

Meeting Minutes of Shelter Advisory Group

Date: 16.03.2007

Venue: Mini Conference Hall, Collectorate, Nagapattinam.

The SAG meeting started at 11.15 am and was chaired by the District Collector, Mr. Thenkasi S. Jawahar I.A.S. This was attended by Mr. Kanathasamy Special Deputy Collector (R & R) SAG members Prof. Santhakumar, Ms. Annie George CEO NCRC, Mr. Selvaganapathy, Mr. Dipan Shah of IHD, Mr. Jignesh of IHD, District Monitoring Tteam of the TDIU, Khitish and Justin, the UNVs and Shelter team of NCRC.

The District Collector evinced an interest in knowing about the corrective actions, if suggested, taken in the sites visited by the Shelter Support Group during the earlier monitoring visits. He also requested that the District Monitoring Team follows- up and ensures compliance with such corrective measures wherever suggested at the field level.

Following this, the Shelter Support Group presented the findings of their site visits. Mr. Dipan Shah started with his observations on the sites of Mahalakshmi Nagar, Saveriar Koil, Andanapettai, and Velangani where TMSSS is constructing the permanent shelters. The following observations were highlighted:

Mahalakshmi Nagar

- Lesser depth in the foundation mat top to ground level than what was approved.
- Shifting of column from the centre line.
- The brick work alignment above the lintel level is out by more than 1.5 inches.
- The staircase detailing is faulty with no negative reinforcement
- Distances between the main rods more than the acceptable limits
- Column rods are out of alignment at the roof level
- Stirrups spacing in roof beam (8 inch centre to centre as per drawing and but is 12 inch in actual practice)
- Column alignment has shifted by more than 1.5 inches over the grade beam.
- Over the lintel to roof level stirrups are missing in multiple locations.
- Cutting of lintels and roof beams for the fixing of electrical pipes.
- Very less cover in roof slab rods are visible in multiple locations, with the future potential of quick corrosion of the steel.
- As per the drawing, the roof beam rods are 12 mm and 5 numbers, but in the implementation is 10mm.

Prof. Mr. Santhakumar observed that wrong detailing could be retrofitted but if steels are missing then it has to be demolished.

The District Collector asked the technical engineer from TDIU to check immediately and submit their observation and the corrective action taken by the NGO in writing to both the NGO as well as the Administration. He also stated that work in this site should commence only after the rectification.

Saveriar Koil

- The column size is reduced to 7 or 8 inches from the actual required size of 9 inches.
- Brick work is used as form work
- Only small portion of stair case detailing is available in the drawing.
- Spacing of stair case rod is more than 1 feet.
- Two contractors in the same site are differing in their reinforcements details.
- No proper covers at top in Grade beam and this leads to cracking at stirrups. Such cracks have been observed in multiple places.
- No negative reinforcement in staircase and also no bracket beam reinforcement at bottom of the staircase in the ground level.
- Grade beam alignment is out
- Uneven spacing of roof reinforcement.
- Brick work used as form work in grade beam and it is casted along with bricks, which are visible.
- Reinforcements are missing in roof beam.

Andanapettai

- Staircase thickness varying from 0.5” to 4”.
- Staircase bracket beam is shifted.
- Column and beams alignment is out by 4 inches.
- Column reinforcements are poor.
- Stirrups were not found in the columns casted.
- Column alignment at basement is up to 6” out of grade beam.

The SAG member Mr. Selvaganapathy stated that, in general, all these misalignments are due to non- marking of centre line.

Velanganni

- Absence of cover and stirrups in the columns.
- Quality of brickwork was found poor.
- Cracks at corners in multiple locations were found especially in the openings.

After the presentation of all these four sites, the Shelter Support Group noted that the mistakes in all the four sites are quite similar and common.

SAG and the Collector agreed that the poor quality of construction was being observed in all the sites of TMSSS and this could not be continued. **It was decided that a 100% check be done of all the houses constructed by TMSSS, including non- destructive tests in select houses. The safety of the houses constructed had to be ensured at any cost.**

Poombuhar – SEVAI

Mr. Dipen Shah stated that this was the third visit to this site and none of the suggestions in their earlier visits have been complied with. His observations during this visit were:

- Very poor quality of brickwork.

- Continuous vertical joints in brick work in multiple houses.
- No tothing left for walls, no fixing detail for door frame
- Off centered footing, with 3” thick concrete instead of 9”.
- Instead of PCC, loose jelly is using and mortar is putting over that free jelly
- No proper cover for footing matt and column bars
- Twisted columns and reinforcement,
- Out of plumb columns & no cover
- Poor quality hidden by loose patchwork
- Off centered Columns with 2.5” thick concrete.
- No concern for plumb, cover, W/C ratio, mixing, alignment and STRUCTURAL details
- For concreting no engineers or technical supervisors were available at the site.

As all Sevai sites have also been observed to be having very poor quality of construction, a 100% survey of Sevai Sites, including non- destructive testing in select houses was advised for Sevai also and Collector has directed the SSG to plan the visits at the earliest.

