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All issues concerning education see sep. report by Mr. P. Wijesiri Gunasekara
1. SUMMARIES AND INTRODUCTION

1.1 Executive summary

Assessment in brief:

- The RIERP project targets successfully the most disadvantaged population groups and areas: plantation schools in rural locations and slums.

- The RIERP is a significant contribution and a meaningful project where benefit goes directly to beneficiaries: the children of plantation workers.

- The constructions and reparation work are made with local labour and material. Building and maintenance costs go to local small local contractors and target a wide section of the local population.

- The contributions to improve the conditions in plantation schools are not limited to Sida loans and the central government (although these stand for the large expenditures, such as buildings). The care for the school environment and maintenance is clearly shared on a wide front by parents, local government, ex-pupil organisations, teachers and pupils all taking part in the necessary improvements.

- RIERP has been successful in handling the building of new schools and shown insight in introducing improved construction methods, yet these can and must be developed further.

- RIERP has been increasingly successful in introduction of maintenance policies and knowledge that will have a positive effect way beyond the targeted issues of the actual school maintenance. The results of this is evident in most schools.

- The collaboration and communication between the RIERP, Central Government, Ministry of Education, and project adviser and recent overseas consultants appears to be working well.

- NEC guidelines can be improved in order to be to be more precise and thus instrumental. The relatively simple school structures can be optimized in terms of the technical detailing, especially concerning handling of roof/surface water.

- A better system of reporting when certain schools do not cope with upkeep must be developed. It cannot be waited until buildings dilapidate.

- More effort must go into delivering a finished ‘package’. Not only a completed school building but also a fully equipped school with toilets, furniture, ready at inception date.

- Library, computer room and science lab were needed in several schools, and are necessary as many schools have pupils up to the 13th grade.

- There was been no gender disparity in the schools visited concerning teachers and pupils. They were evenly distributed in terms of gender. Although principals were in all 14 schools only men. A large religious variation was identified among the principals in the 14 schools visited were representatives of Hindu, Catholic, Muslim and Buddhist religion. The same applies for the teachers.

1.2 Further recommendations

The school sites and planning

- Considering the number of new school buildings to be built there is a necessity to introduce some master planning. One way can be examples addressing the positioning of building in the extreme topography in Central Sri Lanka. Much depends on how the new building is positioned in the landscape.

- Extending the school sites: In several schools visited the extending of sites were already agreed with plantation owners. The choices made on which side to extend the school site plays a primordial role. Some guidelines/recommendations with illustrated examples could be beneficial for headmasters and officials from the Ministry of Education to make the right choices for the future.

- Lack of surveying and maps results in unclear potential when needs for extension of building and playgrounds have to be planned.

- Design Guidelines for primary schools (concerning layout of buildings, landscaping, park, fence and water supply should be revised and extended). Sometimes misunderstood: Functional landscaping means not only decorative landscaping projects but using planting to avoid erosion and to indicate borders and structuring of outside spaces and playgrounds.

- The surrounding spaces of school buildings have sometimes to cope with level changes in the terrain without steps/stairs. Some are extremely difficult to access during rainy days, the school nr 4, 5, 6, 8, 10 and 14 had problems of this kind.
• Lack of protecting handrails in several schools was observed where terrain level measured several metres. In these places playing children could fall dangerously. Examples of this could be found in schools nr: 5, 8, 9, 10, 13 and 14.

• Playgrounds in sloping terrain are difficult to achieve. Still places to move around freely are vital for children especially in the lower grades. A minimal size of playground must be provided in every school!

• Secondary issues must be looked at, for example that schools in remote locations have additional needs for example, that teachers are travelling too long distances. The need for teacher’s quarters becomes in these cases a primordial aspect for the functioning of the school.

1.3 Conclusion

Continuation/Impact
The RIERP project is well worth continuing and even in some part worth extending. It fits well into the category project dealing with poverty alleviation targeting the most needing part of the population and the areas in most need of aid in Sri Lanka. If completed, this project will substantially increase the education and quality of life for the Tamil workers children.

Ownership
There is a high sense of ownership on several levels in the maintenance project. Particularly shown by the pupils and teachers using the improved premises. The effects of the project give an immediate visible result for the users of the school. The sense of ownership is reaffirmed through that some schools take on repair work themselves without waiting for governmental or Sida support.

Economy
Higher cost efficiency can be achieved though targeting the re occurring technical problems highlighted in this report. The extreme difference between the estimated cost of 713 million Sri Lankan Rupees and the needed 2096 million Sri Lankan Rupees (despite identifying the factors for the increase) must be looked at once more by QS or similar expert.

Effectiveness
The RIERP, Central Government, Ministry of Education, and project adviser and recent overseas consultants appears to have found an effective collaboration to run these geographically very dispersed projects.

Sustainability and extension of the ‘Maintenance Manual’
Long-term sustainability of the project depends on implementation program and how the maintenance routines can become part of the long term running of the school. A maintenance manual is under production. This manual will help yet could be improved by adding protocols to be filled in by headmaster. (See a rough concept of such ‘protocol manual’ in the following report).

Continuation
In order to address the issues of improvement of technical details and the reoccuring problems of sites and positioning of buildings in the terrain it is recommended that collaboration between consultants from Sweden and the RIERP design office is established. A workshop could be organised with the aim to collectively develop standard details and modus operandi for planning issues. The outcome should be documented and become an integral part of the planning of future school buildings.

1.4 Introduction
This Intermediate evaluation is mainly addressing the technical aspects of the project. The economical aspects have been looked at and are partially discussed at the end of the report. The special local knowledge for professionally answering and controlling these questions is not available in Sweden. A local independent Sri Lankan quantity surveyor and or economist can control numbers, local building costs, and devaluation figures.

My Sri Lankan partner in this evaluation is P. Wijesiri Gunasekara (consultant education specialist Policy Planning and Performance Review Division, ministry of Education, Sri Lanka) Mr. Gunasekara has done the educational assessment and the evaluation of maintenance training, etc which is presented in a separate report.

As far as it was possible on this journey there was an attempt to study over all relevant issues. However, as these 14 school samples are to represent over 400 schools also individual aspects become interesting, as they may be representative considering that a large number of schools was not visited. The report addresses some of these aspects which seem relevant.
In order to assess the overall planning sketch diagrams were drawn from all schools visited. These become useful to find out capacity of the schools as individual classrooms can be identified in the sketches. The material contains also information about the size of the buildings (in feet) and the amount of storeys. An additional schedule has been attached containing the year of construction and type of roof structure and roofing material used in the different buildings. The diagrams give insights in questions of planning, and become an aid in understanding both photographs and texts.

Technical aspects were photographed and have been given a separate section in order to highlight repeated technical problems. These problems must be addressed in the future planning and building of plantation schools in Sri Lanka. Implementing improved technical solutions could save a considerable amount of time and money invested.

The important role of the principal
The quality of maintenance and general condition are extremely connected with the principals engagement and potential to take on the issues. We visited a school almost beyond repair built in 1998! Other much older buildings were in a very good state. It is therefore important for the ministry officials to keep an eye on conditions and make principals responsible for the keeping of the built environment of the plantation schools. The principal himself should always be targeted for maintenance schooling.

Different sources of aid
Observation on economy: schools becoming Sida projects sometimes misleadingly are considered ‘taken care of’. It must be made clear that aid for some aspect should not hinder other potential aid to address need and help these schools. Principals should take initiative organising other potential contributors such as: parent organisation, local government, old boys support groups, etc for support.

Organisation
Some new school lack adequate toilet facilities. Some schools had complete new building but not enough furniture, children being forced to work on blankets on the floor. The timing of completion of the school building must coincide with building of toilets and the supply of equipment such as furniture. Better coordination work must be done in order to avoid this type of situations.

Some improvement concerning organisation and coordination can be done. For example: Local politician prevent the immediate use of new schools due to delayed dates for inauguration ceremony. This issue was discussed with R. Tharmakulasingam ass. Secretary, Ministry of Nation Building and Estate Infrastructure Development and eng. P Suresh in the workshop in Hatton. It was agreed that this should no longer happen and that principals had the clearance that completed school building should be taken in use at completion.

Evaluation method
This evaluation is collaboration between P.Wijesiri Gunasekara (consultant education specialist Policy Planning and Performance Review Division, ministry of Education, Sri Lanka) and myself.

The evaluation is based on material collected during a brief journey to Sri Lanka between the 13 and 20 of May 2007. During this stay I visited 14 plantation schools selected by the Ministry of Estate housing and Infrastructure, together with Mr. Gunasekara. (See diary of meetings and list of schools visited in documents at the end of the report). The surrounding of the schools and the interior climate of classrooms and other issues has been taken up to discussion and extended the range of the question and criteria asked in the TOR.

The selected schools were well chosen as they represented a wide scale in size, (140 - 1 100 pupils). The schools visited represented different geographic zones. As far as maintenance and management the schools were very different. From extremely well kept schools to the opposite: schools in a very bad state.

The resources of the assignment for my part (I+2) were limited so it was decided to make two separate reports. A joint report would have meant another journey to Sri Lanka for my part and considerable time for reworking the two reports into one single document. But as they are produced separately and address separate issues it may not matter.

When visiting the schools a previously prepared questionnaire was used based on our TOR from the Swedish Embassy. All questions were at times difficult to get answered. Issues of language, and conflicting information and the lack of time made the filling in of the questionnaire not 100% complete. Still, it was very valuable to talk to both headmasters and teachers. Mostly Mr Gunasekara had meetings with the headmasters whilst I spent most time with the teachers going through the premises. The contact with the users during these four days was very valuable and gave this report its substance.
A photographic material formed a base of recording technical issues and recording the state of the different schools. Over 800 photographs were taken on the journey. Meetings with Mr Suresh and his colleagues have been helpful.

It’s obvious, that a complete assessment of several schools (each one consisting of several/many separate buildings) on one day is not possible. Also considering that we were traveling large distances between these schools. The 14 schools have

The material has been evaluated and is presented in this brochure. Beyond the requested issues stated in the TOR, the aim of the brochure is to become a further instrument addressing the technical problems of many schools in Central Sri Lanka. It targets the Ministry of Education and the consultants working with RIERP. This report is consciously designed to be of a visual character. This will help all participants both in Colombo and in Sweden to get clear idea of the issues and needs in the plantation schools.

