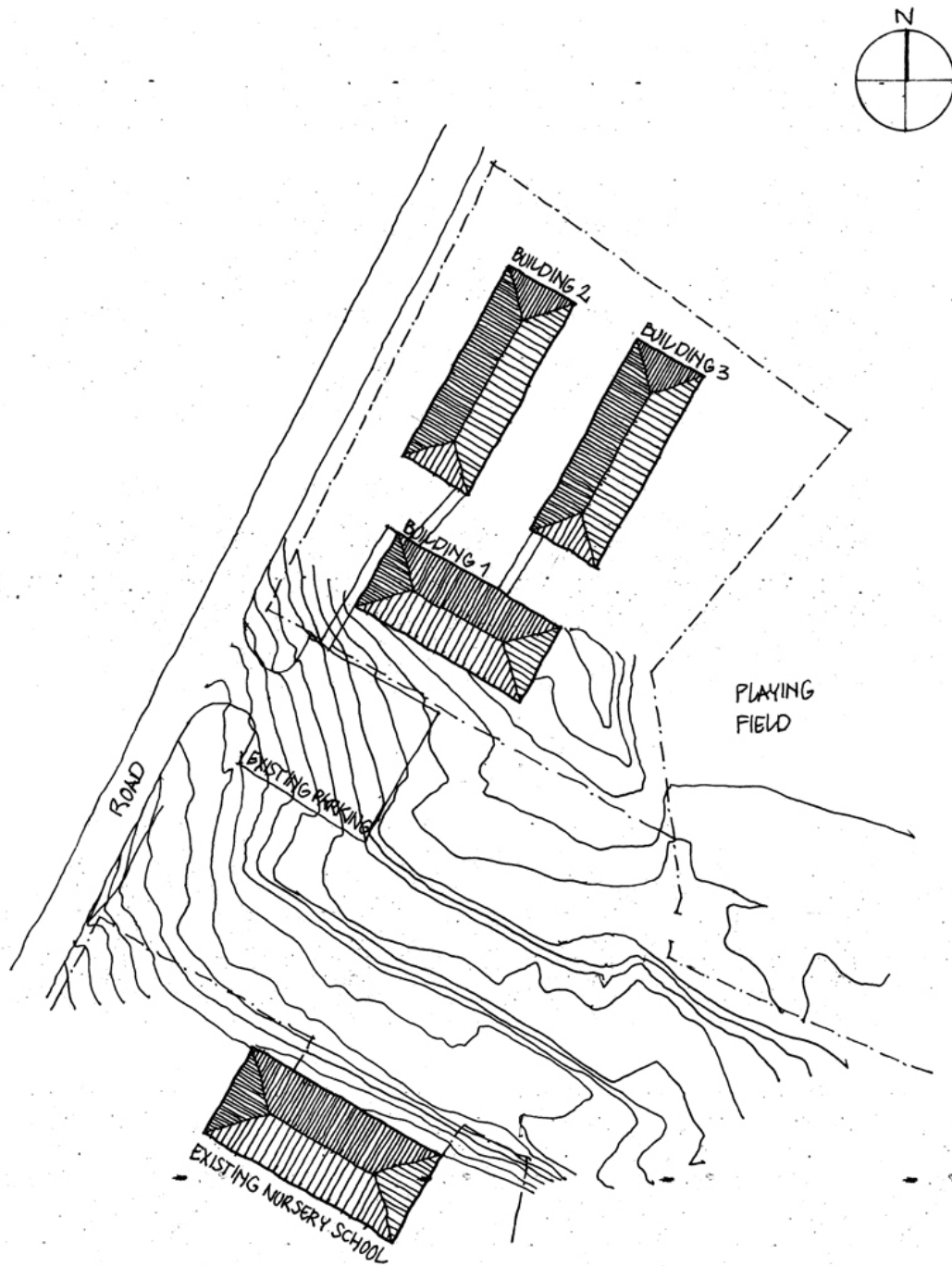
Existing Facilities

Lookout Primary School is a single-stream primary school with 174 pupils in kindergarten and grades 1 to 6. There are twelve teachers (including the head teacher) and two part-time staff: a grounds man and a woman who helps with school lunches. The school was constructed in 1997 as a secondary school and was converted into a primary school in 2001. The school is situated next to a road in a housing area. The site is fairly large and has been terraced to form several flat areas on which sit the entrance and parking area, the school buildings and the school playing field. The site falls from south to north. The pupils have use of an adjacent basketball pitch for sports activities.

The existing school facilities consist of three buildings on two different levels connected by covered links with a small paved yard between them. Building 1 is at a higher level than the other two and is oriented to face north/south. It contains the head teacher's office, two staff toilets, a small store/library, a small computer room with 6 computers (some of which do not work) and two classrooms.

The other two buildings are at a lower level and are oriented to face east/west. Building 2 contains a lunch room, two classrooms and four toilets for girls and Building 3 contains three classrooms and three toilets and a urinal for boys. Access between all three buildings is via steps and there is no provision for disabled access.

See drawing LPS/01: Existing Site Layout.



LPS/01: Existing Site Layout

The school buildings are constructed of large concrete columns (12" x 12") and beams with fair-face 8" hollow block infill panels. Roofs are of colour-coated profiled steel sheets on timber trusses with high flat ceilings. Windows are steel louvres in timber sub-frames with provision for hurricane shutters externally. Each classroom has only three windows and the steel louvres cut down the amount of light entering the classrooms. Doors were originally double stable door type with the top opening to provide more light in the classrooms. Some of these have been replaced with single panelled timber doors.

All of the buildings have been painted during the summer and seem to be in good condition. The only serious construction problems seem to be some water-logging at the bottom of the site next to Building 2 and water penetration into Building 1 and 3 where the external ground levels are higher than the floor levels. All buildings originally had gutters all round but these have been taken off and not replaced. This might cause problems in future because the roof overhangs are very small. It was also noted that there are inadequate fixings to the roof sheets and they will be vulnerable to hurricane damage. It was not possible to see how the timber roof structure is fixed to the RC frame and this should probably be checked.

The two classrooms in Building 1 are 23' 10" x 24' 1" giving an area of 576ft² (53m²) and the five classrooms in Buildings 2 and 3 are 24' 1" x 20' 2" giving an area of 483ft² (45m²) all of which are smaller than the UK standard for a primary school classroom of 56m² to 63m² (605ft² to 680ft²) and the head teacher complained of the lack of space in the classrooms. The classrooms are also poorly lit and most had electric lights on in mid-morning. None of the classrooms has a sink or water supply.

Proposed Phase 1 Extension

There is a proposal developed by PWD for a two-storey extension to the school behind Building 1, to the rear of the present parking area and oriented to face east/west.

The accommodation as proposed consists on the ground floor of:

- Three large classrooms (area including play space 1,045ft²/97m²) that can be opened up to form an auditorium with a raised stage.
- A special needs classroom (area 407ft²/38m²).
- An entrance, main staircase and two staff toilets.
- 2 boys' toilets and a urinal, 3 girls' toilets, a disabled toilet and a shower;
- A secondary staircase and a third staircase at the end of the building.
There is a covered, partially enclosed corridor at the rear of the building providing access to the classrooms and the toilets and stairs.

The accommodation as proposed consists on the first floor of:

- A foyer at the top of the main stair.
- A library/resource centre (675ft²/63m²).
- An IT classroom (390ft²/36m²) plus a server room.
- The head teacher's office (248ft²/23m²).
- A staff room including a small kitchen (799ft²/74m²) and a large store.
- A laboratory (696ft²/64m²) with a small prep room.
- Two staff toilets, 2 boys' toilets and a urinal, 3 girls' toilets.
- A store.
- A secondary staircase and a third staircase at the end of the building.
- A large open veranda providing secondary means of escape (751ft²/ 70m²).

Again there is a covered enclosed corridor at the rear of the building providing access to the classrooms and the toilets and stairs.

There are a number of major issues with this design:

- The building is badly oriented facing east/west. This will mean sun penetration and glare in the classrooms in the morning and overheating of the building in the afternoon. Buildings in tropical countries should be oriented to face north/south to reduce the amount of solar gain to the minimum and other measures are also usually necessary to reduce solar gain such as external louvres, large roof overhangs, etc.
- The orientation of the building means that it will be built across the contours rather than along them increasing foundation costs. It also exposes the building to the prevailing wind from the west.
- The positioning of the building means that it will block access to the rear of the site which could be used for future extensions.
- The classrooms are oversized and because of their depth badly under-lit. There is also very little cross ventilation.
- There are large areas of unnecessary and expensive circulation. There is for instance a large enclosed entrance on the ground floor and a large foyer and veranda on the first floor all of which are unnecessary.
- There is also a third staircase which would be unnecessary if the building was planned differently.
- The three classrooms on the ground floor are designed to provide a small auditorium with sliding, folding doors between them that can be opened up. The classroom at the northern end has been raised up to form a stage. While this space could be used in the evenings by the school or community it cannot be used during the day as the classrooms will be in use. It will be difficult therefore for the school to use it for assembly or for music or drama during the day. The raised floor in one of the classrooms will restrict the flexibility in use of the building in the long term and there will be sound transfer issues between classrooms. It will be preferable therefore at least in the long run to provide a multipurpose space that can be used by the school and the community for assembly, drama and music, indoor games and for dining.
- While raising one classroom will reduce the foundation costs to some degree (because of the sloping site) this is a rather expensive solution to the problem. If the building was constructed facing north/south along the contours the step in the foundations would not be necessary, costs could be greatly reduced and a stage could be provided using demountable units.
- The enclosed corridors at the rear at ground and first floor levels will greatly reduce light and ventilation in the rooms and the corridors could be left open to great advantage.
- The computer room as designed is an internal space and will require artificial lighting and air-conditioning.
- The other rooms on the first floor are also not very well lit or ventilated.
- The head teacher's room is on the first floor and at the rear of the site and not the ground floor at the entrance to the site where it would be more easily accessible to visitors.
- The specialist rooms (the library, IT room and laboratory) are on the first floor and they will not be accessible to disabled pupils.

There are also concerns about the flat concrete roof. It was noted for instance that a similar roof on the Nursery School building at Brades has been leaking both through the roof slab and through the parapet wall. The parapet wall is also badly cracked where it sits on the roof slab. In tropical climates exposed concrete roof slabs move a great deal and it is almost inevitable that they will leak. There is also a concern that the building is 120' 0" long but does not have an expansion joint.

The estimated cost of this building based on current PWD estimates is:

11,653ft ² @ EC\$330ft ²	3,845,490.00
Site works @ 15%	576,823.00
Contingencies @ 10%	384,549.00

Total cost **EC\$4,806,862.00**

This cost greatly exceeds the present DFID total budget of £800,000.00 for the construction, furnishing and equipping of the building. A proposal is made below for amending and simplifying the design of the building.

3.2.2 Future Development of the School

Future Requirements

It seems likely that the school will continue as a single-stream primary school which would contain a maximum of 210 pupils if all classes had the maximum design number of 30 pupils. It is not considered possible to develop the school into a two stream primary school as there is insufficient space on the site. If the primary school population in this area grows it will be necessary therefore to construct a new school on another site.

In order to develop this school to accommodate and teach the maximum number of pupils, additional facilities will be required and the existing facilities will have to be renovated and modified. Proposals have therefore been made to develop the school in two phases and these proposals are set out below.

Phase 1 Proposals

Proposed New Construction: New Classroom and Specialist Facilities Building

There are a large number of issues raised by the present design for the proposed Phase 1 Extension as noted above and it is considered necessary to amend both the design and location of the building.

It is suggested that this building, Building 4 is relocated behind, parallel and to the east of the existing Building 1 which will mean that it is oriented north/south to reduce solar penetration, it will reduce excavation costs and allow access to the rear of the site for the construction of Phase 2. See drawing LPS/02: Proposed Phase 1 Site Layout.

It is proposed that the Head Teacher's office and the Teachers' Room are removed from this building and located in a new staff and administration building near the entrance to the school which will be constructed in Phase 2 of the school's development. The main entrance on the ground floor and the foyer on the first floor will also be omitted.

The front section of the building that is approximately 15'0" wide will be omitted for the whole length of the building and the building re-planned within the remaining structure. This will simplify construction, reduce costs and greatly improve both lighting and ventilation within the rooms. It will mean omitting the proposed playrooms to the classrooms on the ground floor but these classrooms are greatly oversized and the reduced area (690ft²/64m²) is still at the top of the range recommended in UK for large primary school classrooms. Access will also be given to an outside 'wet area' for each classroom. The third staircase at the end of the building will also be omitted.

It is proposed that the specialist rooms are moved from the first floor to the ground floor in order that they are accessible by disabled students and the ground floor facilities will now consist of:

- Library/resource centre (684ft²/63m²)

- IT room (526ft²/49m²)
- IT technician's room and store (158ft²/15m²).
- Small group room (220ft²/20m²)
- Creative Space (684ft²/63m²).
- Store (114ft²/11m²).

It should be noted that some spaces are larger than shown in the 'General' section above because of the need to fit them into the structure that has already been designed. This will however provide a little more flexibility in the use of the spaces.

See drawing LPS/03: Building 4: Proposed Revised Floor Plans.

There will also be a main and secondary staircase similar to that shown on the present drawings; a staff toilet; a disabled toilet and shower and three girls' toilets.

The first floor facilities will now consist of:

- Three general classrooms (692ft²/64m²) all at the same level. Openings could be left between the classrooms so that, as a short term measure until the Multipurpose Hall is built, the rooms could be used as an auditorium. Expensive sliding/folding doors should not however be installed; temporary chalkboard screens should be used instead.
- A Special Educational Needs Classroom (346ft²/32m²).

There will also be a main and secondary staircase similar to those shown on the present drawings; a staff toilet; a store over the disabled toilet and three boys' toilets.

See drawing LPS/03: Building 4: Proposed Revised Floor Plans.

To simplify construction, reduce costs and avoid future roof leaks it is also proposed that the roof construction is changed from a flat concrete roof to either a sloping concrete roof or colour-coated profiled steel roof sheets on timber trusses. The suspended ceilings on the ground floor should also be omitted (because all serviced rooms will now be on the ground floor) together with the external screens to the ground and first floor access verandas. Both of these measures should help to reduce costs.

Phase 2 Proposals

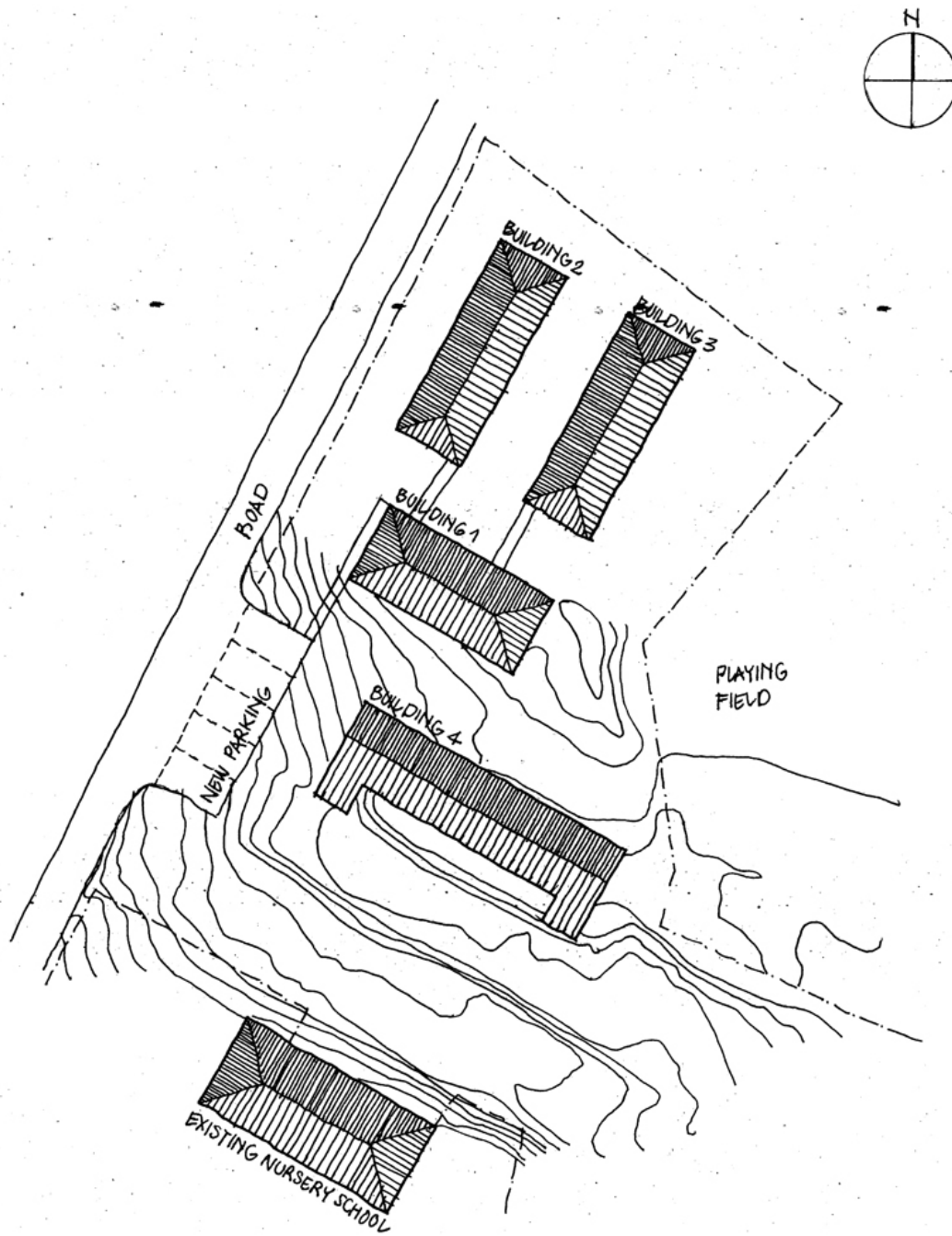
Proposed Renovations

As noted above the existing six classrooms in Buildings 2 and 3 are very small and not fit for purpose. It is proposed therefore that the existing crosswalls between the classrooms are demolished and the size of each classroom increased by 50% which will provide four large classrooms (732ft²/67m²) for Kindergarten and Grades 1 to 3 with storage/resource spaces between. Doors will be provided at the rear of each classroom to a covered 'wet' area with a sink and the windows will be enlarged to provide better lighting. The existing toilets will be renovated to provide four toilets for boys and four toilets for girls.

