

NATIONAL EVALUATION OF CIVIL WORKS UNDER SSA IN 11 STATES (2006-07) – SYNTHESIS REPORT

Introduction

Sarva Shiksha Abhiyan (SSA) is an effort to universalize elementary education by community-ownership of the school system. It is a response to the demand for quality basic education all over the country. The SSA Programme is also an attempt to provide an opportunity for improving human capabilities to all children, through provision of community-owned quality education in a mission mode.

The aim of SSA is to provide useful and relevant elementary education for all children in the 6 to 14 age group by 2010. SSA realizes the importance of Early Childhood Care and Education and looks at the 0-14 age as a continuum. There is also another goal to bridge social, regional and gender gaps, with the active participation of the community in the management of schools.

Objectives of Sarva Shiksha Abhiyan

The objectives with which the SSA programme was started were :

- All children in school, Education Guarantee Centre, Alternate School, ' Back-to-School' camp by 2003;
- All children complete five years of primary schooling by 2007
- All children complete eight years of elementary schooling by 2010
- Focus on elementary education of satisfactory quality with emphasis on education for life
- Bridge all gender and social category gaps at primary stage by 2007 and at elementary education level by 2010
- Universal retention by 2010

SSA has two aspects

- It provides a wide convergent framework for implementation of Elementary Education schemes.
- It is also a programme with budget provision for strengthening vital areas to achieve universalisation of elementary education.

Scope of the Study

To assess the civil works being undertaken in the country, 12 States were identified by Ed.Cil for the study. These States were identified by Ed.Cil for the study. These States were – Andhra Pradesh, Assam, Bihar, Chattisgarh, Gujarat, Jammu & Kashmir, Maharashtra, Madhya Pradesh, Nagaland, Tamil Nadu, Uttar Pradesh and West Bengal. Nagaland was later dropped from the evaluation list and as such 11 states were selected for the National Evaluation study. The main emphasis of the evaluation was :

- To review the Planning process of Civil Works – target setting, priority and phasing, planning of pre-construction activities, funds flow systems, supervision and monitoring strategy etc.
- To look at issues related to site selection and school location, especially in cases where school are located in areas prone to natural hazard. Also to look at land ownership issues, especially in tribal areas, and highlight cases involving resettlement, if any.

- To assess the quality of construction in item of quality of material & ownership, leakage, cracks etc.
- To assess cost effectiveness and efforts towards the same in construction including use of appropriate / local materials and technologies.
- To evaluate Design-functionality in terms of response to pedagogical issues, child-friendliness, lighting and ventilation barrier free features etc; to assess if the physical infrastructure constructed is contributing to the overall teaching learning environment in the school.
- To highlight good practices with respect to energy efficiency, health and hygiene etc.
- To conduct a safety audit of the created asset in items of its location, design and materials used for construction.
- To look into the specific role of the community in management and implementation of civil works.
- To check utilization of the constructed facilities and plans for maintenance of created assets.

The procedure proposed by Ed. CIL for undertaking the study and selection of the sites proposed to be visited in the state was as follows :

- A uniform set of tools is proposed to be used for all the States.
- The evaluation is expected to cover 3-5% (3% in bigger states, 5% in smaller states) of the constructed school buildings / classrooms in the state. However, the total number of sites to be covered in each state would not exceed 75.
- The samples will be chosen through a combination of stratified and random sampling techniques. Each state will be divided into sets of districts those are similar in terms of geographical features and building materials. There would be a maximum of four such sets and one district from each set would be chosen for field visit. Within a district, sample sites will be chosen on a random basis to cover both rural and urban areas, remote and well connected areas, completed and in-progress buildings etc. The list of sample sites will be decided in consultation with the Civil Works Unit, Technical Support Group and not be disclosed in advance to the State / Districts (the sample district would however be intimated to the State in advance for logistical purposes).
- Apart from visit to construction sites, the Evaluating Agency would also interact with State / District officials, villagers, teachers, students and other stakeholder and analyze secondary sources of information.

To undertake the above assignment, the following methodology was adopted:

- The preparation of the TOOLS for undertaking the evaluation;
- The identification of the Districts proposed to be visited in the State;
- The breakup of number of sites to be visited under each category of civil works being undertaken under the scheme namely - Primary and Upper Primary School Buildings / Additional Class Rooms / Cluster Resource Centers (CRCs) and Block Resource Centers (BRCs).

- Identification of the sites proposed to be visited in each district under the above categories.

The set of TOOLS was prepared conforming to the objectives as identified in the Scope of Work. These tools were discussed and debated with the Ed. CIL and finalized by the Ministry of Human Resource Development prior to the commencement of the work.

To select the Districts proposed to be undertaken for the study, the following methodology was adopted:

- The location of the district in the state was assessed.
- The topography of the district – plain, plateau or hilly terrain;
- The construction material being used for the civil works in each district was considered as a parameter for its selection.

The consultants proposed to select the districts that were scattered and widely spread over the state; had different topography and used different types of materials for construction.

The 75 numbers of sites proposed to be selected were distributed in the four categories of buildings as follows:

- The civil works; both completed and in progress; undertaken in each category of building were collected for the selected districts proposed to be studied.
- The percentage of works undertaken for each category with respect to the total works undertaken in the selected districts was calculated.
- Based on this, the number of sites under each category of building was calculated in the same ratio as its percentage to the total works.
- The division of the sites proposed to be visited under each district was further calculated based on the percentage of works undertaken in that district with respect to the total works under that category.

Based on the above methodology, districts were selected in each state which formula basis of the evaluation study. The details of the districts visited in the states are as under:

S. No.	States	Districts Visited
1	Andhra Pradesh	Vizianagaram, Karimnagar, Rangareddy, Nellore, Mahabubnagar
2	Assam	Jorhat, Karbi Anglong, Cachar, Dhubri, Kamrup, Lakhimpur
3	Bihar	Gaya, Munger, Muzaffarpur, Nalanda, Patna
4	Chattisgarh	Rajpur, Rajgarh, Bastar, Sarguja
5	Gujarat	Banaskantha, Junagarh, Porbandar, Surat, Vadodara
6	Jammu & Kashmir	Jammu, Udhampur, Srinagar, Budgam, Leh
7	Madhya Pradesh	Gwalior, Katni, Bhopal, Jabalpur, Indore, Badwani
8	Maharashtra	Bid, Nasik, Ratnagiri, Solapur, Gondia, Nagpur
9	Tamil Nadu	Chennai, Coimbatore, Madurai, Nilgiri, Thiruvarur
10	West Bengal	Darjeeling, Birbhum, Howrah, Bankura
11	Uttar Pradesh	Agra, Allahabad, Ballia, Bareilly, Faizabad, Gaziabad, Gorakhpur, Jhansi, Kanpur, Saharanpur

