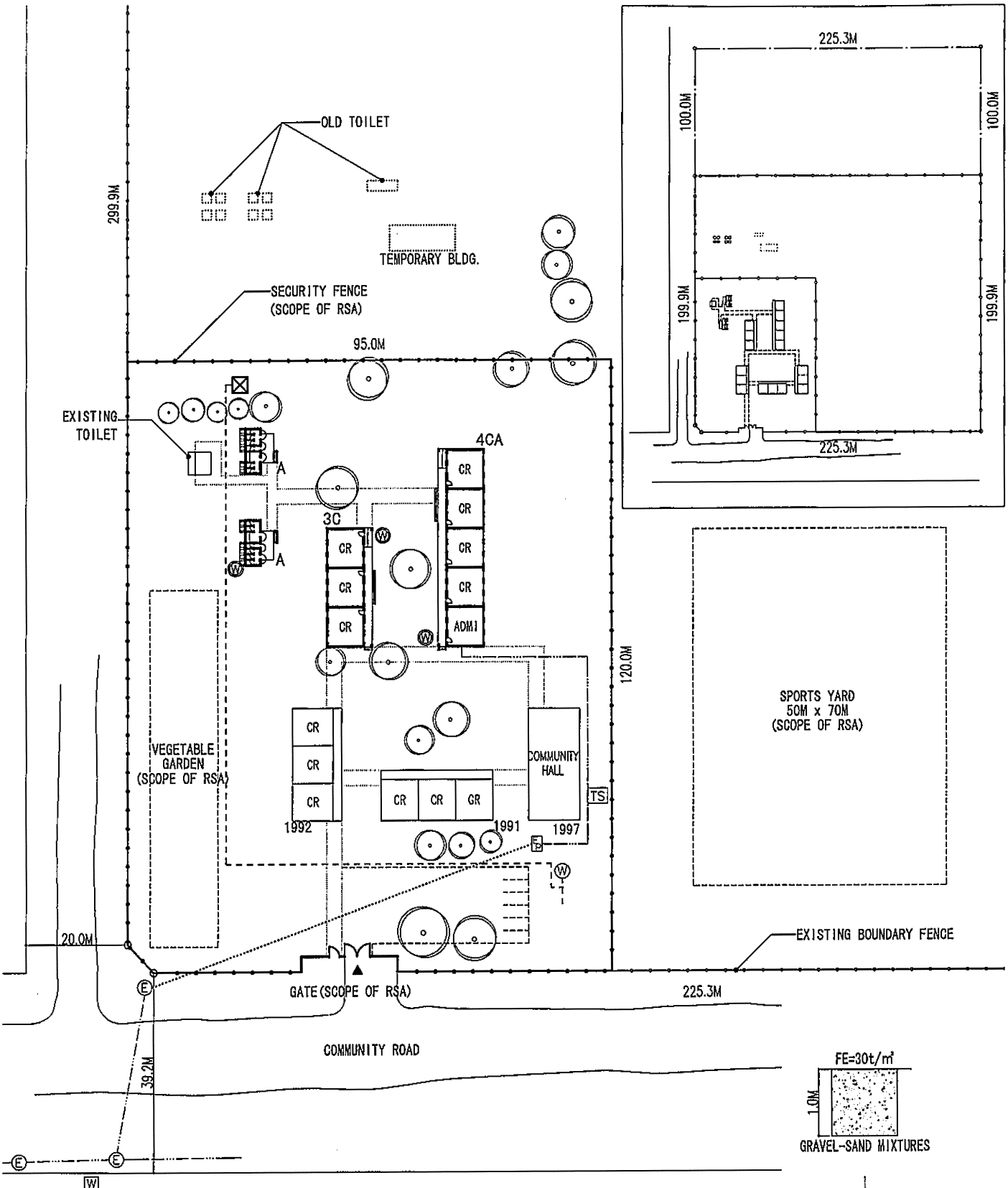
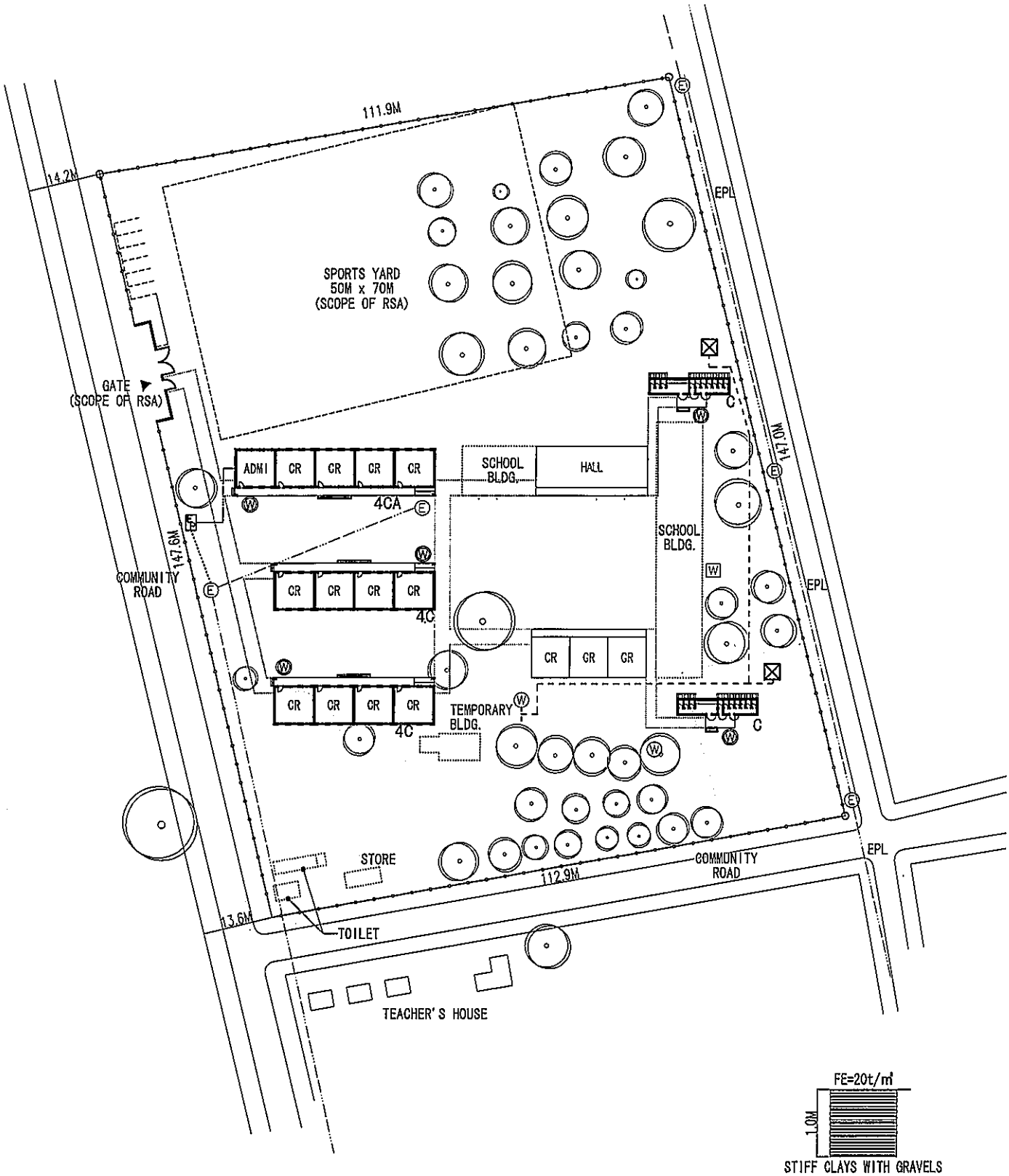


Code Number :	Name of School :		Site Area : 67,553.4sq.m
KK5	Ikageleng Makobe Primary School		CR. Type : 4CA, 3C
	District : KoneKwena	Community : Vlakfontein Ga-Matala	WC Type : A, A



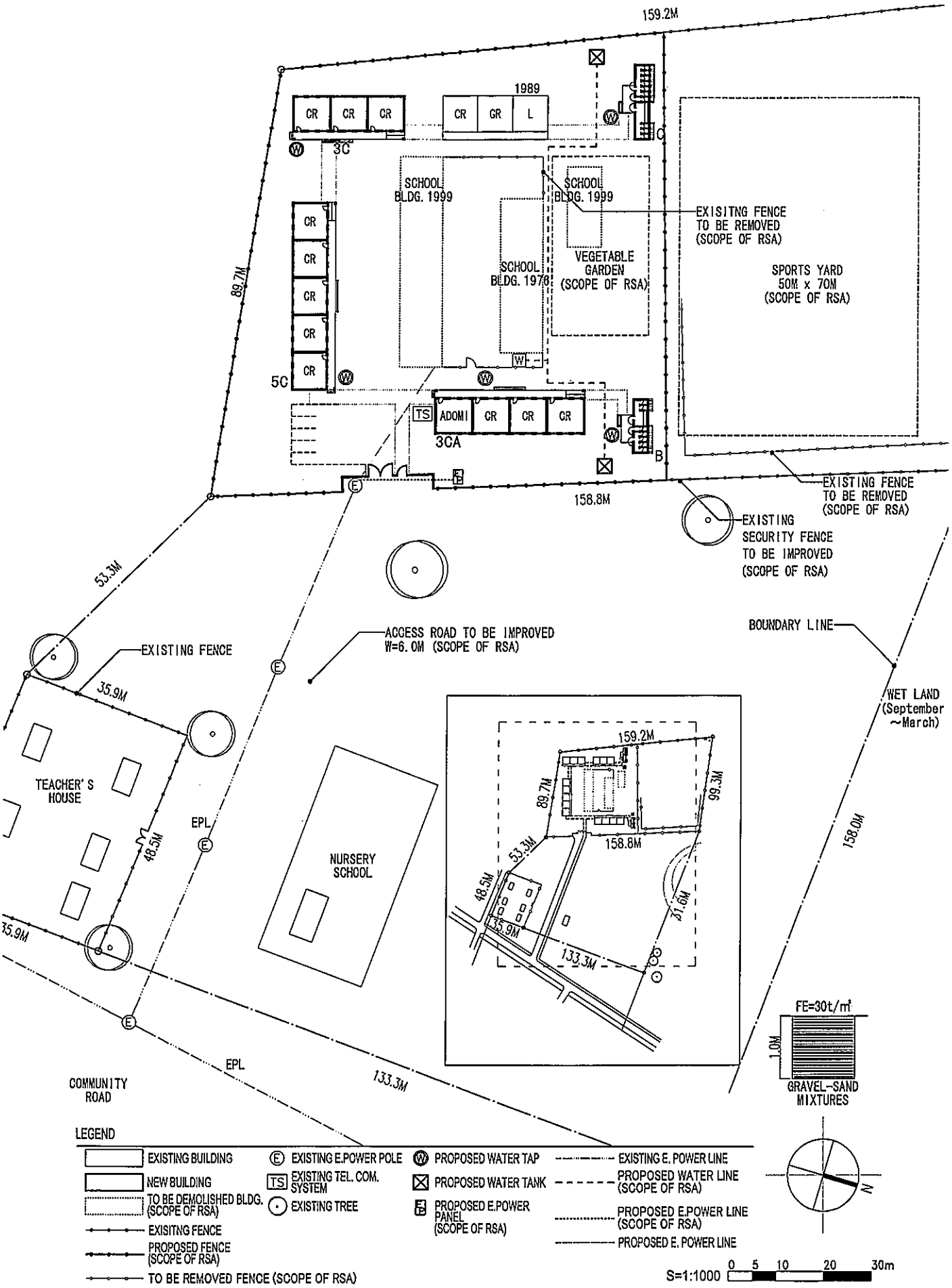
LEGEND

- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- EXISTING E. POWER LINE
- (E) EXISTING E.POWER POLE
- (W) EXISTING WATER TANK
- (W) PROPOSED WATER TAP
- PROPOSED WATER TANK
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- EXISTING TREE
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

N

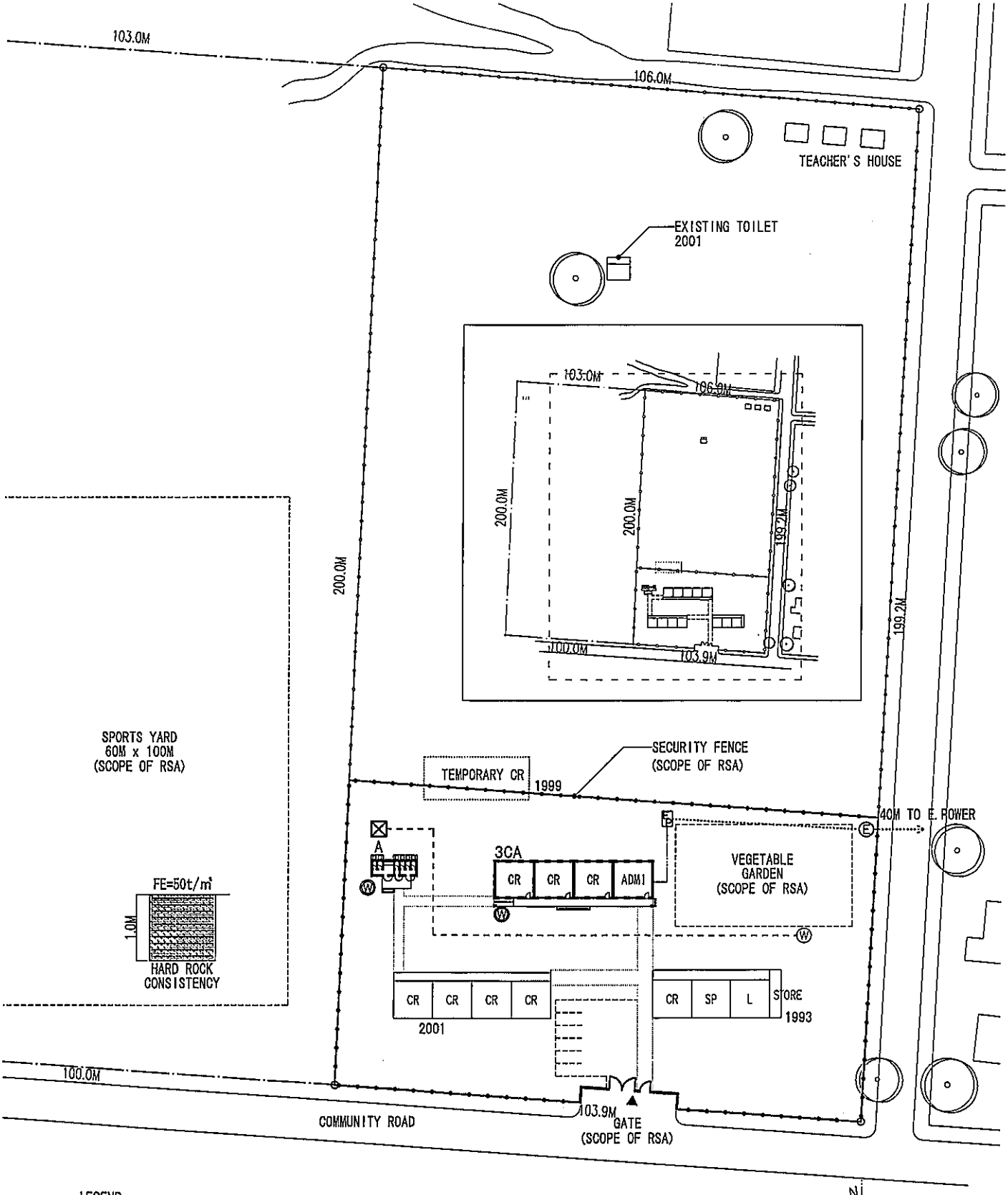
S=1:1000 0 5 10 20 30m

Code Number :	Name of School :		Site Area :
KK6	Pula Seopa Primary School		CR. Type : 4CA, 4C, 4C
	District : KoneKwena	Community : Phetole Village	WC Type : C, C



Code Number :	Name of School :		Site Area :
KK7	Sefataladi Primary School		CR. Type :
	District : KoneKwena	Community : Ramoshoane	WC Type :

Site Area :	34,894.0sq.m
CR. Type :	3CA, 3C, 5C
WC Type :	B, C



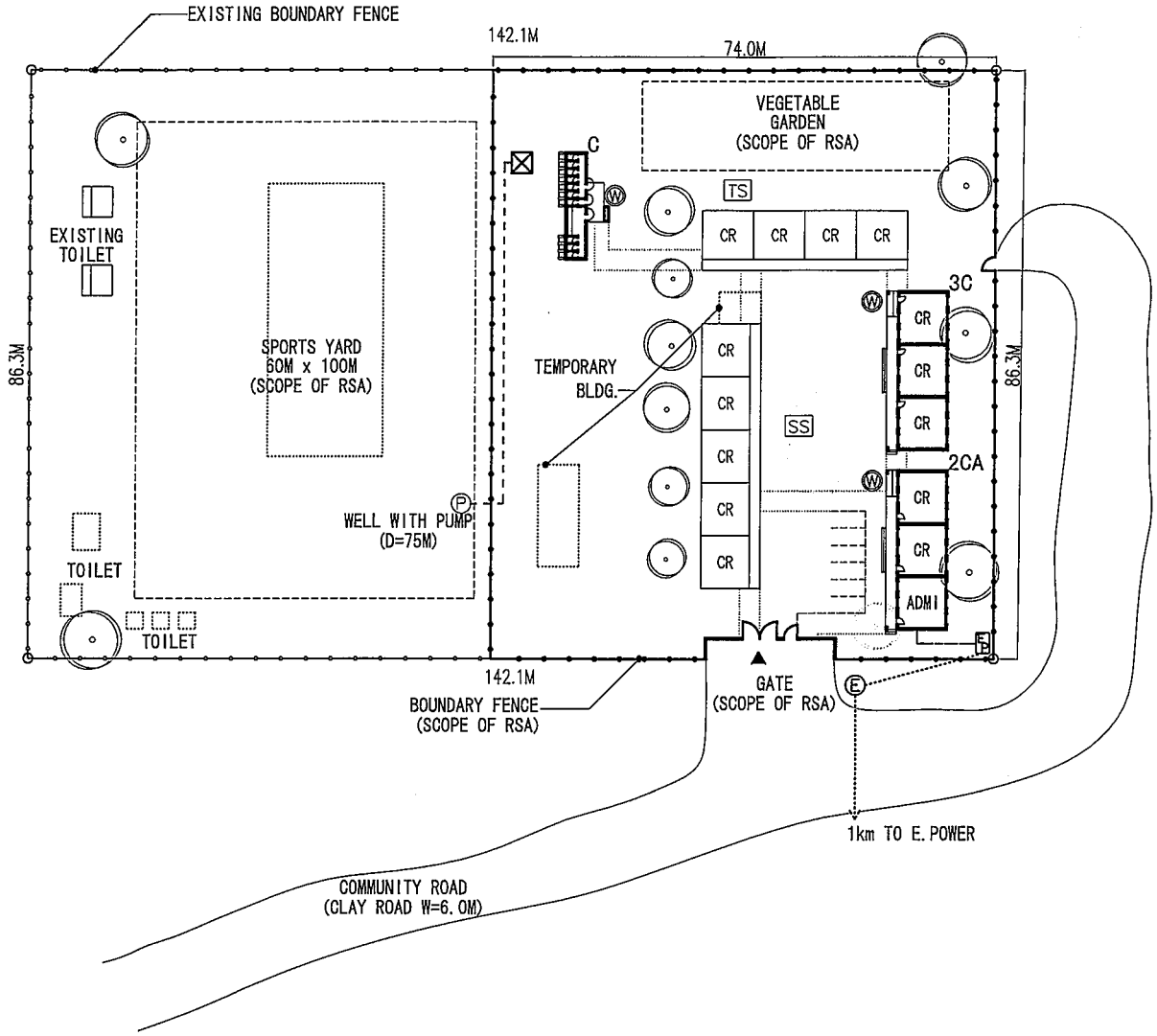
LEGEND

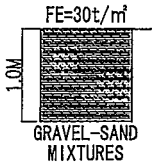
- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- PROPOSED FENCE (SCOPE OF RSA)
- EXISTING WATER TAP
- EXISTING TREE
- PROPOSED WATER TAP
- PROPOSED WATER TANK
- PROPOSED E. POWER POLE (SCOPE OF RSA)
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