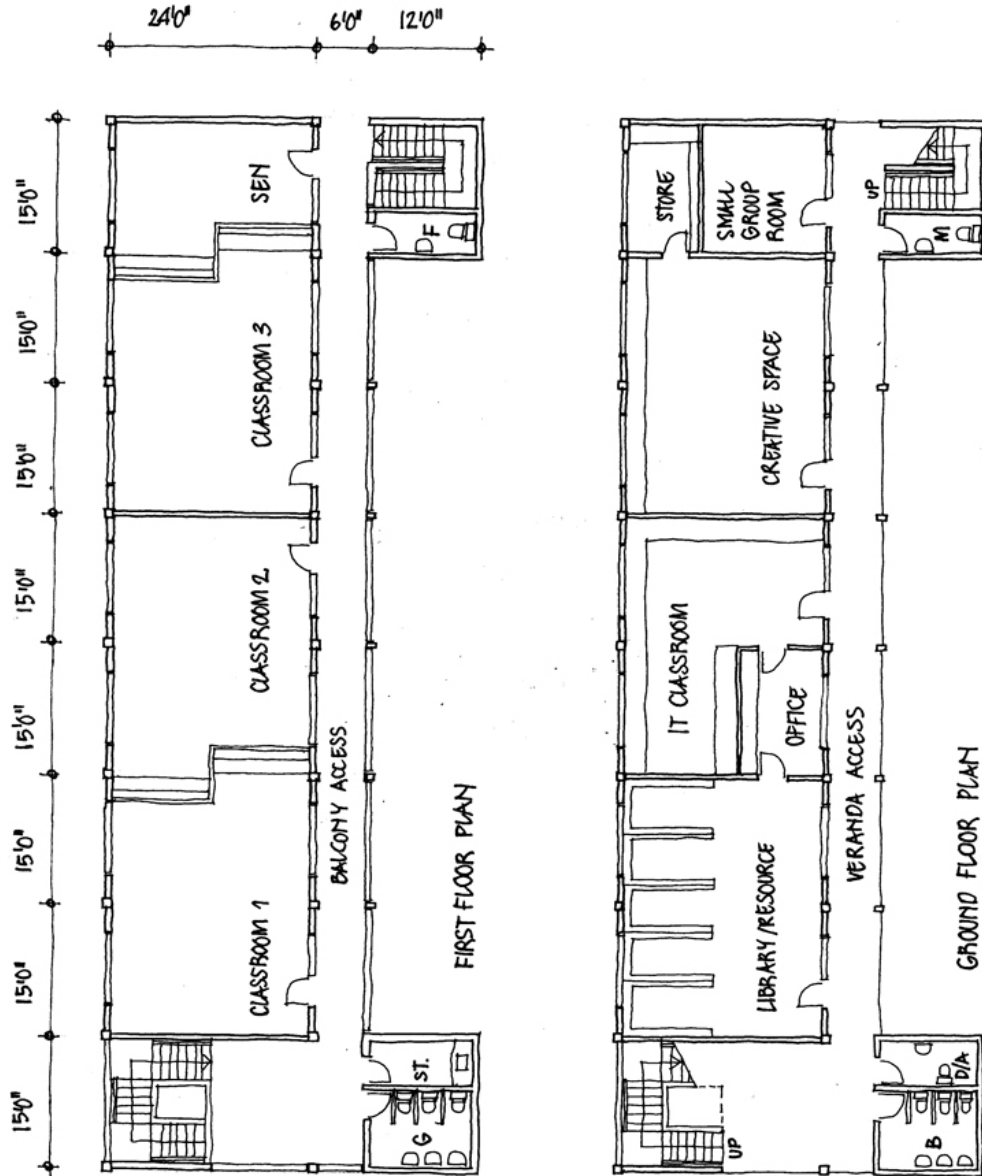
It is proposed that the head teacher's office, computer room and library are moved out of Building 1, that the classroom at the east end of the building is used as a music/dance studio (872ft²/81m²) and that the other classroom (576ft²/53m²) is retained. The toilets will be retained for staff use together with a store.

Access to and around the buildings will be improved with better landscaping, provision of ramps for disabled access etc.

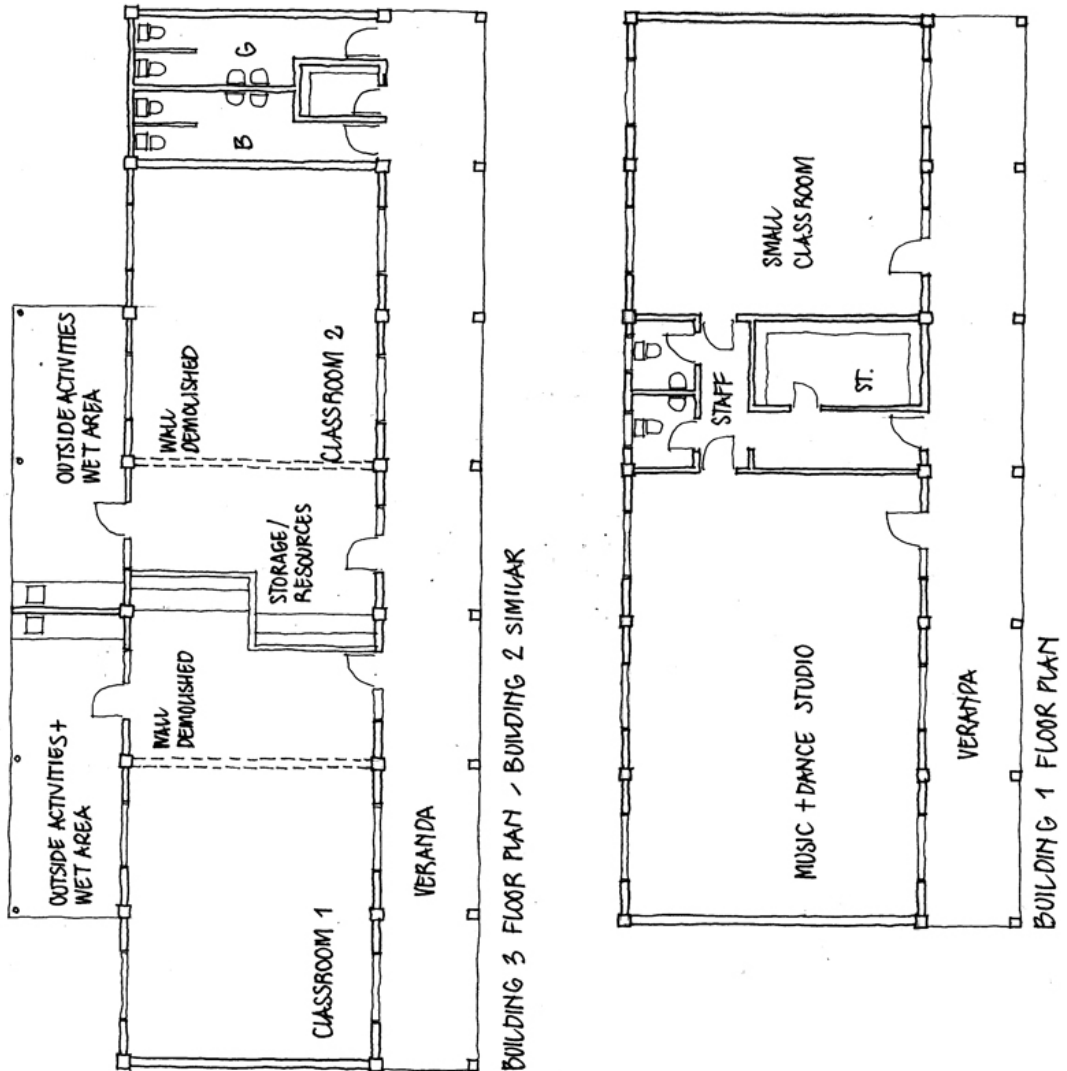
See drawing LPS/04: Buildings 1, 2 and 3: Proposed Renovations and Alterations.



LPS/02: Proposed Phase 1 Site Layout



LPS/03: Building 4: Proposed Revised Floor Plans



LPS/04: Buildings 1, 2 and 3: Proposed Renovations and Alterations.

Proposed New Buildings

Staff and Administration Building

It is proposed that this building, Building 5 is located at the entrance to the site, parallel to and above the new Phase 1 building. See drawing LPS/05: Proposed Phase 2 Site Layout.

This will be a single-storey building and the accommodation provided will consist of:

- Reception (90ft²/8m²)
- Head Teacher (136ft²/12m²)
- Store (64ft²/6m²)
- Meetings Room (136ft²/12m²)
- Staff Room (534ft²/50m²)
- Teacher Resource (186ft²/17m²)
- Store (42ft²/4m²)
- Caretaker (64ft²/6m²)
- Store (64ft²/6m²)
- Counselling/Sick bay (208ft²/19m²)
- Staff Toilets (170ft²/16m²)
- Parents Room (136ft²/12m²)

See drawing LPS/06: Building 5: Staff and Administration.

Multipurpose Hall

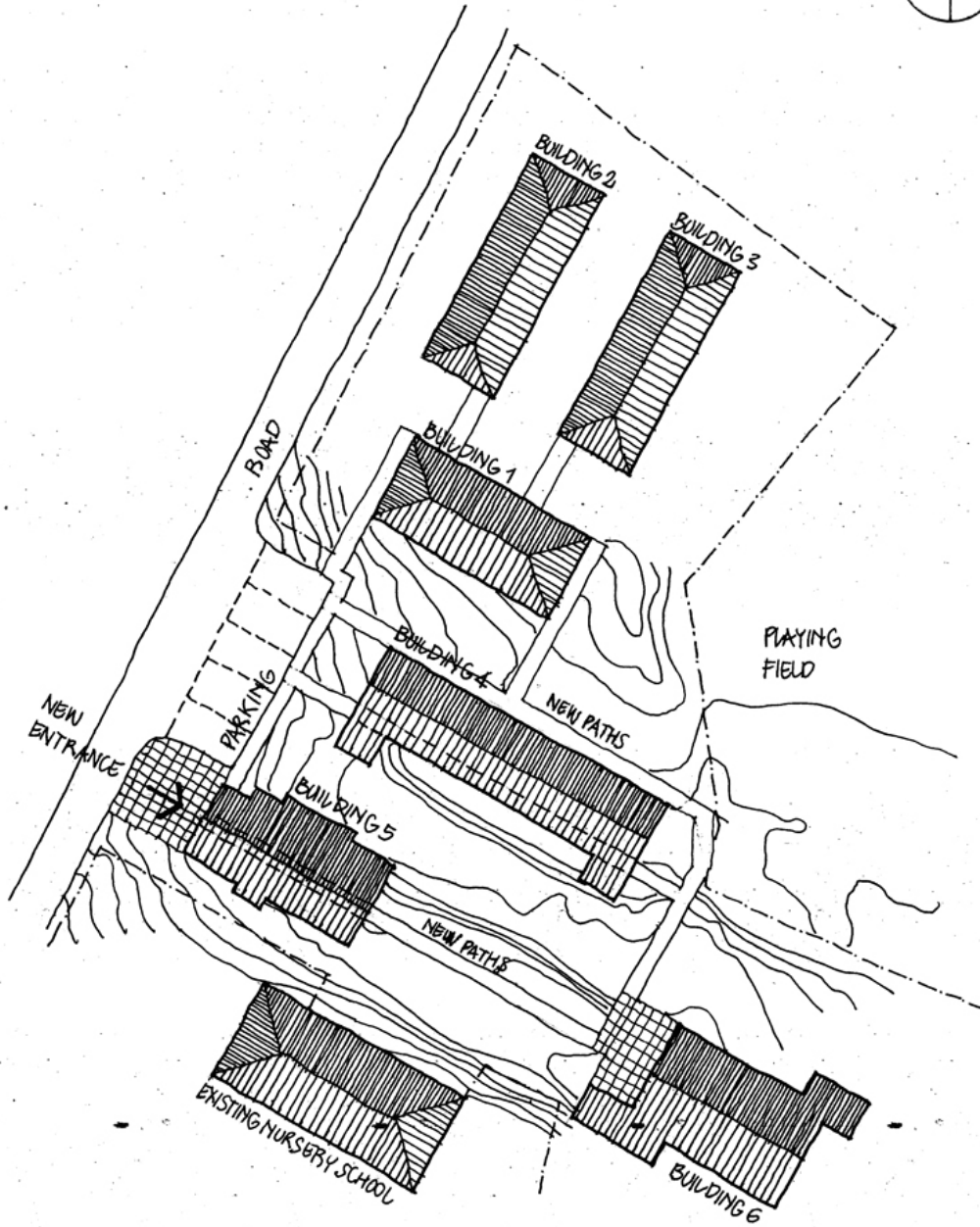
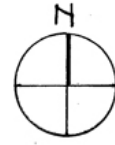
It is also proposed that in Phase 2 the remaining facilities necessary for the development of the school are provided. These will include:

- Multipurpose Hall (1,558ft²/144m²)
- Two stores off main hall for chairs and equipment (281ft²/26m²)
- Changing rooms and toilets (502ft²/47m²)
- Kitchen, servery, store, office, etc (538ft²/50m²)

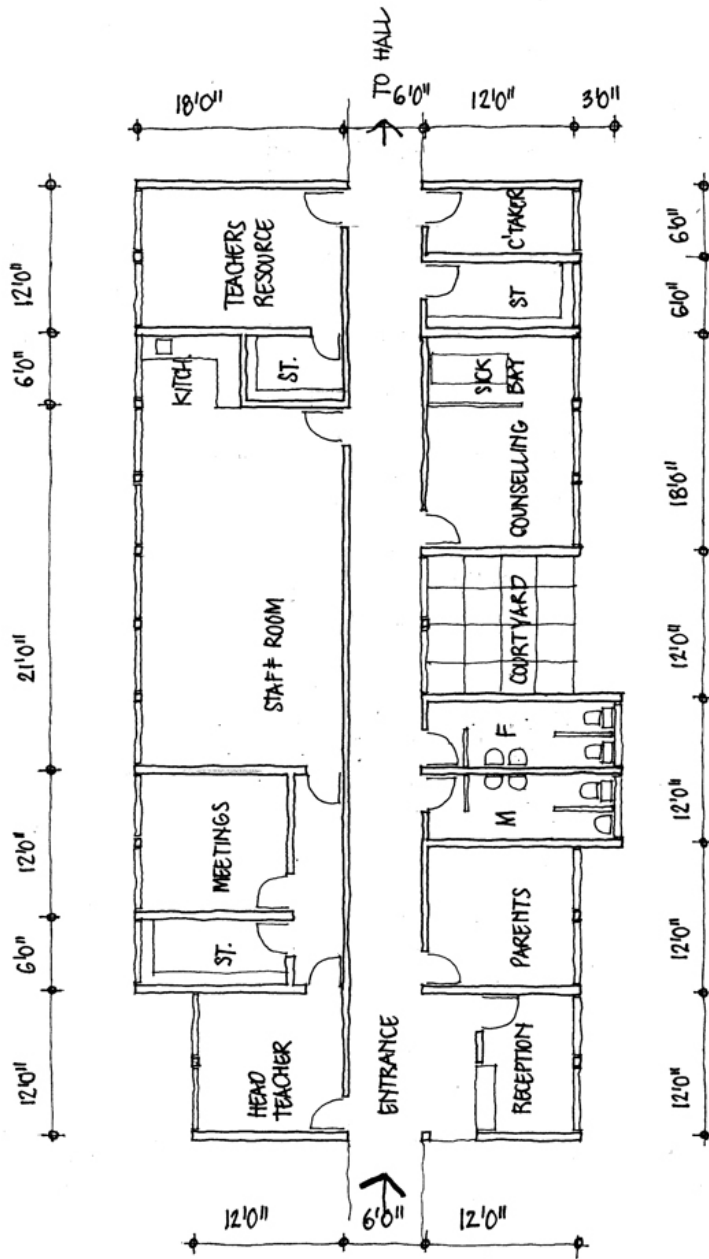
It is proposed that these will be provided in a building (Building 6) parallel to the other main buildings but to the rear of the new Staff and Administration Building and towards the boundary with the pre-school. These facilities should be easily accessible by the local community at times when the school is not using them.

See drawing LPS/07: Building 6: Multipurpose Hall.

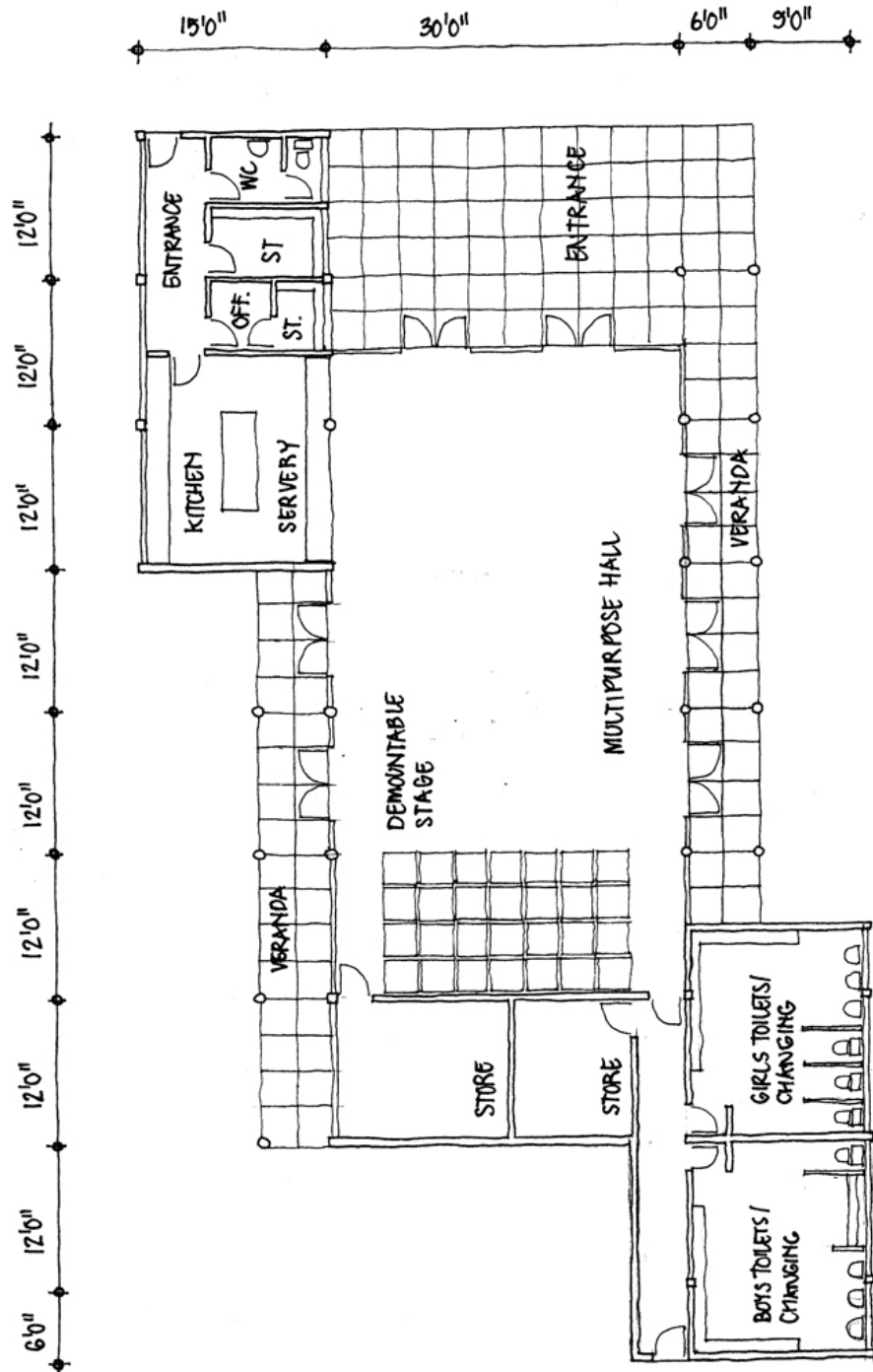
At the end of Phase 2 of the development, the school should have all of the facilities required to bring it up to a standard similar to those of other countries in the region.



LPS/05: Proposed Phase 2 Site Layout



LPS/06: Building 5: Staff and Administration



LPS/07: Building 6: Multipurpose Hall

3.2.3 Cost Estimates

Phase 1: New Construction

Building 4

8,192ft ² @ EC\$330ft ²	2,703,360.00
Site Works @ 15%	405,504.00
Contingencies @ 10%	270,336.00

Total Phase 1 **3,379,200.00**

Phase 2: Renovations

Building 1 Renovations

1,913ft² @ EC\$220ft² 420,860.00

Building 2 Renovations

1,892ft² @ EC\$220ft² 416,240.00

Building 3 Renovations

1,892ft² @ EC\$220ft² 416,240.00

Total 1,253,340.00

Phase2: New Construction

Building 5 Staff/Administration Building

2,890ft² @ EC\$330ft² 953,700.00

Building 6 Assembly Hall

3,297ft² @ EC\$330ft² 1,088,010.00

Total 2,041,710.00

Total New Construction and Renovation 3,295,050.00
Site Works @ 15% 494,257.00
Contingencies @ 10% 329,505.00

Total Phase 2 **EC\$4,118,812.00**

3.3 Brades Primary School

3.3.1 Present Situation

Existing Facilities

Brades Primary School is a single-stream primary school with 151 pupils in kindergarten and grades 1 to 6. There are 11 teachers (including the head teacher) and a teaching assistant and three part-time staff: a grounds man and two women who help with lunches (lunches are also prepared here for Lookout School). The original school buildings were constructed in 1966 by the Methodist Church and the school has had later additions constructed by the government. The school also houses the 'Special Needs Unit' that serves all primary schools on the island. A guidance counsellor and a music teacher who serve all of the primary schools on the island are also based at the school; one room in the school is used by the University of the West Indies for evening teaching and one room is used by the school and community for steel pan orchestra equipment and practice.

The school is situated next to a minor road on a fairly large sloping site that has been terraced in parts to accommodate the buildings. There are still some large changes in level across the site. The school has a flat grassed area on the site which is used for recreation and also has use of netball and basketball pitches that are situated on a site next to the school. The site falls from south to north.