The number of sites visited in each category of the civil works in the selected districts are given in Annexure – 1

Findings

The set of tools developed by the consultants under the consultation of Ed. CIL and Ministry of Human Resource Development, Government of India, identified the following parameters for evaluation:

- Planning Process
- Site Selection Process
- Construction Process
- Cost Effectiveness Techniques
- Design Innovations
- Additional Facilities
- Safety Audits
- Implementation
- Operation and Maintenance
- Community Involvement and Responses
- Provision for children with Special Needs (CWSN)

The various issues covered under these parameters were recorded with the site observations and the same were duly wetted by the concerned officials of the Village Education Committees (VEC), School Head master and the representatives of the SSA programme in the state.

The findings of the National Evaluation are tabulated below.

The recommendation of the study pertaining to each state is given in **Annexure – I**.

ISSUES AND PATTERN

S.No.	Issues and Patterns	Example States	Exception States
1	PLANNING PROCESS		
a	The initial planning to provide additional facility for any school premises was undertaken with the help of the VEC in consultation with the State Project Director (SPD)	All States	
b	The SPD office has prepared various options of buildings for the VEC to select the best possible option for their site as per the site conditions and land availability etc.	Gujarat, Bihar, Maharashtra and Uttar Pradesh	Chattisgarh, Jammu and Kashmir
c	Are deviations in the basic planning and the construction activity reported to the SPD for the sites where construction activity takes place	Gujarat	
d	Is some sort of training being imparted to the VEC on the various aspects of construction, record keeping etc.	All States	
e	Are some building models or pictures of constructed buildings shown to the VEC for their better understanding.	Gujarat, Maharashtra, Bihar and Uttar Pradesh	
2	SITE SELECTION PROCESS		
a	The new buildings have been placed in the compound of the old school building in most of the schools.	All States	
b	At places where school have been shifted to a new location due to non-availability of the land at the existing premises, the sites are away from the main village and the approaches are not proper.		All States
c	The additional construction activity in the school premises has resulted in the reduction of the space in the existing premises for which there is no proposal for land compensation from the VEC		All States

S.No.	Issues and Patterns	Example States	Exception States
3	CONSTRUCTION PROCESS		
a	It was given to understand that at most of the places the building construction was not being completed within the stipulated cost and the VEC or the Head masters had to shell out money to get the work completed. Most of the States had not revised their building estimates of the last couple of years.	Gujarat, Bihar and Maharashtra	All States
b	The time schedule as provided for the completion of the building works were not adhered too due to delays in receiving funds from the Central Government. When the funds were received, the construction phase clashed with the cropping season resulting in non-completion of the works within the stipulated time.		All States
c	All the material procurement related to the building construction is being undertaken from the local market at the lowest available price with the combined efforts of the VEC and the Head Master of the school.	All States	
d	The building construction work was being carried out as per the specifications prescribed in the building estimates.	All States	
e	Is the building construction supervision carried out by the authorized representatives appropriate and sufficient to be categorized as “properly monitored construction”.	Gujarat, Maharashtra, Assam, Bihar, Andhra Pradesh and Tamil Nadu	Chattisgarh, Jammu and Kashmir, Uttar Pradesh and West Bengal
f	Any form of Third Party independent evaluation for the building construction and material being undertaken in the state. Any form of laboratory testing being carried out by the monitoring agencies in the State	Gujarat, Chattisgarh, Madhya Pradesh, Maharashtra, parts of Andhra Pradesh and Bihar	

S.No.	Issues and Patterns	Example States	Exception States
g	Are the measurement book (MB) and other financial records properly maintained, audited and kept.	All States	
4	COST EFFECTIVENESS PROCESS		
a	Is there any form of Cost Effectiveness Process being implemented by the States to use locally available material for the construction activities	Gujarat, Jammu and Kashmir, Andhra Pradesh and Assam	
5	DESIGN INNOVATION PROCESS		
a	Innovation in the building designs related to its shape, size and structural parameters observed during the field visits		All States
6	ADDITIONAL FACILITIES		
a	Are the new constructed buildings ventilated and lighted through natural light for a better study environment	All States	
b.	Is the facility of Drinking water and sanitation proper is all urban and rural schools		All States
c.	Are there provision of compound walls in the school buildings	Gujarat and Urban Schools of all states	Rural schools devoid of this facility
d.	Are there any form of water harvesting techniques present in the school premises	Gujarat	
e.	Are there any form of fire fighting provisions in the school buildings	Maharashtra	
f.	Are there electric connections in the school buildings	All urban schools and some rural school in All States	
7	SAFETY AUDIT		

S.No.	Issues and Patterns	Example States	Exception States
a.	Do the school buildings fall under any High Voltage Electrical lines	All States	
b.	Are proper earthquake prevention techniques being provided in the school buildings	Gujarat, Bihar, Uttar Pradesh, Assam and Chattisgarh	Jammu and Kashmir
c.	Are the building maintenance funds adequate for annual maintenance of the school complex		All States
d.	Are there any special provisions to ensure the safety and security of the girl students		All States
8	IMPLEMENTATION		
a.	Do the Schools under the construction activity through the Village Education Committees.	All States	
b.	Is any for of purchase record/vouchers or stock registered maintained at site by the Head Master	All States	
c.	Does the site in-charge have powers to stop or amend the poor construction, if undertaken at site by the VECs.	All States	
9	OPERATION AND MAINTENANCE		
a.	Are the VECs involved in the yearly maintenance of the buildings in the school complex or it is left to the discretion of the Head Master		All States
b.	Is the deferred maintenance carried out through contributions for the villages in kind and cash	Gujarat	
c.	Do the teachers initiate the training of the students in developing a sense of belonging towards the school and make them aware to keep their	All States	

S.No.	Issues and Patterns	Example States	Exception States
	school and surroundings clean		
10	COMMUNITY INVOLVEMENT AND RESPONSE		
a.	Does the VEC take interest in the SSA works and are actively involved with the development activities	All States	
11	PROVISION FOR CHILDREN WITH SPECIAL NEED		
a.	Does the school take initiatives to develop and maintain provisions for Children With Special Need	Tamil Nadu and Gujarat	

ANDHRA PRADESH

As assessed in the field visit of the sites selected, the consultant is of the opinion that the concept of community involvement is a broad based concept and people oriented with no gender basis. The involvement of women as its prominent members is mandatory. The community works selflessly (donates land cash and labour) as a unit of the district for fulfilling the dream of education for all. The task could not have been fulfilled so rapidly without their participation.