Impressions from the fieldtrip showing classrooms, children in traditional Tamil dress, school children and staff and meetings held with staff, etc
2. QUALITY OF CONSTRUCTION WORK AND THE APPLICATION OF “MAINTENANCE FREE DESIGN”

2.1 General assessment of construction work

Ground floor slab
The older schools have all a brick base construction as a slab. The problems are as follows: The floors are constructed with burned bricks, which are porous and suck humidity from the ground below and become soft. The very thin layer of cement screed cannot adhere to the bricks and tends to crack. This happens both inside and on the outside pavement. Due to mechanical expose (often by steel furniture) the floor is damaged and successively the thin screed layer peals off. This was observed in practically all schools from the 80ies and 90ies visited. A concrete slab that will eliminate the constant problem arising from the use of the previous method has subsequently replaced the brick construction.

Similarly the pavement and the channel breaks outside the buildings suffer from the brick substructure. Cracks appear easily and if not repaired at once a rapid decay is unavoidable. In some schools personnel have been diligent and have constantly repaired any cracks and damages appearing (example school nr 11). This has successfully stopped the further decay, whereas in others schools the damage is way beyond repair (example school nr 4).

Main wall structure
The wall constructions executed in the new school buildings is of a reasonable quality. Of the 14 school visited nine had buildings built during this year (2007) or last year (2006). The finishes varied somewhat in quality. However the large part were of acceptable quality.

All walls were in a sound condition; no mayor cracks or deformation could be registered (One exception: school nr. 12 building nr 3 dated 1998).

Windows sills/frames in wood
In some schools wooden parts have been attacked by insects (school nr 1 and 2). All wooden constructions treated with black oil had no insect attacks whatsoever.

Roof constructions
To a large extent steel trusses are used as roof constructions. Some older buildings had wooden trusses. Due to scarce access to wood steel has been used increasingly. However the steel prices are rocketing so the new roof constructions will in the coming years be built in situ concrete. It is a heavy construction for rather small spans yet it is reasonably cheep in material costs and can be made with local labour force. A good alternative to necessity of purchasing imported steel. Still the secondary structure will have to be made out of steel members. There are areas where wind conditions tend to lift off roofs trough suction. In these areas trusses have to be fixed with roof ties (steel bars) to the ground, and the roof is hold up by flatiron bars (example: Scholl 9+10). If concrete beam are used these steel bars could be omitted and flat iron bars/roof fixed onto the heavy concrete beam.

Roof surface
Generally all new schools have asbestos corrugated sheets. Some older schools have burned tiles. (Exceptionally at school nr 5 some metal sheet roof were detected). On all new roofs the metal plate under the washer was heavily corroded. The screw, washer and plate must be made of corrosion free metal. Otherwise, the asbestos roofing sheets will be lifted up by wind and destroyed. In some places asbestos roofs had been used without the detailed asbestos ridge capping, instead burned tiles had been used. The materials do not work well with each other and show all some kind of disrepair.

Asbestos roofs!
The asbestos roofs may represent an imminent health threat to the school children and teachers. It can be assumed that the older sheet contains asbestos fibres that may cause cancer if inhaled. The newer sheets apparently (according to sources in Colombo) still contain asbestos fibres whereas apparently the ‘blue fibres’ have been omitted. THIS MUST BE CHECKED. IT MAY RESULT IN RECOMMENDATIONS TO REPLACE A LARGE NUMBERS OF ROOFS!
2.2 Are designs following the recommendations of NEC?

Generally the recommendations have been followed. The new maintenance free design recommends a concrete floor ‘as ground floor’, which would solve the floor problem indicated above. However the equipping of the classrooms is not properly being followed up with exception of the setting up of blackboards. Some schools (new and existing) have in addition a general lack of furniture. A type design for new construction work based on workshop 31 July 1997. Detailed information listed point by point. See below:

a) Present norm of 10 sq ft. per pupil was considered inadequate. Therefore it is recommended that the norm be raised to 12 sq ft. per student in future class rooms where activity areas are designed within the class room. The new ratio of 12 sq ft. per pupil has been implemented in newly built schools. The capacity of the schools visited varies, as some have not been given a new school building.

b) The classroom should be an enclosed space. Movable partitions should not be used. Guidelines about avoiding movable partitions (nr 2) are kept in all new schools however in many existing schools the classroom consists of one long space. The interior tends to contain several grades sometimes separated by a movable partitions mostly not separated at all. This arrangement however allows for flexibility. It has the disadvantage that there is a mutual disturbance between pupils sharing the space.

c) The recommended class size is 35 students per class. In newly built schools this is the case. However several older/existing schools visited had serious capacity problems. For example in school nr 11, 90 pupils were crammed into the principals house and other classes were put into lean to sheds fabricated by staff to tackle the shortage of classrooms.

d) A built in worktop at one end of the classroom. The height of top should be within comfortable working height of students. A sink at one end is preferred. Open shelves below the top. The finish of the top should be water resistant eg: ceramic tiles; terrazzo; cement rendering. Avoid using timber as much as possible. In some schools visited the ‘tiled worktop’ was missing. It appears to be needed in the lower grades 1-2 only!

e) The wall space above the worktop may be used either for Display boards or for narrow shelves where student’s handwork may be displayed.

By having large classrooms with windows either side very little wall space is provided. In the newer buildings the classes are more sectioned up thus allowing for more wall surface for display.

f) Black board & Display boards: a built in black board should be provided cm one partition wall. The bottom edge should be lift above floor level so that the pupils too can use it. Display boards +should be fixed on rest of the wall. A soft wood runner of 2” x 1” & 12” centre may be used instead of “full boards”. All new classrooms have black boards. In some older schools blackboards are missing.

g) Provision for a Book Corner should be there. Part of the worktop may be used for this. The book corner is not very common in the schools; its function tends to be fulfilled by a library room.

h) A timber runner (2” x 1” > With metal hooks fixed along the side of at the window sill height would be useful for children to hang their bottles a certain crafts. The timber runner was only to be seen in some classrooms in the lower grades. Some of the new schools were not yet taken in use thus these detail might be put in place later on?

i) Sufficient numbers of student’s desks and chairs should be provided to each classroom. Not sufficiently provided. In some new schools children did not have enough chairs or desks. Resulting in pupils either standing or sitting on blanket on the floor (In either of these positions it is not possible to write/work adequately).

j) Teachers work station: Every class room should be provided with movable work top (this may not essentially be a conventional table) and a comfortable chair. The work top/table should have a drawer and preferably shelves underneath. Teacher’s workstations and comfortable chairs were not registered at all.

k) A lockable steel cupboard should be provided for each class for the use of the teacher. It has been suggested that glass fronted (upper part). Steel cupboards should be purchased for primary classes in future. Lockable steel cupboards were mostly not part of the classrooms but were found the offices or libraries. In some older buildings cupboards were integrated in the wall structure. In some new schools an extra small (back to back of the staircase in multi lever school buildings) room for teachers or storage provided.

Recommendation

The NEC guidelines should be revised and restructured in terms of priority and type as to become more instrumental. New guidelines should be drawn up to contain more specified recommendations concerning improved construction details in order to avoid the reoccurring damages. Checklists have to be provided to headmaster at final inspection of the buildings as to ensure that the points have been taken care of.
2.3 Assessment of the engineering changes has been adopted; taking into consideration the lessons learned from the previous period’s (1988-98) experiences

Several aspects have correctly been addressed and improved. Some of these are listed below:

- **Altered specifications for ground floor slab now cast ‘in situ’ concrete. Solves problems with floors in future buildings.**

- **Tie beam construction allows for better and more stable foundation under walls tying together columns and floors. Wall alterations have been made, saving cost by building 4,5” walls between columns topped with a concrete sill.**

- **New windows are fabricated in aluminium getting rid off insect attacks on wooden members (and being at present more economic to purchase).**

- **Roof structure is increasingly built in a concrete frame. Solid, stable and built with local labour.**

- **Tool kit for the staff of the schools is being provided to each school. This allows for improved maintenance and encourages the staff to take on maintenance work.**

- **Polishing floor screed in existing buildings will improve the life span of floors if the screed has a minimal thickness. It will make it more resistant to mechanical exposure and muck easier to keep clean.**

- **A maintenance manual is in production. A rough copy has been studied. The manual will aid maintenance work and its introduction is useful reading for headmasters and school staff. The section on landscaping and sites for new schools should be extended.**

- **Several of these new changes represent in addition to technical improvements also cost effective measures!**

Conclusion:
Adequate improvements and good progress are on the way. Some further improvements can be made.

2.4 Are the maintenance aspects fully considered?

No they are still not fully considered. Several improvements can be done to avoid unnecessary further repairs, causing unnecessary expenditure. Examples:

**Concept of a maintenance PROTOCOL manual**

A ‘maintenance manual’ is being produced at present. It contains illustrated examples of maintenance aspects and repairs that easily can be made by layman. It could become a very useful and easily understood document. Combined with the tool box, which is given to every school, it will probably improve maintenance in the schools.

Another type of recorded manual could become useful: A checklist, which continually records the maintenance of the school building. It must be a protocol manual where the principal and his team are making notes obliged to keep controlling the premises. Checklists are being signed and can be controlled by visiting officials from the ministry of education. By implementing this recorded manual the maintenance is no longer dependant on individuals having taken part in the workshops.

**Roof water and channels**

In all schools visited channels and pavement were broken or else had just been repaired (meaning that the construction method is not sufficiently studied. In all schools down pipes were damaged, broken or just no longer in existence. Water from gutters is pouring onto the buildings and causing severe damage.

Practically all buildings have channels on the ground picking up the roof water via down pipes or else positioned immediately below the gutter taking the water from the roof directly. The channels are sometimes too deep and represent a hazard for playing children. At times the channels are bridged with a concrete slab positioned at entrances to classrooms, at times these slab are missing. It is important to decide whether to make the channels wide and shallow or deep (needing the bridging slab). Both alternatives can be dimensioned adequately:

At school number 7 a problem was identified, involving lack of thinking by the builder and or planner: a channel was following the contour of the building creating a piece of channel positioned at the very entrance to a toilet. See picture.
The main problems in all schools visited remain: it is the handling of the roof water between the gutters to the channel. The gutters, running head, gutter bracket bend and down pipes in PVC used in Sri Lanka are hopelessly weak. Once exposed to ultraviolet rays from the sun the plastic tends to get brittle and will easily break. As the gutters are on the level of the pavement where all pupils walk, they are exposed to the toughest treatment of any place in the schools. In the school visited were a series of solutions adapted to address the problem—none of which could technically resolve the problem. (see separate chapter and drawings of the detail).