The existing school facilities consist of four permanent buildings on different levels some of which are connected by narrow covered ways. There are also three semi-permanent timber-framed buildings that are used by the school and other agencies. These buildings have timber cladding but no internal wall linings or ceilings and are very hot. It is proposed to eventually replace them and remove them from the site. Access to the buildings at the higher level is difficult and there is no disabled access to the toilets.

The original buildings, Buildings 1 and 2 are single-storey buildings constructed of RC columns and beams with: 8" rendered block walls; felt tile roof coverings on timber framing on 12" x 3" structural purlins spanning from cross wall to cross wall; T & G boarded ceilings; large RC cantilevered roof overhangs on both sides; steel louvres in timber sub-frames and concrete floors. Building 3 which was constructed in 1996/1997 is a two-storey building of similar construction to the buildings at Lookout Primary School: it is constructed of large concrete columns (12" x 12") and beams with fair-face 8" hollow block infill panels. Roofs are of colour-coated profiled steel sheets on timber trusses with high ceilings. Windows are steel louvres in timber sub-frames with provision for hurricane shutters externally. Each classroom has only three windows and the steel louvres cut down the amount of light entering the classrooms. Doors are the original double stable-door type with the top openings to provide more light in the classrooms. As noted above, there are also three semi-permanent timber-framed buildings which are still in use but which the MOE hope to replace.

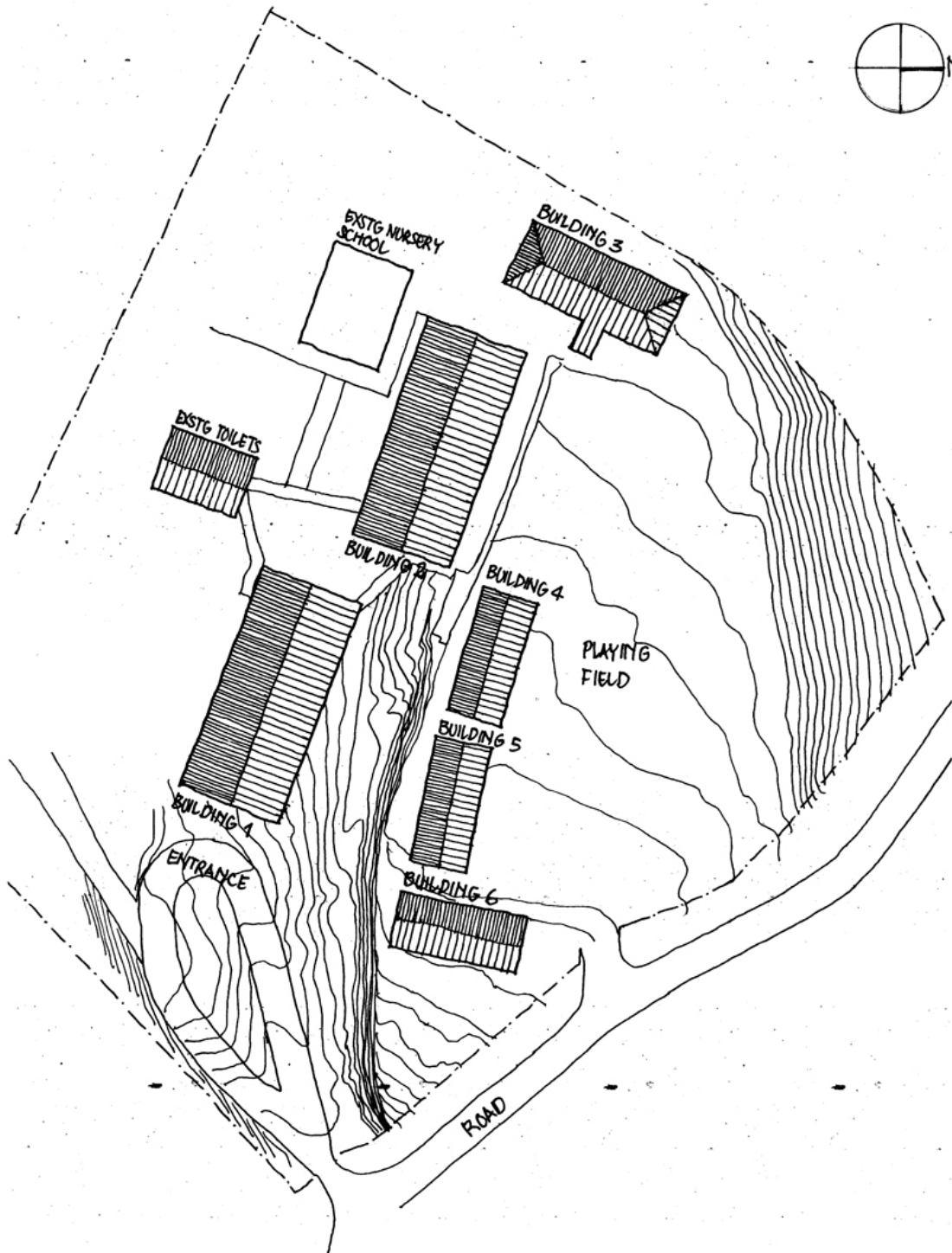
All of the permanent buildings have been painted during the summer and seem to be in good condition. The only major construction problems seem to be that some fascias and external timber soffits to Buildings 1 and 2 are rotting and require replacement. It might also be advisable to replace the felt roof tiles to these buildings with hurricane-resistant roofing. The gutters to Building 3 also require either replacement or removal and the main storm drains around the site seem to be blocked in places. It was also noted that again there are inadequate fixings to the roof sheets to Building 3 which would make them vulnerable to hurricane damage. It was not possible to see how the timber roof structure is fixed to the RC frame and this should probably be checked. It should be noted that Buildings 1 and 2 were

very well constructed and because of their design and location they will be difficult to extend or convert to other uses.

Building 1 contains the head teacher's office, a store and two staff toilets. It also contains four classrooms each approximately 24' 4" wide x 19'11" long (485ft²/45m²). All four classrooms are interconnected so that they can form a small auditorium. The openings between the classrooms used to be closed by sliding/folding doors which have now disappeared and the openings are now closed by moveable chalkboards and there is a noise issue between classrooms. The classroom adjacent to the head teacher's office is at a higher level than the other three and forms a stage when the classrooms are being used as an auditorium. The timber stairs up to the stage protrude into the second classroom and obstruct its use. Part of the floor to the fourth and end classroom is also at a higher level than the rest of the floor making it very difficult to use. None of the classrooms has a sink or water supply.

Building 2 is similar to Building 1 but contains three classrooms (one used as a library) similar in size to those in Building 1 together with a lunchroom (again a similar size) and a store. None of the classrooms has a sink or water supply. In the basement there is one large classroom (which is on two levels, one with a very low ceiling) and two toilets that are used by the Island's Special Needs Unit (maximum 10 children).

Building 3 is a two-storey building similar in construction to those at Lookout Primary and Montserrat Secondary Schools. It contains one classroom (used by the adjacent Nursery School), a laboratory and an IT classroom (with 14 PCs a reprographic machine and a photocopier that does not work) on the ground floor and three classrooms on the first floor. None of the first floor classrooms has a sink or water supply. All rooms are approximately 24' 0" x 20' 0" (480ft²/44m²).



BSP/01: Existing Site Layout

Building 4 is a semi-permanent timber building that has one room that is used for pupils who have special educational needs (approximately 20 pupils) and the other larger space is used for standing assembly and for dance and music lessons.

Building 5 is semi-permanent timber building that has a music room, a classroom (that is not being used this year) and a grounds man's room and store.

Building 6 has one room that is used by a guidance counsellor and a music teacher both of whom serve all the primary schools on the island; a room set up with a pan orchestra that is used by the school and the community and a room that is used by the University of the West Indies for teaching in the evenings.

The school therefore has 12 classrooms all of which are much smaller than the UK standard of 56m² to 63m² (605ft² to 680ft²) and the head teacher complained of the lack of space in the classrooms. The classrooms are also poorly lit and most had electric lights on in mid-morning. None of the classrooms has a sink or water supply.

See drawing BSP/01: Existing Site Layout.

Proposed Extension

There is a proposal to construct a two-storey extension to the school on a steeply sloping site below the existing playing field. This building is to be funded by the Caribbean Development Bank through the Basic Needs Trust Fund (BNTF).

The original proposal was that this building would accommodate physical education, three classrooms and pupils' toilets on the upper floor and a resource centre, a music room, a dance room, an SEN room, a guidance counselling room and more pupils' toilets on the lower floor. This has been revised to provide three classrooms and toilets on the upper floor and accommodation for dance, special education, guidance and counselling and toilets on the lower floor. A proposal for this building is shown below.

The estimated cost for this revised accommodation is EC\$1,884,976.50 and the BNTF budget for the building is US\$420,000 (EC\$1,131,858.00). The government will have to contribute the remaining cost of the building.

3.3.2 Future Development of the School

Future Requirements

It seems likely that the school will continue as a single-stream primary school providing a maximum of 210 places if all classes have the maximum number of 30 pupils. It will not be possible to develop the school into a two-stream primary school as there is insufficient space on the site. If the primary school population in this area grows it will be necessary therefore to construct a new school on another site.

In order to develop this school therefore to accommodate and teach the maximum number of pupils, additional facilities will be required and the existing facilities will have to be renovated and modified.

It should be noted however that additional accommodation will have to be provided on this site for activities that are already taking place there:

- A classroom will have to be provided for the adjacent Nursery School to replace that at present being used in Building 3.
- A room will have to be provided for the school steel pan orchestra that is at present housed in the semi-permanent buildings.
- Offices will have to be provided for the national guidance counsellor and music teacher who are also housed in the semi-permanent buildings.

- A classroom with at least one toilet will have to be provided for the national Special Education Needs Unit that is at present housed under Building 2.

It is understood that the University of the West Indies will not be requiring separate accommodation but they could use one of the school's classrooms if necessary.

It is proposed that some of the additional facilities that are required will be provided in Phases 1 and 2 of the development of the school and the renovations and that the modifications of the existing buildings and further additional facilities will be provided in Phase 3. Phases 1 and 2 have been split because of budget considerations (each phase will cost in excess of EC1.8 million) but it would be more economic if they were implemented at the same time.

Phases 1 and 2 Proposals

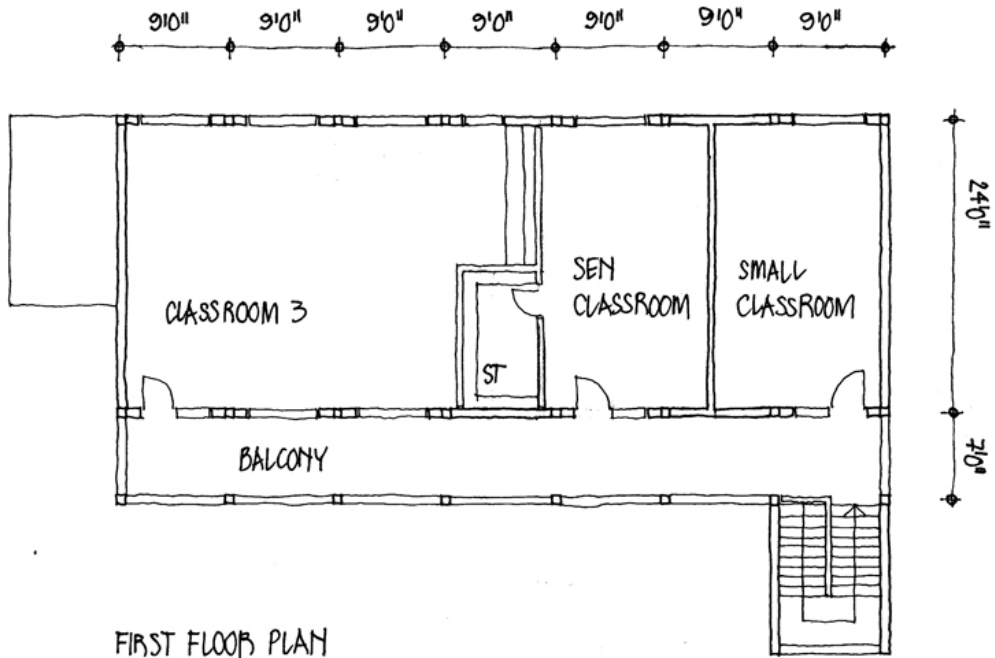
Proposed New Construction

It is proposed that two 2-storey buildings (Buildings 7 and 8) are constructed in Phases 1 and 2 of the expansion and renovation of this school. The buildings will be similar in design and size and will be located on the northern edge of the existing playing field. The buildings will have access from the playing field level to an upper ground floor and a lower ground floor. A ramp will also be provided for disabled access to the lower ground floor.

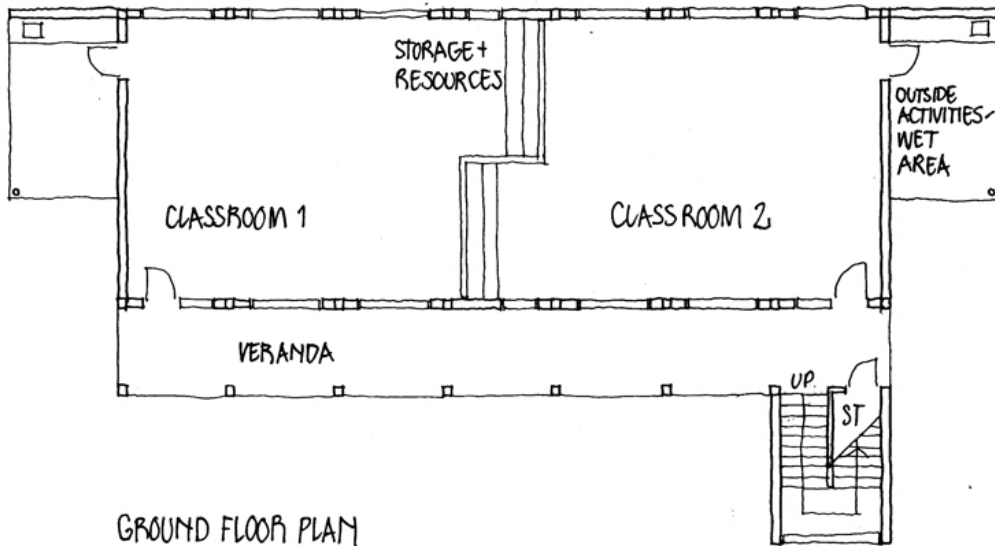
Building 7 will contain:

- On the lower ground floor, two classrooms (724ft²/67m²) each with a storage/resource area. The classrooms will open out at the ends on to external 'wet' areas and will accommodate Kindergarten and Grade 1 classes.
- On the upper ground floor, a classroom for Grade 3 (724ft²/67m²) with a storage/resource area, a small classroom (326ft²/30m²) and an SEN classroom (326ft²/30m²) and store (66ft²/6m²).

See drawing BSP/02: Proposed New Building 7.

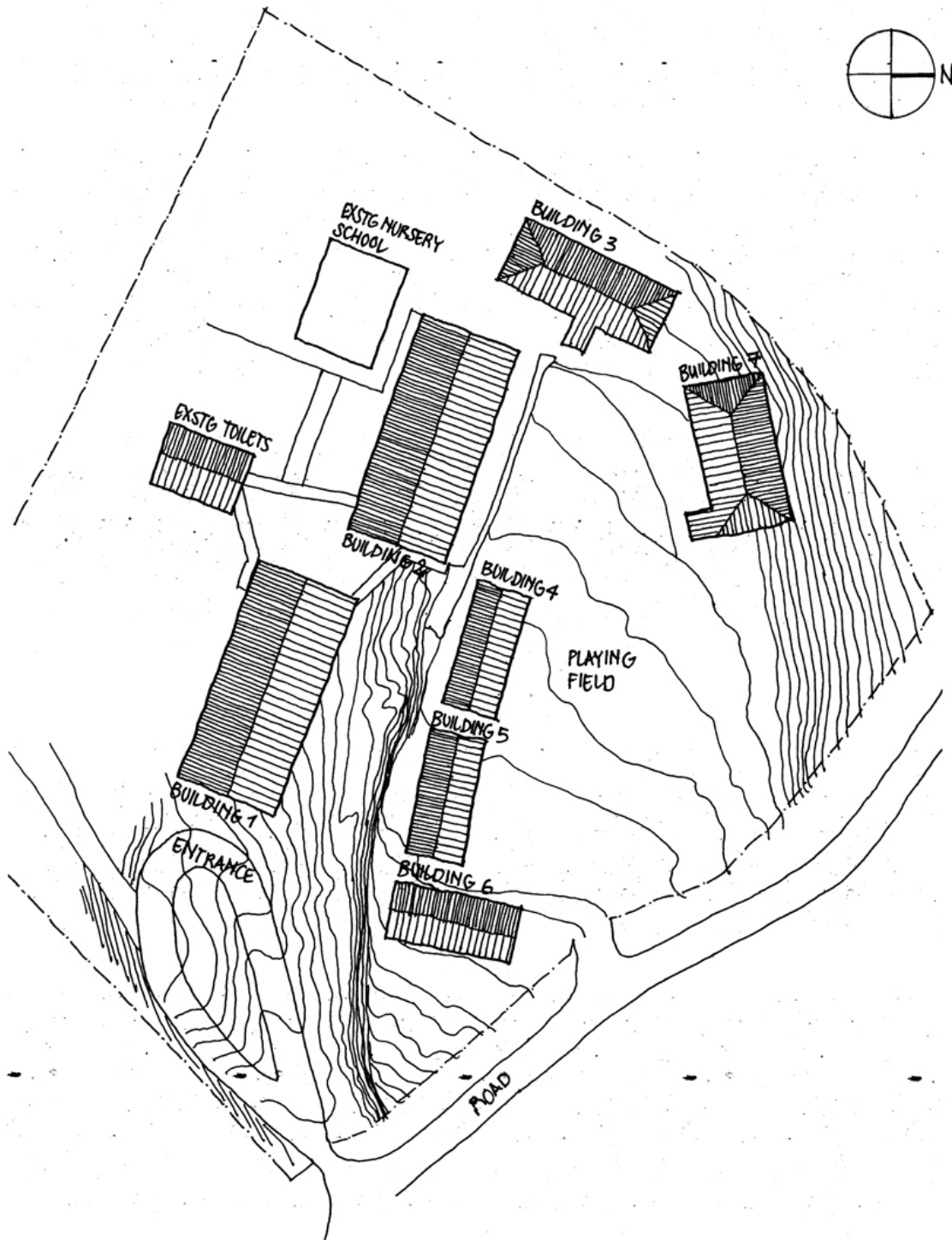


FIRST FLOOR PLAN



GROUND FLOOR PLAN

BSP/02: Proposed New Building 7



BSP/03: Proposed Phase 1 Site Layout

Building 8 will contain:

- On the lower ground floor one classroom (724ft²/67m²) with a storage/resource area which will open out at the end on to an external 'wet' area and will accommodate the Grade 2 class, three boys', three girls' and two staff toilets (398ft²/37m²) and a caretaker's store (88ft²/8m²).
- On the upper ground floor the national Special Educational Needs Unit with a store and a toilet (724ft²/67m²) and a classroom for Grade 4 with a storage/resource area (724ft²/67m²).

See drawing BSP/03: Building 8 and drawing BSP/04: Proposed Phase 1 Site Layout and drawing BSP/05: Proposed Phase 2 Site Layout.

When these two buildings are completed it will be possible to remove the three semi-permanent timber buildings freeing up a large area of the site for playing fields and further extensions.