N

S=1:1000 0 5 10 20 30m

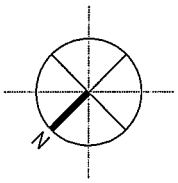
Code Number :	Name of School :		Site Area : 40,962.6sq.m
KK8	Tlou Secondary School		CR. Type : 3CA
	District : Konekwena	Community : Phoffu Ga-Matlala	WC Type : A





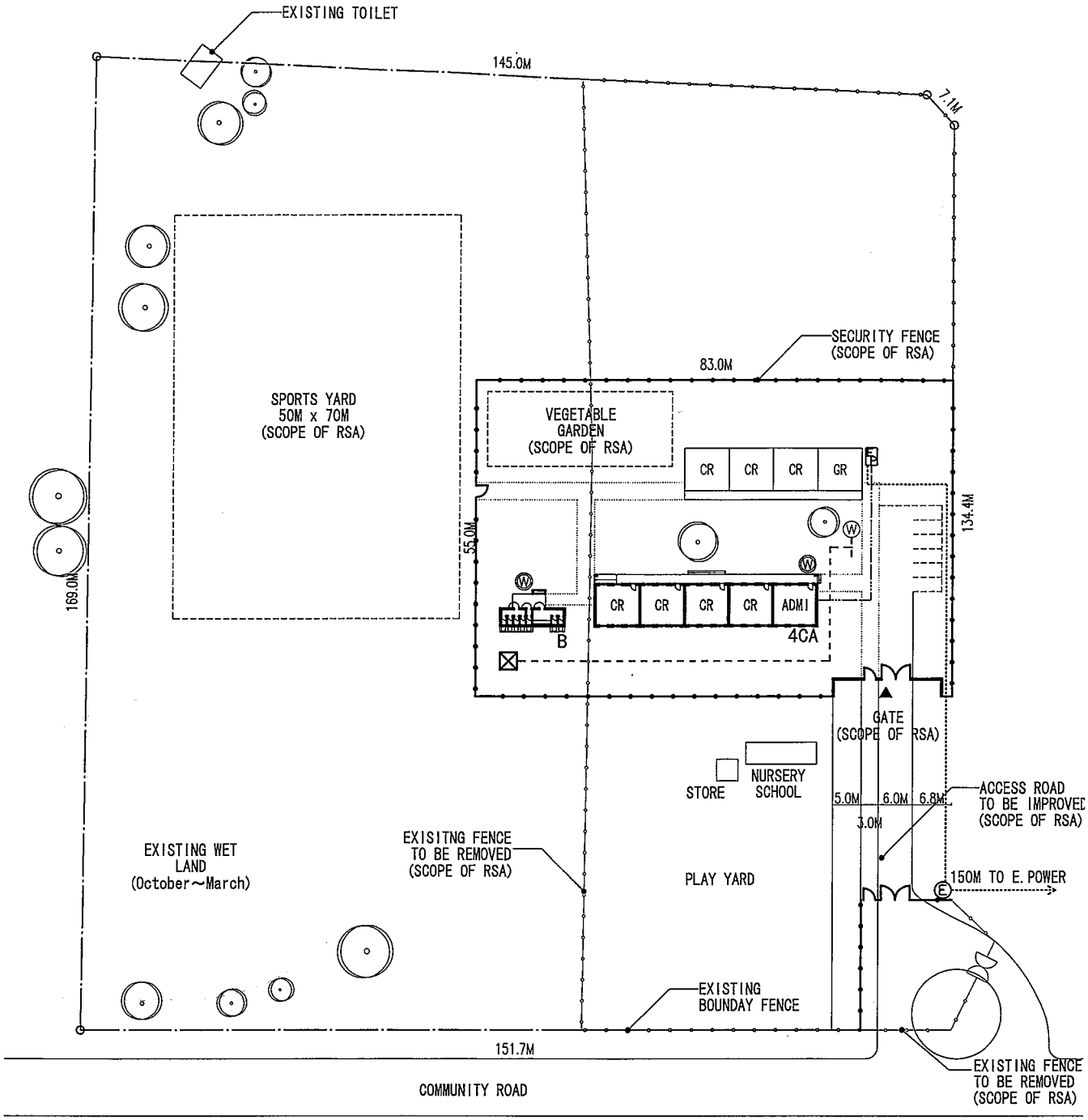
LEGEND

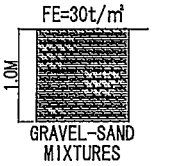
- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- PROPOSED FENCE (SCOPE OF RSA)
- (P) EXISTING WELL WITH HAND PUMP
- SS EXISTING SOLAR SYSTEM
- TS EXISTING TEL. COM. SYSTEM
- EXISTING TREE
- (W) PROPOSED WATER TAP
- PROPOSED WATER TANK
- SS PROPOSED SOLAR SYSTEM (SCOPE OF RSA)
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E. POWER LINE



S=1:1000 0 5 10 20 30m

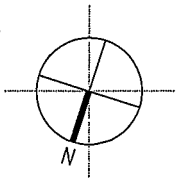
Code Number :	Name of School :		Site Area : 12,263.,sq.m
KK9	Rapitsi Primary School		CR. Type : 2CA, 3C
	District : KoneKwena	Community : Rapitsi	WC Type : C





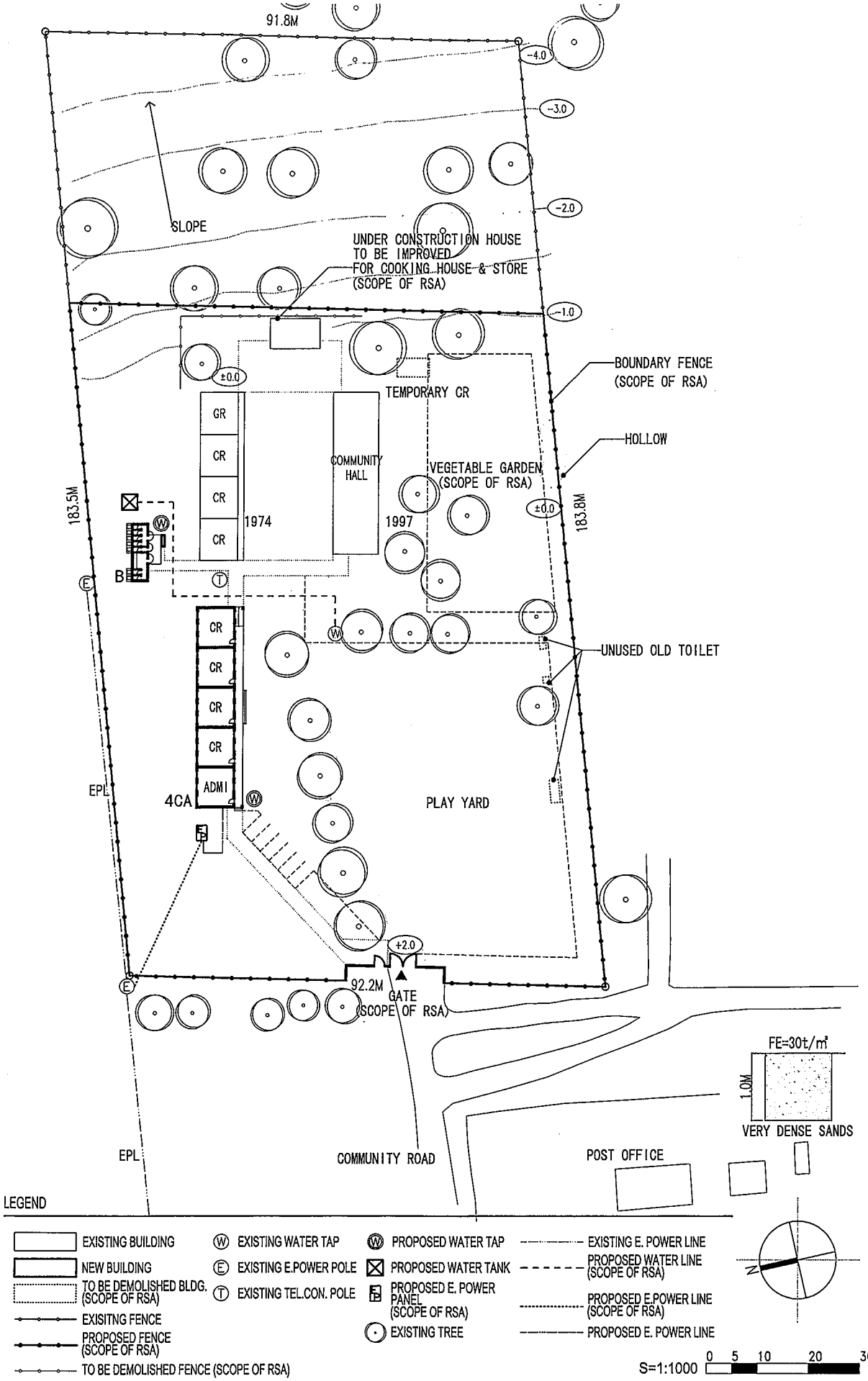
LEGEND

- EXISTING BUILDING
- NEW BUILDING
- EXISITNG FENCE
- PROPOSED FENCE (SCOPE OF RSA)
- TO BE REMOVED FENCE (SCOPE OF RSA)
- Ⓦ EXISTING WATER TAP
- EXISTING TREE
- Ⓦ PROPOSED WATER TAP
- PROPOSED WATER TANK
- Ⓔ PROPOSED E. POWER POLE (SCOPE OF RSA)
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

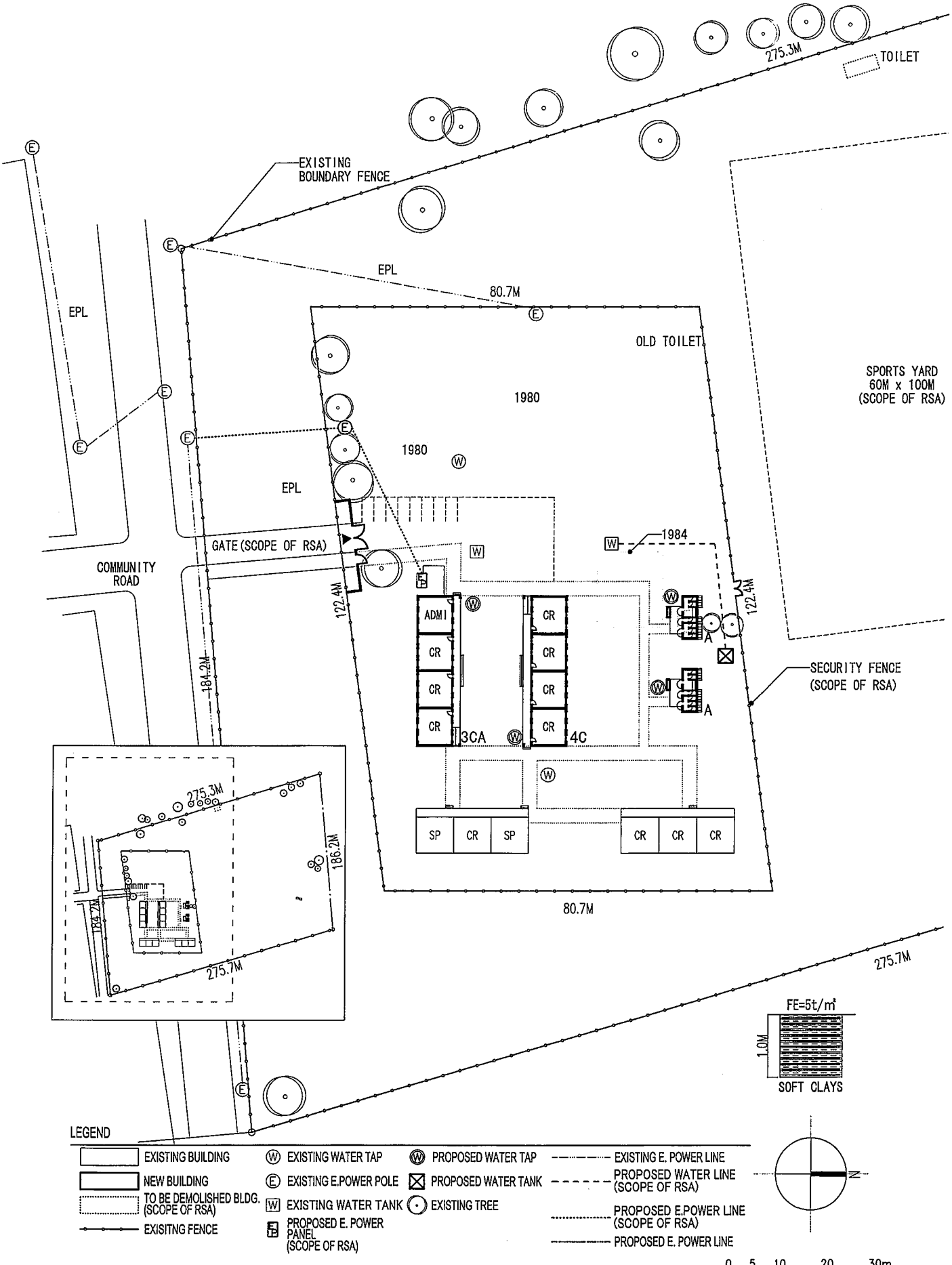


S=1:1000 0 5 10 20 30m

Code Number :	Name of School :		Site Area :
KK10	Kgabo Primary School		24,576.8sq.m
			CR. Type : 4CA
	District : KoneKwena	Community : Kgabo Park	WC Type : B

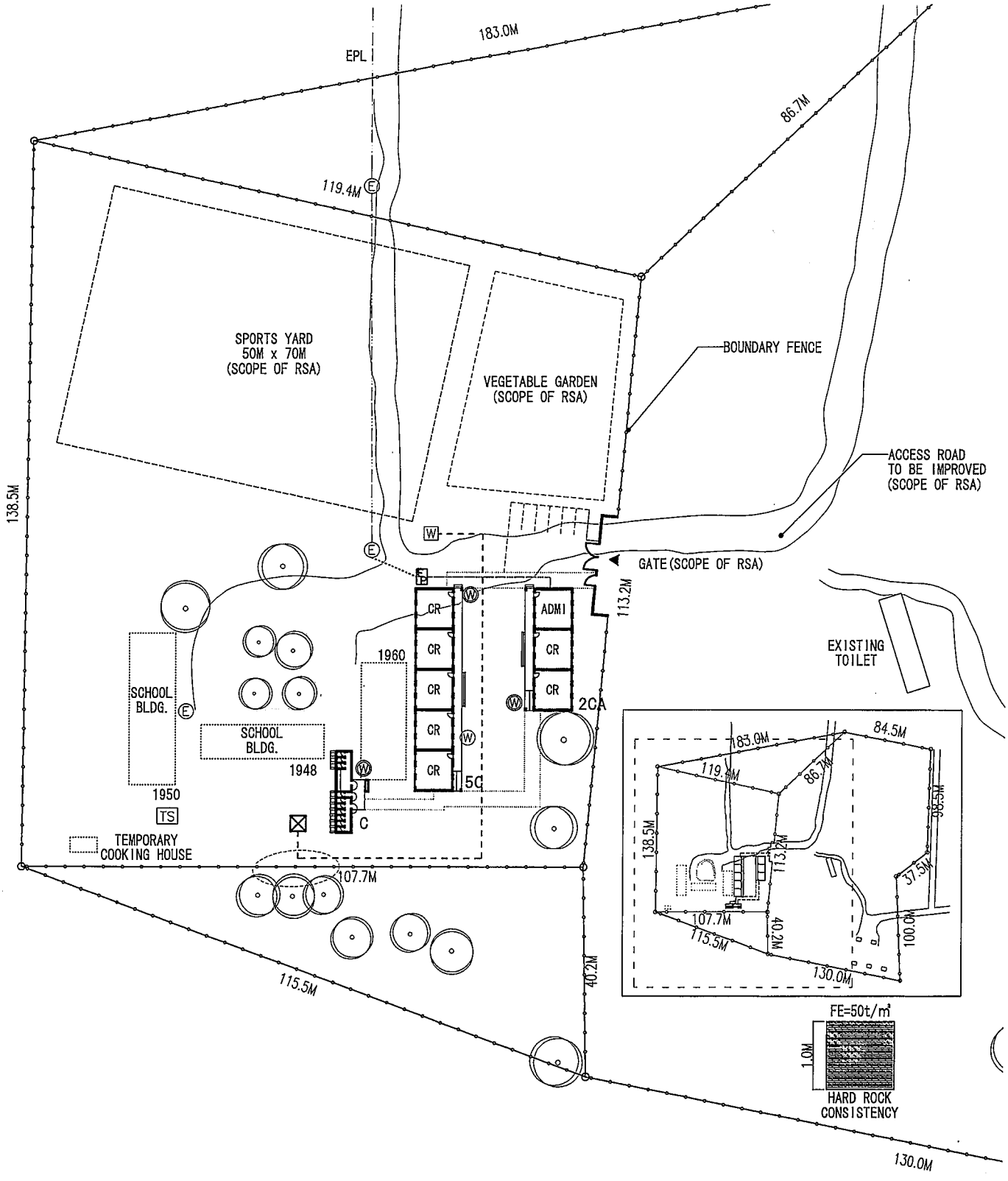


Code Number :	Name of School :	Site Area :
BB1	Basterpad Primary School	16,780.3sq.m
		CR. Type : 4CA
	District : BakenBerg / Community : Basterpad	WC Type : B



Code Number :	Name of School :		Site Area :
BB2	Kgakgathu Secondary School		CR. Type :
	District : BakenBerg	Community : Scirappies Nonplus Ultra	WC Type :