To ensure a better quality to the implementation of the project it is recommended as follows:

Mapping of the schools (Master Planning of Schools)

Though master planning of the school premises is being taken up but proper school mapping in terms of infrastructure, land area and facilities needs to be undertaken to have a better planning platform.

Third Party Inspection / Material Testing

To keep a check on the works being executed by the SMC and the supervision of the State Engineers, it is recommended that an independent third party be engaged for technical audit, testing and supervision at site to ensure a better quality control of the structures under construction.

Structural Amendments

The following observations are made pertaining to the designs:

- The structural designs for foundations be taken up for a loading to pave for a multilevel structure ensure a good space management, minimizing the need of additional land for the structures to be constructed in a single premises in the future. The technique though taken up in hand needs to be adhered to as a policy.
- Provisions for earthquake resistance to be provided in all buildings while designing the components of a structure.
- Plinth protection is not provided in design / drawing or executed at site. This is an essential requirement of the building design in order to save the intrusion of water into foundation thus protecting the building structure from destabilization. In future works provision for the item should be made in the estimate.
- There is no provision made in the typical estimates from SPO for ramps to facilitate barrier free movement of CWSN. But during the site inspection it was found that most of them had provided ramps with hand railing with a minimum slope of 1:12 along the alignment. This aspect can be amended in the drawings being issued by the SPO.
- The spouts though provided in the buildings need to be designed to arrive at the actual no required as per the rainfall intensity of the area. Further there is no provision of down take pipes for the drainage of rain water from the roof top, which is essential to protect the foundation from scouring effects of the gushing waters from the spouts during rains.

- The boundary walls should be reinforced by providing angle iron posts at the top of the existing / proposed wall after embedding them in cement concrete blocks and connecting them further by a row of wire mesh so as to ensure against any trespassing. This will ensure a safe and secured atmosphere for assets created and to the occupants of the school i.e students and staff.

Review of training programmes to SMC's / Head Master (Instruction to SMCs / Head master)

During site visits it was observed that the Head Master, the chairman of the SMC is not well versed with technique of proper documentation. It therefore suggested that the frequency of training programmes be increased and ensured that the Head Master and the Chairman fully understands the technique and documents checked by the visiting teams while on tour to the site and point out any deficiencies to the Head Master for future guidance.

Additional Facilities

There is a time gap between the construction activities and the provision of additional facilities like water and sanitation. The reason as explained at site was the fact that both the activities are being undertaken by separate agencies. While the SMC undertakes the building construction work, the water supply and sanitation is left to the Rural Water Supply Department of the state. It is therefore suggested that the gap in both the workings may be looked into and they should converge directed to execute the works in tandem with the implementation schedule of SSA.

Inadequate Annual Maintenance Grant (Review of annual maintenance grants)

The annual maintenance grants available with the school authorities are meager as compared to the actual requirement at site. A lump sum amount of Rs.5000/- year is granted to the school for their annual maintenance or petty repairs.

This needs to be reviewed as per the actual requirement at site on the basis of the master plan of the Respective. Schools & funds released on the basis of per square meter area as the yard stick.

The major repair / renovations are however undertaken under annual works plan.

The consultant was highly impressed with the outcome of the SSAM. This is quite successful people are quite amused to see the future of their children being defined with their involvement. They do not hesitate from donating lands, cash, labour and even the materials for the raising of infrastructures for housing their own children for elementary education.

In short this is an **ABHIYAN BY THE PEOPLE OF THE PEOPLE AND FOR THE PEOPLE**. The institution has thus been democratized.

ASSAM

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, SMC, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to

the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under:

Mapping of the schools

Some task of school mapping was done in the month of April and May 2006. However this seems to be inadequate. The DPE / JE / TRPs should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

Cost Estimates

The cost estimates as prepared for the buildings are uniform for the whole State except for districts like Karbi Anglong and North Cachar Hills; Sadia sub-division in Tinsukia district; Majuli sub-division in Jorhat. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing to the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The JE / TRP indicated the allowances provided for travel to far off sites is less and inadequate.

Third Party Inspection

Third Party Inspection has already been initiated for civil works activities in Assam from March 2007. Four number of engineering organization institution were engaged in seven districts for Third Party Inspection. The work of three organizations / institutions in 5 districts in 1st Phase was found to be satisfactory. The remaining districts of the state are proposed to be evaluated by the Third Party shortly.

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SMD / DMC office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / DPE office of the status of civil works as being executed at site.

Material Testing

Apart from some cube tests, slump cone, IS sieve, measuring tap etc, there is no provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration

of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings:

- The provision of plinth protection works is completely missing. The foundation of the building is subjected to drainage water from the roof top and near by ground which results in uneven settlement of the foundations. This component should be added in the building estimates to increase the safety and life of the structure.
- Building being constructed in hilly areas should be provided with retaining wall provision to prevent sliding of the back slopes.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Without this mobilization, it would not have been possible to construct school infrastructure at the remote places of the state. The request for the boundary wall, drinking water and proper sanitation facility is being voiced by most of the Head masters in the schools of the state.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the SMC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

BIHAR

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, V.S.S, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under:

Mapping of the schools

There is total lack of school data related to the infrastructure at the Block / District / State level. The AE / JEs /TRPs should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The funds being provided at this stage are inadequate and unjustified considering the amount of responsibility entrusted on the AE / JEs/TRPs.

Since the JE is a nodal position between the TRPs (site) and the EE / AE (District Office) his position is of great importance. As such, he should be fully aware of the day to day construction problems and be able to suggest their remedial measures at site. The JE should have at least 5 years experience in the construction field. The engineer should be bound by a work contract so that he is responsible for the works he is certifying.

Third Party Inspection

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SPD / SLO office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / SLO office of the status of civil works as being executed at site.