Suggestions:
Pavements and channels outside the buildings could be made in concrete. Separation should be made between members of differing life span. Weak plastic drains should not be cast in structural members, which have a much longer life span. The down pipes should be produced and positioned as to be resistant to mechanical destruction. This would make one of the most exposed areas in the schools becoming maintenance free.

2.5 Questions on classroom enclose and ventilation

Most old schools have wooden frames with a metal grill instead of windows. These are climatically adequate due to the constant and plenty flow of air. (Although in some areas windows are needed due to climate rain and wind forces). Windows are increasingly being constructed in aluminium. These have advantages over the earlier wooden frames that often were subjected by insect attacks but if they do not have ventilation grills they are ‘sealing’ the classroom and creating a bad interior climate.

It is important to take advantage of the natural flow of air between one side of the school building and the other. Ventilation grills are provided in some new built schools in other they are completely absent. There is a strong argument for ventilation even if the windows are closed (due for example to rainfall combined with strong wind preventing the possibility to have the windows open).

Birds in classrooms

One problem was identified in some older and some of the most recent schools: The joint between asbestos roof and the flat top end of wall have often gaps. The undulating roof panels must be filled in otherwise gaps are formed. Through these gaps come birds. Several schools had bird flying in the classrooms during lessons! Bird nests in classrooms could be identified by ocular inspection. The gaps must be filled!

Suggestions:
Adequate ventilation must become an integral part of the design of school buildings as the buildings increasingly become much more enclosed. (Through closed windows, tight asbestos roofs, etc). Holes and gaps must be closed to avoid birds entering the classrooms.

2.6 Need for master planning

Planning issues must be addressed when considering the large amount of new school buildings to be built in coming years. The following points should be considered:

- A school positioned in the mountainous landscape in central Sri Lanka requires some consideration how it in the most effective way should relate to the sloping ground and surrounding buildings. Depending on its position it may require either a more or much less costly and durable solution. It may perhaps need a retaining wall or other devise to cope with the altered terrain after building.

- Soil consistency must be checked when altering contours and slopes near buildings. The subsoil may be soft and erode. This may result into damages of building. Adequate precautions have to be made especially for the rain season.

- It may be important to avoid expensive retaining walls, alternatively making use of landscaping devices. The degree of a slope can prevent erosion and can be secured by planting if adequately planned.

- Handle the surrounding spaces of school buildings as to achieve as much flat areas as possible. Depending on design these surfaces may perform very well or not at all for children’s play. The lower grades are in great need of physical movement they are the ones most dependent of such surfaces.
Drawings of down pipe details, drawings of channels as found in the plantation schools visited.

1 Simple down pipe with down pipe shoe positioned outside wall. Semicircular channel leading water down to main channel.

2 Down pipe positioned on outside wall with down pipe shoe and horizontal pipe cast into concrete, leading water down to main channel.

3 Down pipe outside positioned on wall flanked by protecting pilasters on either side with down pipe shoe and horizontal pipe cast into concrete, leading water down to main channel.

4 Down pipe on outside wall with small plinth protecting the base of the pipe. Down pipe shoe and horizontal pipe cast into concrete, leading water down to main channel.

5 Down pipe on outside wall with full height plinth protecting the full height of the pipe. Down pipe shoe and horizontal pipe cast into concrete, leading water down to main channel.
Plinth bridgeing deep channel at entrance to classroom creating step across pavement.

Railing necessary when drops are over 2 feet. In landscaped terrain railings or other protection should be considered if drops are large and terrain very steep.

Submerged plinth bridgeing deep channel at entrance to classroom creating no step across pavement.

Shallow channel becoming part of pavement.
3. REALIGNMENT OF THE BUDGET

3.1 Review the present budget’s utilization

Mr. P. Suresh has done the review and the detailed control does not form part of this evaluation (See RIERP annual report Nov. 2006).

3.2 Analysis of the budget situation and the additional needs of funding

Additional funds are needed due to the following reasons:

a) One significant cause is the price escalation of construction material and labour costs during the last 5 years. In this interim period between project inception and the present implementation period prices have rocketed. Normal context annual there is a price escalation of 3% to 5%- however in the last 5 year period prices apparently doubled. (According to the RIERP annual report Nov. 2006- revisions in schedule 3).

b) The tsunami is another major cause of the escalation of costs. Example: price of sand has gone up from SLR 1200 to SLR 7500 due to the prevention of mining sand from the coastal area in order to avoid erosion of coastal bed. More need/usage of construction materials in the tsunami area have made the price increase of construction materials in general.

c) Facility needs in schools have increased due to the expansion grades in schools. The planned schools had up to year 5 grades only, now are they giving classes up to grade 11 or 13.

*According to RIERP annual report 30 Nov. 2006 by Eng P Suresh.

3.3 Assess the realignment of the budget as proposed by the ministry

There is an extreme difference between the estimated cost of 713 million Sri Lankan Rupees and the needed 2096 million Sri Lankan Rupees. Despite identifying the factors listed in point 3.2, which stand for the needed increase it, the increase must be looked into in more detail.

3.4 The fulfilment of the legal requirements in accordance with the loan agreement

The legal requirements concerning loan, payment and conditions for effectiveness cannot be controlled within the scope of this assignment. However, the professionals responsible for the project have made a solid and reliable impression. As far as the application of a “maintenance free” design, it is working. But technical improvements can be implemented. This could have an overall positive economical effect on the project.

3.5 Devaluation of the Sri Lankan Rupee against the Swedish Kronor

When schedule 3 was prepared in Sri Lankan rupees the value of a SEK was 11.4 SLR today it is 15.64 SLR. Due to this an additional sum of money becomes available to be added to the initial 45’000’000 SEK. This sum can be utilized to compensate some of the expanded needs.

Up to May 2007 315 Million SLR have been spent. Only by assessing by which pace money have been spent it will be possible to calculate the actual gain of the devaluation.

The original sum requested was 713.0 Mn SLR. The funding available was 45 Mn SEK at the time the exchange rate was 11.4 Rupees per SEK at present it is 15.64. This means that 703.8 - Mn SLR. is available today minus the influencing factor of money spent since the start of the project. It can be assumed that before the end of the project more money is available due to further devaluation of the Sri Lanka Rupee against the SEK ?

The project office (Government) request is SLR 2261 Mn. SLR. According to RIERP annual report 30 Nov. 2006, 2096 Mn. has been estimated which is marginally lower. This means that, adding 200 Mn. SLR. (GOSL 50 Mn. SLR. times 4 years = 200 Mn SLR) the available money including the positive exchange rate effect still is only less than half of the amount needed. (see table 12 Suggested revisions in schedule 2 by the project director).

3.6 The maintenance programme that has been put into place

In the large part of the schools visited (with exception of school nr 12) the program has been put in place. Principals and teachers have taken part in the workshops. The results of the workshops can be appreciated in the school interior and exterior environment. The keeping of the school has been taken as part of the daily program (school nr 13 and others). I had the opportunity to assist a workshop for teachers in Hatton on the 18 of May. It matched the aims of the project and was well attended and professionally run.

3.7 The effective use of the created infrastructure

The infrastructure, in these case new school buildings is a cornerstone in the education of the Tamil tea pickers and rubber collecting workers children system in Central Sri Lanka. They play a fundamental role for primary and secondary education of this part of the population. The new schools built are all effectively used.
3.8 The project’s management structure and monitoring procedure

The ministry of Nation Building and Estate Infrastructure through its Central Project Implementation unit carries the overall responsibility for the project. The various ministries involved become rather confusing as many contain similar areas of responsibility (for instance containing the word: infrastructure). The project’s management structure seems to be working well with the Sri Lankan Civil Engineer P. Suresh (consultant to the Ministry of estate housing and infrastructure) as Project Advisor to supervise and advice Sida on the project’s implementation.

The executing agencies for the project are the various Provincial Ministries for Education. On our journey the different local officials from the ministry accompanied us when visiting the schools. They seemed to be well informed and executing their work in a professional way.

On the journey we met the secretary of the Ministry of Nation building and Estate Infrastructure development Mr. J. R. W. Disanayake when we were taking part in the maintenance education workshop. In Colombo we met the secretary J. R. W. Disanayake Ministry of Nation Building and Estate Infrastructure Development. It seems that the project is taken care of on various levels of Government.

1 Tea plantation in Craig.
2 Tea plantation worker at Dyrabar school
3 Tea factory in school nr 3 in Rayigam
4 Row of three wheelers in Colombo

5 Rubber resin being collected in coco nut shell in New Chatel
6 Rubber being cleaned in Factory
7 Rubber sheets drying in factory near new chatel school
8 Rubber as collected
05.30 Arrival Colombo Airport

1130 Meeting with P.Wijesiri Gunasekara, (consultant education specialist) co partner in Intermediate evaluation projects. Discussing field- trip planning.

13.30 Meeting Embassy of Sweden, Börje Mattsson, Chargé d’Affaires a. i. and K. Romeshun, Programme officer: P.Wijesiri Gunasekara

K. Romeshun presenting task and persons involved to Chargé d’Affaires. Talk with Mr. K. Romeshun about schools looking at photographs, etc.

14.00 Eng. P. Suresh Ministry of Estate housing and Infrastructure, collaborators Mr P. N. R. Saamarasekara assistant Director (engineer) and Mr A. Visvanathan Project officer: Ministry of Estate housing and Infrastructure, collaborators Mr PN. R. Saamarasekara assistant Director (engineer) and Mr A. Visvanathan Project officer.

P. Suresh reported a series of structural and technical improvement which have been done, based on the damages recorded on school buildings. Several of these technical improvements imply even cost savings! However no architectural changes have been done.

