



**TRAINING FOR ALL TECHNICAL STAFF - INTENSIVE TRAINING
PROGRAM (ITP) –TRIBAL WELFARE ENGINEERING
DEPARTMENT (TWED)
GOVERNMENT OF TELANGANA**

**TRAINING COURSE TO
THE FUNCTIONARIES OF ENGINEERING
DEPARTMENT - TWED**

DESIGNED BY

M RADHIKA, AEE &

N HARIKA, AEE

**TRIBAL WELFARE ENGINEERING DEPARTMENT, DSS BHAVAN,
MASABTANK, HYDERABAD – 500028**

CONTACT: 9676142685 E-MAIL: mogiliradhika@gmail.com

nanumala.harika@gmail.com

CONTENT

SL. NO.	DETAILS	PAGE NO.
1	Client	3
2	Context	3
3	Scope	3
4	Performance Problem	3
5	Organizational /Functionary Training Needs	3
6	Entry Behaviour	4
7	Target Group, Batch size, Duration& Strategy to Implement	4
8	Design Constraints	4
9	Aim	4
10	Benefits of the Training Course	5
11	Learning Units	5
12	Training Objectives	5
13	Format for Creating Learning Event <ul style="list-style-type: none">• For Common Day Module• For Domain Specific	5
14	Session Wise Action Plan for three Days Training	7
15	Instructional Strategy / Training Methods	8
16	Course Material	8-9
17	Assessment	9
18	Validation	9
19	Trainer Review	9
20	Transfer of Learning	9
21	Module Development and Implementation Plan / Schedule	10

1. Client

Commissioner, Tribal Welfare Department, Hyderabad, Telangana State.

2. Context

The Tribal Welfare Department is providing infrastructure facilities towards enhancing Literacy and health condition to Scheduled Tribes in the state of Telangana. The Engineering wing of the Tribal Welfare Department is supervising the implementation of all infrastructure works related to Educational, Health and Rural Road connectivity in Tribal Areas of the state of Telangana.

The technical staff of the Tribal Welfare Engineering Department has been succeeding in implementation of infrastructure facilities to Schedule Tribes in the Telangana state. But the technical Staff maynot aware of new technologies in construction field. If we adopt these new technologies this will help to Improving the quality of works, reducing the cost and time.

While executing the works the staff of Tribal Welfare Engineering Department (TWED) facing some issues in monitoring the works effectively and completing the works within the specified time period. It is mainly on the account of the following ground:

- (1) Lack of awareness on work monitoring system.
- (2) The TWED Staff have not gone under any proper training previously.
- (3) Lack of updating in their role and responsibilities
- (4) Lack of motivation
- (5) Lack of proper environment to learn

3. SCOPE

The proposed training is intended for all the Technical personnel in Engineering Wing of Tribal Welfare Department with specific scope and limitations.

- The contract procedures and administration will be followed as per latest government orders and guidelines issued by TR&B, I&CAD, Works & Projects Depts which are in general are followed by all engineering departments in the state.
- To expose them to the latest construction technologies available within their reach. The training will provide basic knowledge in adopting suitable technologies & methods if any during their design, execution and maintenance of the building being planned or constructed by the department.
- To orient them towards latest road construction technologies and practices within the Rural Road Construction guidelines. The guidelines issued by Ministry of Rural Development (MoRD) are proposed to be followed in this training. The guidelines issued in case of Ministry of Roads, Transport and Highways (MoRTH) and Pradhan Mantri Gram Sadak Yojana (PMGSY) will be referred where ever necessary.
- In this training, the best practices adopted in Rural Roads will be identified through interaction with experts in the field and the participants will exchange information of their location specific conditions to seek appropriate advises to be followed.
- Provide knowledge and skills in Monitoring Information System developed by CGG
- Introduction of concepts of Green Building in construction of infrastructure facilities for Tribal Welfare School Buildings.

Performance Problem

The lack of Knowledge on new technologies and work monitoring system among the TWED Staff leads to:

- Due to lack of knowledge and skills among the TW Engg Tech staff about the tender procedures and contract administration, the works are not completed within intended time limits and costs
- Due to lack of knowledge and skills among the TW Engg Tech staff about the alternate technologies in construction of buildings, the costs and time limits are being hiked in construction of building works
- The cost of maintenance and repairs of Rural Roads in tribal areas are being escalated due to lack of knowledge and skills in construction practices among the TW Engg Tech staff in rural road construction in tribal areas Conducting
- Due to lack of knowledge and operational skills among the TW Engg Tech staff about the Monitoring Information System developed by CGG, the TW authorities are unable to assess and

analyse the periodical status of physical and financial achievements in infrastructure works programs

- Due to lack of Green Building Concepts among the TW Engg Tech staff, the performance of Buildings in terms of Water efficiency, Energy Efficiency and post construction maintenance is observed to be low when compared to the desired levels as per GBC ratings

4. Organizational / Functionary Training Needs

A systematic Training Need Analysis (TNA) of Tribal Welfare Department (TWD) was conducted by MCRHRDIT with the collaboration of TWD, Hyderabad. 20% of the Target Group was studied. The final draft of TNA was validated with the MCRHRDIT. From the TNA the following training needs have been clearly noticed:

1. Lack of knowledge on functionary roles of TWED staff
2. Lack of knowledge and Skills on adopting new technologies
3. Lack of knowledge and Skills on CGG tool and monitoring information system
4. Lack of knowledge and Skills on communication and consolidation
5. Lack of knowledge and Skills on implementation of innovative methods in construction technologies

6. Entry Behaviour

- Majority of the trainees have not aware of their Duties and responsibilities.
- Majority of the trainees have not undergone any proper training on different kinds of construction technologies previously.
- Few of TWED Staff are working on Outsourcing Basis, hence they are reluctant to learn and implement all systematic impletion of TWED works.