Material Testing

No provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings:

- There is no provision of earthquake resistant structures in the building design. The same needs to be incorporated.
- The provision of plinth protection works is completely missing. The foundation of the building is subjected to drainage water from the roof top and near by ground which results in uneven settlement of the foundations. This component should be added in the building estimates to increase the safety and life of the structure.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in specific schools where they are essentially required and the space is available for such a construction.
- The buildings constructed under the SSA programme are devoid of any rain spouts or drainage pipes from the roof top. As such, the water from the roof top flows along the walls to the ground. The absence of the plinth protection works adds to the weakening of the building foundation.

Communication and Transportation

There is a gap of communication and interaction between the technical and the administrative wings of the SLO office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication mechanism, with proper reporting, needs to be evolved to help the V.S.S and the Head Master in the endeavor to complete the said works as per the desired specifications.

The Assistant and Junior engineers proposed should be provided with adequate funds for transportation in the field. The efficiency and success of the programme would be achieved if proper and timely supervision of the works is undertaken.

Instructions to V.S.S / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the V.S.S / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

A sample table could be as follows:

Construction Instructions

S.No.	Stage of Building	Material Used								
		Bricks		Cement		Sand		Steel		Any Other Material
		Required	Used	Required	Used	Required	Used	Required	Used	
1	Plinth Level									
2	Lintel Level									
3	In Beams / Lintel									
4	At roof level									
5	Roof Slab									
6	Plastering									
7	Flooring									
8	Misc. Works									

The SPD should give the quantities “**required**” for the building construction to the V.S.S / head master before the start of the work. The “**used**” column should be filled by the V.S.S / head master during work execution.

Alterations / Deviations

As present, no reporting of alterations / deviations undertaken in the building from the basic design is being reported to the SPD / SLO office. As such the SPD office is completely ignorant of the site reality. Proper instructions should be given to all Technical staff to report all deviations / alterations undertaken by the V.S.S / head master at site. No deviations / alterations should be permitted at site without the proper clearance from the SPD office or the EE posted at the District Level. These alteration / deviations could have structural implications of which neither the V.S.S nor the head master is aware. In case, the school asks for additional infrastructure facilities, the future provisions could be made based on the altered design.

Scope for Future Expansion

With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the layouts and construction of the new building should be undertaken keeping this factor into consideration. However the working drawings of these buildings indicate that these layouts have a scope for future expansion.

At many places the new building has been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision.

Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure. The plans being handed over to the V.S.S / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. The Senior Head Masters highlight the fact that it was because of the SSA programme that the development of the school complex in term of additional rooms, mid-day meal, school books, annual maintenance and yearly infrastructure grant has taken place. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following:

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the Public Health Department. The DLO should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the DLO is in direct contact with the District Collector and the V.S.S / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the V.S.S and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of

belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

CHHATTISGARH

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, Village sarpanch, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under:

Mapping of the schools

There is total lack of school data related to the infrastructure at the Block / District / State level. The BRCC is a non-technical person who is already loaded with other administrative works of the District education department. It is practically not possible for him to record, document and maintain the school infrastructure data. The engineers should be deputed at the Block Level (preferably one engineer for two blocks) who should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

Cost Estimates

The cost estimates as prepared for the buildings are uniform for the whole State. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

The typical cost estimates have been prepared on an ideal situation of flat terrain. The estimates do not account for hilly terrains where additional plinth levels are to be constructed to bring the building to a uniform plinth level. Such buildings require additional cost. The buildings constructed on Black Cotton soil need additional foundation depth which is not accounted for in the estimates.

The SPD office should be provided with a full technical team consisting of Senior and Junior Engineers, Architect and Draftsman who should estimate each site based on its local conditions and provide / sanction the funds accordingly. This would help in releasing proper funds to the sites and result in the work being undertaken within the prescribed specifications.

Strengthening of the Technical Wing

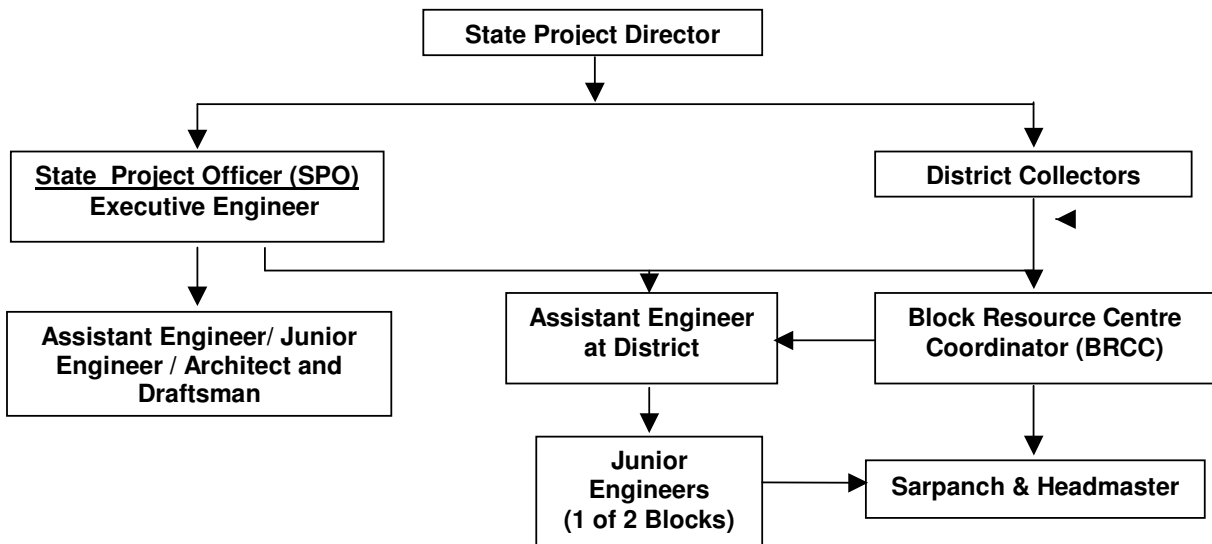
The State Government should strengthen the technical support to the Education department for this scheme. The strengthening is required in the following levels:

- State Level
- District Level

As indicated earlier, the State Level technical strengthening of the SPD shall result in proper preparation of building estimates and specifications. This would also benefit the state in preparing future plans for their school buildings.

The shortcomings observed in the civil works at the Block level / District Level can only be attended, if a person is posted on a regular basis at sites (preferably one engineer for two blocks) to monitor and supervise the works. The engineer should have atleast 5 years experience in the construction field. He should be fully aware of the day to day construction problems and be able to suggest their remedial measures at site. The engineer should be bound by a work contract so that he is responsible for the works he is certifying. These engineers should work under the Assistant engineers of each district who in turn should report all construction matters to the State Project Officer.