Site Area :	49,960.3sq.m
CR. Type :	3CA, 4C
WC Type :	A, A



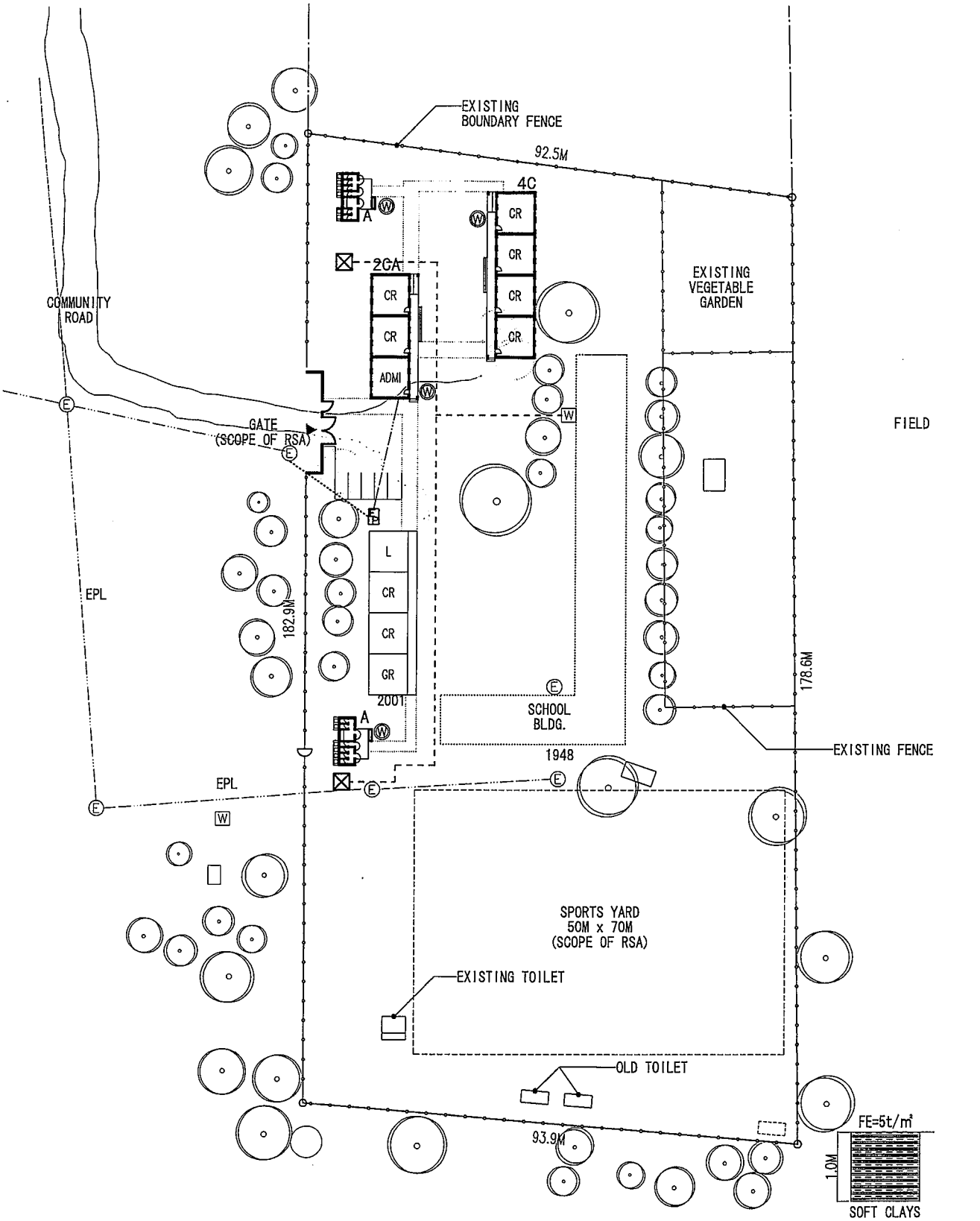
LEGEND

- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- EXISTING E. POWER LINE
- Ⓦ EXISTING WATER TAP
- Ⓔ EXISTING E.POWER POLE
- W EXISTING WATER TANK
- TS EXISTING TEL.COM. SYSTEM
- Ⓦ PROPOSED WATER TAP
- PROPOSED WATER TANK
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- EXISTING TREE
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

N

S=1:1000 0 5 10 20 30m

Code Number :	Name of School :		Site Area : 48,813.1sq.m
BB4	Kgotsoro Primary School		CR. Type : 2CA, 5C
	District : BakenBerg	Community : Scirappes Village	WC Type : C



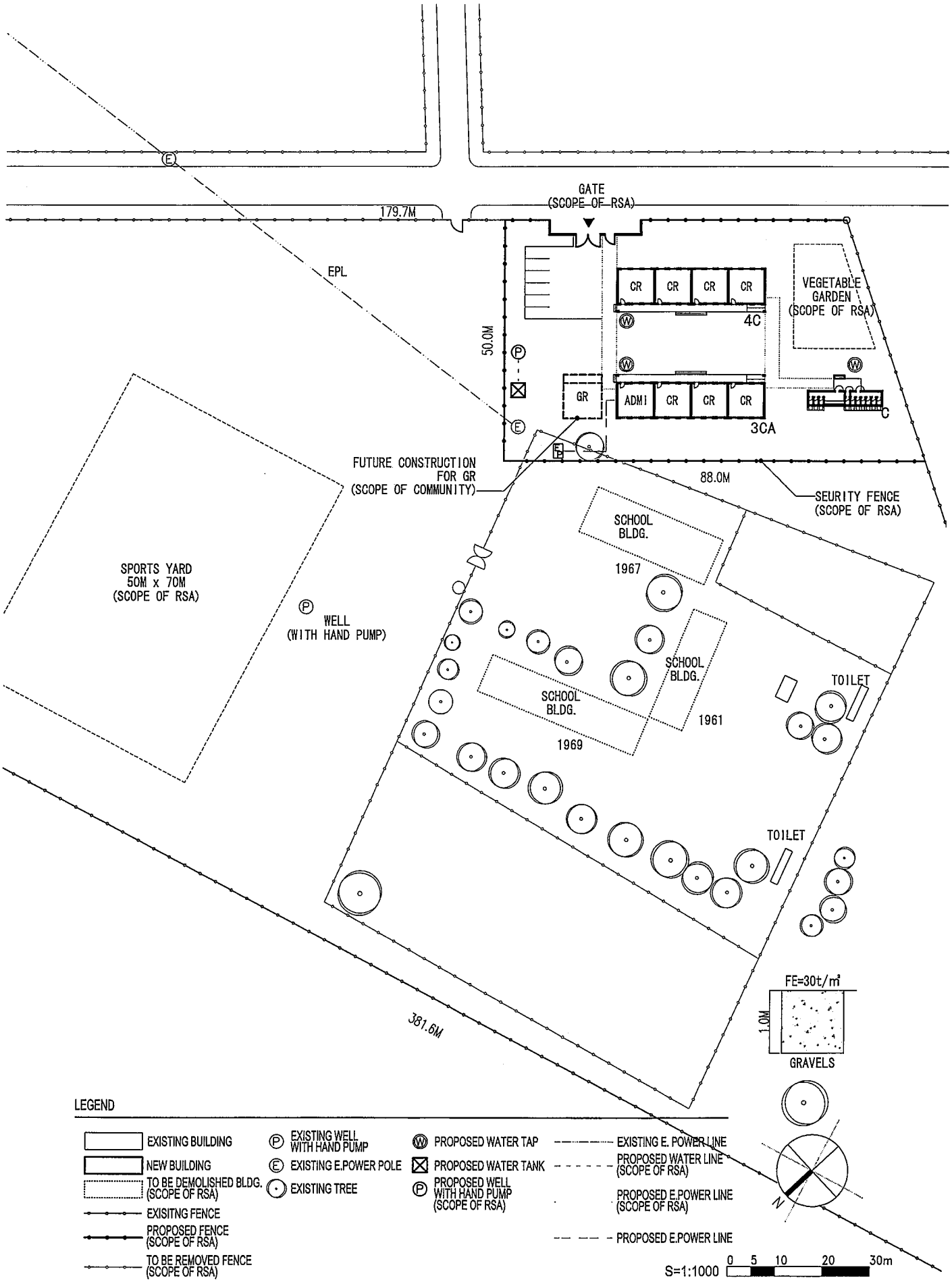
LEGEND

- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- EXISTING E. POWER LINE
- EXISTING E.POWER POLE
- EXISTING WATER TANK
- EXISTING TREE
- TO BE REMOVED TREE (SCOPE OF RSA)
- PROPOSED WATER TAP
- PROPOSED WATER TANK
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

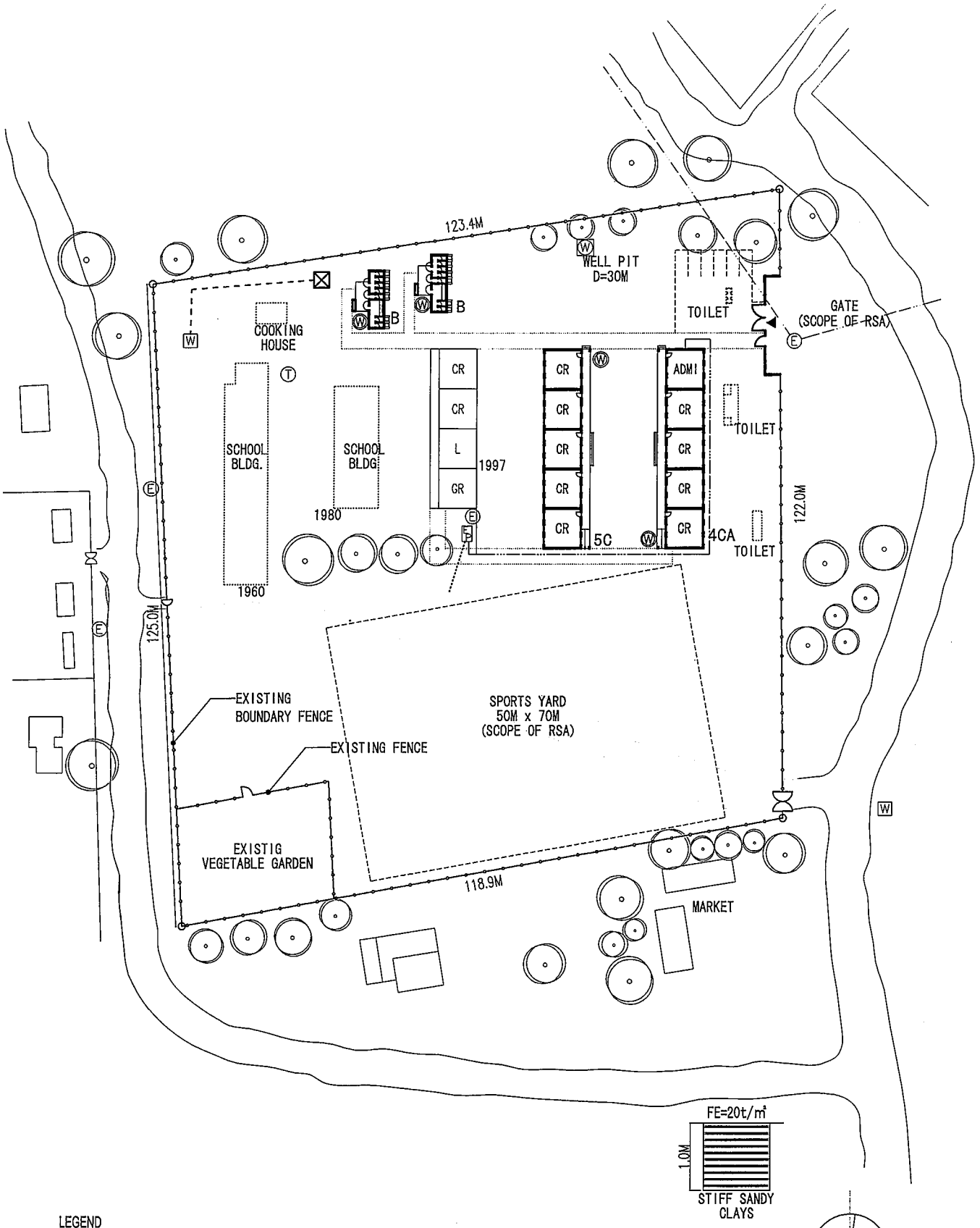
N

S=1:1000 0 5 10 20 30m

Code Number :	Name of School :		Site Area : 29,397.0sq.m
BB5	Matlou Memorial Primary School		CR. Type : 2CA, 4C
	District : BakenBerg	Community : Garapadi	WC Type : A, A



Code Number :	Name of School :		Site Area :
BB6	Moroba Primary School		CR. Type : 3CA, 4C
	District : BakenBerg	Community : Sodoma Village	WC Type : C

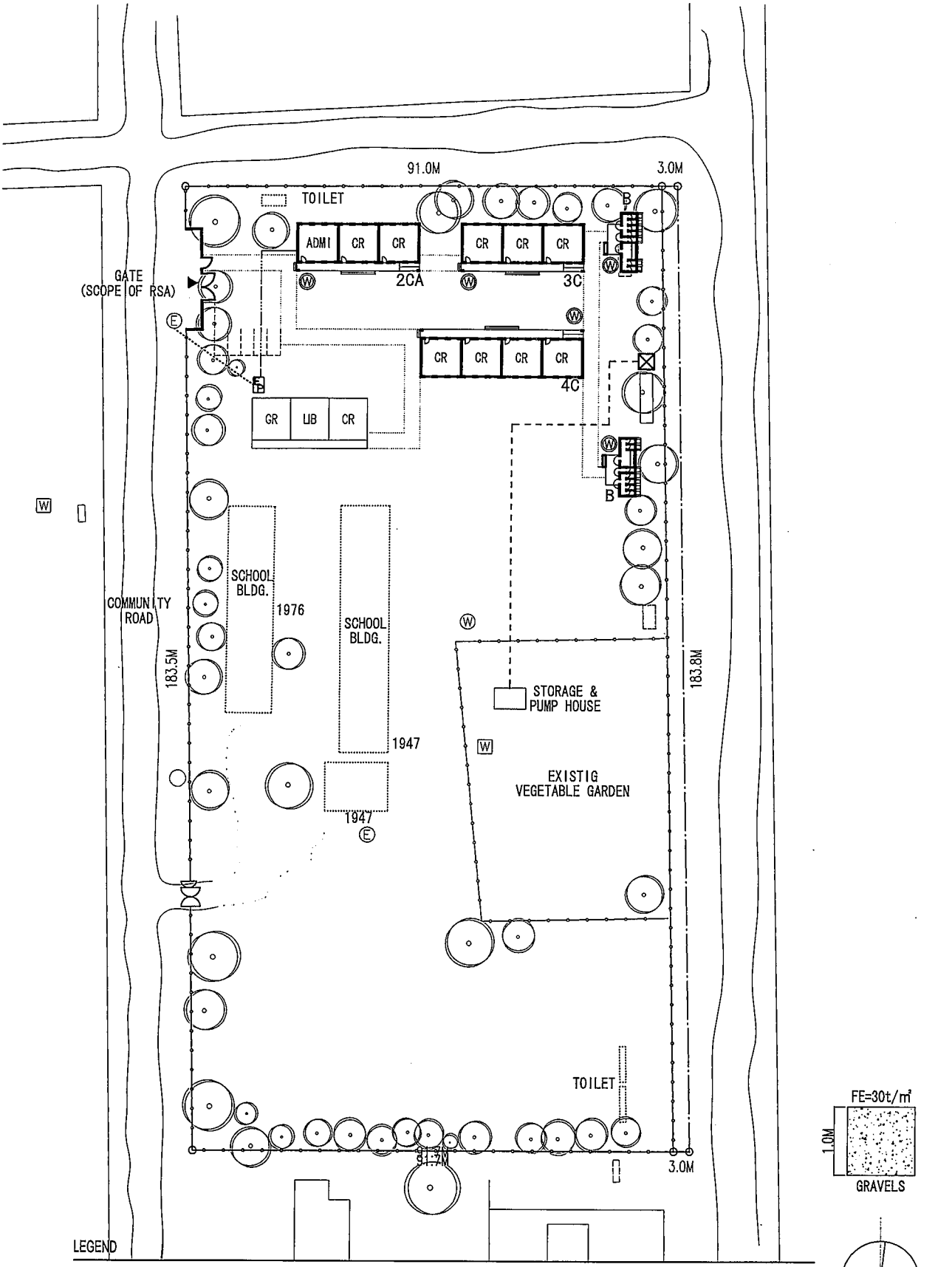


LEGEND

- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- E. POWER SUPPLY
- EXISTING WELL PIT
- EXISTING E.POWER POLE
- EXISTING TEI.COM. POLE
- EXISTING WATER TANK
- EXISTING E.POWER PANEL
- PROPOSED WATER TAP
- PROPOSED WATER TANK
- EXISTING TREE
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

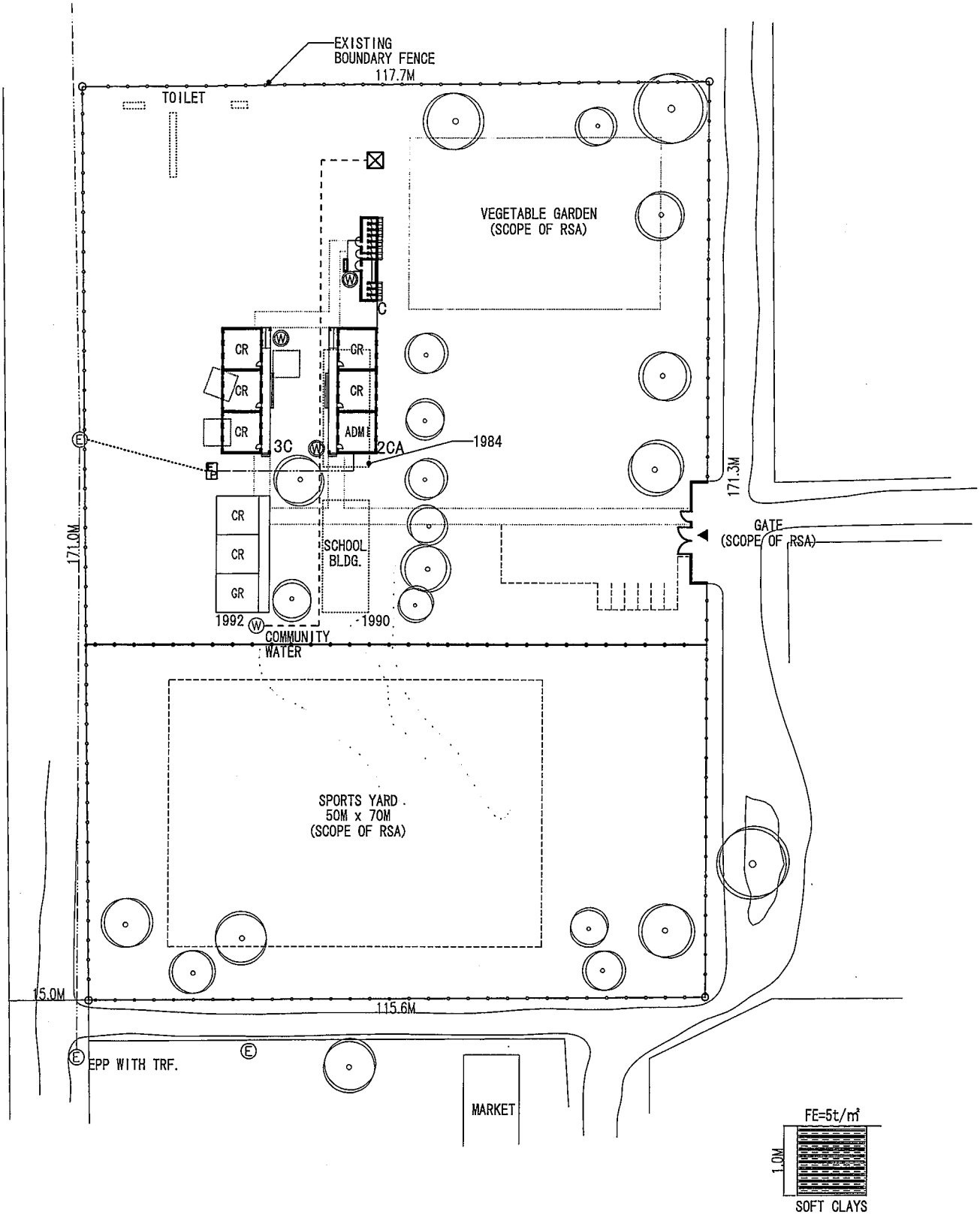
S=1:1000 0 5 10 20 30m

Code Number :	Name of School :		Site Area : 14,823.8sq.m
BB7	Mushi Primary School		CR. Type : 4CA, 5C
	District : BakenBerg	Community : Mushi Village	WC Type : B, B



Code Number :	Name of School :		Site Area :
BB8	Nkidikitlana Primary School		CR. Type :
	District : BakenBerg	Community : Ga-Nkidikitlana	WC Type :