Proposed Renovations

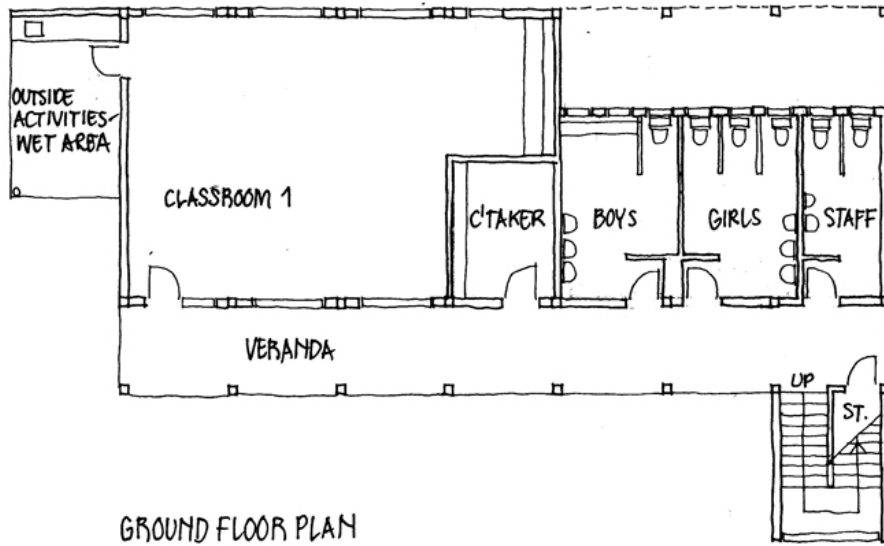
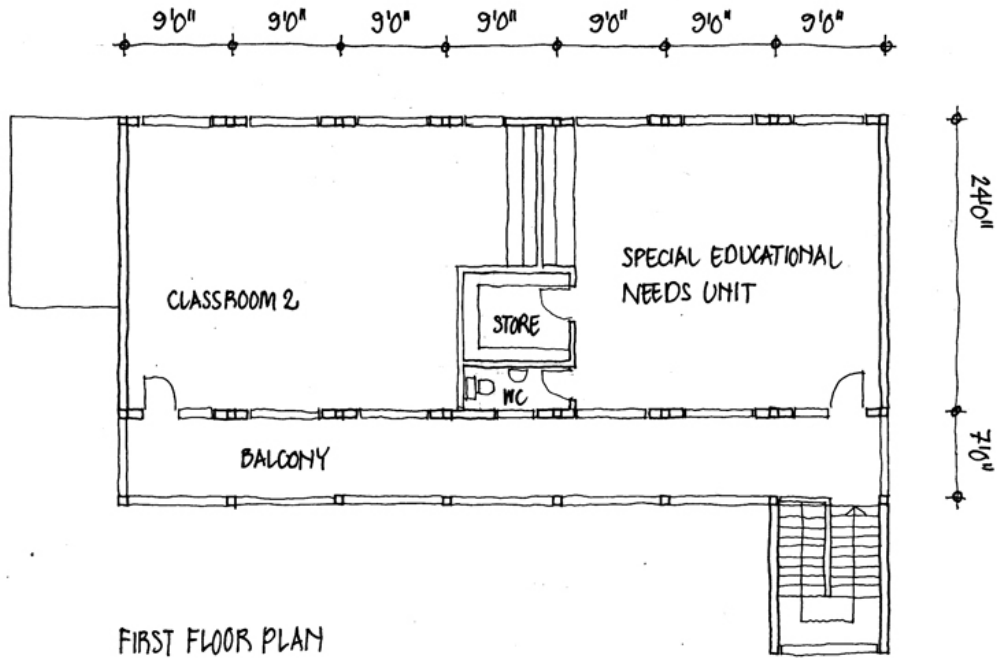
As noted above the existing classrooms in Buildings 1, 2 and 3 are very small by UK standards and not really fit for purpose. It will be very difficult however to enlarge the existing classrooms in Buildings 1 and 2 because of their design and construction. It will be possible however to modify the classrooms in Building 3 to provide larger classrooms as at Lookout Primary School.

It is proposed therefore that Building 1 is converted into the Staff and Administration Building. The accommodation provided will be larger than that set out above because of the constraints of the existing building but it is considered that this will still make the best use of this building. The facilities to be provided in this building will be:

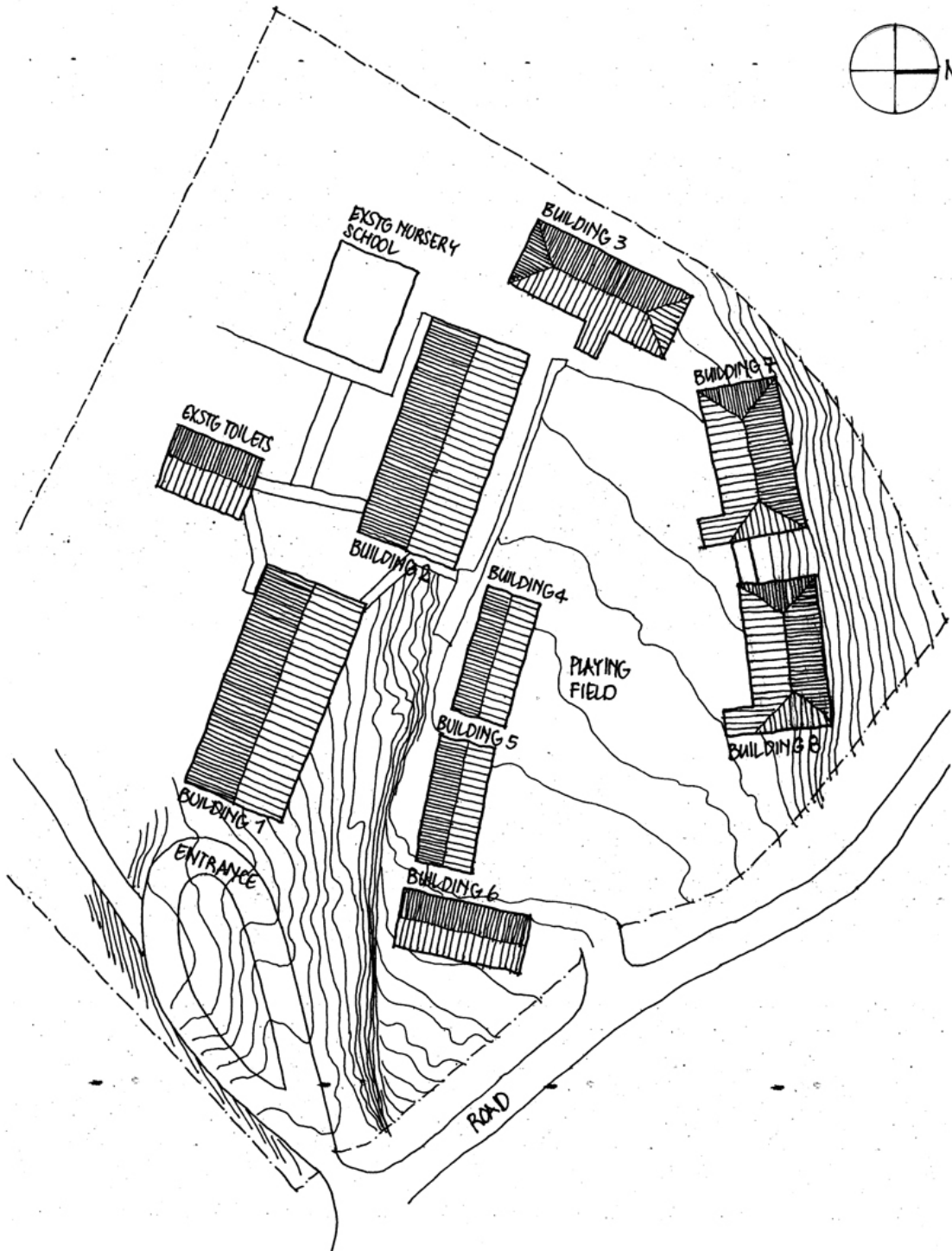
- Entrance/reception, staff/visitors' toilets, head teacher's office, general office, store (46m²/499ft²).
- Meeting room, teachers' resource room, photocopier and store (49m²/526ft²). Note: there will have to be steps up to this room from the staff room because of the change in level.
- Staff room (48m²/519ft²).
- Counselling room/parents/community room and sick bay (48m²/519ft²).
- National counselling officer and national music teacher (48m²/519ft²). Note: the floor in this room will have to be brought up to one level.

It is proposed that the existing windows and shelf at the front of the building is removed and that new windows and doors fitted.

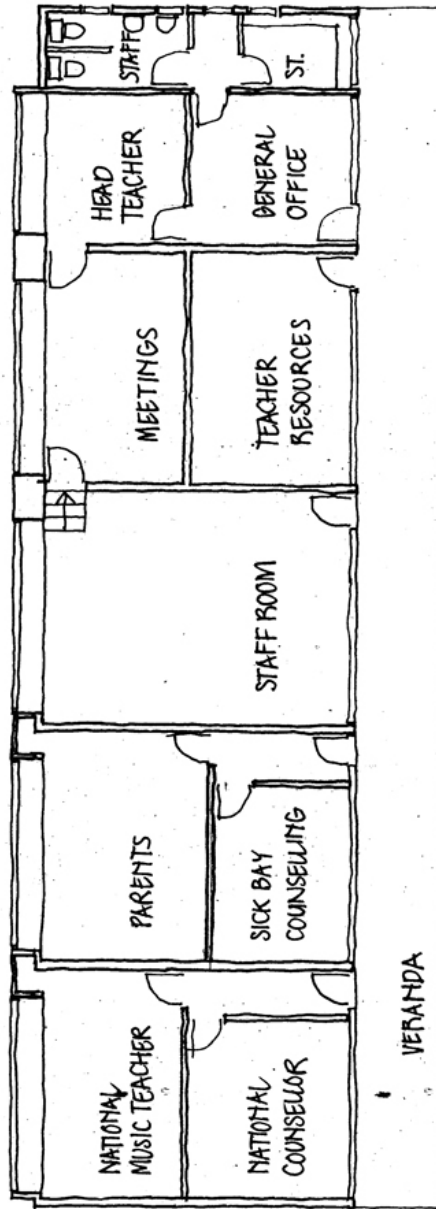
This will provide all of the staff and administration facilities close to the entrance to the site. See drawing BSP/06: Building 1: Proposed Renovations and Alterations.



BSP/04: Proposed New Building 8



BSP/05: Proposed Phase 2 Site Layout



BSP-06: Building 1: Proposed Renovations and Alterations

Building 2 has the same physical restraints as Building 1 and it is therefore proposed that it is used as follows:

- The existing lunch room/kitchen will become the Music and Dance Studio (64m²/687ft²).
- The classroom that is at present used as a library will be used for the steel pan orchestra room (it is quite close to the rear entrance to the site for community access). (49m²/532ft²).
- The other two classrooms will remain as additional small classrooms. (2 x 46m²/495ft²).
- The basement accommodation at present used by the national Special Education Needs Unit will be renovated for use by the Nursery School that is opposite and more or less at the same level (1,050ft²/97m²).

See drawing BSP/07: Building 2: Proposed Renovations and Alterations.

The footpaths and covered ways linking the entrance and Buildings 1 and 2 will be improved at the same time as the changes to the buildings are made and ramps will be added where necessary.

The existing toilet block will be renovated and upgraded and the access to it improved.

It is proposed that Building 3 is renovated and converted to the following uses. On the ground floor the accommodation will be:

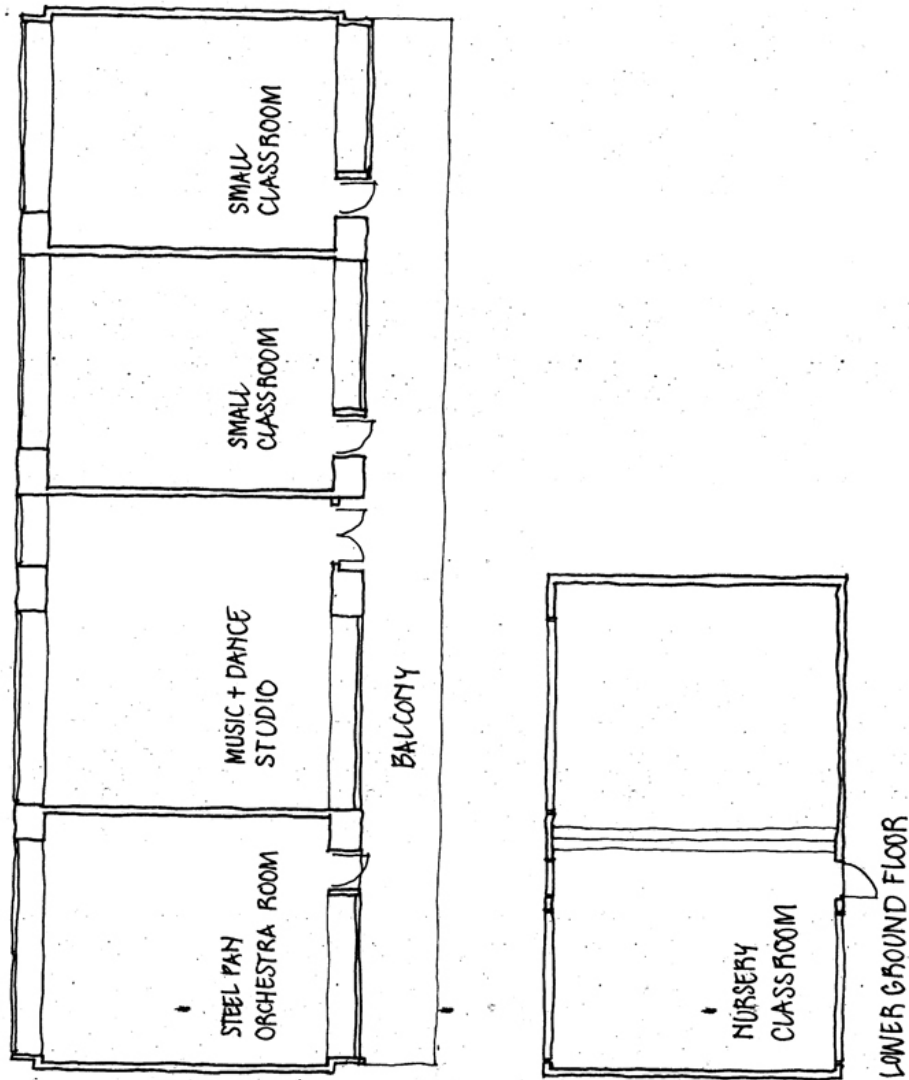
- Library Resource Centre (44m²/480ft²). Located in the room at present used by the Nursery School.
- IT Room (44m²/480ft²). This room remains in its present location.
- Creative Space (65m²/707ft²). This is the room at present used as a laboratory. It will be extended and used for science teaching, food technology and design and technology.

On the first floor the accommodation will be:

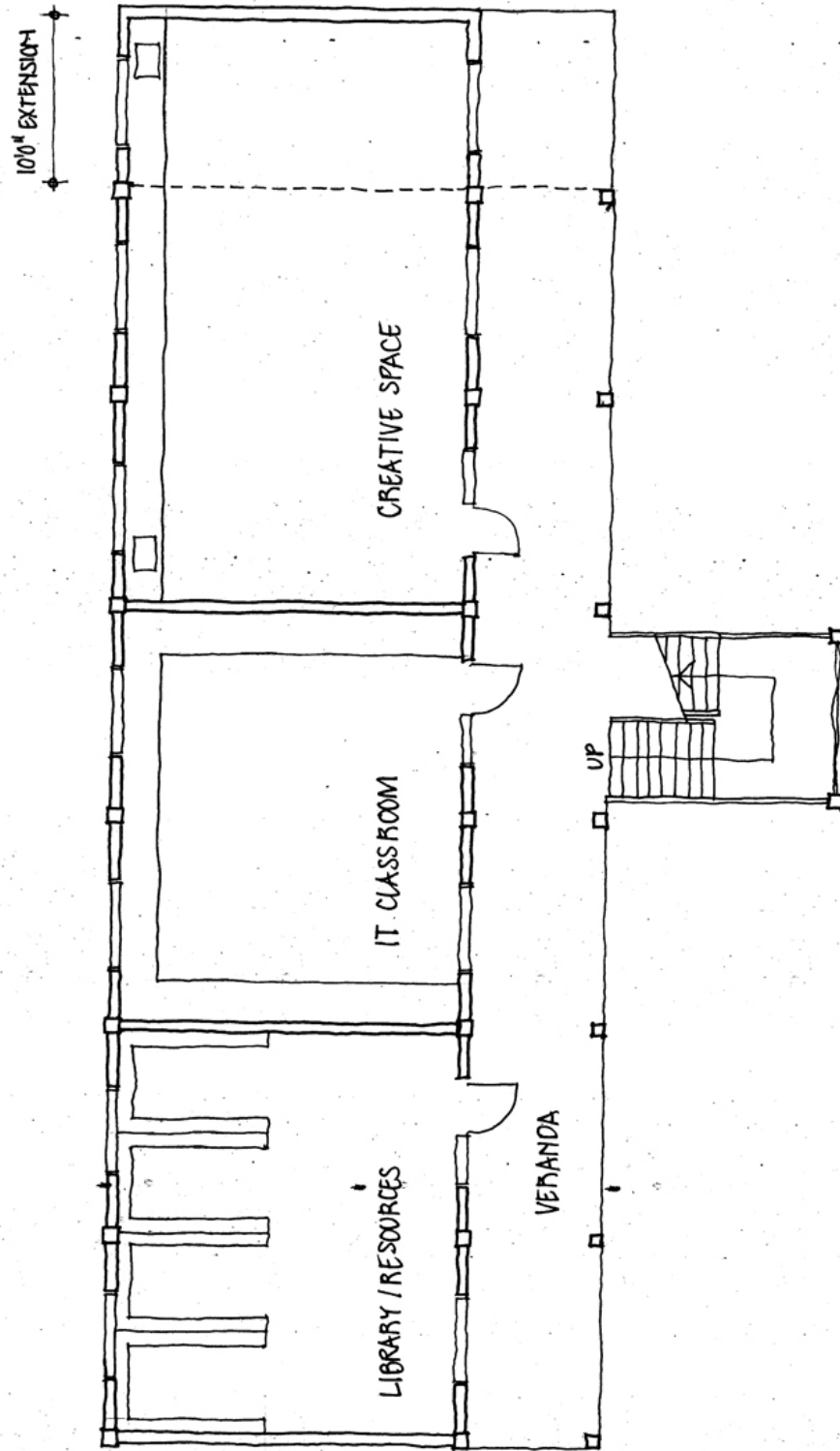
- Two large classrooms (66m²/713ft²) each with storage/resource areas that will be used by Grades 5 and 6.

See drawings BSP/08: Building 3: Ground Floor: Proposed Renovations and Alterations and BSP/09: Building 3 First Floor: Proposed Renovations and Alterations.

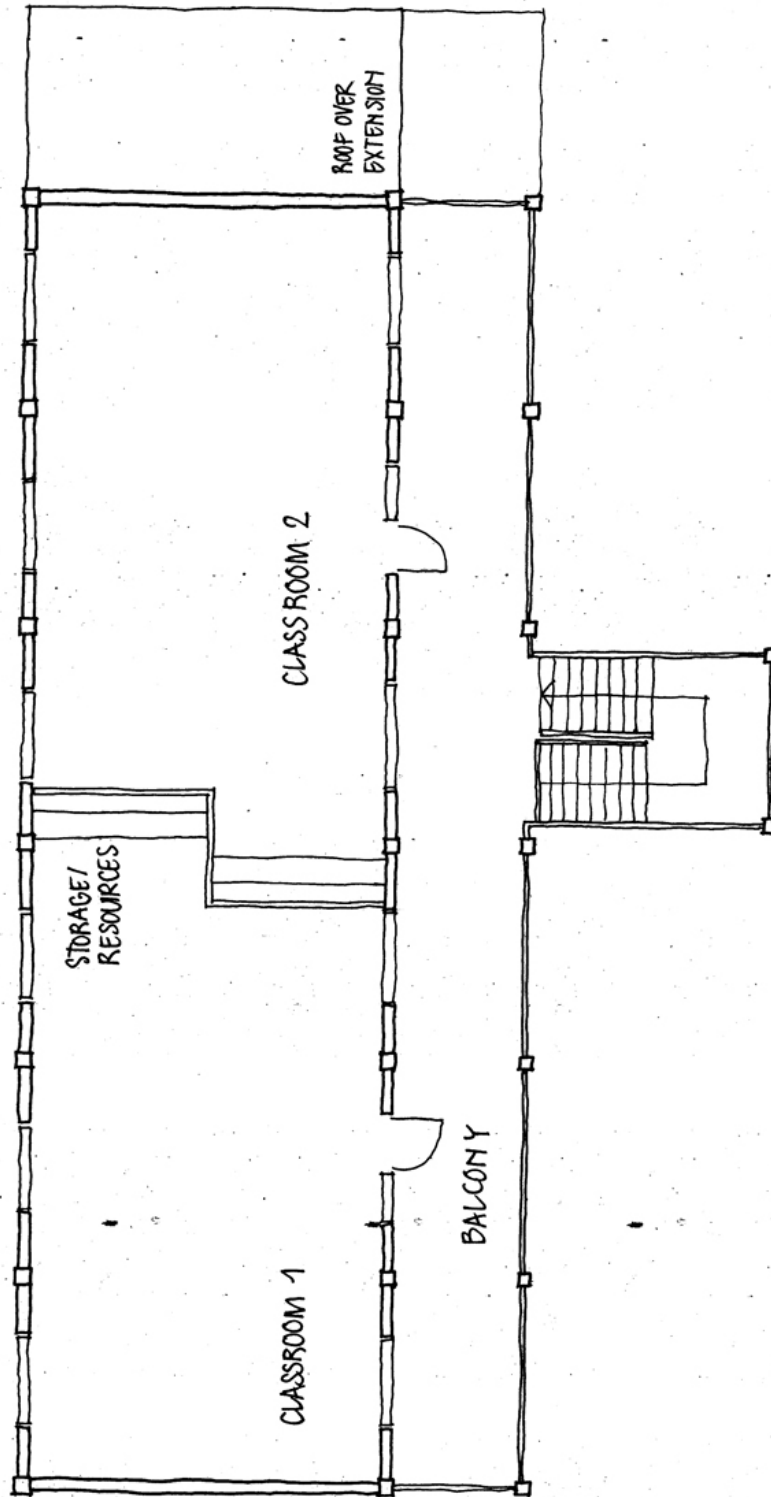
When the renovation work to this building is completed, the majority of the specialist spaces will be situated on the lower level of the school and the ground floor of buildings where they will be more easily accessible to all pupils including disabled ones.