The proposed technical wing should be as follows:



Third Party Inspection

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SPD / SPO office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / SPO office of the status of civil works as being executed at site.

Material Testing

No provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings:

- There is no provision of earthquake resistant structures in the building design. The same needs to be incorporated.
- The provision of plinth protection works is completely missing. The foundation of the building is subjected to drainage water from the roof top and near by ground which results in uneven settlement of the foundations. This component should be added in the building estimates to increase the safety and life of the structure.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in specific schools where they are essentially required and the space is available for such a construction.
- The buildings constructed under the SSA programme are devoid of any rain spouts or drainage pipes from the roof top. As such, the water from the roof top flows along the walls to the ground. The absence of the plinth protection works adds to the weakening of the building foundation.

Communication and Transportation

There is total lack of communication and interaction between the technical and the administrative wings of the SPD office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication mechanism, with proper reporting, needs to be evolved to help the Village sarpanch and the Head Master in the endeavor to complete the said works as per the desired specifications.

The Assistant and Junior engineers proposed should be provided with adequate funds for transportation in the field. The efficiency and success of the programme would be achieved if proper and timely supervision of the works is undertaken.

Instructions to Village Sarpanch / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the Village Sarpanch / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of

material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

A sample table could be as follows:

Construction Instructions

S.No.	Stage of Building	Material Used								
		Bricks		Cement		Sand		Steel		Any Other Material
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The SPD should give the quantities “**required**” for the building construction to the village sarpanch / head master before the start of the work. The “**used**” column should be filled by the village sarpanch / head master during work execution.

Alterations / Deviations

As present, no reporting of alterations / deviations undertaken in the building from the basic design is being reported to the SPD / SPO office. As such the SPD office is completely ignorant of the site reality. Proper instructions should be given to all Technical staff to report all deviations / alterations undertaken by the Village sarpanch / head master at site. No deviations / alterations should be permitted at site without the proper clearance from the SPD office or the AE posted at the District Level. These alteration / deviations could have structural implications of which neither the village sarpanch nor the head master is aware. In case, the school asks for additional infrastructure facilities, the future provisions could be made based on the altered design.

Scope for Future Expansion

The building plans prepared and executed at site do not show any provision for future expansion on the first floor. With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the designs of the buildings are inadequate to provide rooms at the first floor.

At many places the new buildings have been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision. Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure. The plans being handed over to the village sarpanch / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. The Senior Head Masters highlight the fact that it was because of the SSA programme that the development of the school complex in term of additional rooms, mid-day meal, school books, annual maintenance and yearly infrastructure grant has taken place. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following:

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the Public Health Department. The BRCC should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the BRCC is in direct contact with the District Collector and the Village Sarpanch / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the Village Sarpanch and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

GUJARAT

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, VEC, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under :

Mapping of the schools

The SPO has completed school mapping of all the Government primary school existed in the state. The SPO has clear picture about the school campus, availability of infrastructure, gaps and also earmarked the place if available for the placement of required facility.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following:

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the Gram Panchayat / Gujarat Water Supply and Sewerage Board. The DPC should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the DPC is in direct contact with the District Collector and the VEC / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

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There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

The SPO has school mapping in place to evaluate the parameters mentioned.

Furniture for Schools

Most of the buildings lack in school furniture for children. Mostly all school Head Masters and VEC members request for this facility through the SSA programme. If possible some fund from the school maintenance should be exclusively kept for school infrastructure development.

It is beyond doubt to conclude that the involvement of the VEC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, computers, water facilities, furniture etc. is worth appreciating. The State Government has taken active and due consideration towards this programme and provided adequate and able personnel on this project. The State Govt. has taken initiative to provide benches to the schools.

It has also allotted Rs. 50 crore to provide compound walls during the current year. It has also undertaken construction of 625 toilet blocks to various schools through Non Government Organization (NGO) from the state Government budget.

JAMMU & KASHMIR

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, VEC, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under:

Mapping of the schools

There is total lack of school data related to the infrastructure at the Block / District / State level. The AE / JEs should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document

the same. This would enable the education department to undertake future development works as per specific site requirements.

Cost Estimates

The cost estimates as prepared for the buildings are uniform for the whole State. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

The typical cost estimates have been prepared on an ideal situation of flat terrain. The estimates do not account for hilly terrains where additional plinth levels are to be constructed to bring the building to a uniform plinth level. Such buildings require additional cost.

The SPD office should be provided with a full technical team consisting of Senior and Junior Engineers, Architect and Draftsman who should estimate each site based on its local conditions and provide / sanction the funds accordingly. This would help in releasing proper funds to the sites and result in the work being undertaken within the prescribed specifications.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing to the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The funds being provided at this stage are inadequate and unjustified considering the amount of responsibility entrusted on the AE / JEs.

Since the ZEO is a nodal position between the DPC and the JEs, their position is of great importance. As such, they should be fully aware of the day to day construction problems and be able to suggest the remedial measures at site. The JE should have at least 5 years experience in the construction field. The engineer should be bound by a work contract so that he is responsible for the works he is certifying.

Third Party Inspection

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SPD / DPC office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / DPC office of the status of civil works as being executed at site.

Material Testing

No provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings:

- The present building design as being provided to the VECs do not have any provision for future construction on the first floor. Since, land and space is a constraint, proper designs with provision of future expansion should be provided to the VECs.
- There is no provision of earthquake resistant structures in the building design in the Kashmir region which is highly sensitive to earthquakes. The same needs to be incorporated.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in specific schools where they are essentially required and the space is available for such a construction.
- Building being constructed in hilly areas should be provided with retaining wall provision to prevent sliding of the back slopes.

Communication and Transportation

There is a gap of communication and interaction between the technical and the administrative wings of the DPC office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication mechanism, with proper reporting, needs to be evolved to help the VEC and the Head Master in the endeavor to complete the said works as per the desired specifications.

The ZEOs, AE and JEs should be provided with adequate funds for transportation in the field. The efficiency and success of the programme would be achieved if proper and timely supervision of the works is undertaken.

Instructions to VEC / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the VEC / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

A sample table could be as follows:

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The SPD should give the quantities “**required**” for the building construction to the VEC / head master before the start of the work. The “**used**” column should be filled by the VEC / head master during work execution.