Foundations with tie-beam avoids cracking of walls and replaces rubble bed, Concrete instead of brick floor, cost effective design, Roof construction previously in wood, now constructed in concrete (wood scarce and more expensive) Plywood panels replacing soffit plaster Gutter and down pipes

Was given brochure ‘The School we like’ (compiled and developed by Ministry of Nation Building and Estate Infrastructure Development).

16.00 Courtesy visit to the Secretary J. R. W. Disanayake Ministry of Nation Building and Estate Infrastructure Development, R.Tharmakulasingam ass. Secretary Ministry of Nation Building and Estate Infrastructure Development, P. Wijesiri Gunasekara, P.Suresh & collaborators Mr PN. R. Saamarasekara assistant Director (engineer) and Mr A. Visvanathan Project officer: Introductory meeting about the school evaluation project and discussing work to be done the coming days.

Field trip: 2007-05-15
Colombo to New Chatel / New Chatel to Sorana / Sorana to Raigam UD / Raigam UD to Puwakpitiya

Field trip: 2007-05-16
Belihuloya to Balangoda CC P. Wijesiri Gunasekara, I. Pandurenganathaw, RIERP –Project coordinator, Sabaragama Province, Pontvik Sida Consultant.
Hindi to Craig P.Wijesiri Gunasekara, Pontvik Sida Consultant, Mr P.Vetandanoorty and Mr. K. Velaitham, program officer.
Craig to Bandarawela (hotel)

Field trip: 2007-05-17
Bandarawela to Dyrabaa / Dyrabaa to Albion / Albion to St. Clair / St. Clair to Upper Glencairn

Field trip: 2007-05-18
Upper Glencairn to Carfax / Carfax to Dickoya / Dickoya to Hatton’ / Hatton to Colombo (hotel)

Addressing maintenance workshop and meeting with R.Tharmakulasingam ass. Secretary Ministry of Nation Building and Estate Infrastructure Development, Eng. P. Suresh Ministry of Estate housing and Infrastructure Wijesiri Gunasekara, P. Suresh, Consultant to Ministry of estate and infrastructure, P. N. R. Samaresekara engineer, Assist, Director; A. Wisnavanathan, project officer; B.S. B. Josedth, project Co-ordinator Central Province, N. Balasundaram, district co-ordinator Nivara Elija. Pontvik Sida Consultant,

Afternoon in Hatton
Meeting with Ministry of Infrastructure Mr Suresh Compiling information and results of our field trip.

Field trip and preparation of evaluation 2007-05-19
Field trip with Deepika Fernando and Champika Samaranyake to look at two social housing and relocation projects in eastern Colombo. Projects organised by REEL for low-income community in the city of Colombo Sahaspura Housing Project Baseline Mw, Borella, Colombo 08. The new building is part of new social housing which is to replace the surrounding slums in east Colombo.

Afternoon preparing report for The evaluation of Plantation schools in the hotel.

Evening flight to Delhi and via Frankfurt to Stockholm
First of all I would like to warmly welcome you to my school premises today on behalf of our principal, teachers and students.

Actually up to last year we found very difficult to get our education. Because we were packed in two halls. Now we are very happy to say that we get our education very comfortably with a new hall. We know that Swedishes and the government gave their hands us to come to this condition. So as students we would like to thank Swedishes for giving this stand to all of us, and we hope their attention further more to our school.

Thank you very much.
5. LIST OF SCHOOLS VISITED

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>Estate</th>
<th>Name of School</th>
<th>Name of Principal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>Kalutara</td>
<td>Neuchatel</td>
<td>Neuchatel Tamil Vidyalayam</td>
<td>Mr. A. J. R. Godwin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sorona</td>
<td>Eilakanda Tamil Vidyalayam</td>
<td>Mr. A. H. A. Munaff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rayigam</td>
<td>Rayigam Upper Division Tamil Vidyalayam</td>
<td>Mr. P. Vijayakumaran</td>
</tr>
<tr>
<td>Western</td>
<td>Colombo</td>
<td>Puwakpittiya</td>
<td>Puwakpittiya C.C Tamil Maha Vidyalayam</td>
<td>Mr. V. Thirunambi</td>
</tr>
<tr>
<td>Sabaragamuwa</td>
<td>Ratnapura</td>
<td>Dela</td>
<td>Dela Tamil Vidyalayam</td>
<td>Mr. V. S. Navamani</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rye</td>
<td>Balangoda Hindu College</td>
<td>Mr. N. Jeyarajan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garawaketiya</td>
<td>Balangoda CC Tamil Maha Vidyalayam</td>
<td>Mr. M. Singaravel</td>
</tr>
<tr>
<td>Uva</td>
<td>Badulla</td>
<td>Craig</td>
<td>Craig Tamil Maha Vidyalayam</td>
<td>Mr. K. Jeyabalan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dyraba</td>
<td>Dyraba Tamil Vidyalayam</td>
<td>Mr. K. Devendrasabapathy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Albion</td>
<td>Albion Tamil Vidyalayam</td>
<td>Mr. J. B. Fernando</td>
</tr>
<tr>
<td>Central</td>
<td>Nuwara Eliya</td>
<td>Talawakelle</td>
<td>Bharathy Tamil Vidyalayam</td>
<td>Mr. E. Lohanathan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>St. Clair</td>
<td>St. Clair Tamil Vidyalayam</td>
<td>Mr. S. Arumugam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carfax</td>
<td>Carfax Tamil Vidyalayam</td>
<td>Mr. V. Udayakumar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dickoya</td>
<td>Dickoya Primary Tamil Vidyalayam</td>
<td>Mr. P. Sugumar</td>
</tr>
</tbody>
</table>

6. COLLECTED INFORMATION AND DIAGRAMS/PHOTOGRAPHS OF SCHOOLS VISITED

NOTE TO SKETCHES:
The site plans sketched may not be accurate, yet it gives information about position of the various buildings making up each school. It contains also information about the capacity and size of the buildings (in feet) and the amount of storeys. It contains the year of construction and which roof structure type and roofing material the different buildings have.
**Plantation school evaluation**  
**INEC URBAN F71539, INEC-BREDSAM**  
**Day one, School nr 1**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Neuchatel Tamil Vidyalayam</td>
<td>Two schools built 1990 lying along each other on higher ground on three sides of the school. Large open area in front of the school. Steel trusses are supporting the roof, which were clad with burned tiles on one it has been replaced with asbestos panels (around 2000) i.e. cement panels. The ridge has not the standard asbestos ridge but burnt brick ridge tiles fixed with plaster, which do not work as well as the cement panel detail.</td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. A. J. R. Godwin</td>
<td></td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Neuchatel</td>
<td>The school is well kept and Principal is dedicated and has initiative. It is recommended to carry out the principal's request after controlling the estimate.</td>
</tr>
<tr>
<td><strong>District:</strong> Kalutara</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Western</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong> 220 pupils.</td>
<td></td>
</tr>
<tr>
<td><strong>The pupils of this school are Tamil workers children from on the surrounding the nearby rubber plantation/factory.</strong></td>
<td></td>
</tr>
</tbody>
</table>

**1. Quality of Construction Work and the application of a “maintenance free design”**

1.1 General Assessment of construction work  
- The roof from 1990 is not in best condition.  
- The floors are constructed with burned bricks, which are porous and suck humidity from the ground and become soft. The very thin layer of cement screed cannot adhere to the bricks and tends to crack. Due to mechanical exposure the floor/pavement or channel breaks. The new maintenance free design recommends a concrete floor ‘as ground floor’, which would solve the problem.

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences  
- Are designs following the recommendations of NEC  
- All walls are in a sound condition; no mayor cracks or deformation could be registered.  
- The steel trusses are in a good condition even though they show some signs of rust. All wooden members in the roof are painted with ‘black oil- non of them show the insect attacks identified on other wooden parts.  
- Are the maintenance aspects fully considered?  
- Headmaster who has been attending maintenance workshops has made a series of improvements.  
- Paint works, improvements of holes in floors, |

**2. Realignment of the budget**

2.1 Review the present budget’s utilization  
We were given a written estimate (dated 14 may 2007) of items which the principal deemed important:  
- A) Grade T classroom iron grill shutter. (attacked by insects, danger that it spreads onto other wooden members of building)  
- B) 70x20 Classroom floor pavement (damaged through steel furniture plus probably to thin screed)  
- c) Electricity for classroom as no electrical teaching aids can be used without it (needed for tape recorder, video, TV etc).  
- C) Water supply (piping) to reach the recently renovated toilettes from 1990. Total of estimate of 192’000 Rs.  

2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications) |

2.3 Assess the realignment of the budget as proposed by the Ministry |

**3. Assess Maintenance Programme**

3.1 Assess the maintenance manual that has been prepared  
- Results, conscious headmaster. Several items have been made by initiative of the school, not waiting for someone else to carry out the work.  
- Its relevance to the day to day maintenance work at the schools |
1a Main view of school nr 1.
1b Paving with channels, slabs bridging channels.
1c Damages resulting out of downpipes missing downpipe shoe.
1d Insect attack on wooden frame (wood not treated with black oil).
**Plantation school evaluation**  
**INEC URBAN F71539, INEC-BREDSAM**  
**Day one, School nr 2**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Ellakanda Tamil Vidyalayam (Sorana Tamil Vidyalayam)</td>
<td>Five school buildings arranged along the same geometry. (See sketch layout) built between 1989 and 2007. The two recently built buildings are in cement bricks the old ones with concrete columns and brick walls in between. The principal was critical of the contractor of the old buildings and demonstrated the very week plaster (Crushing it between thumb and finger)</td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. A. H. A. Munaff</td>
<td></td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Sorona</td>
<td></td>
</tr>
<tr>
<td><strong>District:</strong> Kalutara</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Western</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong> 200</td>
<td></td>
</tr>
</tbody>
</table>

The pupils of this school are Tamil workers children from on the surrounding the nearby rubber plantation/factory.

1. Quality of Construction Work and the application of a “maintenance free design”

- Steel trusses are supporting the roof, which are clad with burned tiles. The floors in the old buildings are constructed with burned bricks, which are porous and suck humidity from the ground and become soft. The very thin layer of cement screed cannot adhere to the bricks and tends to crack. Due to mechanical expose the floor/pavement or channel breaks. The steel furniture used does damage the top floor surface once this happens the screed is gradually deteriorating. Repairs of floors are needed.