Prof. Sathakumar observed, on an enquiry by the Collector, that the Valivalam Desigar Polytechnic in Nagapattinam had the necessary infra- structure facilities to carry out non- destructive tests. Alternatively, help could also be sought from institutions in Chennai for the same.

Kameshwaram – DPG

- Though column ring is 150x150, quality of columns Stirrups distance
- 9 out of 11 columns had kinked reinforcement
- Long span stair without proper support details
- Waist slab reduced from 6” to 4”

Chandrapadi – UELCI

- No overlapping reinforcement
- Exposed reinforcement at many places

The SAG member for the above observation by SSG of main reinforcement in bottom places in cantilevers it was said quoted that especially the cantilever has got the high risk of falling so has to given good reinforcements.

Kottaimedu – Care Plan

- Reinforcement details are not sufficient
- Columns were found out of plumb
- Hold fasting fixing the columns were slightly cut.

Keechankuppam – Seva Bharathi

- All works were done by proper method
- Good quality of work

Saveriarkoil – World Vision

- Brick work is used as form work for column rising and this leads to reducing the size of the column.
- All other works were done with proper supervision and good care.

Sambanthottam – Matha Amrithanadamayi

- Thickness of staircase slab is 3 inch instead of 4 inches
- Quality of work is good

Sellur – UELCI

- Stirrups spacing is 9 inch instead of 8 inch center to center.
- Over the lintel to roof level stirrups are missing.

Pandagasalai – Rotary

- Rain water spout is given
- Cracks are formed over the leak proof course.

The District Collector observed that rectifications and repairs required, in the cases of the houses which have been handed over, should be done by the beneficiary and necessary orientation on the same provided. Rectifications for the houses still under construction should be done by the NGO.

Prof. Sathakumar classified the defects, based on their seriousness, into three categories:

Category I:

This category is life threatening as they are structural damages, like cases of missing reinforcements. They should not be allowed to remain and will necessarily have to be **demolished and rebuilt**.

Category II:

This category is not life- threatening but would cause problems in the future. Examples would be lack of cover blocks, etc. **Protective measures** have to be taken for these cases.

Category III:

Houses which do not feature disaster resistant construction come in this category, where there is no danger till a disaster strikes. Such houses have to be **retrofitted** to strengthen the stability of the building.

The District Collector asked the technical engineers to report all their findings in writing to ensure compliance with necessary follow- up action.

Mr. Dipan Shah reiterated that the lack of quality seemed to be more due to the NGO being forced to give multiple contracts for early completion of houses than a deliberate attempt to cut corners at the NGO level. However, the inexperience of the NGOs in such large- scale construction, lack of enough numbers of qualified staff, heavy dependence on these multiple contractors and low field level monitoring by the NGO, was leading to this poor quality of construction.

Prof. Santhakumar emphatically stated that qualified supervision was absolutely essential to avoid the irregularities observed. He also insisted on the availability of correct drawings at the sites.

During the session, a technical engineer enquired about the rectification measures for columns or beams that are out of plumb. Prof. Santhakumar replied that there was no other alternative but to demolish and redo.

The CEO, NCRC requested that the SSG classify all the observations made till now on the criteria suggested by Prof. Santhakumar. Mr. Dipan Shah agreed to do so and present the categorised report.

Sanitation In Nagapattinam

The CEO, NCRC, requested a clarification on the sanitation systems proposed in Nagapattinam. Although initially the Govt. had agreed to construct sanitation systems for all sites with more than 200 houses, lately the decision seemed to have changed to the Govt. constructing these systems only in town and municipal areas and the NGOs having to construct in the rural areas.

The District Collector stated that for all the locations in Town Panchyaths and the municipalities, where there are more than 200 houses, the government would set up solid waste treatment plants. In rural areas, irrespective of the number of houses, the system recommended is a septic tank as the local government will not be able to bear the O&M cost which is going to be high. However, a site- to- site planning is recommended and TWAD Board is already working on it.

Third party Audit

When asked about the third party audit, the SAG member, Prof. Sathakumar replied that the audit can be done on the sampling basis and the negotiations are on with IIT Chennai and Anna University. Quotations have been received from both. The costs quoted are Rs.10, 000 per building and, in a cluster, 5% of the houses will be tested. Professor also said that the OSD was keen on this study and if the Government was doing this at the State level, then Nagapattinam need not do it individually. The Collector also felt that the regular visits of the SSG and the meetings of the SAG was proceeding effectively and there was not much perceivable need for another round of construction audit at the district level.

District Collector also requested the presence of an SAG member in the weekly shelter review meetings. Mr. Selvaganapathy, was nominated and has agreed for the same. Prof. Santhakumar also suggested clubbing the SAG meeting with the weekly review meeting at least once a month. Thus it was decided that the SAG would be scheduled to synchronise with the first weekly review meeting of the month.

The District Collector regretted that such monitoring systems were not in place earlier when it would have been easier for timely corrective measures. He concluded that quality and speed should go side- by- side and not one at the cost of the other.

The Collector then thanked all the participants and brought the meeting to a close by 12. 30 pm.

Participants for the SAG internal discussion at Collectorate, on 16.03.2007				
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