Alterations / Deviations

As present, no reporting of alterations / deviations undertaken in the building from the basic design is being reported to the SPD / DPC office. As such the SPD office is completely ignorant of the site reality. Proper instructions should be given to all Technical staff to report all deviations / alterations undertaken by the VEC / head master at site. No deviations / alterations should be permitted at site without the proper clearance from the SPD office or the AE posted at the District Level. These alteration / deviations could have structural implications of which neither the VEC nor the head master is aware. In case, the school asks for additional infrastructure facilities, the future provisions could be made based on the altered design.

Scope for Future Expansion

With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the layouts and construction of the new building should be undertaken keeping this factor into consideration.

At many places the new building has been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision. Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure.

The plans being handed over to the VEC / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Though the

Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following:

- give an excellent look to the school complex
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- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the Public Works Department. The ZEO should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the DPC is in direct contact with the District Collector and the VEC / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

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There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

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It is beyond doubt to conclude that the involvement of the VEC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

MADHYA PRADESH

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, PTA, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under :

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There is total lack of school data related to the infrastructure at the Block / District / State level. The JEs should be deputed at the Block Level (preferably one engineer for two blocks) who should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

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The SPD office should be provided with a full technical team consisting of Senior and Junior Engineers, Architect and Draftsman who should estimate each site based on its local conditions and provide / sanction the funds accordingly. This would help in releasing proper funds to the sites and result in the work being undertaken within the prescribed specifications.

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Instructions to PTA / Head Master

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MAHARASHTRA

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The cost estimates as prepared for the buildings are uniform for the whole State. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

There is no doubt that provision of annually 10% escalation on the current schedule of rates encouraged the sprit of construction of the school buildings and improved the quality of works in the State. At some places, there is some lack in connection between administration sanctioning of funds and execution of construction works. The administrative authority should develop a work plan to ensure that construction of the building would start in the same year in which it sanctioned for funds.

The typical cost estimates have been prepared on an ideal situation of flat terrain. The estimates do not account for hilly terrains where additional plinth levels are to be constructed to bring the building to a uniform plinth level. Such buildings require additional cost.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The funds being provided at this stage are inadequate and unjustified considering the amount of responsibility entrusted on the DE / BLEs.

Since the Executive Engineer at District Level is a nodal position between the E.O and the BLEs, their position is of great importance. As such, they should be fully aware of the day to day construction problems and be able to suggest their remedial measures at site. The BLE should have at least 5 years experience in the construction field. The engineer should be bound by a work contract so that he is responsible for the works he is certifying.

Third Party Inspection

Apart from strengthening its own set-up, the Department engaged an independent agency known as Third Party to undertake the day to day inspection of the sites where construction work is being undertaken. This agency is in direct contact with the SPD / DPC office. This would not only increase the efficiency of the engineering staff but

also apprise the SPD / DPC office of the status of civil works as being executed at site.

Material Testing

Although provision and facility of material testing is available by third party and technical staff but this does not feed each and every site. The test reports and results should be available in proper time to avoid crucial situation at site. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used. Proper instructions should be provided to procure and stacking of the material particularly cement at site as it was found at some sites that no one was aware of expiry of cement bags.

Structural Amendments

The buildings being planned and executed have the following shortcomings :

- The present building design as being provided to the VECs do not have any provision for future construction on the first floor. Since, land and space is a constraint, proper designs with provision of future expansion should be provided to the VECs.
- The provision of plinth protection works is completely missing. The foundation and plinth beam of the building is subjected to drainage water from the roof top and near by ground which results in uneven settlement of the foundations. This component should be added in the building estimates to increase the safety and life of the structure.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in specific schools where they are essentially required and the space is available for such a construction.
- The buildings constructed under the SSA programme are devoid of any rain spouts or drainage pipes from the roof top in rectangular buildings. As such, the water from the roof top flows along the walls to the ground. The absence of the plinth protection works adds to the weakening of the building foundation.
- Building being constructed in hilly areas should be provided with retaining wall provision to prevent sliding of the back slopes.

Communication and Transportation

There is a gap of communication and interaction between the technical and the administrative wings of the DPC office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication mechanism, with proper reporting, needs to be evolved to help the VEC and the Head Master in the endeavor to complete the said works as per the desired specifications.

The BLEs should be provided with adequate funds for transportation in the field. The efficiency and success of the programme would be achieved if proper and timely supervision of the works is undertaken.

Instructions to VEC / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the VEC / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

A sample table could be as follows:

Construction Instructions

S.No.	Stage of Building	Material Used								
		Bricks		Cement		Sand		Steel		Any Other Material
		Required	Used	Required	Used	Required	Used	Required	Used	
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8	Misc. Works									

The SPD should give the quantities “**required**” for the building construction to the VEC / head master before the start of the work. The “**used**” column should be filled by the VEC / head master during work execution.

Scope for Future Expansion

With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the layouts and construction of the new building should be undertaken keeping this factor into consideration.

At many places the new building has been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision. Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure. The plans being handed over to the VEC / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following :

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters :

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the VEC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

TAMIL NADU

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, VEC, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under :

Mapping of the schools

There is total lack of school data related to the infrastructure at the Block / District / State level. The DE / BLS / BLEs should be given the task of preparing the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

Cost Estimates

The cost estimates as prepared for the buildings are uniform for the whole State. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

The typical cost estimates have been prepared on an ideal situation of flat terrain. The estimates do not account for hilly terrains where additional plinth levels are to be constructed to bring the building to a uniform plinth level. Such buildings require additional cost.

The SPD office should be provided with a full technical team consisting of Senior and Junior Engineers, Architect and Draftsman who should estimate each site based on its local conditions and provide / sanction the funds accordingly. This would help in releasing proper funds to the sites and result in the work being undertaken within the prescribed specifications.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The funds being provided at this stage are inadequate and unjustified considering the amount of responsibility entrusted on the DE / BLS / BLEs.

Since the BLS is a nodal position between the DPC and the BLEs, their position is of great importance. As such, they should be fully aware of the day to day construction problems and be able to suggest their remedial measures at site. The BLE should have at least 5 years experience in the construction field. The engineer should be bound by a work contract so that he is responsible for the works he is certifying.

Third Party Inspection

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SPD / DPC office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / DPC office of the status of civil works as being executed at site.