Site Area :	17,325.8sq.m
CR. Type :	2CA, 3C, 4C
WC Type :	B, B



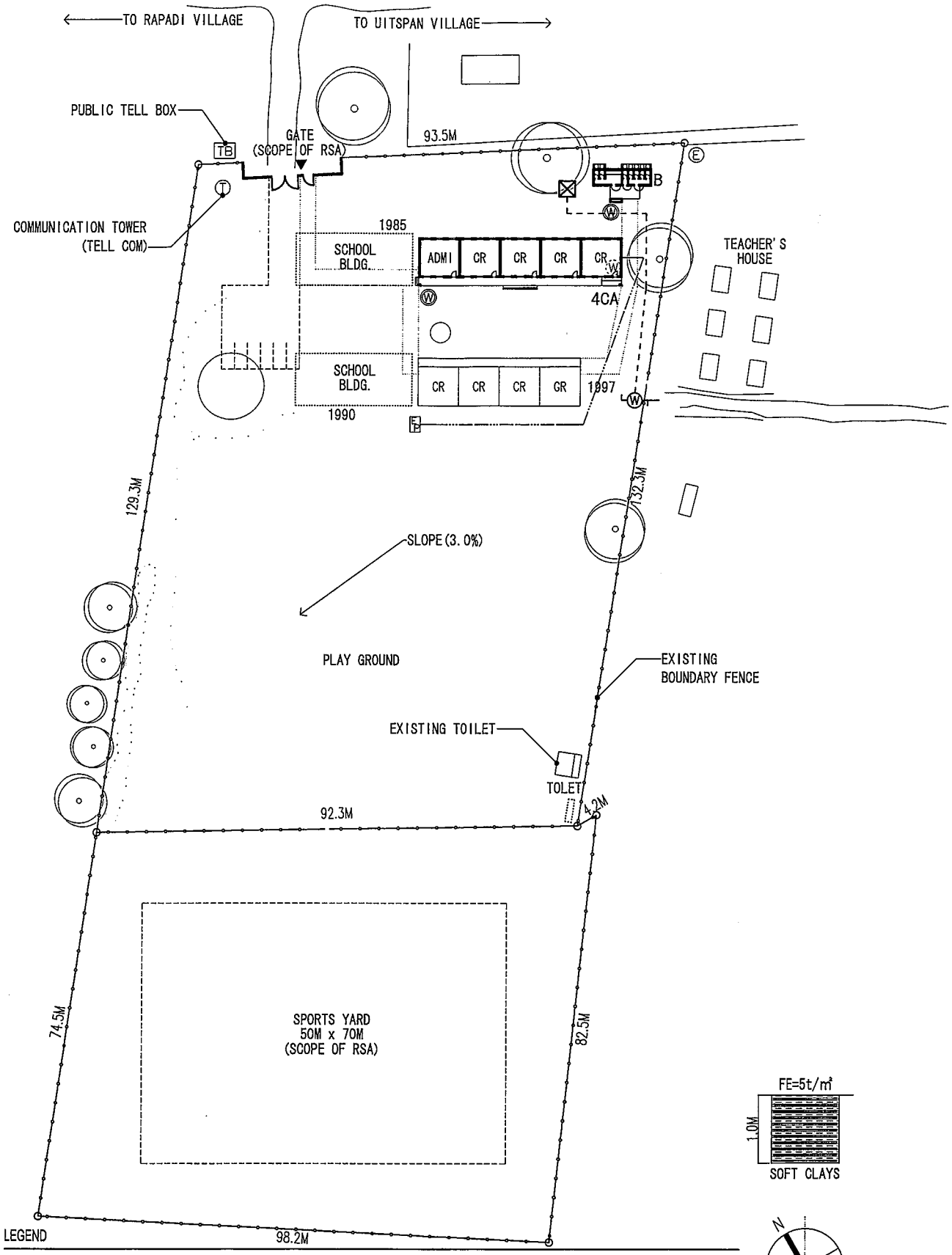
LEGEND

- EXISTING BUILDING
- NEW BUILDING
- TO BE DEMOLISHED BLDG. (SCOPE OF RSA)
- EXISITNG FENCE
- PROPOSED FENCE (SCOPE OF RSA)
- EXISTING E. POWER LINE
- EXISTING WATER TAP
- EXISTING E.POWER POLE
- EXISTING TREE
- PROPOSED WATER TAP
- PROPOSED WATER TANK
- PROPOSED E.POWER PANEL (SCOPE OF RSA)
- PROPOSED WATER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE (SCOPE OF RSA)
- PROPOSED E.POWER LINE

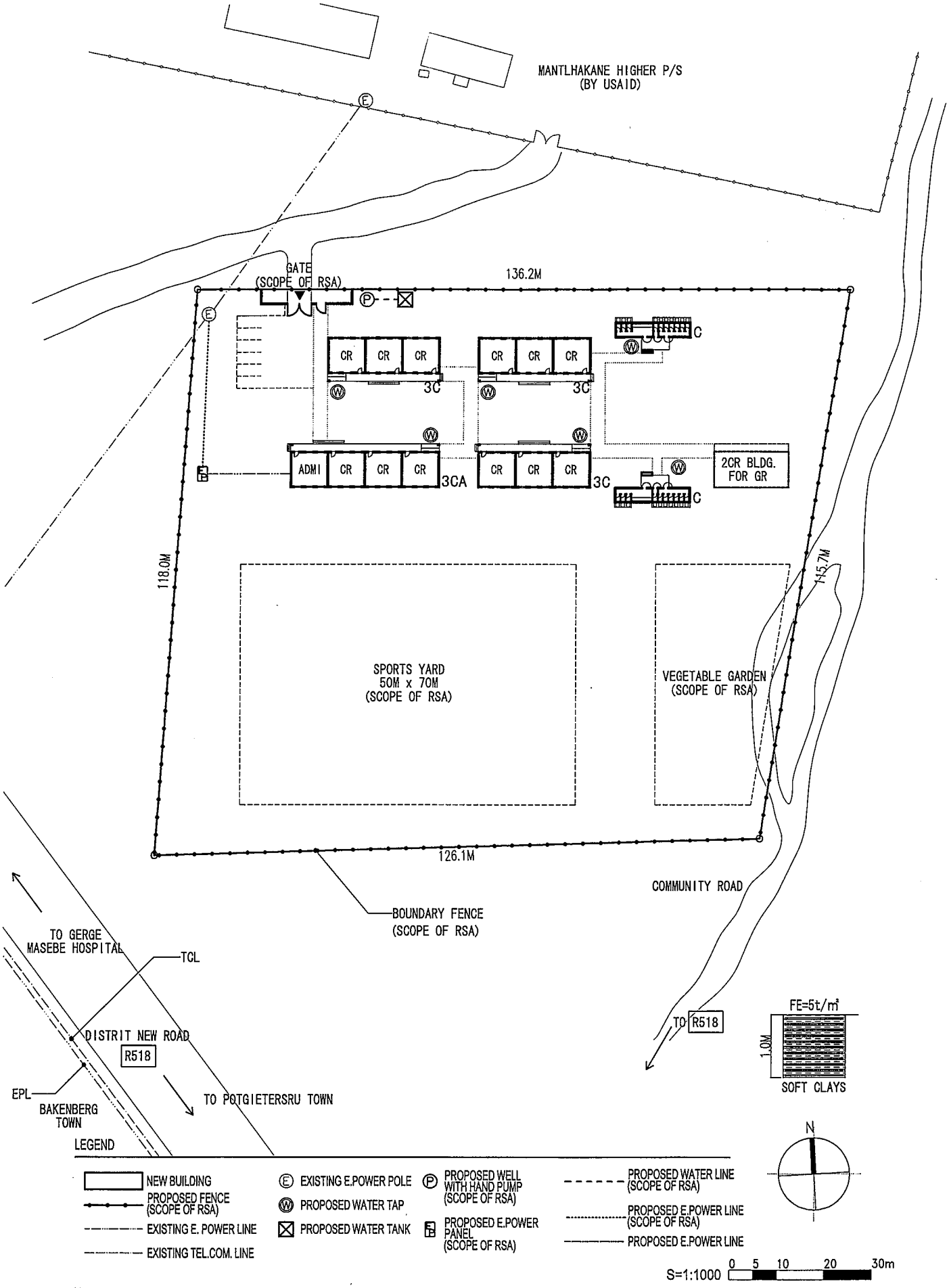
N

S=1:1000 0 5 10 20 30m

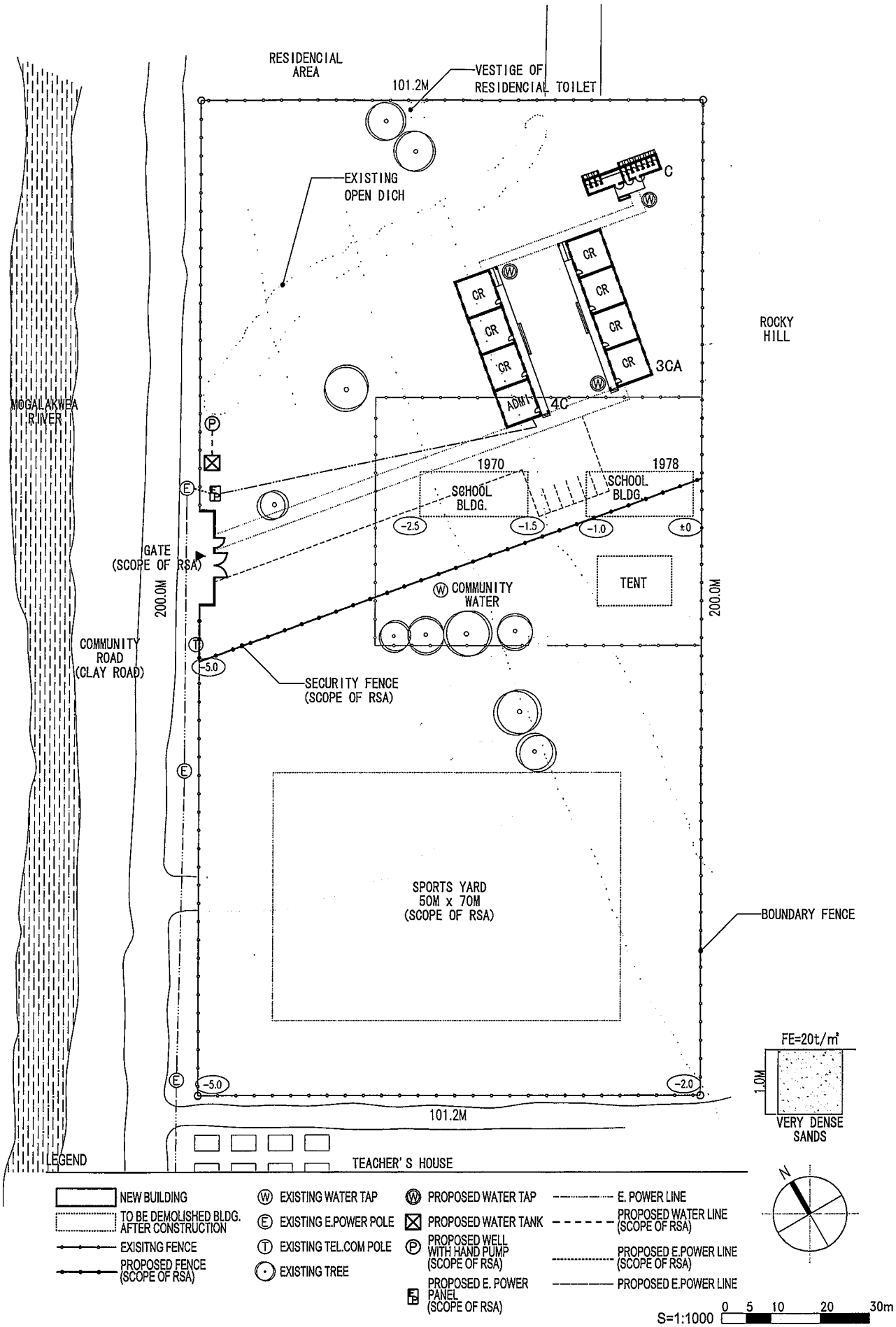
Code Number :	Name of School :		Site Area :
BB9	Nkontlha Primary School		CR. Type : 2CA 3C
	District : BakenBerg	Community : Kabeane Village	WC Type : C



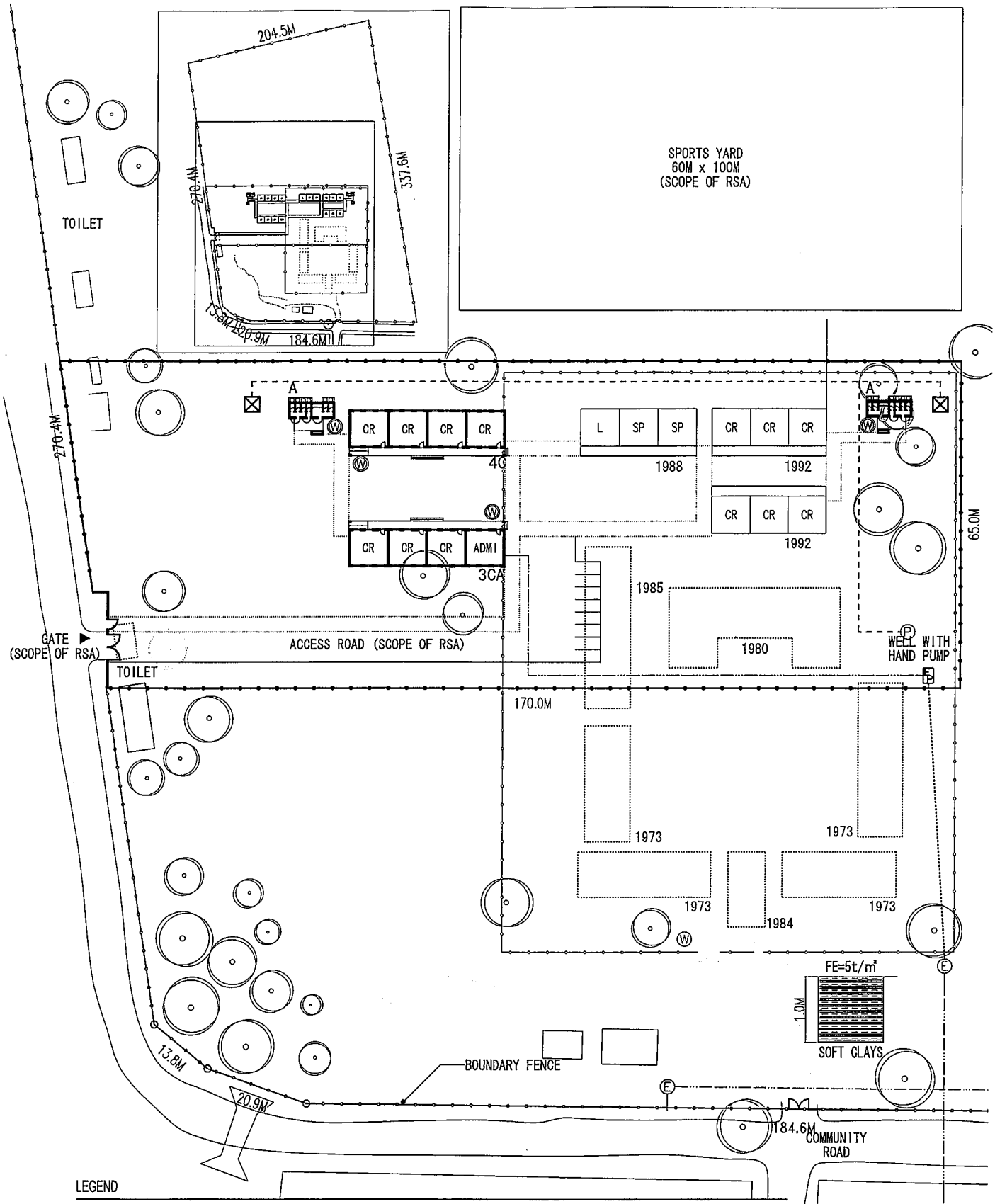
Code Number :	Name of School :		Site Area :
BB10	Ntebeleleng Primary School		CR. Type : 4CA
	District : BakenBerg	Community : Senita	WC Type : B



Code Number :	Name of School :		Site Area : 15,179.7sq.m
BB11	Thutlane Lower Primary School		CR. Type : 3CA, 3C, 3C, 3C
	District : BakenBerg	Community : BakenBerg	WC Type : C, C



Code Number :	Name of School :		Site Area :
BB12	Tlhako Primary School		20,240.0sq.m
			CR. Type : 3CA, 4C
	District : BakeBerg	Community : Preezburg	WC Type : C



Code Number :	Name of School :		Site Area :
BB13	Seshoatlha Secondary School		CR. Type : 3CA, 4C
	District : BakenBerg	Community : Rantzakana	WC Type : A, A

2.2.4 Implementation Plan and Procurement Plan

2.2.4.1 Implementation Policy

(1) Basic Requirements for Project Implementation

For the implementation of the Project, a Cabinet decision by the Government of Japan will be necessary following examination of the Project by the related Japanese government offices based on this report. Following the said Cabinet decision, the Project will enter the implementation stage after the Exchange of Notes (E/N) between the Government of Japan and the Government of South Africa regarding the implementation of the Project. The project implementation processes will be supervised by a Japanese consultant while the construction work will be conducted by a Japanese contractor. The consultant and the contractor will conduct their respective work in accordance with a consultancy agreement and a construction agreement respectively with the implementation agency on the South African side. These agreements must be concluded in accordance with the relevant procedure under Japan's grant aid scheme and certified by the Government of Japan.

(2) Project Implementation System

The National Department of Education (DOE) will represent the South African side for the E/N between the two countries regarding the implementation of the Project and will be responsible for the overall supervision and coordination for the Project, acting as the South African window for this bilateral cooperation project. The organization responsible for actual project implementation will be the Department of Education in Limpopo Province (LDE) and the Special Project Fund, a unit directly controlled by the Head of Department, will be responsible for project coordination as well as actual project management. The LDE will be party to the consultancy agreement with the consultant and the construction agreement with the contractor. Meanwhile, the Logistics Division of the Financial Management Department will supervise the site preparation, extension of electric and water supplies and the construction of perimeter fencing, etc. which will be conducted at the expense of the South African side as part of the Project.

(3) Consultant

Following the signing of the E/N, the LDE will conclude a consultancy agreement (work supervision agreement) with a Japanese consultant (the Consultant). After certification of this agreement by the Government of Japan, the Consultant will conduct a series of work supervision in accordance with the agreement. Such work will include selection of the contractor through tender on behalf of the LDE and work supervision up to the completion of the construction work.

(4) Contractor

The types of work planned under the Project are the construction of facilities and the provision of school furniture and fixtures. The contractor will be selected through open competitive tender in which qualified Japanese construction companies will participate. In principle, the company with the lowest bid will be declared the successful bidder (the Contractor) and will conclude a construction agreement with the LDE. The Contractor will complete the work within the period specified in the agreement and will hand the completed facilities, etc. over to the LDE after successful completion inspection.

(5) Fields for Use of Local Consultant and Construction Companies and Methods

Limpopo Province is proceeding with the construction of school buildings at a rate of some 250 schools a year based on its school construction programme. Each school basically consists of a standard classroom block (4 classrooms) and one toilet block. The construction work is being conducted by the provincial Department of Public Works under the said programme formulated by the LDE. However, because of the severe shortage of engineers employed by the Department of Public Works, work supervision at most of the sites is entrusted to private consultants. For example, most of the 278 standard classroom blocks with a toilet block each which were constructed in 2001 were constructed by local construction companies under the supervision of local private consultants. As these local consultants have detailed knowledge of the local standard specifications for school facilities and the conditions of the local construction industry in the province, their use as assistance supervisors will be effective for the smooth implementation of the Project.

There are many construction companies operating in Limpopo Province and many companies, limited to 100, participate in the tender for the construction of standard classroom blocks each time. Because of the high number of construction sites of standard classroom blocks, many local construction companies have experience of constructing such facilities. It is, therefore, possible to use these local construction companies as subcontractors. However, the technical level of local construction companies in the province is not necessarily high. The analysis results of the business scale and past performance of local companies based on information obtained by the interview survey found that there are few companies capable of simultaneously conducting construction work at multiple sites. The reality of the work currently in progress to construct standard classroom blocks suggests problems in regard to the construction method employed and the quality control of the buildings due to the absence of a permanent site engineer.

The planned construction work under the Project is quite extensive as it will take place at 32 sites in three districts. It will, therefore, be necessary to employ many subcontractors given a feasible work volume which matches the construction capability of each potential subcontractor. It will be

essential for the Contractor to ensure uniform quality control and process management while utilising the experience of local construction companies of the required work.