BSP/07: Building 2: Proposed Renovations and Alterations



BSP/08: Building 3: Proposed Renovations and Alterations to Ground Floor



BSP/09: Building 3: Proposed Renovations and Alterations to First Floor

Phase 3 Proposals

New Construction: Multipurpose Hall

It is proposed that in Phase 3 the remaining facilities necessary for the development of the school will be constructed. These will include:

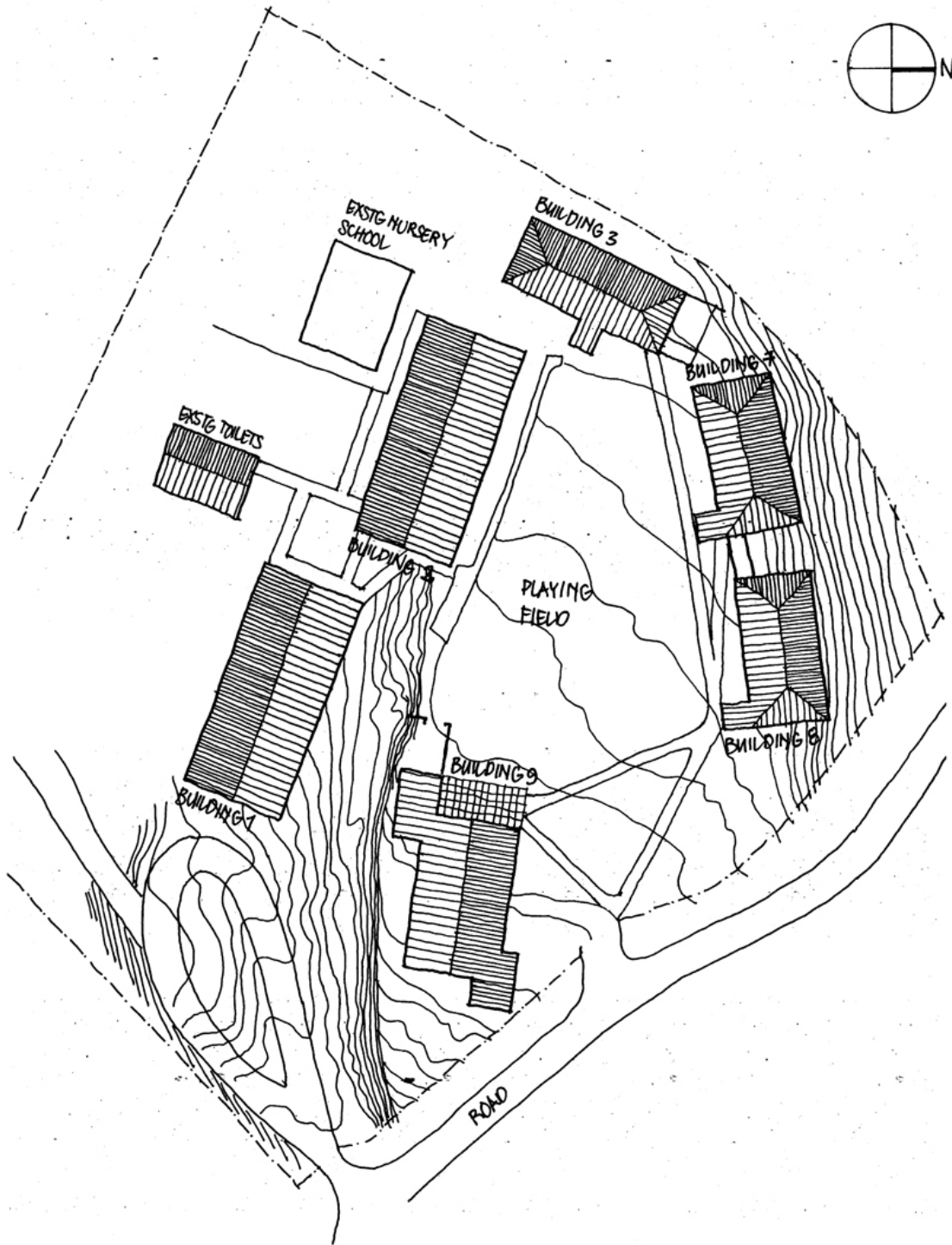
- Multipurpose Hall (1,558ft²/144m²)
- Two stores off main hall for chairs and equipment (281ft²/26m²)
- Changing rooms and toilets (502ft²/47m²)
- Kitchen, servery, store, office, etc (538ft²/50m²)

It is proposed that these will be provided in a new building (Building 9) below Building 1 and in the corner of the site adjacent to what is now the lower entrance. This will still leave a large area of playing field and the facilities will be easily accessible by the local community at times when the school is not using them.

This building will be similar to the Multipurpose Hall provided at Lookout Primary School.

See drawing LSP/07: Building 8: Multipurpose Hall. See also drawing BSP/10: Proposed Phase 3 Site Layout.

At the end of Phase 3 of the development, the school should have all of the facilities required to bring it up to a standard similar to those of other countries in the region.



BSP/10: Proposed Phase 3 Site Layout

3.3.3 Cost Estimates

Phase 1 New Construction

Building 7

4,168ft ² @ EC\$330ft ²	1,375,440.00
Site Works @ 15%	206,316.00
Contingencies @ 10%	137,544.00

Total Phase 1 **1,719,300.00**

Phase 2 New Construction

Building 8

3,952ft ² @ EC\$330ft ²	1,304,160.00
Site Works @ 15%	195,624.00
Contingencies @ 10%	130,416.00

Total Phase 2 **1,630,200.00**

Phase 3: Renovations

Building 1 renovations

3,072ft² @ EC\$220ft² 675,840.00

Building 2 renovations

3,936ft² @ EC\$110ft² 432,960.00

Building 3 renovations

3,300ft² @ EC\$110ft² + 200ft² @ EC330ft² 429,000.00

Total 1,537,800.00

Phase 3: New Construction

Building 9 Assembly Hall

3,297ft² @ EC\$330ft² 1,088,010.00

Total Renovations and New Construction 2,625,810.00

Site Works @ 15% 393,871.00

Contingencies @ 10% 262,581.00

Total Phase 3 **EC\$3,282,262.00**

4. MONTSERRAT SECONDARY SCHOOL PROPOSALS

4.1 Present Situation

The existing Montserrat Secondary School campus is located towards the centre and on the western side of the island at Salem not far from the northern boundary of the exclusion zone. The school was originally one of two junior secondary schools and there was also a senior secondary school in Plymouth that was destroyed by the volcanic eruption.

The school currently has 35 staff and 350 students in 5 year groups. Each year group is divided into forms: first year has 4 forms; second year has 4 forms; third year has 5 forms; fourth year has 5 forms and fifth year has 3 forms. This means that some forms have very few students (as few as 10, 11 or 12) and it is not clear on what basis these divisions have been made. It should be noted however that this is a very inefficient use of resources and should not be the basis on which the new school is designed.

The site is close to the island's main road and slopes quite steeply up from this road. The site is very constricted with very little room for further expansion and with little or no space for recreation or social activities for the students. An adjoining playing field part of which belongs to the school and where the school's toilets are located provides the school's only recreation space.

The school site is badly affected by ash from the Soufriere Hills volcano and when the ash fall is particularly heavy the school has to be evacuated.

The school currently has thirteen buildings that step up the side of the hill and that all face east/west. There are no covered ways between the buildings and access between the various levels is via steep flights of steps making access for disabled students difficult or impossible and movement for teachers between lessons difficult.

The existing facilities are also limited in the activities that they cater for. There are general classrooms, 3 laboratories, 2 IT rooms, and some workshops catering for electronics, woodwork and home economics. There is a small administration building with a general office and an office for the principal and also a staff work room on the first floor of one of the classroom buildings to the rear of the site. There is no assembly hall, kitchen or dining room and no sports hall or sports facilities and no social facilities for either staff or students. There are also no facilities for music or drama or for special educational needs students.

The Ministry of Education is developing a new secondary curriculum that is more relevant to the needs of students on the island but there will be problems in introducing this curriculum because of the restricted range of facilities at the present site.

To sum up the present situation, the site is vulnerable to ash falls and has to be abandoned when these are very heavy; the site is steep with very little space for recreation or expansion and the existing facilities are limited in scope. It should also be noted that while the present site is convenient for the families living in the Salem area it is a long way from the new population centres that are developing in the north of the island.

It is imperative therefore that a more suitable site is found probably in the north of the island away from the exclusion zone and one that can provide a permanent location for the school.

4.2 Design Guidelines

4.2.1 General

The objective of the current exercise is to develop as far as possible without having an actual site, a proposal for the facilities to be provided in the new school and an approach for planning the proposed school buildings when a suitable site is found.

Preliminary proposals have been prepared for the new school that assume that a suitable site can be found but before these proposals are set out it is considered useful to set out some of the criteria and other factors that will affect the detailed design of the school at a later stage.

4.2.2 Design Criteria

There are two general criteria that need to be met in order to ensure the quality of the final design for the school.

The first criterion is the school's 'vision' for the new school. The school sets out its aspirations for its pupils as follows:

- They will follow a curriculum that is stimulating and challenging and that, crucially, takes fully into account the standards they have already reached when they join the school.
- They will reach the highest standard of attainment that they can – well in excess of national expectations for the school.
- They will be offered a greater diversity of opportunity at fourth form to encourage them to stay in education beyond the age of 16, and to lock them into post-16 opportunities as early as possible.
- They will leave the school with the skills and desire to be autonomous life –long learners.

These aspirations form part of the school's vision and must be taken into account.

The second criterion which will have more practical implications for the design will be the school's preferences for:

- The organisation and management of the school and the location of the various resources.

While there have been some discussions with key staff at the school, there will have to be more detailed discussions, particularly when the new curriculum and time-table have been finalised about the proposed organisation and management of the new school before any designs can be finalised.

The final design of the new school campus and the type of facilities provided should facilitate the school's vision for the future and its preferences for the organisation and management of the school.

4.2.3 Factors Affecting the Design of Facilities

A number of factors will affect the design of the facilities and these will include:

Function: all rooms requested in the schedule of accommodation should be provided; the prevailing climatic conditions and comfort norms should be respected; rooms used in conjunction with each other should be close together; there should be adequate distance between quiet and noisy activities.

Construction: local materials should be used that are understood by local craftsmen; modern materials that will improve construction and bring long life and low maintenance should be introduced if at all possible without comprising the first principle; local building codes should be

respected; construction methods and materials that are resistant to damage by natural disaster should be used.

Design considerations: the buildings should be of an appropriate scale for the pupils of the school; the buildings should relate closely to the culture of the surrounding community; the buildings should be attractive to users; prevailing local architectural standards should be respected.

Equipment: equipment should be provided to encourage a diversity of play that will enhance the overall development of the child. This can be creative play, imaginative play, manipulative play, and physical and adventure play together with activities to encourage scientific interest and activities to encourage reasoning skills.

Cost: The areas provided should follow the accommodation schedule and not be excessive and the design of the buildings should be as simple and economic as possible while still respecting the functional brief in order to reduce construction costs.

Flexibility and Adaptability: The designing in of flexibility to allow for change is a key requirement. Whatever layout of buildings or rooms is selected it must allow for future changes in timetables, subjects studied, etc. Adaptability is also required to allow for long-term changes such as developments in the curriculum, changes in class sizes, the use of computers, etc. Avoiding fixed furniture allows for flexibility and the use of a concrete frame structure would allow for long-term adaptability. Buildings should also be flexible enough to be used by communities out of school hours.

Access: Access and inclusion must be allowed for in the design and pupils with special educational needs or disabilities should have access if at all possible to the whole curriculum and should be able to participate in school life. There will be difficulties in achieving this in Montserrat because of the limited availability of land which will mean the most school buildings will be two-storey and it will not be possible to install lifts to give disabled access to first floor classrooms. Most sites will also be sloping which will again give problems with access although it should be possible to provide ramps at least to ground floor classrooms. Ground floor classrooms and access corridors should however be designed to accommodate wheelchairs and disabled toilets and hygiene facilities should be provided. Space for pupil support in the form of small group rooms, SEN classrooms, etc should also be provided. Parent and community access should be actively encouraged by the design of the new facilities and the layout of the school should be easily understood by all users.

Safety and Security: Safety and security are very important issues which should be considered especially when considering requirements for community access. The site should be securely fenced with adequate controls over access for visitors both during school hours and after school. The buildings themselves should also be secure.

Site Considerations: There are a number of criteria that should be fulfilled when choosing a site for a large new school. The site should for instance be within easy access of children's homes, whether by foot or by public transport, and should preferably be situated within an existing settlement. Actual distances will depend on the availability and reliability of public transport or whether the school itself provides transport for students.

The site should provide adequate space for the initial buildings and any possible future extensions together with space for sports fields, outside play, gardens, car parking, etc.

The development of the whole site should be considered when designing the facilities and this should include security (fencing and control of access), landscaping, outside teaching areas and aids, outside play areas, sports fields, paths, roads and car parking and gardens for fruit and vegetables.

The site should be as level as possible and have good, uniform soil conditions to avoid expensive foundations. The site should be naturally well drained to avoid the possibility of flooding. See also sections on design for hurricanes and earthquakes.

The site should if possible be situated away from busy roads carrying vehicular traffic.

Any mature trees on the site should be kept to provide shade for buildings and occupants, protection to buildings (see section on design for hurricanes), etc.

Any watercourses or ponds on or adjacent to the site should be properly fenced to avoid accidents.

The size, shape and orientation of the site and the type of terrain will obviously have an effect on the design and layout of the school. The buildings should be arranged in the most economical way taking into account orientation, the slope of the site and any prevailing breezes, etc. This might mean that the buildings will have to be divided into separate units.

In areas affected by hurricanes careful attention should be paid to the siting of the buildings. Exposed areas and sites close to abrupt changes in level and steep-sided valleys that open onto the sea should be avoided. Advantage should be taken of any natural shelter that is available such as enclosed valleys not open to the sea or groups of trees that can form wind breaks.

The site should have adequate space for the facilities required by the present school population (using the new curriculum when it is introduced) as well as all necessary social and recreational facilities activities with sufficient space for future expansion if it is ever required.

Design for Climate: Climate will be the major influence affecting the comfort of children attending school and a variety of measures can be taken to improve the comfort levels.

The climate of Montserrat is sub-tropical tempered by trade winds and there is little climatic variation throughout the year. The heaviest rainfall occurs between July and November and the temperature peaks in August/September. The highest temperature is around 32°C and the lowest is around 22°C. Humidity ranges from around 60% to 70%. The major factors that have to be taken into account when designing school buildings if they are to be comfortable in this sort of climate are the sun (solar load and solar penetration during school hours), daytime temperatures, humidity, high rainfall and prevailing breezes.

Correct orientation of buildings is essential if the sun is to be kept out of rooms and off main walls. Buildings should therefore be oriented if at all possible with their long axis on a line east - west so that the main window walls face north -south. In warm, humid climates it might be necessary to modify this orientation in order to face the buildings into the prevailing breeze. If this is done other measures such as the provision of shutters or louvres might be necessary to keep the sun out of rooms.

Roof overhangs should be large enough to keep the sun out of windows during school hours. The size of the overhang will depend on the height of the roof and the latitude of the site. In multi-storey buildings, other measures such as louvres or projecting concrete slabs will be necessary to keep the sun out of windows.

Large roof overhangs will also keep the sun off walls and thus reduce the solar load. They will also protect the walls from the rain and reduce maintenance costs. Roofs will require insulation and/or ventilation to reduce the solar load through the roof.

The use of planting in providing shade and helping to keep buildings cool in the tropics should not be forgotten. Trees can be planted adjacent to buildings to provide shade and climbing plants can be trained over verandas and roofs.

Maximum ventilation in rooms is usually required throughout the year in hot, humid climates to increase comfort. Window openings should therefore be as large as possible.

Ceilings or linings should be provided to reduce heat gain from the roof and thus increase comfort.

Large roof overhangs will help to keep rain out of rooms but other measures, such as windows or shutters, might be required for wind-blown rain.

Roof gutters should not be provided as they are easily broken, become blocked with leaves, provide breeding grounds for mosquitoes and increase maintenance costs. Storm drains should instead be provided around buildings to dispose of storm-water and protect foundations against erosion. If either gutters or drains are provided then they should be accessible and easily cleaned.

Hurricanes and Earthquakes: Montserrat is in a hurricane zone and measures will have to be taken in the detail design of the buildings to protect them from damage. These measures will include: 1) the provision of adequate fixings to roof members and the tying down of roof members to walls; 2) roof pitches of between 30° and 40° to reduce uplift; 3) the use of hipped ends to roofs rather than gable ends and the ventilation of roofs at the ridge; 4) restricting the extent of unsupported roof overhangs; 5) minimising window openings; 6) providing windows with hurricane shutters; 7) providing adequate bracing to roofs, floors and walls and 8) proper tying down of the buildings to the foundations.

Some of these measures, such as the small size of wall openings, will conflict with the requirements outlined in climate above and decisions will have to be made as to which criteria are the most important. It should however be remembered that, if the facility is properly designed and built, then it could act as a sanctuary for the community in times of hurricanes.

Montserrat also suffers from earthquakes and again measures should be taken to protect the buildings against damage. The general construction and design principles are as follows: 1) Square or rectangular buildings are recommended as they have equal rigidity in all directions; 'T' or 'L' shaped buildings should be avoided. 2) Wall openings should be as few and as small as possible and openings should be kept away from the corners of buildings. 3) Buildings should be symmetrical about centre lines to reduce rotation. 4) Lightweight roof construction should be used where possible. 5) The building should be reinforced over the top of walls (ring beams), over openings (lintels), vertically at the side of openings, horizontally in walls and vertically at wall intersections and corners. 6) Foundations should be adequately reinforced and taken down to solid ground. Supervision to ensure that the buildings are properly constructed is most important.

Again, some of these measures will conflict with the requirements outlined in climate above and decisions will have to be made as to which criteria are the most important.

4.3 Proposals for the New Secondary School

4.3.1 Introduction

While the consultant's brief asks for a concept design only for the proposed new secondary school, it has been necessary to prepare more detailed designs for the school buildings in order to establish a preliminary budget and to ascertain the area of land required for the new school. However, it must be emphasised that these are preliminary proposals only and that a great deal

of work remains to be done on the detail design and layout of the buildings when a site has been selected, the new curriculum is finalised and a time-table is available.

While it is not possible to arrive at a definitive design for the new school without an actual site, details of the new curriculum and a time-table, it is possible to define an approach to the design of the new school taking into account discussions with school staff and the criteria and guidelines outlined above.

The proposals that are illustrated in this report therefore set out possible design strategies that could be adopted when designing the new school facilities.