Material Testing

No provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings :

- The present building design as being provided to the VECs do not have any provision for future construction on the first floor. Since, land and space is a constraint, proper designs with provision of future expansion should be provided to the VECs.
- There is no provision of earthquake resistant structures in the building design. The same needs to be incorporated.
- The provision of plinth protection works is completely missing. The foundation of the building is subjected to drainage water from the roof top and near by ground which results in uneven settlement of the foundations. This component should be added in the building estimates to increase the safety and life of the structure.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in specific schools where they are essentially required and the space is available for such a construction.
- The buildings constructed under the SSA programme are devoid of any rain spouts or drainage pipes from the roof top. As such, the water from the roof top flows along the walls to the ground. The absence of the plinth protection works adds to the weakening of the building foundation.
- Building being constructed in hilly areas should be provided with retaining wall provision to prevent sliding of the back slopes.

Communication and Transportation

There is a gap of communication and interaction between the technical and the administrative wings of the DPC office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication

mechanism, with proper reporting, needs to be evolved to help the VEC and the Head Master in the endeavor to complete the said works as per the desired specifications.

The BLS and BLEs should be provided with adequate funds for transportation in the field. The efficiency and success of the programme would be achieved if proper and timely supervision of the works is undertaken.

Instructions to VEC / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the VEC / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

A sample table could be as follows:

Construction Instructions

S.No.	Stage of Building	Material Used								
		Bricks		Cement		Sand		Steel		Any Other Material
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The SPD should give the quantities “**required**” for the building construction to the VEC / head master before the start of the work. The “**used**” column should be filled by the VEC / head master during work execution.

Alterations / Deviations

As present, no reporting of alterations / deviations undertaken in the building from the basic design is being reported to the SPD / DPC office. As such the SPD office is completely ignorant of the site reality. Proper instructions should be given to all

Technical staff to report all deviations / alterations undertaken by the VEC / head master at site. No deviations / alterations should be permitted at site without the proper clearance from the SPD office or the DE posted at the District Level. These alteration / deviations could have structural implications of which neither the VEC nor the head master is aware. In case, the school asks for additional infrastructure facilities, the future provisions could be made based on the altered design.

Scope for Future Expansion

With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the layouts and construction of the new building should be undertaken keeping this factor into consideration.

At many places the new building has been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision. Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure. The plans being handed over to the VEC / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following :

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the Public Health Department. The ADPC should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the DPC is in direct contact with the District Collector and the VEC / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters :

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the VEC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

UTTAR PRADESH

The assessment of the field visit to the selected sites and the interaction with the various stakeholders viz. State Government Officials, engineers, VEC, Head Master / Head Mistress and Villagers highlighted that the SSA programme has been a boon to the Education Department. To take up such a gigantic task would not have been possible without the involvement of the Village community into this scheme.

To give more strength to the project and the education facilities as a whole some of the recommendations are as under :

Mapping of the schools

There is total lack of school data related to the infrastructure at the Block / District / State level. The DPO should prepare the infrastructure data related to the schools in each Block. They should prepare the details of the school premises, its land area, building details and other infrastructure details and document the same. This would enable the education department to undertake future development works as per specific site requirements.

Cost Estimates

The cost estimates as prepared for the buildings are uniform for the whole State. This uniformity is unjustified. The uniform cost of the building being constructed near to the material source and that far away from it seems to be unjustified. The estimates should be prepared district-wise and subsequently some carriage should be added for the transportation of material in distinct areas. The distribution of funds should also be based on the location of the sites from the material source.

The typical cost estimates have been prepared on an ideal situation of flat terrain. The estimates do not account for hilly or plateau terrains like Jhansi where additional plinth levels are to be constructed to bring the building to a uniform plinth level. Such buildings require additional cost.

The SPD office should be provided with a full technical team consisting of Senior and Junior Engineers, Architect and Draftsman who should estimate each site based on its local conditions and provide / sanction the funds accordingly. This would help in releasing proper funds to the sites and result in the work being undertaken within the prescribed specifications.

Infrastructure for the Technical Wing

The State Government should strengthen the Technical wing the extent of providing proper infrastructure (office space, computer facility etc.), transport and communication facilities to commute to various sites. The funds being provided at this stage are inadequate and unjustified considering the amount of responsibility entrusted on the REs.

Since at the Block level the RE is an only person to provide technical guidance and support to the H.M and VEC, he should be fully aware of the day to day construction problems and be able to suggest their remedial measures at site. There is a need of enhancement of the technical staff (engineers) in terms of monitoring and supervision of the construction work for the SSA buildings in the State. These engineers should be appointed at block level and have at least 5 years experience in the construction field. The engineer should be bound by a work contract so that he is responsible for the works he is certifying. Though the recruitment of the engineers at district level has been started but it requires acceleration.

Third Party Inspection

Apart from strengthening its own set-up, the Department should engage an independent agency to undertake the day to day inspection of the sites where construction work is being undertaken. This agency should be in direct contact with the SPD / DPC office. This would not only increase the efficiency of the engineering staff but also apprise the SPD / DPC office of the status of civil works as being executed at site.

Material Testing

No provision and facility of material testing is available in the present scenario. The proposed technical staff and the Third Party Inspection team should be asked to certify the quality of material being used for the construction activity. Simple testing techniques should be devised and undertaken for testing the material at site. This can only be achieved if proper day to day supervision is being undertaken. If the duration of the site visit is large, the untested material has already been utilized at site and it becomes very difficult to alter the sub-standard work or material used.

Structural Amendments

The buildings being planned and executed have the following shortcomings:

- The present building design as being provided to the VECs do not have any provision for future construction on the first floor. Since, land and space is a constraint, proper designs with provision of future expansion should be provided to the VECs.
- The ramps being provided in the buildings are not as per design in most of the buildings. Most of the buildings have ramps with improper design, width and slope. As per the opinion of the consultants the ramps should be provided in

specific schools where they are essentially required and the space is available for such a construction.

Communication and Transportation

There is a gap of communication and interaction between the technical and the administrative wings of the DPC office. Due to poor reporting and lack of accountability, many crucial issues are unreported. A proper communication mechanism, with proper reporting, needs to be evolved to help the VEC and the Head Master in the endeavor to complete the said works as per the desired specifications.

Instructions to VEC / Head Master

Proper instructions in the simplest of tables and techniques should be forwarded to the VEC / Head Master. They should be provided with the layout map of the building along with a tabulated format giving the details of the material, its quantities and mix ratio etc. for various stages of the building. This would enable them to plan and procure the material as per the requirement of the building at that stage. This would also help them in keeping a watch on the material being used by the mason at site. Excess use of material would have to be explained with due reasoning. Use of material below the prescribed quantity or using the material of any other additional civil works would amount to work being below specifications.