2.2.4.2 Implementation Conditions

(1) General Situation and Local Characteristics

1) Construction Industry

While the construction industry in South Africa experienced a temporary downturn due to the worsening economic and fiscal conditions in the late 1990's, it has recorded gradual growth in the last few years. Following the idea of the RDP, the provincial government is promoting the dispersion of investment, which used to be concentrated on white-owned companies under the policy of apartheid, and preferential treatment is given to companies owned by HDI (historically disadvantaged individuals), women and the disabled in the selection of construction companies for projects under the jurisdiction of the Department of Public Works. It is essential to take the development of local industries and the transfer of technology based on the idea of the RDP into consideration for the implementation of the Project.

2) Labour Conditions

While adopting local standard classroom specifications as the design basis, some improvements will be made under the Project to ensure building durability and quality. Consequently, while it is possible to recruit skilled bricklayers and joiners, etc. with experience of the construction of standard classroom blocks entirely within the province, it is still important to strictly enforce quality control by carefully scrutinising the skills and experience of these workers in view of simultaneous work of uniform quality at multiple sites. There is a compulsory requirement to promote the employment of local people for public works ordered by the provincial government because of the extremely high unemployment rate in the Project Area. The recruitment of labourers from areas adjacent to the project sites to work for the Project is, therefore, desirable in order to meet the high local expectations for paid work.

3) Construction Materials

All of the main construction materials can be procured in South Africa and all products are locally produced or manufactured except for hardwood from Southeast Asia which is used for some windows and doors. As most products can be procured from suppliers based in Polokwane, the capital of Limpopo Province, and factories dotted around Polokwane, local procurement will be adopted as the basic policy for procurement. Nevertheless, it will be

necessary to examine direct procurement from factories in other provinces if such procurement can be justified based on quality, supply volume and cost, etc.

4) Road Transportation

While most of the project sites are located in rural areas some 50 - 180 km away from Polokwane, no problems are anticipated in regard to the transportation of equipment and materials as all of the main trunk roads in Limpopo Province are paved. Access roads to the sites from nearby trunk roads are unpaved and there are hazardous sections for transportation during the rainy season for some sites. The length of each of these sections, however is not long and they can be sufficiently repaired by the South African side at its own expense prior to commencement of the work at each site.

(2) Important Points for Construction Work

The following points must be taken into careful consideration for the construction of the planned facilities.

- The work plan will be formulated in such a manner as to ensure efficient construction work at a large number of sites in three districts without delay while maintaining a uniform level of work quality.

- Prior to the commencement of site work, a demonstration will be conducted to ensure proper understanding of the work manuals, processes and objectives, etc. for each type of job to facilitate job training and the transfer of skills.

- A construction meeting attended by members of the LDE, Educational District Offices and Circuit Offices will be held on a monthly basis to ensure their understanding of and cooperation for the objectives of the construction work as well as necessary measures through detailed discussions and reporting.

- At sites where school facilities already exist, a work plan will be formulated with due consideration of the need to provide teaching time and to ensure pupil safety. The actual work will be implemented through close consultations with the principal and other suitable persons of the existing school.

- In principle, local subcontractors will be selected from among those based in Limpopo Province after careful examination of their past work performance, technical strength and financial strength, etc.

- In regard to the use of local materials, their quality and prospects of a sufficient supply will require proper study. More than one supplier should be selected to ensure competition to achieve a lower price and a stable supply of the required materials.

- The workforce of local communities will be employed as much as possible and technical guidance and training will be provided to improve its abilities.

2.2.4.3 Scope of Work

(1) Work to be Undertaken by the Government of Japan

1) Construction of Facilities

- Construction of classroom blocks (classrooms and administration rooms)
- Construction of toilet blocks

2) Supply of Furniture and Fixtures

- Pupils' and teachers' desks and chairs, chalkboards, pin boards/notice boards, shelves and cabinets

(2) Work to be Undertaken by the Government of South Africa

- Provision of suitable land for school construction at each site

- Removal of existing buildings and structures, etc. which would hamper the construction work and grading of the land prior to the commencement of the said work

- Construction of fencing and gates

- Extension of electricity to all sites and extension of water supply and connection to the drainage system at sites where such work is possible

- Installation of a water supply system (drilling of a well and installation of a water pump) at sites requiring such a system

- Improvement of access roads to the construction sites where necessary

- Landscaping and planting if necessary

2.2.4.4 Consultant Supervision

(1) Basic Principles and Important Points for Supervision

The Consultant which will be responsible for the detailed design of the facilities and equipment will be selected by the LDE from among Japanese consultants with abundant experience of designing and planning educational facilities and implementing grant aid projects of the Government of Japan. The Consultant will assist the LDE for the tender for and conclusion of the construction agreement based on the detailed design of the facilities and equipment approved by the LDE. At the construction work supervision stage, the Consultant will dispatch a full-time site supervisor to provide guidance for the Contractor and to liaise with the LDE, district education offices, Circuit Offices, schools, school governing bodies (SGBs) and school building committees. The basic duties of the Consultant are listed below.

1) Assistance for Tender and Construction Agreement

Decision on the principles for the construction agreement; preparation of the draft construction agreement; internal inspection of the bill of quantities; selection of the contractor (announcement of tender, pre-qualification, evaluation of bids and witnessing of the signing of the agreement)

2) Inspection and Approval of Work Drawings, etc.

Inspection and approval of the work drawings, work plan, materials, finishing samples, equipment and materials submitted by the Contractor

3) Work Guidance

Guidance for the Contractor based on the results of examination of the work plan and the schedule plan

4) Reporting of Work Progress

Reporting of the work progress to the LDE and Project-related organizations; management of the monthly meetings between the South African side and the Contractor

5) Assistance for Payment Approval Procedure

Examination of the invoices submitted by the Contractor for payment to be made during and after the completion of the work; assistance for the payment procedure

6) Inspection

Inspection of the progress and quality of the work from the start to the completion of the construction work.

(2) Supervisory Regime

The appointment of one Japanese engineer and one local engineer on a full-time basis to act as the on-site supervisor and assistant supervisor respectively is planned. These engineers will be responsible for appropriate supervision at the work sites and proper coordination with the related organizations for management of the quality, schedule and safety at the project sites which are dispersed over a huge area. In addition, engineers (chief engineer and building engineer) will be dispatched from Japan at the start of the construction work and at the time of completion inspection.

(3) Project Implementation Regime

The relationship between the related organizations at the implementation stage and the project implementation framework are shown in Fig. 2-6.

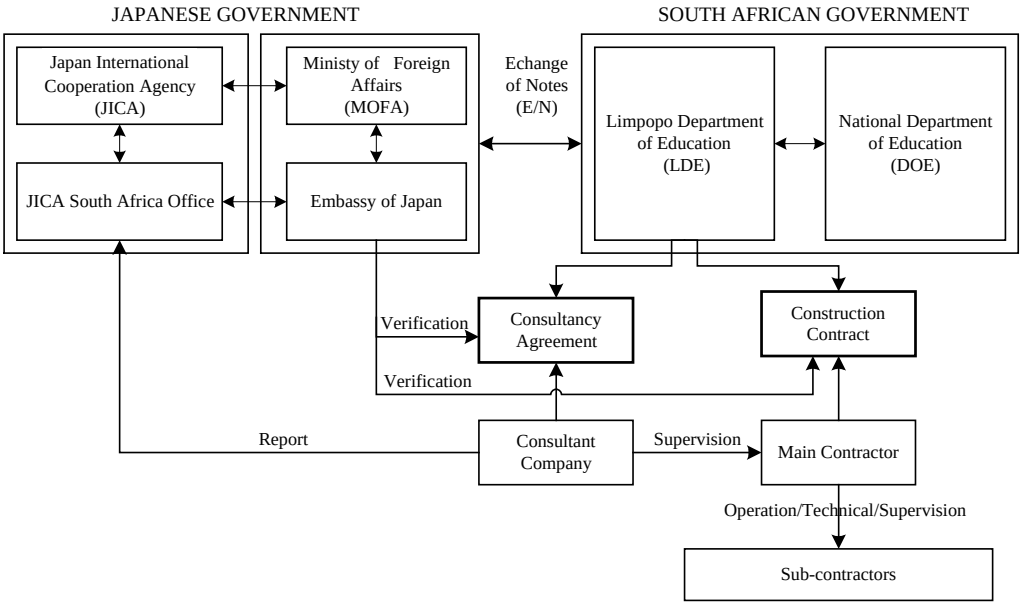


Fig. 2-6 Project Implementation Framework

(4) Site Management Regime

The construction work will be conducted by local construction companies employed as subcontractors by the Japanese Contractor. In consideration of the geographical distribution of the sites and the work capability of the subcontractors, the work will be divided on the basis of one subcontractor being responsible for 2 – 3 sites. The Japanese Contractor will be required to

introduce an appropriate site management regime with the suitable assignment of personnel so that all of the subcontractors can proceed with their work with uniform work technologies/skills and quality control. The main work management base will be set up at Konekwena from where the necessary communication and control of the equipment and materials will be conducted. As the Project Area is largely divided into two parts by an unpaved road, a sub-work management base will be set up at Bochum for the main purpose of controlling equipment and materials so that the entire Project Area is covered by these two bases. Fig. 2-7 shows the structure of the work management regime.

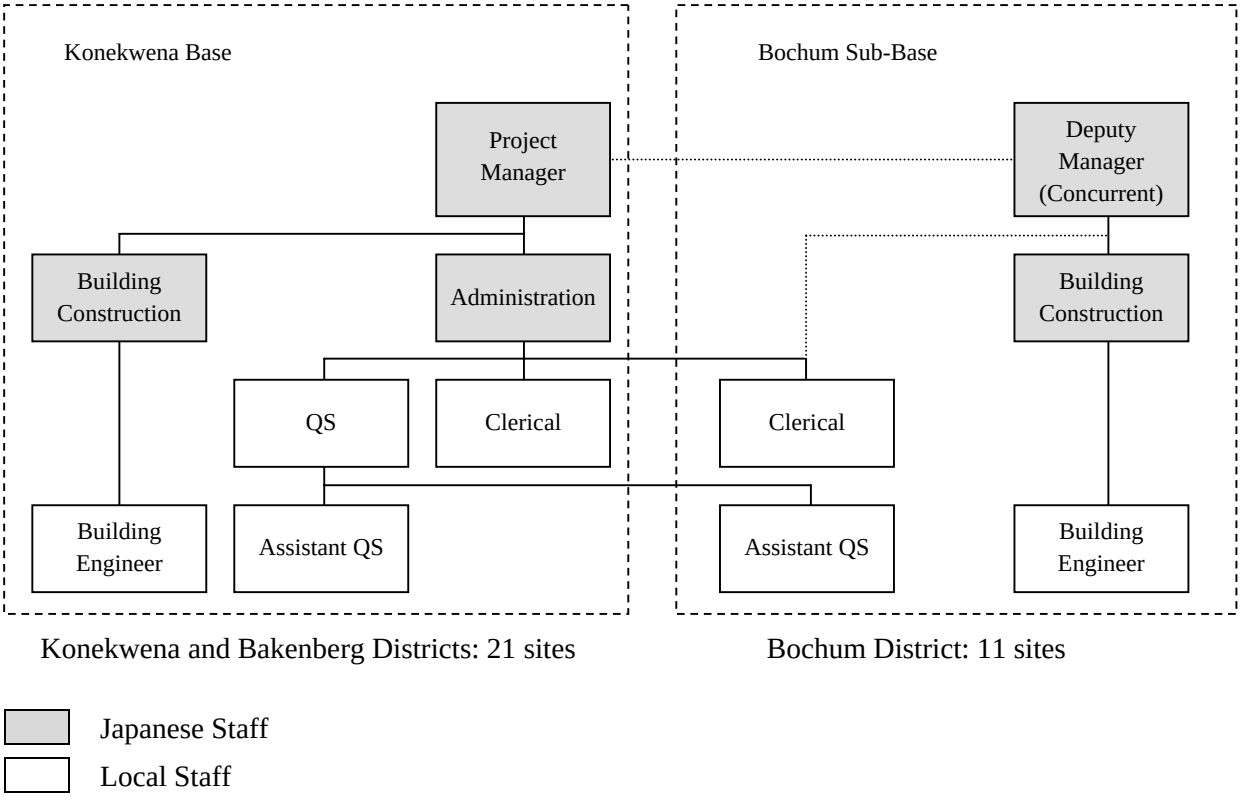


Fig. 2-7 Work Management Regime

2.2.4.5 Quality Control Plan

(1) Checking of Soil Bearing Capacity

As part of the Basic Design Study, test pits were dug to a depth of approximately 1 m at all of the sites to check the ground conditions. The ground conditions at all of the sites were found to be reasonably good despite some variations in soil quality from one site to another. Either the plate loading test or the soil bearing capacity test will be conducted prior to the commencement of the work at those sites with a relatively soft clay layer in order to confirm the presence of the required soil bearing capacity from the design point of view.

(2) Checking of Site Conditions and Setting Out

The site boundaries, conditions of the existing ground and underground structures, drainage routes on the site, treatment method of miscellaneous waste water and sewage, level of the ground and situation of existing vegetation, etc. will be comprehensively checked based on the site surveying results at the time of the Basic Design. This will be followed by line drawing using slaked lime or roping to verify and adjust the relationship between the planned buildings and adjacent area to the site in the presence of the Japanese engineer (in charge of project design) and South African personnel responsible for the sites.

(3) Benchmarking, Batter Boards and Markings

For benchmarking, the elevation will be indicated on existing structures or newly erected piles, etc. and the surrounding area of such benchmark will be secured to prevent is movement. Batter boards and markings are important as they act as references for the dimensions and positioning throughout the construction period to ensure the work accuracy. As such, surveying apparatus (auto-levels and theodolites, etc.) will be used for the final confirmation of the batter boards and markings by a Japanese engineer/supervisor at all of the sites.

(4) Scaffolding

Full attention should be paid to the selection of the scaffolding materials to ensure work precision and the safety of workers. In principle, steel-frame scaffolding which is commonly used in South Africa will be used for the Project.

(5) Earth Work: Excavating and Backfilling

For the placing of the foundation concrete, excavated side walls will be used as substitutes for forms. Accordingly, the excavation width will be 50 mm wider than the planned foundation width to secure the required footing width. This excavation work will be conducted by hand. In regard to flooring, a work manual for the envisaged deep excavation and cropping out of the bedrock will be prepared and concrete measures will be examined in advance. Backfilling will conform to Technical Specifications PW 371 of the Ministry of Public Works and sandy material, such as mountain sand with a low humus or clay content, will be used in view of its good water-binding performance. Anti-termite treatment will be applied to soil under the slabs and around the buildings to prevent termite damage to the structural materials.

(6) Reinforcing Bars

In principle, reinforcing bars will be procured from a single supplier for each site and the product quality must be confirmed by checking the product test report of the manufacturer with each delivery. A manual for the reinforced concrete work will be prepared to check the test procedure,

performance sheet, storage, processing, tools, joint specifications, set length, hook shape, covering thickness and spacers, etc.

(7) Form Work

Plywood forms are commonly used in South Africa and these forms will also be used for the Project. Apart from careful examination of the conditions of the forms to prevent poor hardening of the concrete surface, sufficient curing in view of the local climate will be conducted. A form work manual will be prepared to achieve the required concrete quality with strict checking.

(8) Concrete Work

The design mix of concrete will be based on volume rather than weight to achieve the specified quality. Concrete mixing will be conducted on-site using a small mixer. A manual will be prepared to help workers to easily understand the required cement storage method, permitted storage period, necessary measures in the case of lengthy storage and series of work from design mix, including the size control of aggregates, to mixing and placing. Strict examination and checking will be conducted during the work to ensure the concrete quality.

The quality control of concrete will be conducted at each site as well as each casting place. The slump test and sampling of test pieces will be conducted at the time of casting and the compression destruction test will be carried out to confirm the specified strength. Three test pieces each will be sampled to confirm the concrete strength one week and four weeks after casting. This test will be conducted by an approved local laboratory.

(9) Bricklaying Work

Bricks which are produced by authorised factories in Limpopo Province will be used. These will be structural and fair-face bricks conforming to SABS 227 and their strength will be checked based on the manufacturer's test result reports. Bricklaying mortar will conform to SABS 0164 Class I or Class II. In principle, river sand will be given priority over mountain sand. If mountain sand is used, it will only be used after checking the mud and organic contents. Cement will be ordinary Portland cement and will be mixed in the following manner.

Application	Mixing Ratio of Cement : Sand
Class I or Class II	1 : 2.5

In principle, mortar mixing will be conducted on-site using a mixer. A manual describing a series of work, including the reinforcement method, will be prepared to assist the bricklaying work. The actual work will be fully examined in advanced and checked thoroughly throughout its progress.

(10) Timber Work

For wooden trusses, timber manufactured by an approved factory of the Institute of Timber Construction and conforming to the relevant SABS will be used. This timber should at least meet the Grade 5 standard stipulated by SABS 563. The matching metal plates, etc. to be used will be those tested and approved by the Council for Scientific and Industrial Research (CSIR).

(11) Plaster Work

In principle, no plaster work will be conducted under the Project.

(12) Doors and Windows

Ready-made steel window frames will be used. Wooden doors will have a steel frame for better strength and maintainability. Factory-made products in Limpopo Province will be procured.

(13) Painting Work

Weather-resistant paint will be used for the exterior while ordinary emulsion paint will be used for the interior. A painting schedule which allows sufficient time for under-coating, inspection and drying/curing after painting will be planned.

2.2.4.6 Procurement Plan

All of the main construction materials can be procured in Limpopo Province and their quality, supply volume and cost, etc. have already been confirmed by factory visits. The procurement plan for the main materials is described below.

(1) Structural Work

- Cement : A product made in South Africa and conforming to the relevant SABS will be procured. Because of the absence of a cement factory in Limpopo Province, procurement will be made from a local supplier or factory (factories) near Pretoria. The type of cement commonly used for the construction of school facilities is ordinary Portland cement which is also called multi-purpose cement.

- Reinforcing bars : Products made in South Africa and conforming to the relevant SABS will be procured.

- Aggregates : As several companies with a large plant and capable of supplying aggregates throughout the province operate in a suburb some 20 km from Polokwane, the provincial capital, local procurement is possible.

- Concrete : Concrete will be produced at each site using a concrete mixer. The mixing ratios of cement, aggregates, sand and water will be those which can be easily measured and the volume of cement use will be regularly checked. Placing will be conducted using wheel-barrows or concrete buckets.

- Forms : Plywood forms which are popular in South Africa will be used.

- Bricks : As several brick factories operate in a suburb of Polokwane, South African factory-made products conforming to the relevant SABS can be procured in the province. The SABS sets forth the strength and contraction rate, etc. of bricks in detail to ensure the quality and every factory has an in-house laboratory to enforce strict quality control. As locally produced bricks use local soil, their appearance and strength vary due to the use of different soil from one region to another.

- Wooden trusses : Wooden trusses are fabricated at a factory in Polokwane and are then supplied to building sites by a special large trailer. In the case of the Project, it is necessary to examine the possible fabrication of wooden trusses at a base or even a site itself because of the inaccessibility of some of the sites by a large trailer. For accessible sites, the required wooden trusses will be procured from a local supplier. The timber used for these trusses is entirely South African pine and the Provincial Standard Design suggests the use of SABS Grade 5 timber.

(2) Finishing Work, Doors and Windows

- Paint : Commonly marketed South African products will be procured.
- Glass : Commonly marketed South African products will be procured.
- Windows and doors : Wooden doors can be procured from suppliers in Polokwane. The type of wood used is South African seriguna or melanti imported from Southeast Asia. Although seriguna is cheaper than melanti, its marketing volume in South Africa is not large. Accordingly, imported melanti is dominant in the market but demands careful

drying and termite-resistant treatment. Steel frames are commonly used. Because of the availability of various sizes, ready-made steel frames will meet the project requirements.