Preliminary designs have been prepared for the facilities that will probably be required in the new school and a notional site layout has also been prepared that illustrates how these facilities could be arranged on a site. A preliminary budget has been prepared based upon these preliminary designs and layouts.

4.3.2 Siting

Two possible sites for the new secondary school have been identified. Both are in the north of the island: one at Blakes near the new FIFA football stadium and one at Pasture Piece.

The site at Blakes is unsuitable for a number of reasons: 1) it is very isolated from all of the existing population centres; 2) it is very rocky and slopes quite steeply and 3) at only three acres the size of the site is too small. This site can therefore be discounted.

The site at Pasture Piece is, at approximately 50 acres very large and it is close to an existing population centre that is itself growing. There are however problems in that there are existing houses scattered over parts of the site and the site is in multiple ownership which will make acquisition of even part of the site difficult. If these difficulties can be overcome then this site or at least parts of it would be suitable for the construction of the new school.

On the basis of the preliminary proposals that are illustrated in this report, it is estimated that the minimum site area required for the new school is around 18 acres and if space is to be provided for future expansion then this area should be increased to at least 20 acres and preferably to 25 acres.

While it has not been possible to design the school facilities for a specific site, it is recognised that any site on the island, particularly one that will be large enough to accommodate the school, is bound to be sloping to one degree or another and the design of the individual buildings and the proposed layout for the school buildings take account of this fact. The majority of the teaching buildings have also been designed as 2-storey buildings in order to reduce as much as possible the area of the site required for buildings.

4.3.3 Design Concept

The school as proposed consists of a group of separate buildings linked by covered ways running from north to south. Each building has a covered veranda running its full length giving access to all rooms and there are thus a series of north/south and east/west covered routes connecting all rooms and buildings. See the proposed school layout showing covered ways and verandas; drawing MSS/001.

Building lengths have been kept to the minimum compatible with internal planning constraints and the economic use of staircases for the 2-storey buildings in order to minimise the amount of cut and fill if the selected site was to slope from east to west.

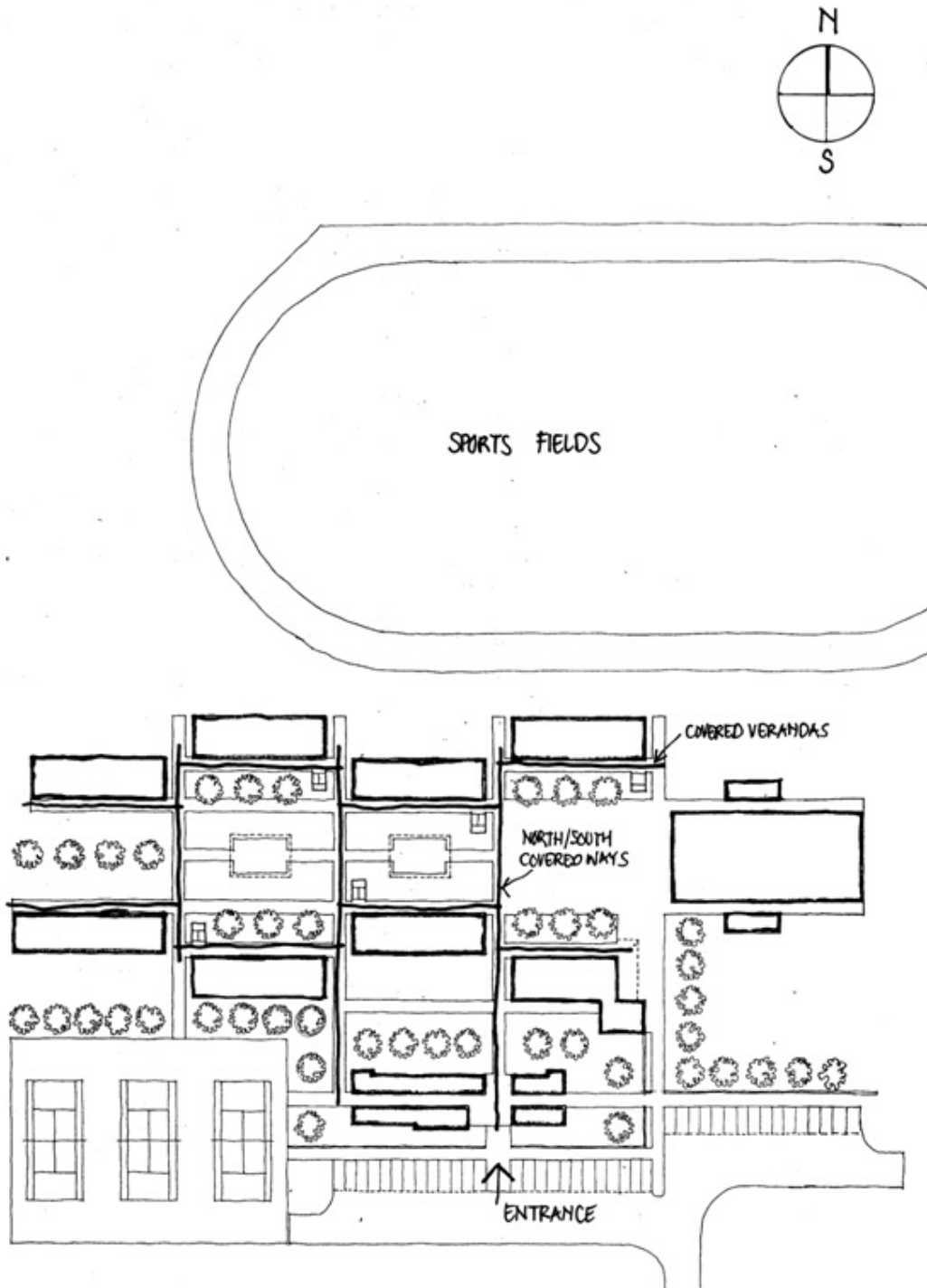
Differences in level from east to west can be taken up by steps from the buildings either up to or down to the north/south covered ways. Differences in level from north to south can be taken up by steps in the north/south covered ways. See drawing MSS/002.



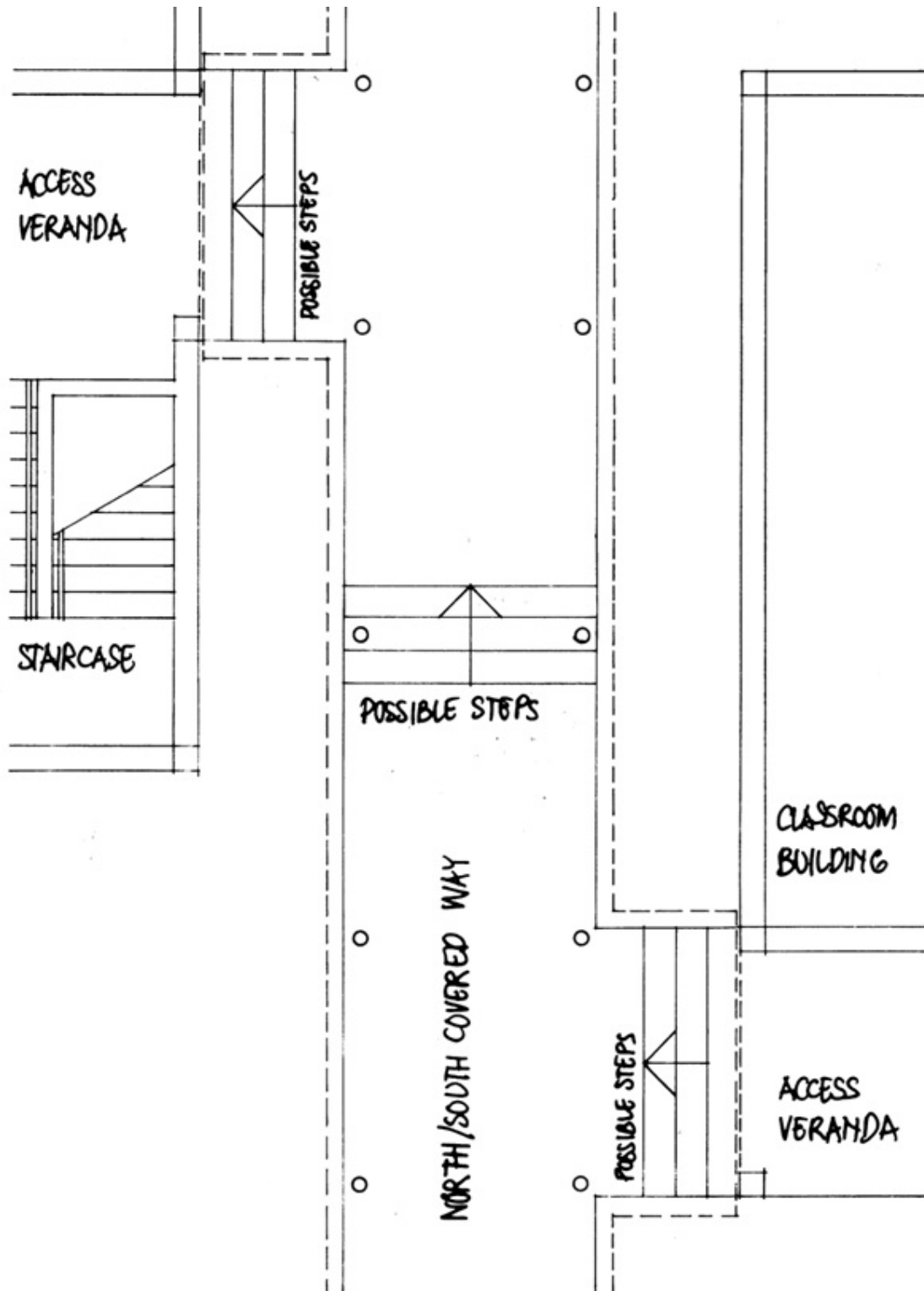
The organisation of the school around the north/south covered ways thus gives flexibility in the layout of the buildings. Depending upon the size and proportions of the site that is eventually selected the school buildings can be arranged in a number of ways around these covered ways and the organisation shown on the present proposal is only one of a number of possibilities.

The proposed layout gives the buildings the north/south orientation necessary to reduce solar penetration into windows and rooms and thus improve comfort. It should also minimise the amount of cut and fill in the foundations should the selected site slope from east to west and it will provide for any future expansion of the school facilities which could happen by extending the covered ways and constructing additional buildings to the north of the buildings presently proposed. See drawing MSS/003.

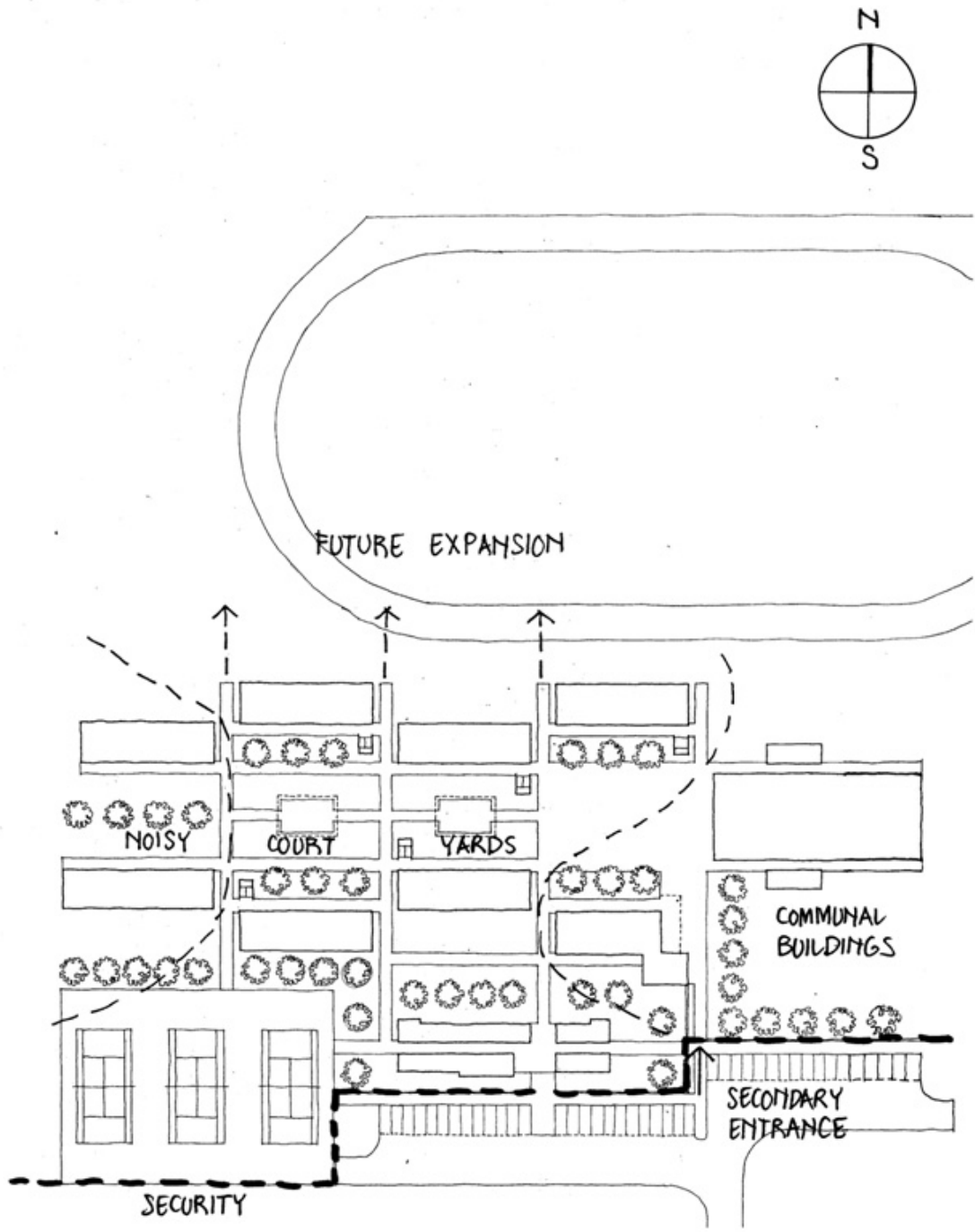
The proposed site layout assumes that access will be from the south and a car parking area for staff and visitors has been provided at the south of the site. In order to provide security for staff and pupils a wall or fence will be provided north of the car parking with the main access to the school for visitors passing through a reception/waiting area in the Administration Building. A secondary access is provided for out-of-hours use by the community of some of the school's facilities such as the Multipurpose Hall and the Sports Hall. See drawing MSS/003.



Drawing MSS/001: Layout of school showing north/south covered ways and covered verandas



Drawing MSS/002: Detail of junctions between covered way and buildings showing possible changes in levels



Drawing MSS/003: Layout of school showing noisy and communal areas, line of security fence or wall and direction of future expansion.

All buildings have been designed to provide as much cross-ventilation as possible to all rooms in order to make them as comfortable as possible in a situation where both average temperatures and humidity are high. All rooms to teaching buildings are twin aspect with windows on both sides to provide adequate light and ventilation.

Large roof overhangs will provide protection from sun and rain to single-storey buildings and to the first floor of 2-storey buildings and protection will be provided to ground floor windows of 2-storey buildings by concrete cantilevers or other means.

The communal buildings that are likely to be used by the community such as the Sports Hall and the Multipurpose Hall are placed at the eastern end of the school complex. A paved external assembly and informal hard play area is placed in front of the Sports Hall and a series of paved and planted courtyards leads from the Sports Hall to the western end of the complex. See drawing MSS/004

These courtyards separate the teaching buildings in order that noise between buildings is not a nuisance, provide informal soft play and social meeting areas and allow free movement of air through the buildings on each side of the courtyards. It is proposed to have some simple roofed structures in two of the courtyards to provide seating areas protected from the sun and rain. See drawing MSS/004

The rooms likely to generate the most noise, the Music and Drama Studios and the Design and Technology Workshops are placed at the western end of the complex away from the majority of the other teaching rooms. See drawing MSS/003.

The sports field is to the north of the site and there should be enough space to move these sports facilities further north if the school should expand in future. There should also be space on the site for agricultural activities and for wild-life habitats that can provide a valuable resource across the whole curriculum.

4.3.4 Phasing of Construction

While the design and layout of the buildings would allow for the phasing of the construction, it is difficult to see how this could actually be achieved as the specialised buildings such as the laboratories and workshops will be required as soon as the new school opens as will the Multipurpose Hall, the Sports Hall and the Administration Building. The only buildings that could therefore be built in phases would be the three General Classroom Buildings and given the disruption that the construction of these buildings in phases would cause to the running of the school which would of course be in operation and the increased costs that would be involved because of inflation over the extended construction period, it is felt that it would be more realistic and economic to construct the whole school at one time.

4.3.5 Construction

All buildings have been designed to be as simple and economic to construct as possible. Two planning grids have been used: a 9'0" grid for the teaching buildings and a 12'0" grid for the two Halls and the Administration building.

The teaching buildings all have, as previously stated, double-aspect rooms with a 7'0" wide access veranda or balcony on one side. They are designed to be constructed of a reinforced concrete frame with columns at 9'0" centres. The structural width has been standardised at 28'0" centre-to-centre of columns which gives a width of 27'3" for the larger rooms such as laboratories and workshops and a width of 24'6" for the general classrooms, the difference being taken up by lockers in front of the general classrooms accessible from the balconies and verandas.

The two halls are designed to be constructed of simple steel portal frames with columns at 12'0" centres. It is also proposed to have roof vents along the top of the ridge of these buildings to assist with cooling of the buildings.

All roofs apart from that to the Administration Building are designed as simple double-pitch roofs of profiled, colour-coated steel sheets fixed to steel purlins on steel trusses in the teaching buildings and steel portal frames in the Halls and Administration building.

The Administration Building is the only building with a central corridor and this will be lit and ventilated by high level louvres along the length of the corridor. The roof will consist of two mono-pitch roofs with louvres between the two roofs at the centre and the roof over the entrance area will be raised above the general roof height.

Walls will be of concrete blocks rendered and painted inside and out and protected from the rain by large roof overhangs.

Windows will be colour-coated steel louvres protected by hurricane shutters. The area of windows will be as large as possible to provide maximum light and ventilation within the restrictions set by the hurricane shutters. First floor windows will be protected by the roof overhangs and ground floor windows will be protected by concrete cantilevered slabs over them or by other means.

All buildings will be protected around all sides by concrete paving and storm drains. The north/south covered ways will also act as service routes for water and electrical services.

4.3.6 Proposals for Facilities

The school currently has 350 students in 5 year groups and each year group is divided into a number of forms ranging from 3 to 5 forms per year group. This means that some forms have very few students (as few as 10, 11 or 12) and this, if it were reproduced in the new school, would be very uneconomic in terms of the provision of facilities and cannot be the basis on which the new school is designed.

The maximum class size in UK is now 30 students and this has been used as the basis for the design of the new school in order to make the maximum use of the facilities to be provided.

Using this criterion and assuming a three-form entry to the school this will give a maximum year size of 90 students and a maximum school population of 450 which would allow for a 23% increase in future on the present school population of 350.

The present average year group is approximately 70 students and this will at present give a three-form entry school with approximately 24 students per form.

Using the UK Building Bulletin 98: Briefing Framework for Secondary School Projects and discussions with the school staff as a starting point, the following facilities have been proposed for the new school. It should be noted however that the number and type of facilities to be provided will possibly change when the new curriculum has been finalised.

From discussions with the school staff it became evident that the school organisation would be class-based and so fifteen classrooms in three buildings have been provided in order that all of the three classes in each of the five year groups will have its own class base. Access is from verandas or balconies overlooking the central school square or courtyards and all classrooms will have individual lockers for pupils outside.

There are three science laboratories with prep rooms and stores, an IT room and three design and technology workshops. Again access is from verandas or balconies overlooking the



central courtyards. One of the workshops is designated for home economics and the other two could be for light and heavy practical subjects. The detail design of these will depend on what subjects are included in the new curriculum. It should also be noted that while an IT room has been provided, the general classrooms and other teaching rooms are large enough to allow for the use of laptops by some of the pupils and the school as a whole will have to be designed to allow for increased use of IT throughout the school.