- **1.1 General Assessment of construction work**

  - Are designs following the recommendations of NEC
  - All walls are in a sound condition; no mayor cracks or deformation could be registered.
  - The steel trusses are in a good condition even though they show some signs of rust.

- **1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences**

  - Are the maintenance aspects fully considered?
  - Some floor surfaces had been remade recently.

2. Realignment of the budget

- **2.1 Review the present budget’s utilization**

  - Two new buildings 40x 20 and 60 x 20 feet. and a new toilet building have been built this year. A little greenhouse had been built and some plastic bags containing earth were lined up on the floor. The headmaster had not attended any workshop but a plantation/agricultural project has been started (the day before our arrival). We were told 4 of the teachers had been attending a workshop. Insect (ants) making holes inside and outside the office building—only action taken is pouring hot water—apparently so far no result?

- **2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)**

  - The principal’s house is positioned on a lower level than the school buildings. It showed an extreme state of disrepair. The retaining wall against the ground was decayed. The pavement around the building practically no longer visible. Wooden material was in bad state and partly attacked by insects. All roof drainage was completely broken or absent. Channels on the ground are hardly any longer visible.

- **2.3 Assess the realignment of the budget as proposed by the Ministry**

3. Assess Maintenance Programme

- **3.1 Assess the maintenance manual that has been prepared**

  - Its relevance to the day to day maintenance work at the schools
# Mid-Term Evaluation, Plantation Schools • Maj / June 2007 • Pontvik Arkitekter

## 2a Main view of school nr 2

- **2b** Two systems of roof drains with and without gutter.
- **2c** Desk totally damaged by insect attack.
- **2d** Floor surface cracking and peeling off aided by aggressive steel furniture.
- **2e** Weak substructure out of brick sinking and cracking up.
- **2f** Principal’s house totally dilapidated. Broken drains, pavements and channels practically disappearing.

### Table: House - Year - Roof Cover - Roof Truss

<table>
<thead>
<tr>
<th>House</th>
<th>Year</th>
<th>Roof Cover</th>
<th>Roof Truss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2007</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>2.</td>
<td>2007</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>3.</td>
<td>1989</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>4.</td>
<td>1989</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>5.</td>
<td>1989</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>6.</td>
<td>1989</td>
<td>Tiles</td>
<td>Wood?</td>
</tr>
</tbody>
</table>
## Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**

**Day one, School nr 3**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Rayigam Upper Division Tamil Vidyalayam (Saraswathy Junior Tamil Vidyalayam)</td>
<td>Two parallel school buildings arranged on a cut out flat piece of ground in a remote hilly region! (See sketch layout) built between 1987 and 1988. Steel trusses are supporting the roof, which were clad with burned tiles. KOLLASTEEL!</td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. P. Vijayakumaran</td>
<td></td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Rayigam</td>
<td></td>
</tr>
<tr>
<td><strong>District:</strong> Kalutara</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Western</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong> 214</td>
<td></td>
</tr>
</tbody>
</table>

The pupils of this school are Tamil workers children from on the surrounding the nearby rubber plantation/factory.

1. **Quality of Construction Work and the application of a “maintenance free design”**

   - **1.1 General Assessment of construction work**
     
     - The very thin layer of cement screed cannot adhere to the bricks and tends to crack. Due to mechanical expose the floor/pavement or channel breaks. The steel furniture used does damage the top floor surface once this happens the screed is gradually deteriorating. Repairs of floors are needed. The roof has apparently varying types of tiles that makes it leak? Are designs following the recommendations of NEC?
     
     - All walls are in a sound condition; no mayor cracks or deformation could be registered. The steel trusses WOODEN TRUSSES are in a good condition even though they show some signs of rust. All wooden members in the roof are painted with ‘black oil- few of them show the insect attacks identified on other wooden parts.

2. **Realignment of the budget**

   - **2.1 Review the present budget’s utilization**
     
     - There is a shortage of classrooms. But the fact that the teachers have to come from 10-40 km on bad roads is a real problem for the school.
     
     - Teacher accommodation would greatly facilitate the daily work in this remotely placed school.

3. **Assess Maintenance Programme**

   - **3.1 Assess the maintenance manual that has been prepared**
     
     - The workshop had been a success. Teachers and headmaster have done several concrete actions. The planting around the school was stupendous! Beautifully done and using the bushes and flowers to order the court.
     
     - Its relevance to the day to day maintenance work at the schools

   - **3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.**

   - **3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices.**

   - **3.4 Determine the level of autonomy displayed by schools in maintenance (budget, decision making)**
3a Views of school 2 and the space between the two buildings.

3c Wooden roof structure.

3d Parents contribution to the school, several mural paintings, one of the planet system, one world’s map and the map of Sri Lanka.
## Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**  
**Day one, School nr 4**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
</table>
| **Name of School**: Puwakpittiya C.C Tamil Maha Vidyalayam  
**Name of Principal**: Mr. V. Thirunambi  
**Name of Estate**: Puwakpittiya  
**District**: Colombo  
**Province**: Western  
**Nr of pupils**: 998(with coming O’levels 1050 pupils) | A cluster of school buildings squashed between a brook and a higher positioned road. Three buildings financed by Sida in 1991 southern end of the site. One new two-storey building positioned at the very end of the site. Steel trusses and wooden trusses are supporting the roof, which are clad with burned tiles and partly cement panels. The steel and wooden trusses are in a good condition even though they show some signs of rust. All wooden members in the roof are painted with ‘black oil - non of them show the insect attacks identified on other wooden parts. |

The pupils of this school are Tamil workers children from on the surrounding the nearby rubber plantation/factory.

1. **Quality of Construction Work and the application of a “maintenance free design”**

   - **1.1 General Assessment of construction work**
     - The very thin layer of cement screed cannot adhere to the bricks and tends to crack. Due to mechanical expose the floor/pavement or channel breaks. The steel furniture used does damage the top floor surface once this happens the screed is gradually deteriorating. Repairs of floors are needed. The roof has apparently varying types of tiles that makes it leak? Are designs following the recommendations of NEC? All walls are in a sound condition; no mayor cracks or deformation could be registered. The new building at the north of the site is well constructed and adequately detailed concerning surface water and drainage.

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

   - Are the maintenance aspects fully considered? A new science library has been built this year. The last building towards the south is in a very bad state despite that it is constructed at the same time as the two consecutive buildings. The surrounding level is on a higher level and water is running down damaging the building. No precautions have been made to prevent the damage caused by water.

2. **Realignment of the budget**

   - **2.1 Review the present budget’s utilization**
     - Two new buildings have been built this year a science laboratory and a teachers accommodation. They are of reasonable quality. (position : see sketch). There is a shortage of classrooms due to expansion partly taking on O’level students. Discussions went around where to place an extension. Headmaster wanting to have 3 storey building. Needs have to be assessed and wishes verified against local conditions.

   - **2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)**
     - More importantly is the unfortunate position between the brook on the east side, which is eroding the site (two toilets were swept away last winter) se picture. And a lot of damage is done by the water pouring down from the higher positioned road on th west side of the site.

2.3 Assess the realignment of the budget as proposed by the Ministry

3. **Assess Maintenance Programme**

   - **3.1 Assess the maintenance manual that has been prepared**
     - No signs of maintenance program.

   - **3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.**
     - Its relevance to the day to day maintenance work at the schools
<table>
<thead>
<tr>
<th>HOUSE</th>
<th>YEAR</th>
<th>ROOF COVER</th>
<th>ROOF TRUSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1991</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>2.</td>
<td>1991</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>3.</td>
<td>1991</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
<tr>
<td>4.</td>
<td>2007</td>
<td>Asbestos</td>
<td>Ceiling</td>
</tr>
<tr>
<td>5.</td>
<td>2001</td>
<td>Tiles</td>
<td>Ceiling</td>
</tr>
<tr>
<td>6.</td>
<td>1965</td>
<td>Tiles</td>
<td>Wood</td>
</tr>
<tr>
<td>7.</td>
<td>1960</td>
<td>Asbestos</td>
<td>Wood</td>
</tr>
<tr>
<td>8.</td>
<td>?</td>
<td>Tiles</td>
<td>?</td>
</tr>
<tr>
<td>9.</td>
<td>?</td>
<td>Tiles</td>
<td>?</td>
</tr>
<tr>
<td>10.</td>
<td>1950</td>
<td>Tiles</td>
<td>Wood</td>
</tr>
<tr>
<td>11.</td>
<td>1992</td>
<td>Tiles</td>
<td>?</td>
</tr>
<tr>
<td>12.</td>
<td>2000</td>
<td>Tiles</td>
<td>Steel</td>
</tr>
</tbody>
</table>

4a Main view of the school nr 4.
4b New building at the end of the sports ground.
4c Eastern side facing road on higher level eroding down onto school buildings/site needing retaining wall.
4d Western side a creek with rubbish eroding school site. Two toilets were taken by the last rain season.
4e Classroom with partitions.
4f Classroom in new building
4g School furniture in a very bad state.
## Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**

**Day one, School nr 5**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
</table>
| **Name of School:** Dela Tamil Vidyalayam  
**Name of Principal:** Mr. V. S. Navamani  
**Name of Estate:** Dela  
**District:** Ratnapura  
**Province:** Sabaragamuwa  
**Nr of pupils:** 500 | A cluster of six buildings is sitting cramped on a ridge. A new Sida financed building is on the back on much lower ground. The slopes on the site are extreme. As a result a series of different levels are haphazardly created between the buildings built in different stages. This surrounding is at present unacceptable for any school where 500 children run around. Many platforms with several metres drop with out any handrail or protective barrier (see photographs). The stairs leading up from the access road have to high and with too irregular steps. |

The pupils of this school are Tamil workers children from on the surrounding tea and rubber plantation/factory.

1. **Quality of Construction Work and the application of a “maintenance free design”**

- 1.1 General Assessment of construction work

- 1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

In the older buildings: The very thin layer of cement screed cannot adhere to the bricks and tends to crack. Due to mechanical expose the floor/pavement or channel breaks. The steel furniture used does damage the top floor surface once this happens the screed is gradually deteriorating. Repairs of floors are needed all over.