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The SPD should give the quantities “**required**” for the building construction to the VEC / head master before the start of the work. The “**used**” column should be filled by the VEC / head master during work execution.

Alterations / Deviations

As present, no reporting of alterations / deviations undertaken in the building from the basic design is being reported to the SPD / DPC office. As such the SPD office is completely ignorant of the site reality. Proper instructions should be given to all Technical staff to report all deviations / alterations undertaken by the VEC / head master at site. No deviations / alterations should be permitted at site without the proper clearance from the SPD office or the DE posted at the District Level. These alteration / deviations could have structural implications of which neither the VEC nor the head master is aware. In case, the school asks for additional infrastructure facilities, the future provisions could be made based on the altered design.

Scope for Future Expansion

With the constraint of land availability and increase of school rolls due to better infrastructure, it may not be long before the schools start asking for additional rooms to cater for the increasing requirements. As such the layouts and construction of the new building should be undertaken keeping this factor into consideration.

At many places the new building has been sandwiched between the old buildings or old construction. It would be difficult to provide a staircase in such buildings to go to the first floor. As such, the layouts that are provided to the head master for constructing the new building should be such that it accounts for this provision. Proper training to the technical staff is essential in this regard. The school mapping when undertaken would provide a better insight to the existing school infrastructure. The plans being handed over to the VEC / head master should be taken regenerated with a provision for future expansion at the earliest.

Additional Facilities

It was seen, observed and appreciated by all that there is no match to the SSA programme being undertaken by the Central Government. Though the Head Masters and the Villagers are thankful for the consideration of SSA, but they feel that this development could be properly preserved if the school is provided with the additional facilities of Boundary Wall with gate and proper toilet and sanitation facility.

The programme could consider the provision of boundary wall facility as it would improve the following:

- give an excellent look to the school complex
- ensure the safety and security of the children and the school infrastructure
- result in development of plantation in the school complex.

The Drinking water and sanitation facility needs to be provided with the help of the UP Jal Nigam and Public Health Department. The DPC/BSA should be entrusted the task of undertaking the co-ordination and follow-up of this activity. Since the DPC/BSA is in direct contact with the District Collector and the VEC / Head Master, he should be deputed to get requisite clearance and sanctions of the drinking water and toilet facilities in the various schools of the Blocks under his control.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters

to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters:

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place.

It is beyond doubt to conclude that the involvement of the VEC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.

WEST BENGAL

As result of site visit and opinion gathered after interaction with all the all concerned state and district authorities and VEC one is lead to believe that the concept of community involvement has made this gigantic task for providing infrastructure an easy task. This has generated enthusiasm in the masses who have had a leading role in success of the mission. This has crubbed the problem of land availability or the labour for execution of the work.

Mapping of the schools

In order to ensure against any confusion of mismanagement at site during site selection it is mandatory that a master plan for all schools be prepared identifying the location of existing buildings facilities and the like so that there is ease in deciding while going for site selections.

Cost Estimates

As the unit cost estimate for a particular structure forms the basis for the release of funds, it is essential that the estimate be prepared on the updated rates so that there is no effect on the smooth execution of the works owing to inadequate funds and an unnecessary burden on the VEC provision for external development, plinth protection and thermal insulation and proper roof drainage needs to be provided for the safety of the building in the ensuing estimate.

Cost Effectiveness

Cost effective techniques such as brick arch corbels, parabolic arches and other methods of cost reduction need to be explored and executed after the proper analysis to ensure economy in the cost of construction.

Infrastructure for the Technical Wing

It has been seen during interaction at S.P.O that there is a small technical wing existing wing at the state level. Most of the posts are lying vacant. Similar situation exists at the district level. Diploma engineers with no patronage of a senior rank are running the show. This effects the construction monitoring and supervision process adversely.

The state authorities need to adopt ways and means to strengthen the technical wing spearheaded by senior ranking experienced engineers. Some ex-engineering officers could be recruited to ease out the construction process. Vigorous training programmes held in letter and spirit for both technical and VEC members, is necessary.

Periodic review meeting be arranged for site engineers with the district authorities and state authorities to ensure effective monitoring and supervision of the sites. Construction manuals and guidelines need to be published so that there is no shortfall in execution of works.

Various workshops could be held and visit to other states and sites be arranged to give a proper exposure to the technical personnel for effective execution of the works under there control.

Material Testing

No laboratory facility are available for testing of material and concrete mixes in the present scenerio. The Third Party Monitoring agency should be put in place at the earliest to undertake this work.

Structural Amendments

The provision for earthquake resistance should be made mandatory for the safety of the building under constructions or likely to be constructed in future.

The ramps for the barrier free movement of CWSN need to be executed in proper slope. More facilities take CWSN friendly toilets & special seating arrangement at the back of the class need to be adopted in future.

Instruction to VEC / HM

By looking at the building file (Documents pertaining to building construction) one is led to believe that the VEC / HM are not well conversant with the preparation of documents relating to the buildings. Cash books for receipt / expenditure, muster rolls, stock registers, etc. are not properly maintained. It is therefore strongly recommended that regular training programme be organized to train the VEC / HM / Engineers for proper documentation as per the prescribed formats and maintain them regularly on daily basis.

Inadequate Annual Maintenance Grant

There was no annual maintenance grant for the school premises before the start of the SSA programme. Subsequently, this grant has been of much help to the Head Masters to get the white washing and some minor repairs done on the old buildings existing in the school complex. At present the grant is uniform i.e. per school, irrespective of the school size and infrastructure.

The consultants feel that the annual maintenance grant should be based on the following parameters :

- Land availability of the school complex.
- Number of buildings existing in the complex.
- Physical condition of the buildings in the complex.

These parameters could only be evaluated if the school mapping is in place. The maintenance funds pattern be adopted on unit area basis.

It is beyond doubt to conclude that the involvement of the SMC and the villagers into the SSA programme has been quite successful. The generation of large infrastructure within such a short time span would not have been possible had this route not been followed. The contributions in kind provided by the villagers; whether related to land donation, material or labour input; go unreported and unappreciated. The sense of belonging and attachment towards the building constructed under SSA by the villagers can be seen in their eyes. The villagers feel that if some more facilities like boundary wall, drinking water and toilets are provided; their children would have a better environment for study.