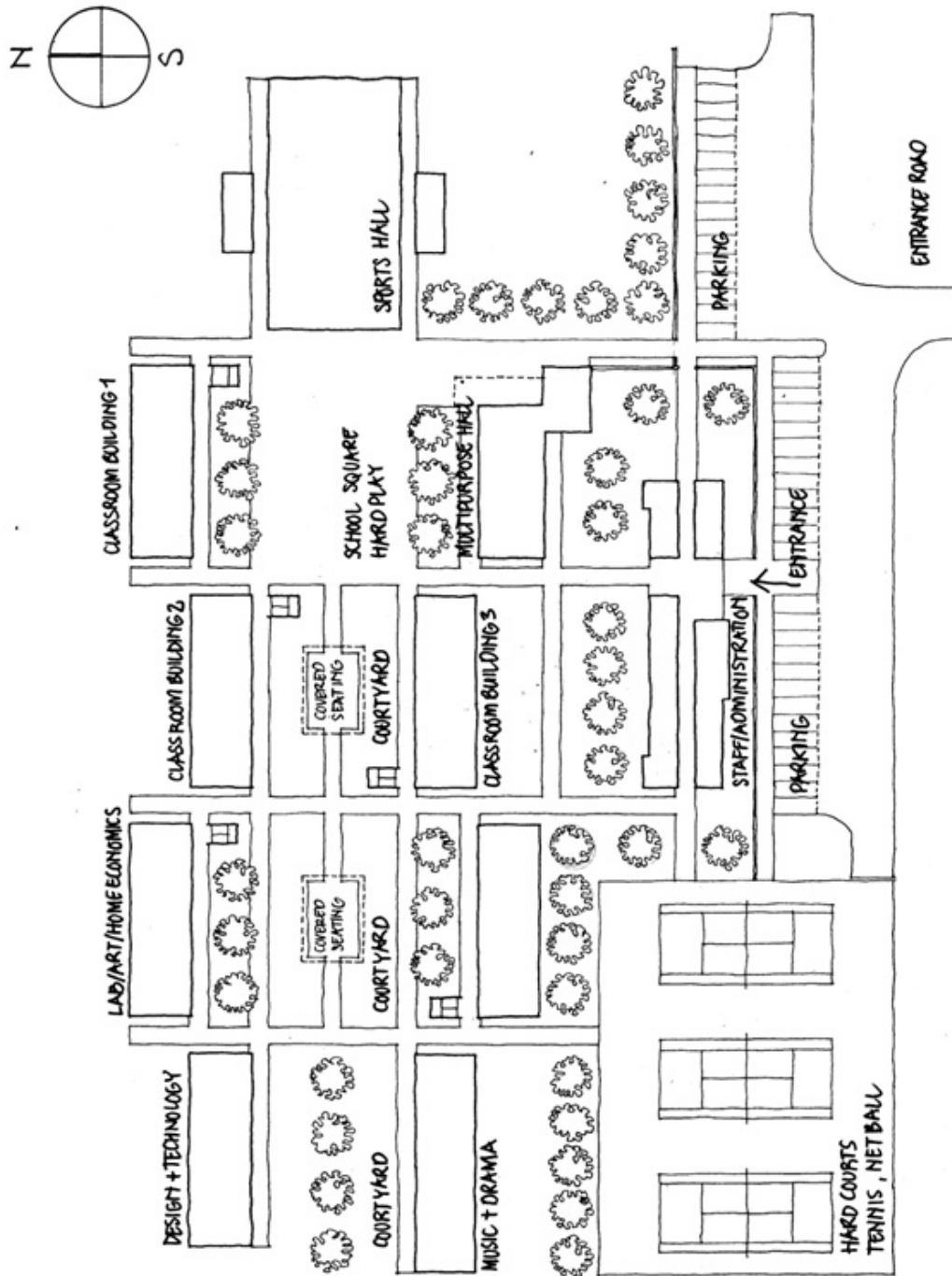
Three studios have been provided, one for art, one for dance and one for music and there are also two music practice rooms. These are also accessible from verandas or balconies facing onto one of the central courtyards.

Several learning resource areas have been provided and these include a large library resource centre, four small group rooms for learning support, behaviour management or private counselling and a special educational needs base.

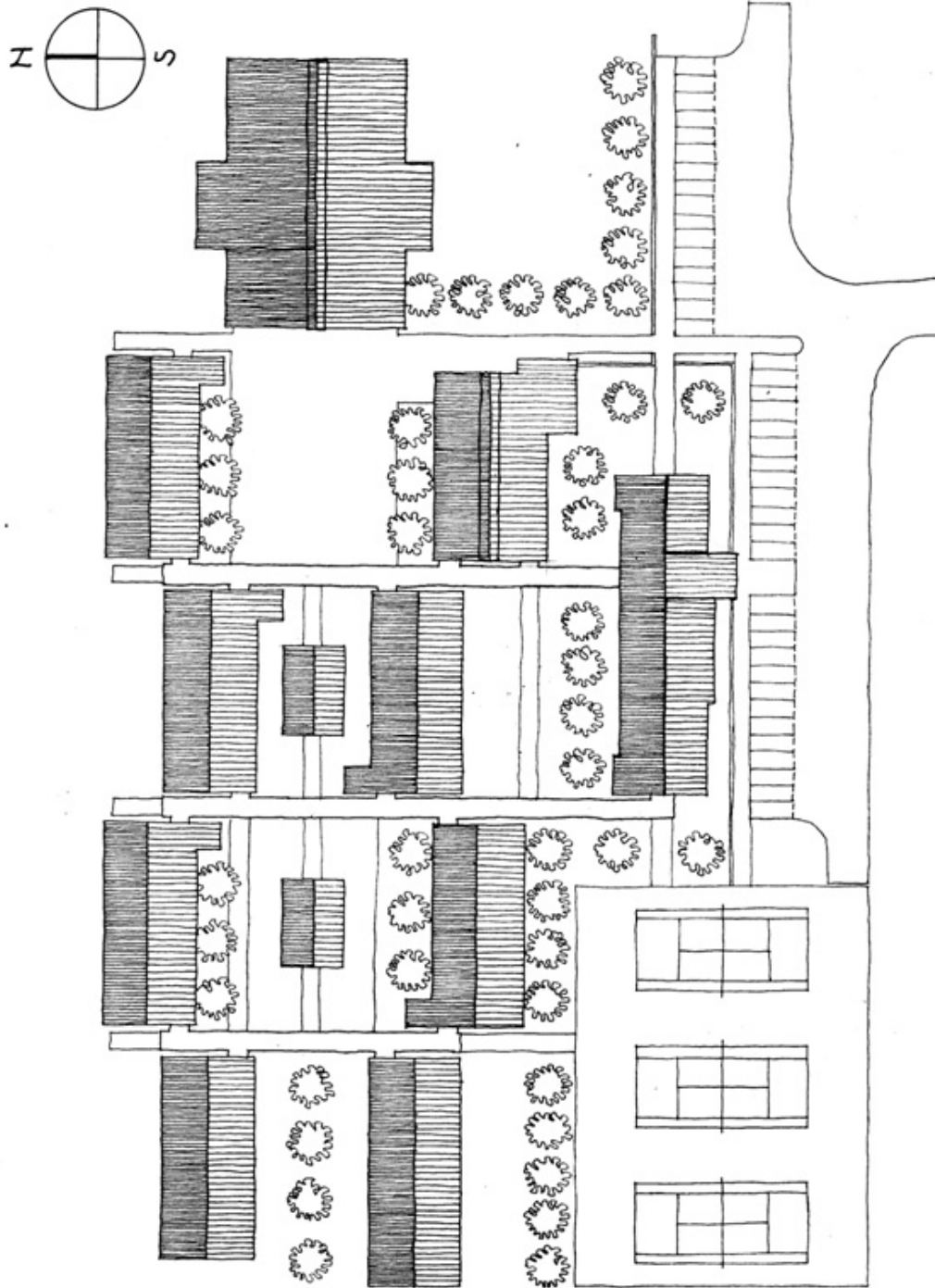
Offices for five heads of years and other offices for staff together with a number of stores are provided around the school.

There is also an administration building, a sports hall and a multipurpose hall designed for dining and performances. Both of these latter facilities should be accessible by the community.

The general layout of the school and a roof plan are shown on drawings MSS/004 and MS/005 and details of the individual buildings are given below.



MSS/004: Proposed site layout showing individual buildings, courtyards, hard play areas, etc.



MSS/005: Roof plan of whole school.

4.3.7 Details of Individual Buildings

General Classrooms

Three two-storey general classroom buildings have been provided. Classroom Building 1 has six classrooms (each 26'3" x 24'6"); Classroom Building 2 has five classrooms (each 26'3" x 24'6"), an office for a head of year (8'3" x 26'3") and a small group room (17'3" x 26'3") and Classroom Building 3 has four classrooms (each 26'3" x 24'6"), an office for a head of year (8'3" x 24'6"), a small group room (17'3" x 24'6") and a resource base for pupils with special educational needs (26'3" x 24'6").

The area of the classrooms is 643ft² giving an area per pupil of 21ft² (2m²). All classrooms have lockers for pupils along the outside of the veranda or balcony wall.

All three buildings have an access staircase and boys' toilets on the ground floor and girls' toilets on the first floor. See drawings MSS/006, 007 and 008.

Specialised Facilities

Two other two-storey buildings have been provided each containing more specialised facilities. Both buildings have an access staircase.

The Laboratory/Library Resource Building contains two laboratories (35'3" x 27'3") and a preparation room (17'3" x 27'3") on the first floor. The services to the laboratories are provided in perimeter benches to simplify construction and servicing. On the ground floor there is a Library Resource Room (44'3" x 27'3") with a reception area and an IT room (35'3" x 27'3") with an office/store. See drawing MSS/009.

The Laboratory/Art/Home Economics Building contains a laboratory (35'3" x 27'3"), a small preparation room (8'3" x 27'3") and an art room (35'3" x 27'3") on the first floor. The art room has an office/store and space for a pottery kiln or other equipment. On the ground floor there is a home economics room (35'3" x 27'3"), an office for a head of year (8'3" x 27'3") and two small group rooms (each 17'3" x 27'3"). See drawing MSS/010.

The two other buildings containing specialised facilities are both single-storey. The Design and Technology Building contains two D and T workshops (each 35'3" x 27'3") and each workshop has its own separate store and office.

The Music and Drama Building has a Drama Studio (35'3" x 27'3") with a separate office and store and a Music Studio (35'3" x 27'3") with an office and store and two small practice rooms. See drawings MSS/011.

Staff and Administration

The Staff/Administration Building has a central entrance and waiting area overseen by a reception area. On the western side of the entrance there are offices for the vice-principal, a parents'/community office and the caretaker's office and store (all 11'3" x 12'0"), an office for the principal (11'3" x 14'0") plus two stores and toilets.

On the eastern side of the entrance there are an administration office (17'3" x 12'0") plus a store; a teachers' resource room (11'3" x 12'0") plus a store; a counselling room/sick bay (11'3" x 12'0"); a teachers' workroom (29'3" x 14'0"); a meeting/training room (23'3" x 12'0"); male and female toilets and a teachers' social room (35'3" x 14'0"). See drawing MSS/012.

Multipurpose and Sports Halls

Two halls have been provided: a Multipurpose Hall for dining and performances and a large Sports Hall for basketball, five-a-side football, etc.

The Multipurpose Hall has a large dining/performance space (29'3" x 47'3") with a paved area in front and a projecting roof covering part of the paved area. The performance space has two large stores at the rear for storing a demountable stage and furniture. These stores could also be used as 'green rooms' during performances.

At the rear of the building are boys' and girls' changing rooms and toilets that could be used by users of the hall or by users of the nearby hard games courts. There is a kitchen attached to the hall for providing school lunches or for after-hours use with an office, store and toilet. The hall has covered verandas on both sides to provide access and protection to the windows and doors of the hall. See drawing MSS/013.

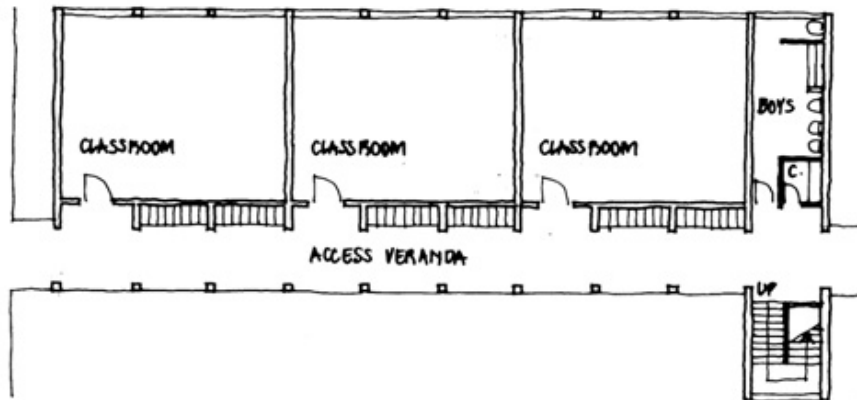
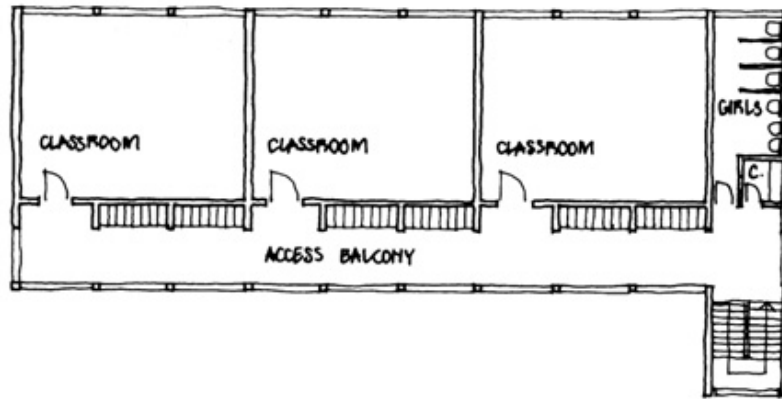
The Sports Hall is a large covered space (107'0" x 59'0") providing adequate space for a basketball court, five-a-side football, etc. It has two large stores and a staff toilet/changing room at the rear together with a staircase up to a viewing area.

There are covered verandas on each side of the hall for access and off these verandas are boys' toilets and changing on one side and girls' toilets and changing on the other side. These toilets and changing facilities could be used by users of the hall or by users of the sports fields north of the hall. They could also have additional viewing areas over them if required. See drawing MSS 014.

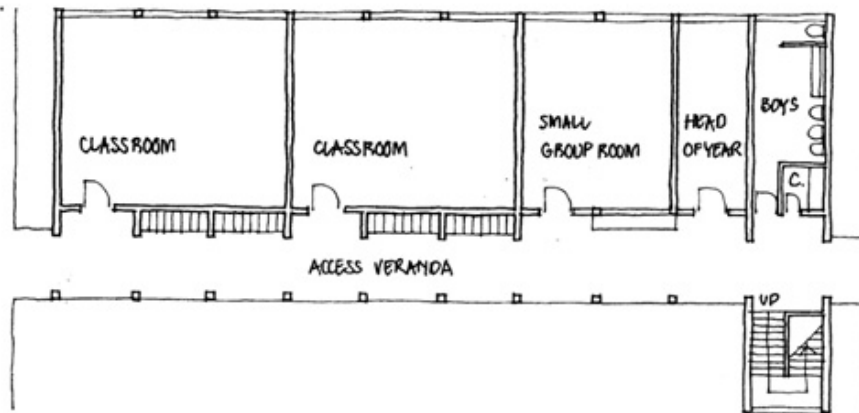
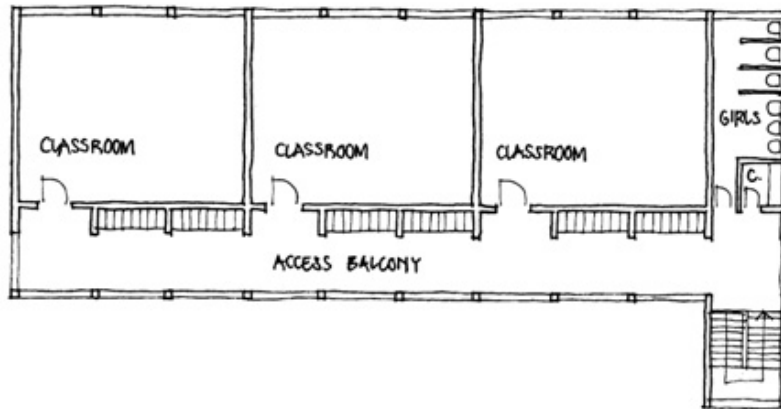
For details of the floor areas of the individual spaces see Table 1: Proposed Accommodation Schedule below.

	Room	No	Area	
			Ft ²	M ²
Teaching Spaces	General Classrooms	15	643	60
	ICT Room	1	960	89
	Science Laboratories	3	960	89
	Art Room	1	1,077	100
	Design and Technology	2	960	89
	Home Economics	1	960	89
	Music Studio	1	960	89
	Practice Rooms	2	110	10
	Drama Studio	1	960	89
Learning Resource Areas	Library Resource	1	1,025	95
	Small Group Rooms	4	424/470	39/43
	Special Educational Needs Base	1	643	60
Staff and Administration	Principal	1	157	14.5
	Deputy Principal	1	135	12.5
	Heads of Year Offices	5	202/225	18/21
	Teaching Staff: Work Space	1	409	38
	Teaching Staff: Social Space	1	493	46
	Administration Office	1	208	19
	Teachers' Resource	1	135	12.5
	Meeting/Training Room	1	279	26
	Reception	1	135	12.5
	Entrance/Waiting	1	457	42
	Parent's/Community Office	1	135	12.5
	Caretaker's Office/Store	1	135	12.5
	Counselling/Sick Bay	1	135	12.5
Dining/Recreation/Sports	Multipurpose/Dining Hall	1	1,382	128
	Kitchen	1	585	54
	Stores	2	162	15
	Toilets/Changing	2	162	15
	Sports Hall	1	6,313	585
	Stores	2	202	19
	Toilets/Changing	2	417	521
Support Spaces	Student Toilets	6	202	19
	Stores	see buildings		

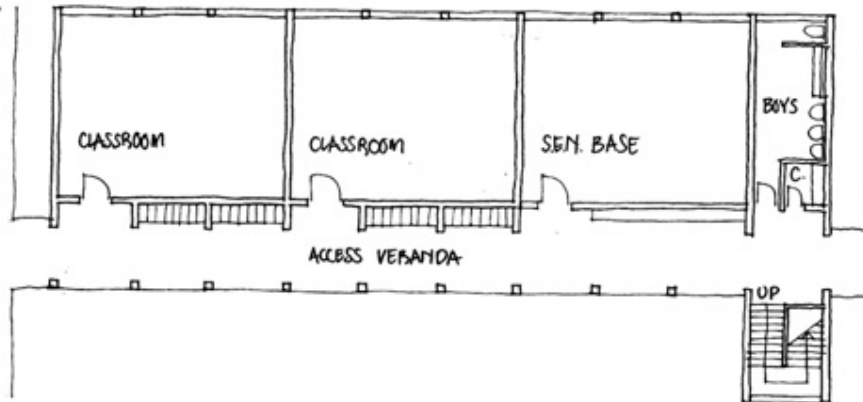
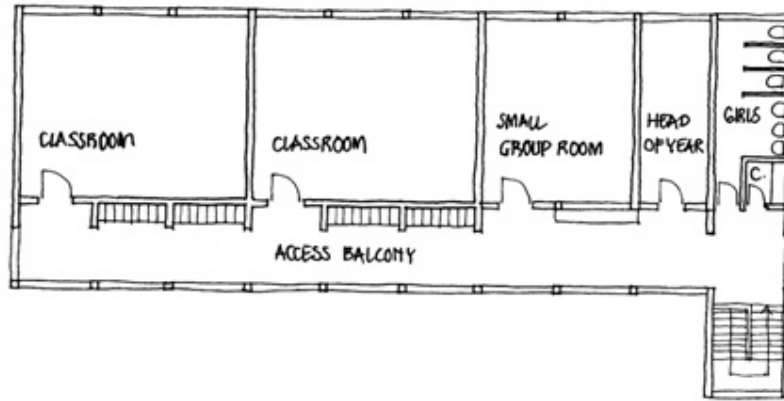
Table 1: Proposed Accommodation Schedule



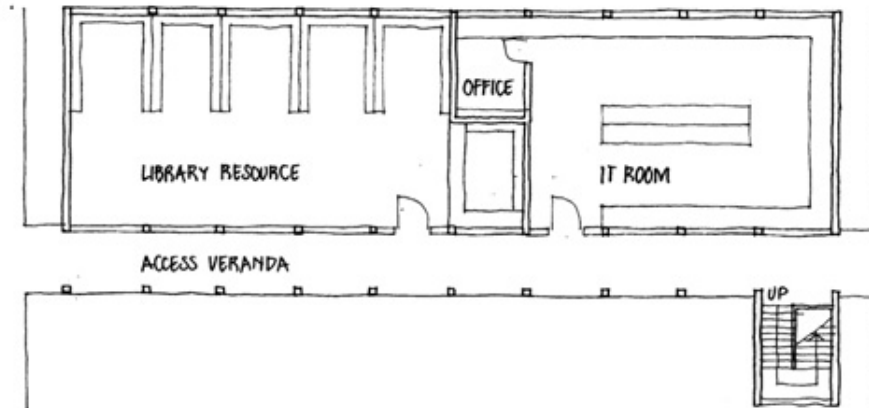
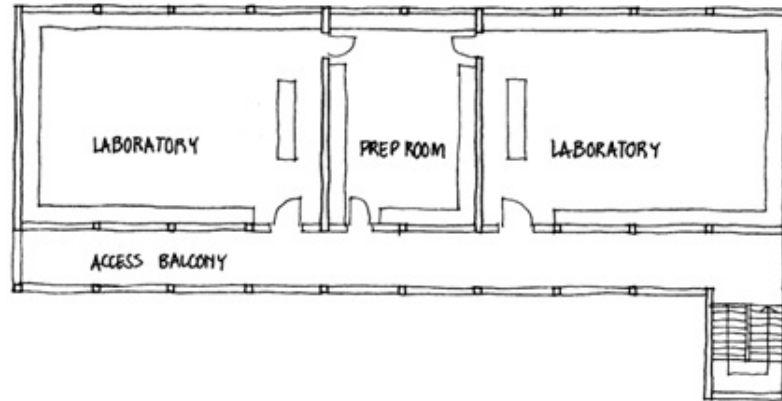
MSS/006: Classroom Building 1 with three classrooms on the first floor and three classrooms on the ground floor.