Are designs following the recommendations of NEC  
All walls are in a sound condition; no mayor cracks or deformation could be registered.

Are the maintenance aspects fully considered? The site surrounding the new and old toilets is in an unacceptable state- and during rain practically unreachable. Site lines must be looked at and larger surfaces on the same level be created as to cater for the large amount of pupils on this cramped site.

Some painting jobs have been done in the existing buildings, governmental grants have been given for this. Down pipes are leaking.  
WHY WINDOWS IN BOTH 3 STOREY BUILDINGS?

2. **Realignment of the budget**

- 2.1 Review the present budget’s utilization  
- 2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)  
- 2.3 Assess the realignment of the budget as proposed by the Ministry

A new three-storey building has been built on the eastern side (financed by Sida for 5’500’000 Rs) of the existing buildings. A new toilet house has also been built in that area. It is well built and of a higher standard than other buildings inspected (for instance with aluminium windows). What has to be brought to attention is that the building is well positioned to the site and makes up a good practice example in opposition to the previous three-storey building which has a retaining wall along its southern and eastern perimeter. This creates dark and damp ground floor and perhaps future insurmountable problems should the retaining wall give way (the rubber tree planted terrain is sloping upwards from it).

There is a shortage of classrooms due to expansion partly taking on O’level students. Discussions went around where to place an extension. Headmaster wanting to have 3 storey building. Needs have to be assessed and wishes verified against local conditions.

More importantly is the unfortunate position between the brook on the east side that is eroding the site (two toilets were swept away last winter) see picture. And a lot of damage is done by the water pouring down from the higher positioned road on the west side of the site.
5a View of school from the access road.
5b New school well positioned in the terrain.
5c Outside areas accessing toilets in a bad state.
5defg Dangerous drops of several metres without handrails
5h Ventilation grills above windows.
# Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**  
**Day Two, School nr 6**

## INTRO

Large tightly built school on N-E sloping site. Buildings from 1987 to 2007 (details see site sketch). New building towards the street financed 2/3 by Sida. Two lower floors by Sida and the third floor by the local government. New toilets financed by Sida. The pupils of this school are Tamil workers children from on the surrounding tea plantation.

## Item 1. Quality of Construction Work and the application of a “maintenance free design”

### 1.1 General Assessment of construction work

Well built but no ventilation openings on the new windows! All other new buildings had these ventilation grills. Wooden parts on old buildings in and surprisingly good condition. Are designs following the recommendations of NEC? Good executed work. Interior could not be inspected- not finished- not yet in use. New drains? Standard details must be revised…Well kept site. plates rusting on roofs. Are the maintenance aspects fully considered? The school showed on all accounts a controlled approach. Water channels renewed and well kept. Deep channels. One down pipe was found broken and signs of humidity was showing on facade. Damage on flooring due to metal furniture in old buildings.

## Item 2. Realignment of the budget

### 2.1 Review the present budget’s utilization

Broken down pipes to be repaired by the school.

### 2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

### 2.3 Assess the realignment of the budget as proposed by the Ministry

## Item 3. Assess Maintenance Programme

### 3.1 Assess the maintenance manual that has been prepared

Maintenance manual and all information requested was readily available, detailed, complete, well documented. The management run by the principal Mr. N. Jeyarajan was impressive. Its relevance to the day to day maintenance work at the schools

### 3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.

### 3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices

### 3.4 Determine the level of autonomy displayed by schools in maintenance (budget, decision making)

## Item 4. Effective use of the created infrastructure, where applicable

### 4.1 Relevant teaching staff being available to teach new classes

### 4.2 Availability of relevant equipment and furniture in line with the curriculum guidelines

## Item 5. Project’s management structure and monitoring procedure

---

**Name of School:** Balangoda Hindu College  
**Name of Principal:** Mr. N. Jeyarajan  
**Name of Estate:** Rye  
**District:** Ratnapura  
**Province:** Sabaragamuwa  
**Nr of pupils:** 674
6a View of central access route through the school nr 6.
6bc Space between new and old building.
6d View into new school building.
6e Too vertical cut in terrain without retaining wall.
6f Too steep slope leading up to the new school building.
6g Broken drain damaging wall structure.
6h Plate on new school already rusting heavily.
## Plantation School Evaluation

**INEC URBAN F71539, INEC-BREDSAM**

**Day Two, School nr 7**

### Item

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Balangoda CC Tamil Maha Vidyalayam</td>
<td></td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. M. Singaravel</td>
<td></td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Garawaketiya</td>
<td></td>
</tr>
<tr>
<td><strong>District:</strong> Ratnapura</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Sabaragamuwa</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong></td>
<td></td>
</tr>
</tbody>
</table>

The pupils of this school are Tamil workers children from on the surrounding tea plantation.

1. **Quality of Construction Work and the application of s “maintenance free design”**
   - 24 teachers attended the maintenance workshop. If so happened that we came on the day in which the principal and 3 other teaches celebrated their 30 anniversary in the school! The function was photographs and several children had their Tamil …clothing

1.1 **General Assessment of construction work**
   - Are designs following the recommendations of NEC
   - 24 teachers attended the maintenance workshop.
   - Good executed work. New drains? Standard details must be revised…
   - Well kept school site. Talk about maintenance free general points!!

1.2 **Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences**
   - Are the maintenance aspects fully considered?
   - A insurance company had donated a large amount of paint which was deposited in the principals room painting of classroom interiors (except new school would precede once
   - One broken rafter on house 3 must be repaired.

2. **Realignment of the budget**
   - On house nr 1 were all 12 plastic down pipes broken on all sides of the building! New detail must be developed for this. The new building next door displayed such an attempt by making a solid concrete box a for height. Still the detail is not convincing as I removed the problem just slightly up. Incase the plastic down pipes get some months of sun they become brittle and will break easily. (See general mpoints). The pipes were to be repaired as soon as possible.
   - Good working environment in the new building.

2.1 **Review the present budget’s utilization**
   - On house 1 were all 12 plastic down pipes broken on all sides of the building! New detail must be developed for this. The new building next door displayed such an attempt by making a solid concrete box a for height. Still the detail is not convincing as I removed the problem just slightly up. Incase the plastic down pipes get some months of sun they become brittle and will break easily. (See general mpoints). The pipes were to be repaired as soon as possible.
   - Good working environment in the new building.

2.2 **Analysis of the budget situation and the additional needs of funding (its causes and implications)**
   - On house nr 1 were all 12 plastic down pipes broken on all sides of the building! New detail must be developed for this. The new building next door displayed such an attempt by making a solid concrete box a for height. Still the detail is not convincing as I removed the problem just slightly up. Incase the plastic down pipes get some months of sun they become brittle and will break easily. (See general mpoints). The pipes were to be repaired as soon as possible.
   - Good working environment in the new building.

3. **Assess Maintenance Programme**
   - Maintenance manual and all information hung on the wall see photograph.
   - Its relevance to the day to day maintenance work at the schools

3.1 **Assess the maintenance manual that has been prepared**
   - Maintenance manual and all information hung on the wall see photograph.
   - Its relevance to the day to day maintenance work at the schools

3.2 **Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.**
   - Maintenance manual and all information hung on the wall see photograph.
   - Its relevance to the day to day maintenance work at the schools

3.3 **Assess the use of the maintenance manual and training workshop in actual maintenance practices**
   - Maintenance manual and all information hung on the wall see photograph.
   - Its relevance to the day to day maintenance work at the schools

3.4 **Determine the level of autonomy displayed by schools in maintenance (budget, decision making)**
   - Maintenance manual and all information hung on the wall see photograph.
   - Its relevance to the day to day maintenance work at the schools

4. **Effective use of the created infrastructure, where applicable**
1. 1997  Sheets  Steel
2. 2005  Asbestos  Steel
3. 1992  Tiles  Wood
4. 1972  Tiles  Steel
5. 1980  Tiles  Steel
6. 1980  Tiles  Steel
7. 1997  Asbestos  Steel

7a Entrance court of school nr 7.
7b New school on tree levels
7c ALL downpipes were broken.
7d Dark ground floor due to level change.
7e Ventilation above windows.
7f View into new school building.
Plantation school evaluation

INEC URBAN F71539, INEC-BREDSAM

Day Two, School nr 8

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School</strong>: Craig Tamil Maha Vidyalayam</td>
<td>INTRO: Large tightly built school on N-W sloping site surrounded by tea plantations with great views out into the distant landscape.</td>
</tr>
<tr>
<td><strong>Name of Principal</strong>: Mr. K. Jeyabalan</td>
<td>Access to the site in rainy period just arrives. Actions to be taken are to build stairs and direct surface water laterally towards large existing channel.</td>
</tr>
<tr>
<td><strong>Name of Estate</strong>: Craig</td>
<td>Two new buildings at the bottom of the site financed by Sida positioned one at a higher and another at a lower level. New toilets financed by Sida. (one opened and one to be opened on the 20th of August)</td>
</tr>
<tr>
<td><strong>District</strong>: Badulla</td>
<td>The pupils of this school are Tamil workers children from on the surrounding tea plantation.</td>
</tr>
<tr>
<td><strong>Province</strong>: Uva</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils</strong>: 700</td>
<td></td>
</tr>
</tbody>
</table>

1. **Quality of Construction Work and the application of a “maintenance free design”**

| 1.1 General Assessment of construction work | The overall handling of the site and particularly the new buildings is unsatisfactory on a series of levels. From certain details to mayor aspects which should be considered missing. |
| Building items on the two new buildings financed by Sida: | Building items on the two new buildings financed by Sida: |
| Several main issues must be tackled on a overall scale. One of these are the positioning of building in the topography. see general points. surfaces. | Several main issues must be tackled on a overall scale. One of these are the positioning of building in the topography. see general points. surfaces. |

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

| Are the maintenance aspects fully considered? | Are the maintenance aspects fully considered? |