- Hardware : Locally marketed products will be procured.
- Roofing materials : Although roofing materials can be procured from suppliers operating in Polokwane, direct procurement from a factory is preferable in view of the required supply volume and cost. However, the factories concerned are concentrated in the suburbs of Pretoria or Johannesburg and there is no factory in Limpopo Province. As most South African iron products are exported, there tends to be a supply shortage in the domestic market, resulting in considerable price fluctuation. The Provincial Standard Design indicates the common use of galvanised corrugated iron sheeting. For the Project, however, galvanised IBR iron sheeting will be used because of the emphasis on ease of attachment to the roof truss.
- Boards : Commonly marketed South African products will be procured in Limpopo Province. In regard to ceiling boards, while the Provincial Standard Design suggests the use of cement boards called CLADIT which contain asbestos, a non-asbestos type product called RHINO will be used for the Project. This product can be procured from suppliers in Polokwane.

(3) Sanitary Work

- Pipes : Commonly marketed South African products will be procured.
- Sanitaryware : Locally marketed products will be procured.
- Sewage treatment : Local products for the Enviro-Loo system will be procured.

(4) Electrical Installations

- Wiring : Commonly marketed South African products will be procured.
- Lighting fixtures : Locally marketed products will be procured.

(5) Furniture and Fixtures

- Furniture : Ready-made South African products or those manufactured by local factories will be procured. While SABS set forth detailed specifications for furniture used for education, commonly used furniture in Limpopo Province are steel pipe-frame desks with an

MDF top board called super wood and steel pipe-frame chairs with a moulded plastic seat. Furniture factories in Limpopo Province meet both the quantitative and qualitative requirements of the Project but their small number means that it may be necessary to examine the possibility of procuring school furniture from other provinces because of cost considerations. Damaged desks and chairs are recycled by replacing the steel pipe frames, top boards and/or seats with a paint finish where appropriate.

2.2.4.7 Implementation Schedule

In the event of the Project's implementation under the grant aid scheme of the Government of Japan, a consultancy (work supervision) agreement will be concluded between the Government of South Africa and the Consultant following signing of the E/N by the two countries and this agreement will form the basis for the pre-qualification and tender. This will be followed by a construction agreement between a construction company selected by tender and the LDE to implement the construction work.

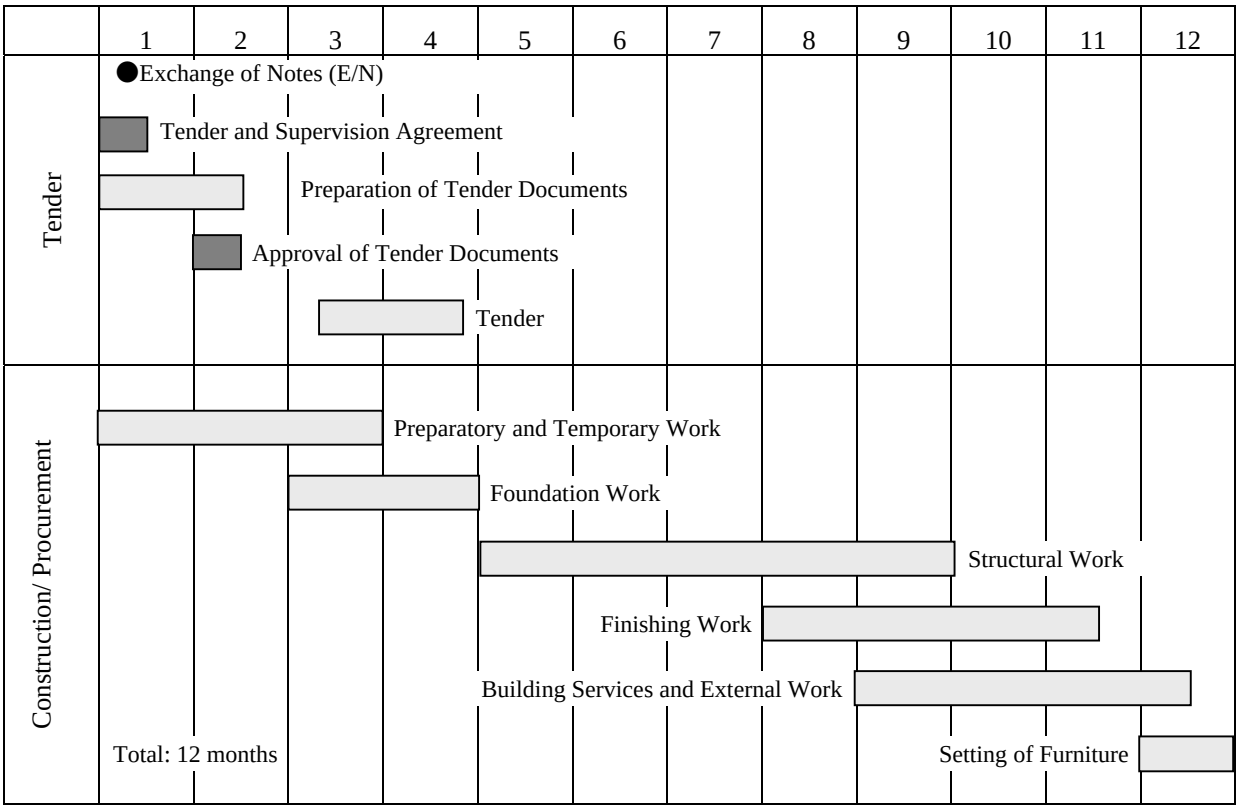
(1) Tender

The Consultant will publicly announce the pre-qualification (P/Q) for tender on behalf of the LDE, which is the project implementation organization on the South African side, and will report the pre-qualification results to the LDE for approval. A competitive tender participated in by qualified Japanese construction companies will be held in the presence of the related parties. The bidder with the lowest bid will be declared the successful bidder if the contents of the bid are evaluated as being appropriate and will conclude a construction agreement with the LDE. This agreement will become valid once it has been authorised by the Government of Japan. Approximately three months will be required for the conclusion of the consultancy agreement to the signing of the construction agreement after the tender.

(2) Construction Work

Following the conclusion of the construction agreement, the actual construction work will commence once the said agreement has been authorised by the Government of Japan. It is assumed that approximately eight months will be required to construct a single story classroom block and toilet block at each site. The entire construction schedule can be completed in 12 months if multiple subcontractors are effectively organized and used in an efficient manner. The assumed project implementation schedule is shown in Table 2-13.

Table 2-13 Project Implementation Schedule



2.3 Obligations of the Recipient Country

(1) Contents of Undertakings

The items to be undertaken by the South African side as confirmed in the Basic Design Study are listed below.

① To secure the land necessary for the construction of the planned facilities, to demolish and remove the existing building(s), etc. if necessary and to level the ground

② To improve the access road to each site required for the construction work

③ To construct perimeter fencing and gates

④ To extend and connect electricity supply, water supply and drainage lines to each site and to conduct incidental work

⑤ To secure the necessary budget and staff for the efficient operation and maintenance of the facilities and equipment provided by the Japanese grant aid

⑥ To accord Japanese nationals whose services may be required in connection with the supply of equipment and services under the verified agreements any conveniences they may require for their entry to South Africa and stay therein

⑦ To exempt Japanese nationals whose services may be required in connection with the supply of equipment and services under the verified agreements from customs duties, domestic taxes, including VAT, and any other fiscal levies which may otherwise be imposed in South Africa

⑧ To pay to a Japanese bank advice fees and commissions concerning the authorisation to pay (A/P) based on the banking arrangements

⑨ To bear all expenses, other than those covered by the Japanese grant aid, necessary for the Project

(2) Contents of the Work to be Undertaken by the South African Side

Of the above undertakings to be implemented by the South African side, the contents of the work relating to the construction at each site are shown in Table 2-14. Grading of the ground will be necessary at one site where the school location has been moved. At two sites, removal of the existing buildings will be necessary prior to the commencement of the construction work under the Project but such removal will not affect actual school operation as these buildings are not currently used because of their badly damaged state. In regard to access roads, improvement of some wadi sections will be required at three sites. Water supply through extension of the local water supply system or the construction of a borehole will be required at 8 sites. Extension of the electricity supply line from a nearby distribution line will be required at 13 sites. As perimeter fencing and gates are required for security purposes, construction of the minimum fencing and gates will be necessary at each site. In addition, the removal of existing buildings which are judged to be dangerous and the repair of existing buildings which are required for education must be completed by the time of the completion of the Project. Appropriate planting around the buildings by the South African side is also desirable to create a good environment for the school facilities.

Table 2-14 Contents of Work to be Undertaken by South African Side

Code No.	School Name	Items to be Conducted Prior to Commencement of Construction Work			Items to be Conducted by Completion of Construction Work						
		Grading of Site	Removal of existing structures	Improvement of Access Road	Provision of water supply to the site	Extension of water supply pipe near the water tank	Connection to Sewerage System	Provision of electrical power supply to the site	Removal of existing structures	Construction of fencing and gates	Planting
BC1	Dinoko P	-	-	-	○ Exists	○	-	○	-	○	○
BC2	Kgopudi S	-	-	○ Partial (wadi)	○	○	-	○ Exists	-	○	○
BC3	Makgotlho P	-	-	○ Partial (wadi)	○ Exists	○	-	○	-	○	○
BC4	Mapotla P	-	-	-	○ Exists	○	-	○	-	○	○
BC5	Matijeketlane P	-	-	○ Partial (wadi)	○ Exists	○	-	○	-	○	○
BC6	Ngoakwana S	-	-	-	○ Exists	○	-	○	-	○	○
BC7	Rapetsoa S	-	-	-	○	○	-	○	○	○	○
BC9	Rapoho P	-	-	-	○	○	-	○ Exists	○	○	○
BC10	Kodumela P	-	-	-	○ Exists	○	-	○	○	○	○
BC11	Bothanang P	-	-	-	○ Exists	○	○	○ Exists	-	○	○
BC12	Sekururwe C	-	-	-	○ Exists	○	-	○ Exists	○	○	○
KK1	Kwena A Peu S	-	-	-	○ Exists	○	-	○	○	○	○
KK2	Rametloana LP	-	-	-	○	○	-	○ Exists	○	○	○
KK4	Mahlabela S	-	○	-	○	○	-	○ Exists	○	○	○
KK5	Ikageleng P	-	-	-	○ Exists	○	-	○ Exists	-	○	○
KK6	Pula Seopa P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
KK7	Sefataladi P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
KK8	Tlou S	-	-	-	○ Exists	○	-	○	○	○	○
KK9	Rapitsi P	-	-	-	○	○	-	○	○	○	○
KK10	Kgabo P	-	-	-	○ Exists	○	-	○	○	○	○
BB1	Basterpad P	-	-	-	○ Exists	○	-	○	-	○	○
BB2	Kgakgathu S	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB4	Kgotsoro P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB5	Matlou M. P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB6	Moroba P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB7	Mushi P	-	-	-	○	○	-	○ Exists	○	○	○
BB8	Nkidikitlana P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB9	Nkontlha P	-	○	-	○ Exists	○	-	○ Exists	○	○	○
BB10	Ntebeleleng P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB11	Thutlane LP	○	-	-	○	○	-	○	-	○	○
BB12	Tlhako P	-	-	-	○ Exists	○	-	○ Exists	○	○	○
BB13	Seshoatlha S	-	-	-	○ Exists	○	-	○ Exists	○	○	○

"○" denotes the required work to be conducted by South Africa side at the target schools.

"Exists" denotes the existing utilities which was identified at the target site during the basic design study survey in July 2002.

2.4 Project Operation plan

(1) Operation and Maintenance

The operation and maintenance of the facilities and equipment provided under the Project at each site will be conducted by the School Governing Board (SGB) consisting of representatives of the school, parents and local community under the supervision of administrative bodies, include the LDE, Educational District Office and Circuit Office. The functions, composition and status of the SGB are set forth in the South African School Act and other regulations and the establishment of a SGB is obligatory at all schools. The SGB is composed of the principal and members elected from among teachers, pupils, parents and local community members and has wide-ranging authority ranging from the management of the School Fund, operation and maintenance of the school facilities, recruitment of teachers and policy decisions regarding school management. Routine maintenance activities, such as cleaning, solid waste disposal, upkeep of the playground, minor painting and repair work and the replacement of light bulbs, are the responsibility of the local community which the SGB represents.

(2) Operating Budget

The budget for the operation and maintenance of a public school is financed by the administration budget disbursed by the LDE and also by the School Fund, the main source of income of which are the school fees collected from the parents at each school.

1) Personnel Cost

The salaries for school staff are paid by the LDE via the Educational District Office. However, the wages for security guards and cleaners, etc. who are employed by individual schools depending on their specific needs are paid by the School Fund. Although some schools in the Project Area employ night security guards and/or temporary staff, this is not a common practice. Accordingly, only the salaries for additional teachers necessitated by the improvement of the over-crowded classrooms will be accounted as the personnel cost under the Project.

2) General Operation Cost

In addition to the personnel cost, the operating cost will include expenses for the following items.

- Textbooks : Distributed free of charge by the LDE via the Educational District Offices.

- Teaching aids and basic stationary : Distributed free of charge by the LDE via the Educational District Offices. Those which are not distributed in such a manner are purchased by the School Fund.

- Office supplies and consumables : Paid for by the operation budget allocated by the LDE to each school. Any shortfall is met by the School Fund.

- Utility charges
(water, electricity and Telephone) : Paid for by the operation budget allocated by the LDE to each school. Any shortfall is met by the School Fund.

- School event expenses : Paid by the School Fund.

3) Operation Budget from LDE Allocation

The LDE allocates the operation budget to each school pursuant to Article 20 of the South African School Act: Standards Concerning School Funding. This budget covers such expenditure items as telephone charge, office supplies, consumables, cleaning goods, facility maintenance cost and utility charges. The actual budget size for each school is determined based on the number of pupils, taking the priority of each school (assessed in terms of the degree of impoverishment of facilities and level of poverty in the area) into consideration. For those schools which are certified as having an appropriate school operation and maintenance system in the light of Article 21 of the South African School Act (Section 21 schools), the calculated budget is directly disbursed for use at the discretion of the school. Non-Section 21 schools are informed of the calculated budget but the budget is executed through the Educational District Office or Circuit Office. This system only began in 2001 and a survey conducted at the beginning of 2002 found that 628 schools (some 15% of public schools) in Limpopo Province were certified as Section 21 schools. All of the target schools of the Project are non-Section 21 schools. Although the government intends to increase the number of Section 21 schools by means of promoting awareness of the SGB of the importance of Section 21 school status and developing the managerial ability of non-Section 21 schools, it believes that it will take some time for all schools to obtain Section 21 school status. The operation budget allocated by the LDE for the target schools pursuant to Section 20 is listed in Table 2-15. The budget size per pupil is approximately R25, showing an increase of some 6.5% compared to the previous year (2002). The LDE plans to boost such allocation through a continuous increase under the Medium-Term Expenditure Framework.

Table 2-15 Norms & Standards Allocation (Section 20)

Code	School Name	Allocation Actual 2002	Allocation Budget 2003	Increased Ratio 2003/2002	Estimated No. of Pupils (2003)	Allocation per Pupil (2003)
BC1	Dinoko P	3,494.32	4,936.80	141.28%	220	R 22.44
BC2	Kgopudi S	11,844.23	12,548.69	105.95%	379	R 33.11
BC3	Makgotlho P	8,381.41	8,881.65	105.97%	405	R 21.93
BC4	Mapotla P	14,589.95	15,458.24	105.95%	412	R 37.52
BC5	Matjeketlane P	2,233.85	2,395.81	107.25%	289	R 8.29
BC6	Ngoakwana P	5,666.18	6,005.72	105.99%	241	R 24.92
BC7	Rapetsoa S	4,016.88	4,254.44	105.91%	146	R 29.14
BC9	Rapoho P	15,432.78	16,361.12	106.02%	698	R 23.44
BC10	Kodumela P	6,329.21	6,704.80	105.93%	170	R 39.44
BC12	Sekuruwe C	10,349.79	10,967.94	105.97%	513	R 21.38
KK1	Kwena A Peu S	5,086.24	5,390.19	105.98%	221	R 24.39
KK2	Rametloana P	12,109.85	12,831.20	105.96%	373	R 34.4
KK4	Mahlabela S	4,079.88	4,325.62	106.02%	262	R 16.51
KK5	Ikageleng Makobe P	10,689.48	11,331.60	106.01%	497	R 22.80
KK6	Pula Seopa P	8,475.63	8,987.16	106.04%	546	R 16.46
KK7	Sefataladi Primary	18,139.09	19,212.81	105.92%	489	R 39.29
KK8	Tlou S	8,488.66	8,992.48	105.94%	259	R 34.72
KK9	Rapitsi Primary	11,501.07	12,191.52	106.00%	528	R 23.09
BB1	Basterpad P	5,851.67	6,199.56	105.95%	204	R 30.39
BB2	Kgakgathu S	7,134.64	7,564.60	106.03%	436	R 17.35
BB4	Kgotsoro P	4,188.09	4,439.04	105.99%	256	R 17.34
BB5	Matlou Memorial P	11,086.01	11,736.76	105.87%	334	R 35.14
BB6	Moroba P	6,974.36	7,389.78	105.96%	274	R 26.97
BB7	Mushi P	14,235.66	15,080.40	105.93%	472	R 31.95
BB8	Nkidikitlana P	7,180.67	7,611.68	106.00%	421	R 18.08
BB9	Nkontlha P	5,258.77	5,575.60	106.02%	265	R 21.04
BB10	Ntebeleleng P	3,093.35	3,294.00	106.49%	244	R 13.50
BB11	Thutlane P	13,203.46	13,992.66	105.98%	573	R 24.42
BB12	Tlhako P	7,151.41	7,577.12	105.95%	232	R 32.66
BB13	Seshoatlha S	8,826.66	9,356.76	106.01%	423	R 22.12
	Total	255,093.25	271,595.75	106.47%	10,782	R 25.91

4) School Fund

Income sources for the School Fund are the school fees collected from parents, donations and fund raising activities. According to the replies of targeted schools of the Study, a school fee charged at primary and at secondary are 25-80R/year/pupil and 50-180 R/year/pupil respectively. On average, this fee is some 50 R/year at primary schools and 110 R/year at secondary schools. There is a huge disparity between schools regarding the school fee collection rate, i.e. actual income (2001 Account Report: obtained from 25 schools) to assumed income (school fee x number of pupils) as the Figure ranges from 30% to 217% (on average, 136% for primary schools and 77% for secondary schools), indicating different attitudes to school management at each school. At those schools where the collection rate exceeds 100% (9 out of 25), active efforts are made to encourage donations by parents and local organizations to finance the maintenance cost and school event expenses (sports, music and other events). In contrast, schools where the collection rate is less than 70% (6 out of 25) adopt a policy of exempting pupils from poor families from school fee payment.

As the Project aims at eliminating the current over-crowding of classrooms and improving the conditions of educational facilities, it does not envisage an expansion of school enrolment. Accordingly, no additional budget will be required to cover expenses other than the maintenance cost for the new facilities.

5) Facility Maintenance Cost

Minor maintenance expenses to replace cleaning tools and consumables, glass and locks, etc. are paid by the School Fund. There is also a special budget called the Facility Improvement Fund which is sourced by donations from parents and local organizations and income from communal activities which is used to finance urgent repairs, drilling of a well and construction of toilet facilities, etc. at the school's own initiative. In the case of full-scale rehabilitation or the construction of additional facilities, the investment budget of the provincial government is used. As the facilities planned under the Project are, in principle, maintenance-free, no maintenance or repair cost should arise for a period of approximately five years as long as they are properly used.

(3) Recruitment and Assignment of New Teachers

The Project intends to conduct the necessary improvement of the educational environment based on the current number of pupils in the Project Area and it does not aim at increasing the number of enrolled pupils. However, the recruitment of some new teachers and the assignment of some teachers to different schools will be necessary due to the transfer of pupils from nearby schools and improved class size, both of which will be made possible by the construction of new classrooms.