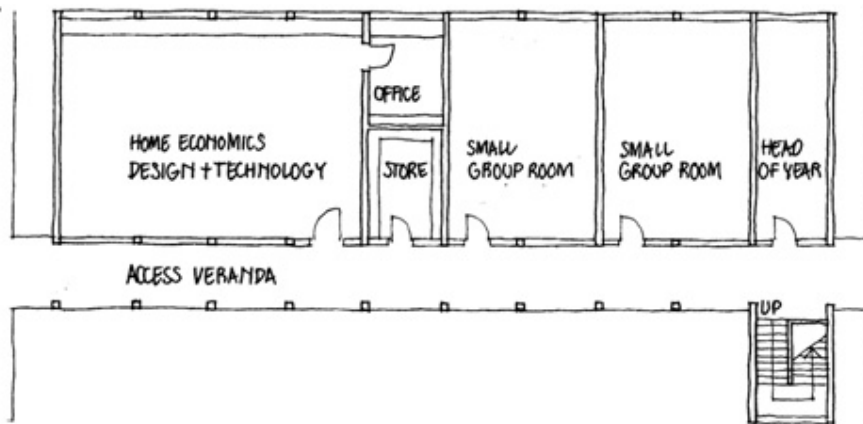
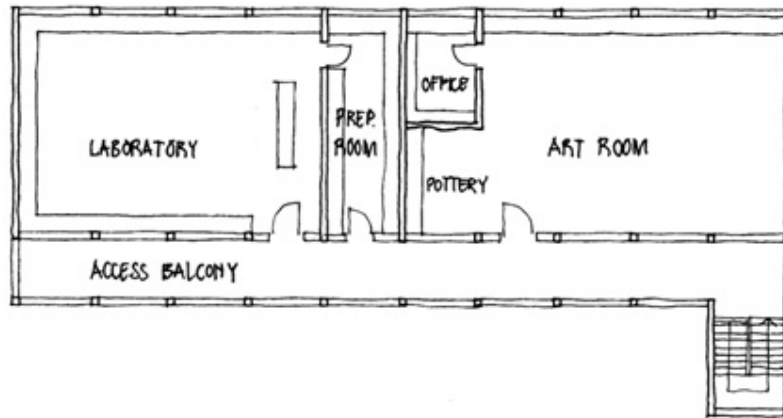
MSS/007: Classroom Building 2 with five classrooms, a small group room and an office for a head of year.



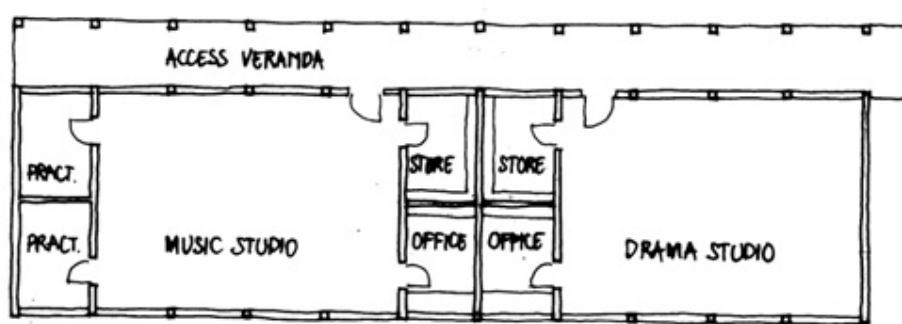
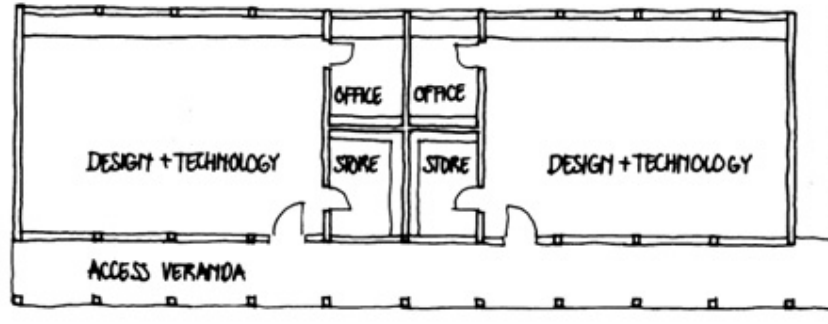
MSS/008: Classroom Building 3 with two classrooms, a small group room and an office for a head of year on the first floor and two classrooms and the base for pupils with special educational needs on the ground floor.



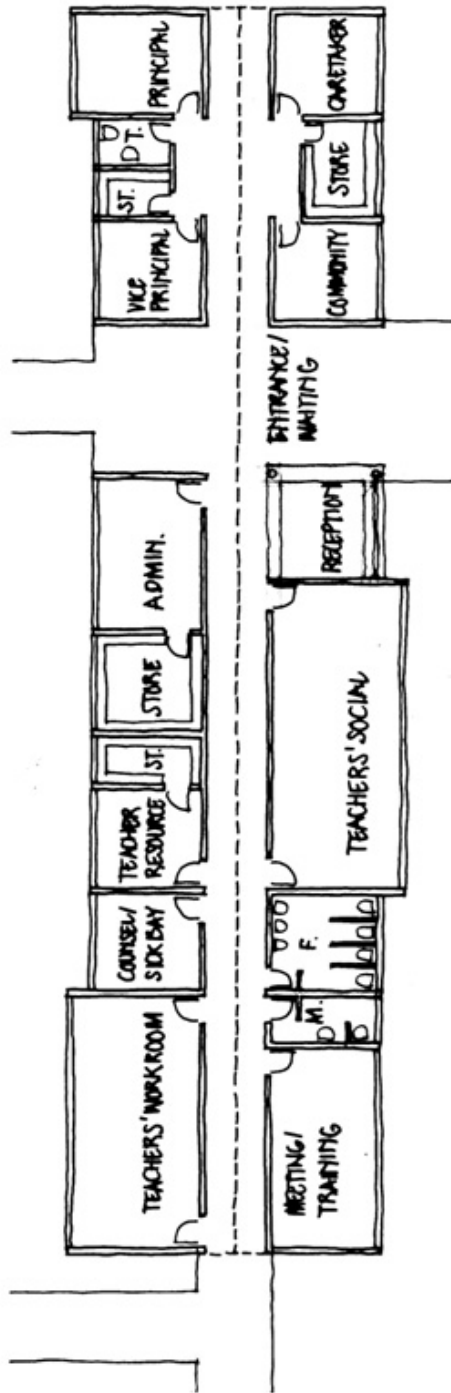
MSS/009: Laboratory/Library Resource Building with two laboratories and a prep room on the first floor and the library/resource centre and IT room on the ground floor.



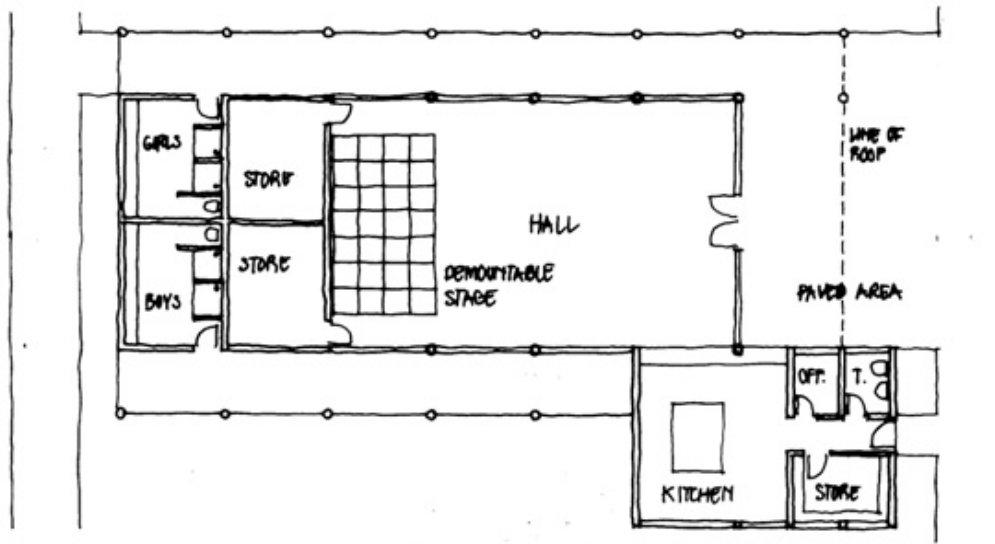
MSS/010: Laboratory/Art/Home Economics Building with a laboratory, prep room and art room on the first floor and a home economics room, two small group rooms and an office for a head of year on the ground floor.



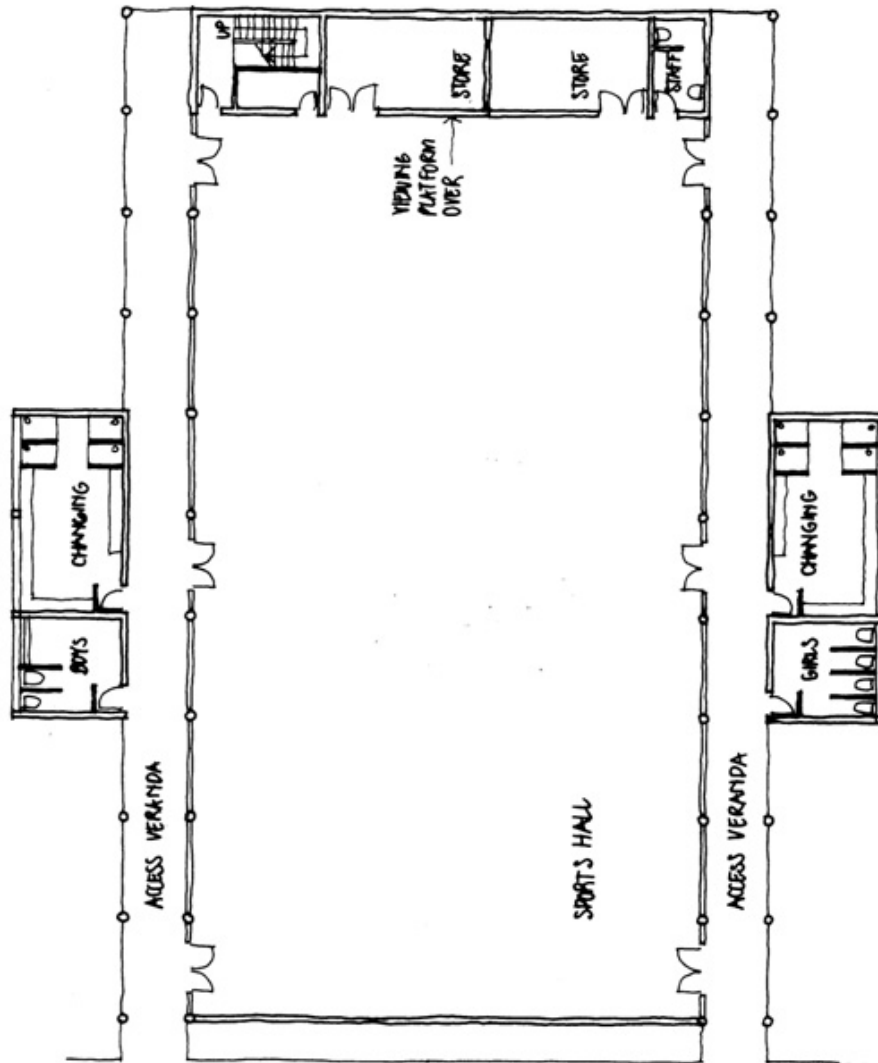
MSS/011: Building 1: two design and technology workshops with separate stores and offices. Building 2: music and drama studios with separate stores and offices and two music practice rooms.



MSS/012: Staff/Administration Building



MSS/013: Multipurpose Hall with attached kitchen, stores, pupils' toilets and changing rooms.



MSS/014: Sports Hall with stores, staff and pupils' toilets and changing.

4.3.8 Preliminary Cost Estimate

A preliminary cost estimate has been prepared for the proposed school buildings as shown on the above drawings. The cost per square foot is based upon current Ministry of Work's cost estimates, the total areas of the buildings including access verandas and balconies have been used for the calculations and no allowance has been made for the cost of the site, for inflation or for consultants' fees.

Preliminary Cost Estimates		
Building	Area in Ft ²	Cost in ECDollars
Classroom Building 1	6,771.00	2,234,430.00
Classroom Building 2	6,771.00	2,234,430.00
Classroom Building 3	6,771.00	2,234,430.00
Laboratory/Library Resource Building	6,771.00	2,234,430.00
Laboratory/Art/Home Economics Building	6,771.00	2,234,430.00
Design and Technology Building	3,312.00	1,092,960.00
Music and Drama Building	3,641.00	1,201,530.00
Staff/Administration Building	4,865.00	1,605,450.00
Multipurpose Hall	3,982.00	1,314,060.00
Sports Hall	10,221.00	3,372,930.00
Total		19,759,080.00
Site Works @ 20%		3,951,816.00
Contingencies @ 10%		1,975,908.00
Grand Total		EC\$25,686,804.00

ANNEX 1: TERMS OF REFERENCE: DESIGN CONSULTANCY FOR EDUCATION INFRASTRUCTURE PROGRAMME

Background

Until the early 1990s, Montserrat was largely self-sufficient. But the volcanic crisis of 1995-1997 destroyed much of the social and economic fabric of the island, devastated nearly all its key infrastructure, caused substantial population exodus. Montserrat's GDP fell from £38.7m in 1994 to £24.2m in 1998.

Substantial DFID assistance (some £250m from the start of the crisis to date) has been provided to restore basic infrastructure and to maintain essential services for the remaining population.

Montserrat's education system is broadly based on the English system. Both universal primary and secondary education have been achieved and the early childhood programme expanded. Provision is made for every child from the age of three to attend nursery school. There are three government nursery schools, two primary (Lookout and Brades), one secondary school (Montserrat Secondary School) and two privately owned primary schools.

Since the volcanic disturbances, families have increasingly moved north across the island. Lookout Primary School was purpose built in response to evacuation and is now over-subscribed and Brades Primary School is in urgent need of renovation and development. Montserrat Secondary School (MSS), sited in the ash shadow of the volcano, is prone to impromptu closure from ashing. Combined with its recent review that highlighted inherent design weaknesses, the Government's intention is for a phased relocation of the secondary school to a new site in the north.

The construction, improvement and expansion of educational facilities has been identified as a key Strategic Initiative in the Department of Education's 2008 Business Plan. This is reflected also in the 2007 – 2010 Sustainable Development Plan.

Purpose

The purpose of the consultancy will be to provide a design for the redevelopment of Brades Primary school and the scoping, initial design and costing for a new Secondary school on the Island.

The consultancy will also involve the provision of a development proposal for the expansion of Look Out Primary school to ensure that there is some consistency in the island's education infrastructure (see Outputs below). The first priority for education infrastructure on Montserrat has been identified as the building of a new two storey building at Look Out Primary School. The design and initial site preparation has already been completed.

This consultancy will mainly focus on the next phase of education infrastructure development on the island: the redevelopment of Brades Primary school and scoping and costing of a new secondary school.

Scope of Activities

Due to climatic risks of the Island there will be some limitations on materials and building specifications which will need to be carefully considered in partnership with local counterparts. Ideally the consultant will have had experience working in the region and/or in environments with similar risks.

At Brades Primary School (student roll: 169 students) the redevelopment design should ensure an appropriate balance is made between renovation and new build taking into account; cost effectiveness, sustainability and facilities which best suit the new teaching and learning techniques currently being developed at the school. The proposed redevelopment of Brades is to be funded both by DFID, with one new building subject to funding by the Caribbean Development Bank's Basic Needs Trust Fund (BNTF). The consultant (s) will therefore be required to work in close consultation with BNTF in the design work for this site.

The consultancy will also provide scoping, initial design and costing for a new site for the Montserrat Secondary School (MSS). This will also include an appraisal of the most feasible location for the new site based on options provided by the Ministry of Education.

A recent review of MSS highlighted that the poor design of the existing site was a contributory factor to some of the school's current management problems. A temporary Change Manager has recently been appointed at MSS and will be in post at the time of the consultancy to provide additional input alongside staff, parents and students. MSS currently has a student population of 351.

On all three sites (including Look Out) there is scope for the use of buildings by the community and for after school activities outside normal school hours. The designs and recommendations from the consultancy should address this subject and be commented on in the report.

Consultations

Consultations should include, but not be limited to key staff at PWD and Department of Education, student and parent representatives, headteachers at each of the schools and teacher representatives.

Reporting in Montserrat

The consultants will work closely with Director of PWD, Director of Education, DFID Engineering Adviser. DFID Infrastructure and Education Advisers will provide pre-visit briefings and oversee the outputs of the consultancy.

Competencies and skills required by the Consultants

It will be expected that the consultants will be architects experienced in both the design and planning of educational facilities. Knowledge and experience of best practice school design within a developing country/ limited budget scenario will be considered particularly important in assessing offers as would experience within the region.

The consultants should either have combined experience in both "hands on" design of structures in a similar risk environment and of overall educational facility infrastructure development or have the support of a team with these required skills.

Timing

It is estimated that the length of the consultancy would be 10 working days. Estimates of staff required to be provided by expressions of interest.

Key Outputs

Within two weeks of departing from Montserrat, the consultants will be required to provide drafts of the following to PWD, MoE and DFID.

1. An overall design for redevelopment of Brades Primary school to include appropriate siting for any new buildings. Approximate costing to be provided and realistic timescale, together with recommendations on construction techniques/materials, building maintenance and energy efficiency for the new build and typical requirements for the refurbishment of the existing buildings.
2. Following completion of the planned two storey extension at Look Out Primary school, identification of any further infrastructure needs for the Look Out Primary School site.
3. A briefing note on the result of key stakeholder meetings and identification of risks and opportunities for the programmes of work.

Within five weeks of departing from Montserrat, the consultant (S) will be required to provide drafts of the following to PWD, MoE and DFID.

4. An initial layout and innovative but appropriate concept design for a new campus for MSS. This should give approximate sizes of the proposed structures, building layouts and areas of land for the various uses, including total area. The design document should suggest possible phasing and time scale for the project, with a budget overall cost broken down into the proposed phases.