2. **Realignment of the budget**

2.1 Review the present budget’s utilization

| New channels are needed in several existing buildings. In building nr 2+3 it has been repaired yet building 4 is showing alarming signs of rising damp! No gutters no channel under roof edge, something must be done at once! | |
| Generally in Craig many critical points many demands yet little activity by the body of teachers themselves. | By positioning buildings 12 metres below playing ground responsibility must be taken to avoid children falling down (apparently happened several times). In the grade 1-5 there is a convention of positioning working benches along the perimeter of the classroom. This is deemed necessary for the activities of these pupils. This has not been done in the new school building. |
| Uneven staircases are unacceptable! The threads and risers must be equal in one and the same stair. | Triangular steel tin plates rusting heavily before even the building is taken in use- to been changed with zinc dipped of stainless plates. See general points. |
| Hangover lower window supposed to prevent rain from hitting the sliding windows but 47 cm seems to little. Sealing off roof overhang av birds (doves) are building nests in the new school. 42 cm deep and 28 cm wide channels positioned 72 cm from the facade are too large in an area where children play. They may require a grill? | Electric switch board must be positioned within the lockable security zone not outside. |
| It is by no means clear when glass sliding windows are used in multi storey buildings? | Acoustic consideration must be taken on in the multi storey buildings on the lower floors consisting of hard material and windows! (complete change to the traditional open spaces with a roof space containing structural members and angled |

2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

| The new lower building at Craig is built next to a slope, which is completely unsecured. No retaining wall, no even a vertical cut through earth and stones like lie to be on the move next rain period!!!! | Bridges to walk over deep channel in front of every door missing |
| New lower building at Craig is built next to a slope, which is completely unsecured. No retaining wall, no even a vertical cut through earth and stones like lie to be on the move next rain period!!!! | Uneven staircases are unacceptable! The threads and risers must be equal in one and the same stair. |
| Generally in Craig many critical points many demands yet little activity by the body of teachers themselves. | Hangover lower window supposed to prevent rain from hitting the sliding windows but 47 cm seems to little. Sealing off roof overhang av birds (doves) are building nests in the new school. 42 cm deep and 28 cm wide channels positioned 72 cm from the facade are too large in an area where children play. They may require a grill? |
| It is by no means clear when glass sliding windows are used in multi storey buildings? | By positioning buildings 12 metres below playing ground responsibility must be taken to avoid children falling down (apparently happened several times). In the grade 1-5 there is a convention of positioning working benches along the perimeter of the classroom. This is deemed necessary for the activities of these pupils. This has not been done in the new school building. |

3. **Assess Maintenance Programme**

3.1 Assess the maintenance manual that has been prepared

| Maintenance manual and all information requested was readily available, detailed, complete, well documented. The management run by the principal Mr. N. Jeyarajan was impressive. | Its relevance to the day to day maintenance work at the schools |
| Maintenance manual and all information requested was readily available, detailed, complete, well documented. The management run by the principal Mr. N. Jeyarajan was impressive. | |

3.2 Assess the effectiveness of the maintenance workshops and the role of the maint.committees.

| 18 teachers went to bakulla workshop the head of school went with his principal top the workshops for principals in Hatton | 18 teachers went to bakulla workshop the head of school went with his principal top the workshops for principals in Hatton |
8a View of main buildings from the south east.
8b New building positioned along the ground levels creating a difficult manageable zone without retaining wall.
8c and 8d close ups between cut in terrain and new building
8e Open gaps between asbestos panels and walls.
8f New classrooms without ventilation grills.
### Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**  
**Day three, School nr 9**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of Principal:</strong> Mr. K. Devendrasabapathy</td>
<td>The school is not yet in use, as it will be inaugurated in July 2007.</td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Dyraba</td>
<td>New water supply financed by Sida.</td>
</tr>
<tr>
<td><strong>District:</strong> Badulla</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Uva</td>
<td></td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong> 476</td>
<td></td>
</tr>
<tr>
<td>The pupils of this school are Tamil workers children from on the surrounding tea plantation.</td>
<td></td>
</tr>
</tbody>
</table>

1. Quality of Construction Work and the application of a “maintenance free design”

- Positioning structures on the site and particularly the new buildings is unsatisfactory on a series of levels.
- Stupid thinking that channels and paving are supposed to be equal size. Result is that a channel is centred on entrance to the toilet! See picture.
- Building items on the two new buildings financed by Sida:
  - All teachers participated in maintenance workshops!
  - Screed on 1991 building less than 1/2 cm. On as relative soft and moist brick-it cannot hold.
  - Roof overhang underside clad with cement panels. Good work. Design deficiencies…
  - New building good contractor! Well-finished work. Room with tiled bench for lower grades. Windows on in all rooms. Well finished. Sturdy well built retaining-wall in front of new building.
  - Steel ties holding down roof on all but the Sida building 1991? Apparently are houses exposed in periods to heavy wind forces.
  - Triangular steel tin plates rusting heavily on 1991 building.
  - Tidy and ordered school. |

1.1 General Assessment of construction work

- Are designs following the recommendations of NEC?
- Good executed work. Interior could not be inspected- not finished- not yet in use. New drains? Standard details must be revised…

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

- New buildings built with concrete floor. Marginally improved protection of down pipes. Cement panel , Repairs requested down pipes etc.
- NEEDS Furniture
- Playground
- Fences wanted everywhere to protect property and tp avoid people trespassing the site. May be right or may be wrong, the school should not be a ghetto for the pupils or a closed environment for the surrounding community- Result: something in between.

2. Realignment of the budget

3. Assess Maintenance Programme

- 3.1 Assess the maintenance manual that has been prepared
- 3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance

- Maintenance manual and all information requested was integrated in teaching on class room walls etc.
- Its relevance to the day to day maintenance work at the schools
- 18 teachers went to bakulla workshop the head of school went with his principal top the workshops for principals in Hatton committees.
9a Main access route through school.
9b New school building on top of the site
9c Broken ridge capping patched up with plastic bags.
9d Clumsy built channel exactly at the entrance to toilets.
9e Example of class room.
9f A row of small trees line the edge of the slope defining both space and marking the edge of the level change.
9g Gap between asbestos panels and walls allowing for bird to build nests in classrooms.
9h Bench according to the NEC requirements.
### Plantation School Evaluation

**INEC URBAN F71539, INEC-BREDSAM**

**Day three, School nr 10**

**Name of School:** Albion Tamil Vidyalayam  
**Name of Principal:** Mr. J. B. Fernando  
**Name of Estate:** Albion  
**District:** Badulla  
**Province:** Uva  
**Nr of pupils:** 638 pupils, 318 boys and 320 girls

- Sri Ganapathy?
  - The pupils of this school are Tamil workers children from on the surrounding tea plantation.

### INTRO:
- Stylish welcoming reception with flowers. Literally 100% satisfied teachers. Official thanking from one pupil in 13 grade (Original se attachments). Beetle leave reception in half a dozen classrooms...Several speaking out of gratitude to Sweden.

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Quality of Construction Work and the application of a “maintenance free design”</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 1.1 General Assessment of construction work | Are designs following the recommendations of NEC.  
Good executed work. Interior could not be inspected- not finished- not yet in use.  
New drains? Standard details must be revised… |
| 1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences | Well-executed work. Good contractor. Unfortunately with bad detailing for down pipes bound to be broken shortly…Proper retaining wall and fairly well adapted to the surrounding levels.  
2x4 urinals and 3x3 toilets.  
Parent have organised and carried through the whitewashing of the inside of houses 1+2.  
All roofs secured by regular bands of flat iron bars. On all buildings.  
Overall positive attitude. Everyone happy with the school. Several |

### 2. Realignment of the budget

| 2.1 Review the present budget’s utilization | Science laboratory missing. Lack of furniture several classrooms equipped with carpets so that children can sit on the floor. Surrounding levels around new school on lower level in bad need of stairs, Steep slopes probably unusable during rainy periods! Planting initiative somehow missing point.  
Becoming ornate decoration with flowerpots instead of landscaping and planting trees etc. |
| 2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications) | |
| 2.3 Assess the realignment of the budget as proposed by the Ministry | |

### 3. Assess Maintenance Programme

| 3.1 Assess the maintenance manual that has been prepared | Own initiative to repair channels in 2006 financed by local government.  
Its relevance to the day to day maintenance work at the schools  
Pupil manual and responsibilities to be found in all class rooms.  
Teachers assisted workshop. |
| 3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees. | |
| 3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices | |
10a View over school nr 10 from access road.
10b New building built at the lower end of the site.
10c Untreated slope as access to the lower level of the new school.
10de Well build retaining wall but perhaps to close to classroom windows?

<table>
<thead>
<tr>
<th>HOUSE</th>
<th>YEAR</th>
<th>ROOF COVER</th>
<th>ROOF TRUSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2006</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>2.</td>
<td>1999</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>3.</td>
<td>1995</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>4.</td>
<td>1999</td>
<td>--</td>
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</table>
## Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**

### Day three, School nr 11

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Bharathy Tamil Vidyalayam (Talawakelle Tamil Vidyalayam)</td>
<td>INTRO: Large sized energetically run school on extreme slope facing north. All buildings sturdy structures with columns and roof structure in concrete from 1991. All Sida financed.</td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. E. Lohanathan</td>
<td>Retaining wall not needed due to hard ground- almost stone.</td>
</tr>
<tr>
<td><strong>Name of Estate:</strong> Talawakelle</td>
<td>Site way off, children have no access to city schools. Some live 6 km away.</td>
</tr>
<tr>
<td><strong>District:</strong> Nuwara Eliya</td>
<td>As we arrived in the late afternoon still all teaching staff were waiting for us. Reception by girls from the 13 grade.</td>
</tr>
<tr>
<td><strong>Province:</strong> Central</td>
<td>The pupils of this school are Tamil workers children from on the surrounding tea plantation.</td>
</tr>
<tr>
<td><strong>Nr of pupils:</strong> 1087 pupils</td>
<td></td>
</tr>
</tbody>
</table>

The pupils of this school are Tamil workers children from on the surrounding tea plantation.