1) Calculation of Required Number of Teachers

In South Africa, the class teacher system is generally adopted at primary schools under the old system (G1 – G7) and elementary and intermediate grades under the new system (G1 – G6) while the subject teacher system is adopted at secondary schools under the old system (G8 – G12) and advanced grades under the new system (G7 – G9). All of the schools at the project sites are not exceptions to these general rules. School staff basically consist of a principal, a vice-principal, a head of department (a head of teacher) and ordinary teachers. Only 37% of schools have a vice-principal (2000) and non of the target schools of the Project have a vice-principal. The principal also often acts as a class/subject teacher. This is the case at one-quarter of the target schools of the Project.

The number of required teachers under the Project is calculated based on the following conditions.

Each school has a principal who does not act as a class/subject teacher. One teacher is assigned to each classroom. At secondary schools, at least one teacher is required for each of eight subjects included in the new curriculum. However, as the number of teachers, including those at secondary schools outside the scope of the Project (G10 – 12), exceeds the required eight teachers together with the present practice of some teachers teaching more than one subject, assignment of a specialized teacher to each subject is not considered.

The calculation results based on the above conditions are shown in Table 2-16. There is a shortage of one principal and 60 teachers at certain schools while there is a total of 18 surplus teachers at other schools. If these surplus teachers are transferred to schools with a teacher shortage, the new recruitment or transfer of 42 teachers will be necessary for the target schools as a whole.

Table 2-16 Calculation of Required Number of Teachers

Code	School Name	Planned No. of Classrooms	Planned No. of Pupils	Required No. of Teachers [A]		Pupil-Teacher Raito	Current No. of Teachers [B]			Teachers for Non-Target Grades	Requirement for New Teachers [A]		No. of Surplus Teachers
				Principal	Teachers		Principal	Target Grades	Teacher Surplus		Principal	Teachers	
BC1	Dinoko P	7	235	1	7	33.6	1	4	0	0	0	3	0
BC2	Kgopudi S	5	152	1	5	30.4	1	2	5	3	0	0	2
BC3	Makgotlho P	10	366	1	10	36.6	1	7	1	1	0	2	0
BC4	Mapotla P	10	378	1	10	37.8	1	7	0	1	0	3	0
BC5	Matijeketlane P	8	289	1	8	36.1	1	6	0	1	0	2	0
BC6	Ngoakwana S	5	165	1	5	33.0	1	2	0	3	0	3	0
BC7	Rapetsoa S	3	72	1	3	24.0	1	2	0	3	0	1	0
BC9	Rapoho P	16	623	1	16	38.9	1	9	1	1	0	6	0
BC10	Kodumela P	7	167	1	7	23.9	1	5	0	0	0	2	0
BC11	Bothanang P	14	523	1	14	37.4	0	0	0	0	1	14	0
BC12	Sekururwe C	12	446	1	12	37.2	1	11	0	2	0	1	0
	Total of Bochum	97	3416	11	97	35.2	10	55	7	15	1	37	2
KK1	Kwena A Peu S	3	92	1	3	30.7	1	2	3	3	0	0	2
KK2	Rametloana LP	9	332	1	9	36.9	1	8	0	1	0	1	0
KK4	Mahlabela S	4	134	1	4	33.5	1	2	3	3	0	0	1
KK5	Ikageleng P	12	442	1	12	36.8	1	7	0	1	0	5	0
KK6	Pula Seopa P	13	483	1	13	37.2	1	12	0	1	0	1	0
KK7	Sefataladi P	12	446	1	12	37.2	1	11	2	1	0	0	1
KK8	Tlou S	4	135	1	4	33.8	1	2	3	3	0	0	1
KK9	Rapitsi P	14	539	1	14	38.5	1	11	1	0	0	2	0
KK10	Kgabo P	7	152	1	7	21.7	1	3	0	0	0	4	0
	Total of Konekwena	78	2755	9	78	35.3	9	58	12	13	0	13	5
BB1	Basterpad P	7	215	1	7	30.7	1	6	0	1	0	1	0
BB2	Kgakgathu S	7	213	1	7	30.4	1	4	4	6	0	0	1
BB4	Kgotsoro P	7	269	1	7	38.4	1	7	1	0	0	0	1
BB5	Matlou Memorial P	8	298	1	8	37.3	1	7	1	1	0	0	0
BB6	Moroba P	7	268	1	7	38.3	1	7	0	1	0	0	0
BB7	Mushi P	11	411	1	11	37.4	1	8	0	1	0	3	0
BB8	Nkidikitlana P	10	382	1	10	38.2	1	10	1	1	0	0	1
BB9	Nkontlha P	7	266	1	7	38.0	1	7	0	1	0	0	0
BB10	Ntebeleleng P	7	214	1	7	30.6	1	4	0	1	0	3	0
BB11	Thutlane LP	12	443	1	12	36.9	1	13	0	3	0	0	1
BB12	Tlhako P	7	243	1	7	34.7	1	4	0	0	0	3	0
BB13	Seshoatlha S	7	228	1	7	32.6	1	6	8	5	0	0	7
	Total of Bakenberg	97	3450	12	97	35.6	12	83	15	21	0	10	11
	Grand Total	272	9621	32	272	35.4	31	196	34	49	1	60	18
	Transfer of Surplus Teachers											42	0

2) Possibility of Teacher Transfer

The Government of South Africa is attempting to achieve the rationalisation of personnel in the educational sector by formulating the Educator Post Provisioning Model for the purpose of reducing the ratio of the personnel cost in the education budget of each province to 85% within the period of the Mid-Term Budget Framework. Accordingly, there is no plan to recruit new teachers in Limpopo Province. The implementation of continuous training for existing teachers at a rate of 3,000/year is included in the development plan (2002/03) with emphasis on improvement of the qualifications of existing teachers and the fulfilment of positions for science teachers. In addition, it is planned to integrate 10 existing teacher

training colleges (enrolment as of 2000: 3,806) to suppress the number of newly qualified teachers which shows signs of over-supply.

The situation of teacher assignment in Limpopo Province based on the Snap Survey 2002 results is shown in Table 2-17. As the pupil-teacher ratio and the teacher-class ratio are 33.06 and 1.11 (Annual Report 2001) respectively, the teacher assignment situation is satisfactory, at least in terms of the numerical aspect. Estimation based on the standard pupil-teacher ratios (40 for primary schools and 35 for secondary schools) indicates that 7,113 teachers or some 13% of the total number of teachers are surplus. This surplus relates to the teacher-class ratio of 1.11 which is slightly high but which is still within the appropriate range. The 60 new teachers required under the Project represent a tiny proportion (less than 1%) of the surplus teachers and it is judged appropriate to fill these positions through the transfer of surplus teachers.

Table 2-17 Teacher Indicators in Limpopo Province

	No. of Pupils	No. of Teachers	No. of Classrooms	Pupils/ Teachers	Teachers/ Class	Teachers/ Classrooms
Primary Schools	1,128,675	31,611	24,730	35.71	-	1.28
Secondary Schools	24,690	801	678	30.82	-	1.18
Integrated Schools	644,465	21,973	14,979	29.33	-	1.47
Total	1,797,830	54,385	40,387	33.06	1.11	1.35

Source : Snap Survey 2002 (the Figure for the teacher-classroom ratio is only for public schools as reported in the Annual Report 2001)

Based on the above analysis results, it is judged that the number of vacant teaching positions at the target schools can be fully filled by the transfer of existing teachers in line with the government policy of personnel rationalisation. Moreover, the LDE has expressed its intention of providing the necessary teachers in full for the target schools.

(4) School Operation Cost

1) Personnel Cost (Directly Paid by Current Budget of Provincial Government)

As the 60 newly required teachers under the Project can be provided by means of transfer from other existing schools in the province, no new personnel cost will be incurred in this regard. However, a salary increase will be necessary in line with the promotion to fill one new position of principal. Given the current average salary level of 70,000 R/year for teachers (Level 1) and 140,000 R/year for principals (Level 2), the increase of the personnel cost as a result of the implementation of the Project will be 70,000 R/year (140,000 R – 70,0000 R). This is a very tiny proportion (0.0013%) of the total budget for the personnel cost of 5,561,780,000 R in 2002 and will not pose any problems.

2) Utility Charges

① Water Charge

The target schools will receive public water supply (such as municipal water supply) except for 10 schools where water can be supplied from a new borehole. Such public water supply is organized by a local public body, etc. in the area and the tariff varies from one area to another. Meanwhile, the central government is proceeding with a free basic water supply programme nationwide and this programme is being implemented in Limpopo Province. The framework of this programme is determined by individual water suppliers and the level of charge and inclusion of schools are up to each supplier. The field survey for the Project found that many schools in Limpopo Province, including nine target schools, are benefiting from this programme. For the present purposes, however, the water charge is estimated based on the average tariff.

② Electricity Charge

The installation of electrical appliances is planned at all of the project sites and an electricity charge will be incurred at all sites. Electricity will be supplied by ESKOM but the tariff will vary depending on the type of distribution network and quantity and type of electricity supplied in each area. Here, the estimation is based on the standard electricity tariff for rural areas. While the new school facilities will, in principle, use natural light, electricity consumption is expected to occur in the administration room and one classroom where lighting fixtures will be installed for their evening use by local community organizations and others. It is assumed that these lighting fixtures will be used for an average of one hour a day. Electricity consumption using the receptacles installed in the administration rooms and all classrooms is also expected to occur based on the use of certain light electrical office and educational equipment.

The estimation results are shown in Table 2-18. The total utility charges for the target schools are estimated to account for 14.0% of the total budget allocation by the Provincial Government to cover the cost of office supplies and consumables, utility charges and the facility maintenance cost or 5.0% of the estimated total school revenue for operation. Therefore, the situation where utility charges will significantly increase because of the implementation of the Project to the extent of imposing a financial burden beyond the means of the schools will not arise. As the budget allocated by the Provincial Government is expected to continually increase under the Medium-Term Expenditure Framework, it is judged that the utility charges will not pose a serious financial burden on the target schools in the future.

Table 2-18 Estimation of Operation Cost for Target Schools

Code	School Name	Estimated Revenue for School Operation[A]								Utility Expenses[B]					Raito of Utility Charges [B]/[L]	Raito of Utility Charges [B]/[A]
										Water		Electricity				
		Total No. of Pupils	No. of Classrooms Increased	School Fee/ Pupils	School Fee x Total No. of Pupils	School Fee Collection Raito	Estimated Size of School Fund	LDE Allocation 2003 [L]	Estimated Total Revenue	Consumption kl/yr	Annual Charge	Consumption kwh/yr	Annual Charge	Total		
BC1	Dinoko P	235	3	50	11,750	100%	11,750	4,937	16,687	61.2	279	1,057	892	1,171	23.7%	7.0%
BC2	Kgopudi S	374	5	50	18,700	70%	13,090	12,549	25,639	98.2	448	1,057	892	1,340	10.7%	5.2%
BC3	Makgotlho P	408	7	50	20,400	30%	6,120	8,882	15,002	105.1	479	1,157	920	1,399	15.8%	9.3%
BC4	Mapotla P	413	3	25	10,325	100%	10,325	15,458	25,783	106.3	485	1,057	892	1,377	8.9%	5.3%
BC5	Matijeketlane P	324	5	40	12,960	60%	7,776	2,396	10,172	83.8	382	1,057	892	1,274	53.2%	12.5%
BC6	Ngoakwana S	241	4	100	24,100	70%	16,870	6,006	22,876	63.2	288	1,057	892	1,180	19.6%	5.2%
BC7	Rapetsoa S	167	2	100	16,700	90%	15,030	4,254	19,284	44.9	0	1,057	892	892	21.0%	4.6%
BC9	Rapoho P	713	10	30	21,390	100%	21,390	16,361	37,751	182.5	832	1,157	920	1,752	10.7%	4.6%
BC10	Kodumela P	167	3	80	13,360	100%	13,360	6,705	20,065	44.9	205	1,057	892	1,097	16.4%	5.5%
BC11	Bothanang P	523	14	50	26,150	100%	26,150	13,551	39,701	438.0	1,997	1,257	947	2,944	21.7%	7.4%
BC12	Sekururwe C	523	10	40	20,920	40%	8,368	10,968	19,336	134.5	613	1,157	920	1,533	14.0%	7.9%
KK1	Kwena A Peu S	221	3	90	19,890	100%	19,890	5,390	25,280	57.8	264	1,057	892	1,156	21.4%	4.6%
KK2	Rametloana LP	385	7	30	11,550	80%	9,240	12,831	22,071	9.0	451	1,157	920	1,371	10.7%	6.2%
KK4	Mahlabela S	262	2	120	31,440	80%	25,152	4,326	29,478	69.5	0	1,057	892	892	20.6%	3.0%
KK5	Ikageleng P	493	7	55	27,115	90%	24,404	11,332	35,735	124.9	570	1,157	920	1,490	13.1%	4.2%
KK6	Pula Seopa P	545	12	42	22,890	90%	20,601	8,987	29,588	137.4	627	1,257	947	1,574	17.5%	5.3%
KK7	Sefataladi P	492	11	25	12,300	100%	12,300	19,213	31,513	124.7	0	1,257	947	947	4.9%	3.0%
KK8	Tlou S	248	3	120	29,760	90%	26,784	8,992	35,776	66.1	302	1,057	892	1,194	13.3%	3.3%
KK9	Rapitsi P	539	5	18	9,702	90%	8,732	12,192	20,923	136.0	0	1,057	892	892	7.3%	4.3%
KK10	Kgabo P	174	4	60	10,440	90%	9,396	4,508	13,904	47.2	215	1,057	892	1,107	24.6%	8.0%
BB1	Basterpad P	234	4	50	11,700	50%	5,850	6,200	12,050	61.6	281	1,057	892	1,173	18.9%	9.7%
BB2	Kgakgathu S	438	7	180	78,840	30%	23,652	7,565	31,217	112.9	515	1,157	920	1,435	19.0%	4.6%
BB4	Kgotsoro P	269	7	50	13,450	100%	13,450	4,439	17,889	69.4	316	1,157	920	1,236	27.8%	6.9%
BB5	Matlou M P	333	6	50	16,650	90%	14,985	11,737	26,722	85.9	392	1,057	892	1,284	10.9%	4.8%
BB6	Moroba P	291	7	50	14,550	100%	14,550	7,390	21,940	75.2	0	1,157	920	920	12.4%	4.2%
BB7	Mushi P	456	9	60	27,360	100%	27,360	15,080	42,440	117.2	0	1,157	920	920	6.1%	2.2%
BB8	Nkidikitlana P	422	9	60	25,320	100%	25,320	7,612	32,932	108.5	495	1,157	920	1,415	18.6%	4.3%
BB9	Nkontlha P	305	5	60	18,300	50%	9,150	5,576	14,726	78.6	358	1,057	892	1,250	22.4%	8.5%
BB10	Ntebeleleng P	244	4	66	16,104	90%	14,494	3,294	17,788	64.0	292	1,057	892	1,184	35.9%	6.7%
BB11	Thutlane LP	537	12	30	16,110	100%	16,110	13,993	30,103	137.9	0	1,257	947	947	6.8%	3.1%
BB12	Tlhako P	243	7	50	12,150	80%	9,720	7,577	17,297	63.1	0	1,157	920	920	12.1%	5.3%
BB13	Seshoatlha S	408	7	100	40,800	90%	36,720	9,357	46,077	106.3	485	1,157	920	1,405	15.0%	3.0%
	Total/ (Average	11,627	204	57	663,176	78%	518,088	289,655	807,743	3,215.8	11,571	34,767	29,100	40,671	14.0%	5.0%

* The estimated revenue for the School Fund is based on the collection rate, in turn based on the actual result in 2001 (100% for a new school). The maximum collection rate is 100% even if the current Figure exceeds 100%.
* Allocation Size for each BC10 and KK10 is calculated based on the average allocation per pupil which is 25.91R x No. of existing pupils.
* Estimation of water consumption
  a. Daily consumption per pupil
  1) Hand washing: 1.2 liters
  2) Flush toilet: closet; 10 times/day, 8 liters/time x 10 = 80 liters/closet
  urinals; 0.2 liters (boys; assumed to be 50% of all pupils)
  b. Daily consumption per teacher
  1) Hand washing: 3 liters
  2) Flush toilet: 8 liters x 1.5 times/day = 12 liters
  c. Annual number of school days: 200
* Water charge: no basic charge is assumed and the average in urban areas is assumed to be 4R/kilolitre + VAT at 14%
* Estimation of electricity consumption
  a. Classroom (all CRs): 58 watts x 2 bulbs x 4 units for 1 hr/day
  b. Administration room: 58 watts x 2 bulbs x 4 units for 5 hrs/day
  c. Light electrical appliances: total 500 watts for 5 hrs/day (up to 5 CRs), 6 hrs/day (up to 10 CRs), 7hrs/day (more than 10 CRs)
  d. Annual number of school days: 200
* Electricity Charge
  a. ESKOM tariff in 2002 for rural small users shall be applied.
  b. Single-phase 16 KVA/80A contract is assumed
  c. Monthly basic charge of 50.27 R + 27.34 cents/kwh = monthly electricity charge (inclusive of VAT)
* Sites using groundwater from their own wells and personnel cost (paid by the LDE) are not included in this table.

3) Other Operation Expenses

Other operation expenses are not compulsory except for a small amount for consumables. As these expenses are likely to be paid as they arise based on school policy, they are not estimated for the Project. However, it can be said that the above estimation results indicate the sufficient availability of funds to finance school events and the procurement of incidental equipment and materials.

(5) Maintenance Cost

One major principle of the Project is to minimise the maintenance cost and, as a result, no maintenance or repair work will be required for several years after handing-over if proper management is routinely conducted. The maintenance items and their costs which are expected to arise in the future are listed below. It is highly desirable for the school governing body at each school to establish a reserve fund to cover the future maintenance cost for the new facilities.

- Replacement of fluorescent bulbs : 100% replacement in five years
- Repainting of ceilings : once every 10 y ears (minor painting to be conducted by local people)
- Repair/replacement of glass : 50% replacement in 10 years
- Repair/replacement of doors and windows : 20% replacement in 10 years
- Repair/replacement of school furniture : 50% replacement of desks and chairs in 10 years

Table 2-19 Estimation of Maintenance Cost

Item	Estimation Formula	Annual Cost per Classroom (R)	Payment Source
Replacement of Fluorescent Bulbs	24.2 R/bulb x 8/5 years	38.72	Each school responsible for the work and payment
Repainting of Ceilings	15.7 R/m^2 x 52.5 m^2/10 years	82.43	As above
Replacement of Glass	220 R/m^2 x 10 m^2/10 years	110.00	As above
Replacement of Doors and Windows	325 R/classroom x 0.2/10 years	6.50	As above
Repair of School Furniture	200 R/set x 20/2/10 years	200.00	As above
Total per Classroom (with Lighting Apparatus)		437.65	Introduction of special reserve is desirable
Total per Classroom (without Lighting Apparatus)		398.93	Introduction of special reserve is desirable
Project Total: 96,625.56 R/year (204 classrooms + 32 administration rooms = 236)			

Table 2-20 shows the estimated ratio of annual reserve for facility maintenance to the estimated total income at each target school based on the annual maintenance cost per classroom shown in Table 2-19.

