

**Minutes of the Meeting on Shelter Advisory Group held  
at 10.30 am on Monday 16-10-2006**

The District Collector presided over the meeting. In his presidential address he mentioned that Shelter Advisory Group is formulated jointly by the District administration, UNDP and NCRC to monitor and ensure the quality, safety and speedy construction of the permanent shelters by the various NGOs for the tsunami affected persons in Nagapattinam district. He said that this is the first of its kind in the state and The **Shelter Advisory Group** shall consist of:

- a. Prof. Santhakumar, Emeritus IIT Chennai, State Advisor for Tsunami Reconstruction, Principal Advisor to UNDP for Tsunami Reconstruction
- b. Mr. Tensi, Sanitation Specialist, Auroville
- c. Mr. Prasanth, Environmental Specialist, Auroville
- d. Mr. Dipan Shah, IHD
- e. Representative of Hunnarshaala
- f. District Revenue Officer (Relief & Rehabilitation), Nagapattinam
- g. Special Deputy Collector (Land Acquisition), Nagapattinam
- h. Executive Engineer, Tsunami Dist. Implementation Unit, Nagapattinam
- i. Executive Engineer, TWAD Board, Nagapattinam
- j. Superintending Engineer, TNEB, Nagapattinam
- k. Representative from NCRC

The Responsibilities of the Shelter Advisory Group is to

1. Construction Quality Assessment
2. Field Based Advisory Support- new construction as well as retrofitting for the entire habitation
3. Linking up with Shelter Advisory Group for Clinics and problem solving
4. Capacity building based on field level requirements and as guided by the SAG
5. Reporting on field based visits and Action taken to Shelter Advisory Group for sustained follow- up action.

*The area of operation will be Area of Operation*

1. All relocation sites in Nagapattinam where new construction is taking place
2. All affected sites where in- situ construction and/ or retrofitting is taking place
3. Sites handed over but not in keeping with safety guidelines, needing retrofitting
4. Sites handed over, requiring maintenance

Prof, Santhakumar presented the modality of working or the SAG and informed that the Shelter Support Team will visit the sites once in a month and on the basis of their assessment trainings and capacity building will be provided.

Mr. Dipan shah of shelter supporting team presented the findings from the sites with photographs. He highlighted that gaps identified in:

The quality of foam work

Bar bending,

Concreting

He called for the attention of NGOs for the usage of cover blocks to ensure proper covering in concreting.

Mr. Prasanth talked about the drainage plan with reference to the TMSSS layout plan and the total station survey. He advised the NGOs to take adequate care on the drainage plan.

Prof. Santhakumar informed what are the basic requirements in sites:

#### **Basic Tools and Equipment to be deployed on site**

- Concrete mixer machine (5/7) (All concreting operations on site i.e PCC or RCC has to be done using concrete mixer only)
- Needle Vibrators (2 Nos. – 40 mm and 25mm)
- All mortar mixing to be done on impervious platform.
- Should have at least 6 cube moulds for taking cube sample (IS specified Quality)
- One slump cone to measure workability with trained personnel to do the testing and interpret the results.
- Design steel shuttering for beams, columns and slab with steel props instead of the loose shoddy planks with gapping holes presently being used.

#### **15.2.2 Frequency**

**The minimum frequency of sampling of concrete of each grade shall be in accordance with the following:**

<i>Quantity of Concrete in the Work, m<sup>3</sup></i>	<i>Number of Samples</i>
1 - 5	1
6 - 15	2
16 - 30	3
31 - 50	4
51 and above	4 plus one additional sample for each additional 50 m <sup>3</sup> or part thereof

**NOTE—At least one sample shall be taken from each shift. Where concrete is produced at continuous production unit, such as ready-mixed concrete plant, frequency of sampling may be agreed upon mutually by suppliers and purchasers.**

### **Manpower Required On Site**

- Depending on the scale and speed, a minimum of 1 qualified engineer and 2 qualified supervisor for every 50 units. They should certify, in writing, each stage especially the reinforcement details before concreting. A separate file / register should be maintained to document it.
- Additionally, there has to be 1 Quality Controller for the entire project certifying the quality of each unit (In- house or Consultancy based)
- One person per 20 units separately assigned for curing job with supporting infrastructure.
- A periodic capacity building of staff, especially masons and bar benders, is must to ensure the quality

### **General Quality Compliance and Systems**

- Cover blocks cast in the same mix as that of concrete member and cured for min. 7 days should only be used. The cover block should have binding wire to avoid displacement especially in staircase and columns.
- Water used for concrete should be strictly potable water with no impurities what so ever.
- Reinforcement detailing should be cleared by the engineer with necessary authentication before execution. The same shall be made available in charts format at main office, field office and with the bar bender. This is basic minimum to be followed for a disaster resistant construction.
- After the building is completed and before the plastering the Quality Controller has to specifically certify the building for compliance with all norms and then only plastering should be undertaken. If any defects found same should be documented and corrected before plastering.
- A record book showing continuous test results of concrete as specified in IS 456, 2000.
- A record book showing continuous test results of other raw material like brick, steel, sand, aggregates, water, cement.
- Field level consumption details for each operation like concrete, brickwork, PCC etc. have to be strictly maintained at the site office

### **Special Instructions**

- A separate instruction book in triplicate will be made available to the TDIU team for recording important lapses by the implementing team, which need to be corrected. This will also be brought to the direct notice of the Collector and the Exec. Engr.
- Three such serious repeated lapses will attract punitive measures as may be deemed fit by the authorities concerned

### **Records to be necessarily maintained at the Site Office**

1. Authenticated **master reinforcement detailing chart** certified by the designer for execution
2. Certified copies of the reinforcement detail adopted, certified by the NGO Supervisor for each stage of concrete work
3. Test results of basic construction materials used at the frequency recommended by IS
4. Test results of cubes at every significant concreting operation in sufficient numbers and frequency
5. Stock register reconciling the consumption of material based on the quantity of work executed
6. Record of Monitoring Team's impressions and recommendations and the follow-up action taken

Prof. Santhakumar added that only in India people are plastering the concrete. He stated that concrete is of superior quality and we are plastering it with inferior quality mortar.

The Executive Engineer TWAD Board stated that sanitation proposals for 27 sites with above 200 houses have already send to world bank for approval and the design for the habitat with less than 200 houses are being prepared. He also mentioned about the water supply work which started in all permanent shelter sites.

The NGO SEVAI enquired whether mixing machines and vibrators are available on rent from government.

CEE south informed that they are using plywood foam work for concreting and they are not plastering the concrete.

The District collector in his concluding remarks advised the NGOs to take the recommendations of SAG in a constructive way and said that 'we are not building house but homes' and all our efforts should be directed towards that.

The meeting ended at 12.30 pm

Attendance,

District Revenue Officer (Relief & Rehabilitation), Nagapattinam  
Executive Engineer, Tsunami Dist. Implementation Unit, Nagapattinam  
Executive Engineer, TWAD Board Nagapattinam

Prof. Santhakumar, Emeritus IIT Chennai, State Advisor for Tsunami  
Reconstruction, Principal Advisor to UNDP for Tsunami Reconstruction

Sri. Prasanth, Environmental Specialist, Auroville

Sri Dipan Shah, IHD

Mr. Vivekandan , Sterring committee member NCRC

Ms. Annie groeg, CEO, NCRC

UNVs

NGO representatives