### 1. Quality of Construction Work and the application of a “maintenance free design”

1.1 General Assessment of construction work

| Are designs following the recommendations of NEC. |

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

| Are the maintenance aspects fully considered? |
| Beautifully treated gardens with bushes and flowers. |
| All channels repaired in 2006. No trace of damaged floors despite metal chairs. |
| Floor had been regularly patched up every year on initiative of the school. Furniture patched up by teachers. Largely unacceptable for children to use. |

### 2. Realignment of the budget

2.1 Review the present budget’s utilization

2 temporary sheds have been built to accommodate store-room and a classroom. This classroom is a highly exposed shed which most of the time is unacceptable perhaps during the raining season unbearable. The principal’s quarter is serving as a classroom. In the tiny living room are 90 pupils studying, partly standing up due to lack of space. All down pipes ‘are gone’. All broken on different heights. 20 down pipes (on both sides of 120 + 120 feet buildings! Fences requested around premises. Lack of toilets and urinals 1 urinal (4) 4 Toilets (12). Lack of water, has to be transported from estate. Teachers have assisted workshop. Pupil manual and responsibilities to be found in all classrooms.

2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

2.3 Assess the realignment of the budget as proposed by the Ministry

### 3. Assess Maintenance Programme

3.1 Assess the maintenance manual that has been prepared

| Its relevance to the day to day maintenance work at the schools |

3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.

3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices

3.4 Determine the level of autonomy displayed by schools in maintenance (budget, decision making)
11a View along the upper school buildings
11b Entrance gate to school nr 10.
11c Completely congested provisional classroom arranged in principles house.
11d Adequate spaced gap between slope and building, in this case the ground was solid enough no need for retaining wall.
11e Broken downpipes
11f Steep terrain without retaining walls.

<table>
<thead>
<tr>
<th>HOUSE</th>
<th>YEAR</th>
<th>ROOF COVER</th>
<th>ROOF TRUSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Concrete</td>
</tr>
<tr>
<td>2.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Concrete</td>
</tr>
<tr>
<td>3.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Concrete</td>
</tr>
<tr>
<td>4.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Concrete</td>
</tr>
<tr>
<td>5.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Concrete</td>
</tr>
</tbody>
</table>
## Plantation school evaluation

**INEC URBAN F71539, INEC-BREDSAM**  
**Day three, School nr 12**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
</table>
| **Name of School:** St.Clair Tamil Vidyalayam  
**Name of Principal:** Mr. S. Arumugam  
**Name of Estate:** St. Clair  
**District:** Nuwara Eliya  
**Province:** Central  
**Nr of pupils:** 501 pupils | INTRO: Three buildings lying around one side of a high lever sport ground. Initially two were of one story height, and one two storey building, this year another one has been stocked up by one more story. It is still not in use. Part of the lower story has been converted into a computer room. Sida has financed all except for the computer room. The new building has not the same quality as the new buildings visited earlier today. Part left to be finished. Completely worn down environment. Sign of shabby repairs on the walls of the top floors. |
| The pupils of this school are Tamil workers children from on the surrounding tea plantations. | |

### 1. Quality of Construction Work and the application of a “maintenance free design”

#### 1.1 General Assessment of construction work

Are designs following the recommendations of NEC.

Two cracks in the wall of the old two-storey building. On under the roof beam and another of the same wall when meeting skirting height.

The whole school has the same sturdy structures with columns and roof structure in concrete as the school before. Only that it is not from 1991 but built seven years later. Another difference is that it is completely run down. All interiors are broken and dilapidated. Even upper floors screeds are broken to pieces despite the fact that there is no brick beneath but concrete! Electric installations with wires hanging out of the wall. At the entrance of the school is a heap of waste. Dirty toilets.

Broken windows patched up with wooden panels and boards. Few speak English - no sign of maintenance

Are the maintenance aspects fully considered?

If previous schools had problems with down pipes this school has large wholes were they once were. The water is gushing down to the foundations, and apparently since several years. Signs of damp is spreading up the wall and plants are growing out of the gutter holes…

### 2. Realignment of the budget

#### 2.1 Review the present budget’s utilization

#### 2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

#### 2.3 Assess the realignment of the budget as proposed by the Ministry

### 3. Assess Maintenance Programme

#### 3.1 Assess the maintenance manual that has been prepared

Its relevance to the day to day maintenance work at the schools

#### 3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.

#### 3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices
12a View on to exiting school buildings from the new added upper floor of building nr 1.
12b View from the upper floor of building 3 onto building 1 and 2.
12c Completely worn down stair from building built 1998.
12d Completely worn down classroom floors.
12e Alternative downpipe detail.
12f Missing downpipe.
12g Damaged drains.
**Plantation school evaluation**  
**INEC URBAN F71539, INEC-BREDSAM**  
**Day four, School nr 13**

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendations/ Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of School:</strong> Carfax Tamil Vidyalayam</td>
<td>INTRO: Extremely well kept medium sized school on an eastern slope. One school building on lower ground. Two parallel buildings lying tight together the fourth building south facing lower playground. Potential to rebuild on western side. All buildings from 1991.</td>
</tr>
<tr>
<td><strong>Name of Principal:</strong> Mr. V. Udayakumar</td>
<td>Pupils organised that 3 min is taken away from each lesson making up 25 a day which is used for cleaning und upkeep of the school. This is done before and after school.</td>
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<tr>
<td><strong>Name of Estate:</strong> Carfax</td>
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<tr>
<td><strong>District:</strong> Nuwara Eliya</td>
<td></td>
</tr>
<tr>
<td><strong>Province:</strong> Central</td>
<td></td>
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<tr>
<td><strong>Nr of pupils:</strong> 446</td>
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The pupils of this school are Tamil workers children from on the surrounding tea plantations.

1. Quality of Construction Work and the application of a “maintenance free design”

1.1 General Assessment of construction work

- Are designs following the recommendations of NEC
- Shallow channels makes stumbling more difficult. No gutter water drops in channel (Meaning?) Grade division in long school buildings (80x 20) with panels giving certain privacy to each section. Good idea.

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

- Are the maintenance aspects fully considered?
- Regular repair done both on pavements, channels, ‘as necessarily requires’. Well kept! These regular repairs are finances by A) Old boys network B) Parents, C) School development fund, etc. Still some parts worn but still in acceptable shape despite damage.
- Teachers involved and give readily answers on these issues! Bad details at eaves bird flying in some classrooms.
- Active display of information with instruction boards signs and schedules all over the school. Maintenance aspects taken seriously and efficiently. Paper of Principal is well kept and ordered in a n excellent way Impressive!

2. Realignment of the budget

2.1 Review the present budget’s utilization

- Need for more space. Need for science lab and activity room. 13 asp x 46 st (meaning?) Principals building acting as classroom 25 kids in a surface of 3x5 metres-crammed!

- Well kept- nice gardening and fences positive environment.
- Meeting about positioning building in landscape.

2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

- |

2.3 Assess the realignment of the budget as proposed by the Ministry

3. Assess Maintenance Programme

3.1 Assess the maintenance manual that has been prepared

- Its relevance to the day to day maintenance work at the schools

3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.

3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices

- |
<table>
<thead>
<tr>
<th>HOUSE</th>
<th>YEAR</th>
<th>ROOF COVER</th>
<th>ROOF TRUSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1991</td>
<td>Asbestos</td>
<td>Steel</td>
</tr>
<tr>
<td>2.</td>
<td>1991</td>
<td>Asbestos</td>
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<td>3.</td>
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<td>6.</td>
<td>1991</td>
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<td>Steel</td>
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13a Well kept space between building.
13b View over building 2 and 3.
13c Principal, teachers, official from ministry of education and pontvik discussing position of possible new school.
13d Classroom with temporary partitions
13e Well kept drains with flowerpots.
13f Broken downpipes (an exception in this well kept school).
### INTRO: New two-floor primary school built in an angle in 2006 on the site of previous run down 20x60 school building from the 50ies. Adjoining shop, private dwellings and separately run crèche all entrench onto school. It appears to lack space around it. The left available space is not taken advantage of. Some rooms of the school are still not filled with activities. One classroom occupied by improvised principals office seven rooms left for activities, library.

Kids coming from a 2-3 km radius.

Principal low command of English. Too much space in relation to amount of pupils.

New detail where whole pipe is built in up in the height of the whole ground floor.

Birds in classroom

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<td>Dickoya Primary Vidyalayam</td>
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<tr>
<td><strong>Name of Principal</strong></td>
<td>Mr. P. Sugumar</td>
</tr>
<tr>
<td><strong>Name of Estate</strong></td>
<td>Dickoya</td>
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<tr>
<td><strong>Nr of pupils</strong></td>
<td>145</td>
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The pupils of this school are Tamil workers children from on the surrounding tea plantations.

#### 1. Quality of Construction Work and the application of a “maintenance free design”

1.1 General Assessment of construction work

- Are designs following the recommendations of NEC?
- Generally well built concrete roof construction. Good finishes

1.2 Assessment of the engineering changes have been adopted, taking into consideration the lessons learned from the previous period’s (1988-98) experiences

- Are the maintenance aspects fully considered?
- Unacceptable and irresponsible change of drains on ground level. Pipes protected 3 metres only to be pierced at ground level with a cold water pipe. This will involve serious expensive totally unnecessary repairs!!! Se sketch. Repairs must be started at once. Damaging the substructure and the walls. To repair this if properly done, will be very costly indeed.

- No fence at high walkway, No Not sufficient space to move for the children

#### 2. Realignment of the budget

2.1 Review the present budget’s utilization

- No new toilets, when building such big building?? Some older toilet half demolished site not cleared site should be used fir kids- not taken in use!!

2.2 Analysis of the budget situation and the additional needs of funding (its causes and implications)

- 2.3 Assess the realignment of the budget as proposed by the Ministry

#### 3. Assess Maintenance Programme

3.1 Assess the maintenance manual that has been prepared

- Its relevance to the day to day maintenance work at the schools

3.2 Assess the effectiveness of the maintenance workshops and the role of the maintenance committees.

- 3.3 Assess the use of the maintenance manual and training workshop in actual maintenance practices

- 3.4 Determine the level of autonomy displayed by schools in maintenance (budget, decision making)
14a View onto school building from the road.
14b View onto western side completely untreated and still access to toilets and used as playground.
14c Classroom on top floor.
14d All downpipes cut through by a water pipe, resulting in considerable damage and costly repairs !!!
14e Pipe still filled with cement after construction
14f High level path without necessary protective railing.
14g Alternative with one whole floor high protection of downpipe, did not help see 14d.
14h Classroom on lower level.
14i Well designed in built work top according to design guidelines.