Table 2-20 Ratio of Required Annual Reserve for Facility Maintenance at Target Schools

Code	School Name	Estimated Revenue for School Operation[A]				Annual Reserve for Facility Maintenance [B]					Raito of Annual Reserve to Revenue [B] / [L]	Raito of Annual Reserve to Revenue [B] / [F]	Raito of Annual Reserve to Revenue [B] / [A]
						Classroom with Lighting Fixture		Ordinaly Classroom					
		School Fee Collection Raito	Estimated Size of School Fund [F]	LDE Allocation 2003 [L]	Estimated Total Revenue	No. of Classrooms (incl. Ad...	Repair Cost (437.65 R/yr)	No. of Classroom	Repair Cost (398.93 R/yr)	Total			
BC1	Dinoko P	100%	11,750	4,937	16,687	2	875	2	798	1,673	33.9%	14.2%	10.0%
BC2	Kgopudi S	70%	13,090	12,549	25,639	2	875	4	1,596	2,471	19.7%	18.9%	9.6%
BC3	Makgotlho P	30%	6,120	8,882	15,002	2	875	6	2,394	3,269	36.8%	53.4%	21.8%
BC4	Mapotla P	100%	10,325	15,458	25,783	2	875	2	798	1,673	10.8%	16.2%	6.5%
BC5	Matijeketlane P	60%	7,776	2,396	10,172	2	875	4	1,596	2,471	103.1%	31.8%	24.3%
BC6	Ngoakwana S	70%	16,870	6,006	22,876	2	875	3	1,197	2,072	34.5%	12.3%	9.1%
BC7	Rapetsoa S	90%	15,030	4,254	19,284	2	875	1	399	1,274	30.0%	8.5%	6.6%
BC9	Rapoho P	100%	21,390	16,361	37,751	2	875	9	3,590	4,466	27.3%	20.9%	11.8%
BC10	Kodumela P	100%	13,360	6,705	20,065	2	875	2	798	1,673	25.0%	12.5%	8.3%
BC11	Bothanang P	100%	26,150	13,551	39,701	2	875	13	5,186	6,061	44.7%	23.2%	15.3%
BC12	Sekururwe C	40%	8,368	10,968	19,336	2	875	9	3,590	4,466	40.7%	53.4%	23.1%
KK1	Kwena A Peu S	100%	19,890	5,390	25,280	2	875	2	798	1,673	31.0%	8.4%	6.6%
KK2	Rametloana LP	80%	9,240	12,831	22,071	2	875	6	2,394	3,269	25.5%	35.4%	14.8%
KK4	Mahlabela S	80%	25,152	4,326	29,478	2	875	1	399	1,274	29.5%	5.1%	4.3%
KK5	Ikageleng P	90%	24,404	11,332	35,735	2	875	6	2,394	3,269	28.8%	13.4%	9.1%
KK6	Pula Seopa P	90%	20,601	8,987	29,588	2	875	11	4,388	5,264	58.6%	25.5%	17.8%
KK7	Sefataladi P	100%	12,300	19,213	31,513	2	875	10	3,989	4,865	25.3%	39.5%	15.4%
KK8	Tlou S	90%	26,784	8,992	35,776	2	875	2	798	1,673	18.6%	6.2%	4.7%
KK9	Rapitsi P	90%	8,732	12,192	20,923	2	875	4	1,596	2,471	20.3%	28.3%	11.8%
KK10	Kgabo P	90%	9,396	4,508	13,904	2	875	3	1,197	2,072	46.0%	22.1%	14.9%
BB1	Basterpad P	50%	5,850	6,200	12,050	2	875	3	1,197	2,072	33.4%	35.4%	17.2%
BB2	Kgakgathu S	30%	23,652	7,565	31,217	2	875	6	2,394	3,269	43.2%	13.8%	10.5%
BB4	Kgotsoro P	100%	13,450	4,439	17,889	2	875	6	2,394	3,269	73.6%	24.3%	18.3%
BB5	Matlou Memorial P	90%	14,985	11,737	26,722	2	875	5	1,995	2,870	24.5%	19.2%	10.7%
BB6	Moroba P	100%	14,550	7,390	21,940	2	875	6	2,394	3,269	44.2%	22.5%	14.9%
BB7	Mushi P	100%	27,360	15,080	42,440	2	875	8	3,191	4,067	27.0%	14.9%	9.6%
BB8	Nkidikitlana P	100%	25,320	7,612	32,932	2	875	8	3,191	4,067	53.4%	16.1%	12.3%
BB9	Nkontlha P	50%	9,150	5,576	14,726	2	875	4	1,596	2,471	44.3%	27.0%	16.8%
BB10	Ntebeleleng P	90%	14,494	3,294	17,788	2	875	3	1,197	2,072	62.9%	14.3%	11.6%
BB11	Thutlane LP	100%	16,110	13,993	30,103	2	875	11	4,388	5,264	37.6%	32.7%	17.5%
BB12	Tlhako P	80%	9,720	7,577	17,297	2	875	6	2,394	3,269	43.1%	33.6%	18.9%
BB13	Seshoatlha S	90%	36,720	9,357	46,077	2	875	6	2,394	3,269	34.9%	8.9%	7.1%
	Total/(Average)	78%	518,088	289,655	807,743	64	28,010	172	68,616	96,626	33.4%	18.7%	12.0%

The ratios of the required annual reserve for all of the target schools to the total budget allocated by the provincial government, the total operating fund and the estimated total income are 33.4%, 18.7% and 12.0% respectively. While these figures suggest a fairly high financial burden, they appear to be manageable. In terms of individual schools, however, the required level of reserve will account for

more than 20% of the estimated annual revenue at those schools with a low school fee collection ratio, possibly affecting their funding for other annual events and other aspects of school operation. Accordingly, it is essential for those schools with a low school fee collection ratio to make conscious efforts to improve the fee collection ratio and to actively encourage donations from parents and local communities.

2.5 Other Relevant Issues

(1) Full Fulfillment of Obligations of Recipient Country

The full fulfillment of its obligations by the Government of South Africa is a precondition for the implementation of the Project. It is essential that the work to remove the existing buildings which are evaluated as being unfit for use, to prepare the sites and to improve the access road to each site be conducted prior to the commencement of the Project. Moreover, the provision of a water supply system through extension of a local water supply system or the construction of a new water supply system by means of drilling a borehole at sites with no local water supply system is essential for the proper maintenance of the planned school facilities. Equally, the extension of a power supply line to the sites and the construction of a gate and fencing are very important for the effective operation and management of the said facilities. Perimeter fencing in particular is essential to protect the new facilities from vandalism or theft and, therefore, the provincial government is required to conduct the necessary work without delay or failure.

Even though the system to fulfill these obligations on the South African side is properly in place, it is important to assist the prompt execution of the required work through appropriate advice and consultation given the fact that the Project is the very first grant aid project of the Government of Japan in Limpopo Province. As local public bodies or other water suppliers are responsible for the execution of the actual work to supply water to the sites, advance consultations with these bodies must be properly held. Advance consultation will be equally required with the ESKOM which will be responsible for the new electricity supply to the sites in need of such supply.

(2) Measures for Usable Existing Classrooms and GR, G10 – 12 Omitted from the Scope of Cooperation

Out of the 32 target schools of the Project, 31 are existing schools (one of which will be relocated to a new site) and the one remaining school is a new school. The expansion plan for each of the 30 existing sites (excluding that to be relocated) adopts a layout plan which makes the maximum use of the usable existing classrooms. Any repair or partial rehabilitation of the existing classrooms which are judged usable (135) must be conducted by the provincial government so that some of these (67) will be preferentially used to (i) improve the physical environment for GR and G10 – 12 classes which are omitted from the scope of cooperation this time, (ii) alleviate the

classroom overcrowding and (iii) ensure appropriate school operation. For this reason, the LDE, Educational District Offices and SGB are required to consult with one another to conduct a fact-finding survey on the existing facilities which are judged usable, to determine how to use these facilities in the future and to urgently implement their repair if such repair is required. The overall effect of the Project will only be felt through the realisation of appropriate operation and maintenance of all of the new and old facilities, including the active use of usable existing facilities.

(3) Deployment of Required Teachers

In South Africa, teachers are directly employed by schools while provincial governments are responsible for recruitment announcement, posting of candidate lists, approval of appointments and payment of salaries, etc. As the relocation of teachers must, in principle, secure the consent of the teachers in question, teachers cannot be forcibly relocated. Given such restriction posed by the current employment system, it is clear that the deployment of teachers takes some time. For the target schools of the Project, therefore, it is essential for the required relocation procedure to commence at an appropriate time so that the required teachers are in place at the time of the opening of all of the target schools.

(4) Exemption from Value Added Tax (VAT)

For the Primary and Secondary Schools Construction Project Phase I in Eastern Cape Province which was implemented with grant aid, the VAT was refunded in response to a claim made by the construction company. For the subject Phase II Project in Eastern Cape Province and a similar project in KwaZulu-Natar Province, an agreement has been reached between the Ministry of Education and the Ministry of Finance that these aid projects will, in principle, be exempt from VAT instead of refunding. The equipment and services procured by Japanese corporations involved in the Project will, therefore, be exempt from VAT with the approval of the LDE. However, it has been pointed out that tax exemption will be practically difficult for direct procurement made by local companies acting as subcontractors. As this will be the first time for the Limpopo Provincial Government to arrange such VAT exemption in relation to Japanese aid, full coordination must be conducted among all of the parties concerned so that VAT exemption measures can be promptly implemented without fail.

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

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3.1 Project Effects

The Project intends to improve the educational environment in three educational districts (Bochum, Konekwena and Bakengerg), i.e. former homelands, in the central and western region of Limpopo Province which is said to be one of the poorest provinces in South Africa through the construction of primary and secondary school facilities. The scope of cooperation under the Project includes the construction of classrooms, toilets and administration rooms and the provision of school furniture, fixtures and water tanks, all of which represent the minimum requirements for the running of a school. Through its implementation, the Project aims at alleviating the classroom shortage and improving the quality of school facilities. The expected effects to be achieved through the implementation of the Project are described below.

(1) Direct Effects

The construction of 236 rooms (204 classrooms and 32 administration rooms) at 32 target primary and secondary schools is planned under the Project. The target schools currently have 295 classrooms which form the basis for SRN calculation, excluding temporary or borrowed facilities as confirmed by the Study. Of these, the number of existing classrooms evaluated as being usable as permanent facilities by the Study is 135, i.e. less than half of the existing number. For examination of the direct effects which are expected to take place due to the implementation of the Project, the number of classrooms to be added and the number of classrooms to be rebuilt have been calculated in the following manner.

- Number of available classrooms (SRN calculation) = number of existing classrooms (327) – temporary or borrowed (32) = 295 classrooms
- Number of existing usable classrooms = number of available classrooms (295) – number of unusable classrooms (160) = 136 classrooms
- Number of classrooms after the Project = number of existing usable classrooms (135) + planned number of new classrooms (236) = 371 classrooms
- Number of additional classrooms = number of classrooms after the Project (371) – number of existing classrooms (295) = 76 classrooms
- Number of classrooms to be rebuilt = number of planned classrooms (236) – number of additional classrooms (76) = 160 classrooms

1) Alleviation of Classroom Shortage and Overcrowding by Additional Classrooms

Under the Project, 76 classrooms representing some 10.7% of the overall classroom shortage of 710 classrooms (SNAP Survey 2002) will be added to primary and secondary schools in the three target educational districts (where 462 schools exist with 4,222 classrooms and 157,111 pupils). Accordingly, the classroom shortage rate of 1.54 classrooms/school in these three educational districts will be reduced to 1.37 classrooms/school. In the case of a newly created primary school (with 14 classrooms and one administration room), it is expected that 517 pupils out of the 2,414 pupils currently attending nearby schools (three schools with 31 classrooms) will move to the new school from nine neighbouring communities. As a result, the number of pupils per classroom in these communities will be reduced from the present 77.9 pupils/classroom to 53.6 pupils/classroom.

2) Improvement of Educational Facilities and Environment Due to Elimination of Temporary, Borrowed and Inappropriate Aged/Deteriorated Classrooms

The elimination of temporary or borrowed classrooms (32) among the existing classrooms (327) of the target schools and the rebuilding of 160 classrooms, i.e. some 55% of the number of available classrooms (327), consisting of 145 classrooms built using the conventional construction method and 15 second-hand prefabricated classrooms, all of which are judged to be unsuitable for continued use because of severe aging and/or deterioration, is planned under the Project. In the case of 135 existing usable classrooms which are judged to be suitable for continued use as permanent facilities, it is planned that 67 of these will be preferentially used as such facilities outside the scope of cooperation as classrooms for GR and G10 – G12, libraries, storage rooms and special classrooms. With the implementation of the Project, the educational facilities and environment will be improved for an estimated 11,673 pupils of the target schools, representing some 7.4% of the 157,111 pupils enrolled at primary and secondary schools in the target educational districts, and the undesirable features at the target schools, including temporary and borrowed classrooms, danger posed by deterioration and existence of unusable classrooms and deterioration/aging, will be eliminated.

3) Improvement of School Management Conditions and New Availability of Administration Rooms

It is reported (SRN 2000) that only some 68% of the schools in Limpopo Province have administration rooms (staff room, administration office and storage room) and an ordinary classroom is used as an administration room at 21 target schools. Most of the target schools lack sufficient quantities of school furniture and fixtures. At many schools, teaching

materials and tools and documents are stacked in the corner of a room, hindering efficient school management. Under the Project, the introduction of work space for the principal, space for staff meetings and space for the storage of teaching materials and tools in one classroom is planned. The necessary desks, chairs and cabinets, etc. will be provided for this room and it is hoped that the creation of this administration room will contribute to effective school management.

4) Improvement of Sanitation Conditions Due to Introduction of Toilet Facilities

Most schools in Limpopo Province have toilet facilities. More than 70% of these use night soil pots and the number of pupils per cubicle of 45 is the highest in South Africa (the national average is 35, SRN 2000). The target schools are experiencing an absolute shortage of the number of cubicles as the present availability rate is only 0.72 cubicles/classroom. This figure drops to 0.47 cubicles/classroom when only the usable cubicles are counted (approximately 140), resulting in a pupil to cubicle ratio of approximately 78 pupils/cubicle. Under the Project, flush toilets will be introduced at one site which is served by the urban sewerage system while environment-friendly improved latrine (Enviro loo) will be adopted at the other sites. In total, 45 toilet buildings with 347 cubicles and continual urinals (total length of some 170 m) will be constructed. Taken together with the existing usable cubicles, the cubicle to classroom ratio will improve to approximately 1.31 cubicles/classroom and the pupil to cubicle ratio will also improve to 24 pupils/cubicle, improving the overall sanitation conditions at the target schools. When compared to the 236 classrooms to be constructed, the cubicle to classroom ratio will become approximately 1.47 cubicles/classroom. Moreover, the introduction of water taps and a water tank will enable public hygiene education on the importance of hand washing and cleaning and the improvement of hygiene customs is expected.

5) Improved Access to Education Due to Construction of New School and Upgrading from Incomplete School to Complete School

The Project plans the construction of one new school (transfer of 517 pupils) and the upgrading of two incomplete schools to complete schools (with an estimated increase of 132 pupils). At present, there is no school within the 2 km radius of these schools and local children have no choice but to walk 3 – 6 km to attend the nearest school. With the implementation of the Project, access to education will be improved for an estimated 4,695 school age children (2,422 for the new school and 957 and 1,298 for the two upgraded schools) in the target communities.

(2) Indirect Effects

1) Enlargement of School Enrolment Opportunity Due to Improved School Facilities

According to the EFA 2000 (Country Report), the primary education enrolment rate in Limpopo Province in 1997 was lower than the national average with a gross enrolment rate of 88.0% (national average: 96.5%) and a net enrolment rate of 83.2% (national average: 87.1%). The gender gap of 4.5% was also larger than the national average of 1.6%. The interview survey for the Study found that the average number of children per family is 5 – 6 and that it is difficult to provide the opportunity for education for all children. The annual cost of education per pupil is at least 500 – 620 R, including the school fee, contribution to school facility improvement and travelling cost for pupils who have to travel a long distance to school. This heavy burden posed by the cost of education, including contribution, is a factor denying the children of poor families the opportunity for education. Even though the provincial government is planning to strengthen the facility maintenance budget in areas with poor communities, the financial burden on parents is expected to remain a heavy one. With the implementation of the Project, the conditions of educational facilities at the target schools will be improved to accept more children. Moreover, access to education will be improved for those pupils currently forced to travel a long distance, substantially reducing the burden of the education cost for their parents. In all, the school enrolment opportunity will be expanded and the conditions will be in place to easily allow currently unenroled children to receive school education.

2) Enlargement of Opportunity for Communal Activities

The three educational districts targeted by the Project are all located in the former Reboa homeland which is sparsely populated compared to other homelands. As there are no permanent communal facilities in the area, schools have historically functioned as core facilities for local communities. In its “Tirisano”, the government upholds “the establishment of schools playing a central role in the local community and cultural life” as a basic issue for action plans. School facilities have the status of core facilities for communal activities and autonomous school management with local participation is aimed at. With the establishment of the essential administration rooms for school management together with the construction of school facilities which can be used at night because of the availability of an electrical system under the Project, it will become possible for school facilities to provide the opportunity for various local activities. Moreover, the strengthening and enhancement of the awareness of the importance of self-reliant governance are expected to increase through autonomous school management.

3) Technology Transfer at Construction Sites

Under the Project, the school facilities are designed to ensure their durability and well-balanced cost based on the provincial standard design, incorporating improvements judged to be necessary based on the field survey results. Even though there are many local construction companies which have experience of constructing school facilities based on the provincial standard design, only a few companies are capable of conducting construction work at multiple sites in view of the evaluation results of their annual turnover, number of engineers employed, construction equipment owned and past work results, etc. Visits to current construction sites during the field survey found that the construction methods and quality control have room for improvement. As such, many local construction companies appear to be in the process of development. Given the fact that the construction work will be simultaneously conducted at a large number of sites under the Project, the employment of many local construction companies as subcontractors is planned. Under the supervision of Japanese engineers, the work method, work procedure and required level of work quality will be demonstrated at model sites for each type of work for the purpose of transferring the necessary technologies. The thorough implementation of this demonstration is expected to further improve the construction skills and technologies of local construction companies.

3.2 Recommendations

The following recommendations are made to emphasise the tasks to be dealt with by the South African side to ensure the smooth implementation of the Project and the enhanced as well as sustained effects of the Project.

(1) Strengthening of Ability of School Governing Bodies

The operation and maintenance of the planned facilities will be conducted by the school governing body (SGB) established for each school pursuant to the relevant law. A SGB has already been established for all existing schools. In the case of the new school, a new SGB will be established after the registration of the school. The active involvement of the SGBs from the construction stage in anticipation for the autonomous management of the completed facilities with an enhanced sense of participation will be important for the appropriate operation and maintenance of the planned facilities. In the case of the new school, the establishment of a “school construction committee” or a similar body consisting of representatives of local communities and educational organizations is desirable to participate in management at the construction stage. Meanwhile, the provincial government has been implementing a programme to strengthen the ability of SGBs in terms of the school management method, facility maintenance and improvement and management of the operation budget. Improvement of the ability of the SGB at each school through this programme is essential. Strengthening of the fund

management ability is also essential as efficient as well as effective fund management by the SGBs is important under the system to distribute funds to each school which was introduced in 2001.

(2) Viability of Technical Cooperation and Collaboration with Other Donors

Many donors are implementing wide-ranging aid projects in Limpopo Province. In the field of ordinary education, the US (USAID), UK (DFID), Netherlands and Canada (CIDA) are providing technical cooperation, mainly featuring (i) a qualitative improvement of primary education, including GR, (ii) the vigorous implementation of the new curriculum, (iii) the strengthening of school management and assistance capability in the educational sector and (iv) the establishment of a fair school fund distribution system. In addition, a programme to enhance the school management and classroom management abilities of principals, teachers and SGBs is in progress by the provincial government with the cooperation of donors. It is desirable for the target schools of the Project to participate in or collaborate with this programme to enhance the positive effects of the Project.

(3) Implementation of Continuous Facility Improvement by Provincial Government

The Project intends the construction of basic facilities to meet the current needs of schools in high priority rural areas to alleviate the classroom shortage in Limpopo Province in line with “the departure from the past imbalance through the introduction of effective resources” as called for by the medium-term strategy of the LDE. Consequently, more sustainable effects will be achieved through the continuous efforts of the provincial government to deal with the need to improve areas which are not targeted by the Project, to meet new demands in the future and to construct better quality facilities. For this reason, the provincial government is required to continually improve school facilities in a more efficient manner while executing the currently planned appropriate distribution of the budget, establishment of the project planning and implementation processes and the reorganization of the institutional arrangements.