Their entry behaviour will be assessed in two ways:

- Pre - Course Questioner will be sent to all the participants in advanced to find out their specific need.
- During the inaugural session course sharing of expectations will be carried out.

7. Target Group, Batch Size,Duration and Strategy to implement

Total no. of trainees involved is 76

- Chief Engineer - 1
- Superintending Engineers - 2
- Executive Engineers - 5
- Deputy Executive Engineers -24
- Section Officers (AEs/AEEs)-44

The strategy for training implementation will be as follows:

- A batch of 76 trainees is to be formed.
- Single batch will be conducted
- The training will be conducted for (3) days in the month of January.
- Identifying three Trainers.

8. Design Constraints

Tribal Welfare Department provides supports in all aspects like Policy, Priority, Budget, Time, Venue, Resources, Trainees, and Trainers. Hence, there are no constraints regarding these factors.

9. Aim

The aim of the training is to equip knowledge and skills to Tribal Welfare Engineering Technical staff in Monitoring Information System developed by CGG, Tender procedures and contact Administration, Introducing Green Building Concepts in Construction of TW Ashram Schools, Alternate Construction Technologies in School Buildings and Good Construction Practices in Rural Road Formation in Tribal Areas.

10. Benefits of the Training Course:

- Trainees will be able to know insight of various latest technologies available for construction of buildings
- Trainees will be able to improve their Monitoring and Supervision skills then they will have more confidence in their duties and responsibility.
- Participants will be self - regulated towards effective field work.
- Speedy construction and utilisation of allocated budgets in time
- The Tribal Welfare Department will get new image of adopting latest and apt technologies in creating its infrastructure facilities
- The department reputation will be improved

11. Learning Units

1. Monitoring Information systems
2. Tender procedures and Contract administration
3. Introduction to Green Building concepts in School buildings
4. Alternate construction technologies in construction of school building
5. Best practices in Rural Road Construction in tribal areas

12. Training Objectives

At the end of the training participants will be able to....

1. Explain Tender Procedures in the department and various steps involved in Contract Administration
2. Explain the Functions of TWED & role of TWED staff
3. Identify suitable building components where Alternate technology constructions can be adapted in School Buildings Construction
4. Identify Good Practices in Construction of Rural Roads in tribal areas
5. Operate and use the MIS software application developed by CGG
6. Describe Green Building concepts
7. Identify various IGBC's rating systems to be adopted in Construction of TW Educational Institutes
8. Acquire skills in construction practices to suite to obtain IGBC ratings for a School Building
9. Identify Important factors affecting design of flexible to be considered in obtaining design data for design of Flexible and Rigid Pavements in Rural Road Construction
10. List out Construction deficiencies in different Layers of Rural Road Construction.

13. Format for creating Learning Event (For Common Day Module)

Learning Unit	Content / Sequence	Method	Media	Performance Aid	Time	Trainer	Assessment Measures
Vision and Mission of TWD	Vision of TWD	Lecture	Projector, Board, Board Marker, Charts	Glossary of Vision and Mission of TWD	10 Mins	Subject Expert from TWD	Question and Answers, Quiz
	Mission of TWD						
Demographic Areas of STs in Telangana	a. Areas of Tribal Population b. Deferent Sub Tribes & Population c. PVTGs names and population	Lesson	Projector, Board, Board Marker, Charts	Map of ST Demographica l Area of TS	10 Mins	Subject Expert from TWD	Question and Answers, Quiz
Schedule Area and Plain Area	Introduction to Schedule Area a. Definition b. Geographical Area	Lesson	Projector, Board, Board Marker, Charts	List of Schedule Area	10 Mins	Subject Expert from TWD	Question and Answers, Quiz

	Introduction to MADA a. Definition b. Geographical Area c. Activities of MADA	Lesson	Projector, Board, Board Marker, Charts	List of MADA Activities	10 Mins	Subject Expert from TWD	Question and Answers, Quiz
Organogram of TWD	Organogram of TWD	Lesson		Chart of Organogram			
Single Line Administration in Tribal Sub-Plan area	Introduction a. Definition b. Administrative Functions	Lecture and Lesson	Projector, Board, Board Marker, Charts	Handout of GO MS No.57	20 Mins	Subject Expert from TWD	Question and Answers, Quiz
Service Delivery Sectors of TWD	a. Education b. Health c. Livelihoods d. TCR & TI	Lesson	Projector, Board, Board Marker, Charts	List of Service Delivery Sectors	60 Mins	Subject Expert from TWD	Question and Answers, Quiz
Flagship Programmes of TWD	a. Panel Inspection b. Meet the Parent c. Karadipath d. STAR Student Lecture e. Career Counselling Programme	Lecture and - Lesson	Projector, Board, Board Marker, Charts	List of Innovative Programmes of Academic Activates	30 Mins	Subject Expert from TWD	Question and Answers, Quiz
	1.SSC Special Centres 1. Punadi -2 2. Cheyutha 3. PrayogaDeepikalu 4. E-Learning in Schools	Lecture and - Lesson	Projector, Board, Board Marker, Charts	List of Innovative Programmes of Educational Activates	30 Mins		

(For Domain Specific)

Sl. No.	Learning Unit	Content / Sequence	Method	Media	Performance Aid	Time	Trainer	Assessment Measures
1	Monitoring Information systems	Functional Roles and Responsibilities of TWED Field Staff	Lecture and Interaction	PPT, Projector, White Board, Markers	Organogram of Dept, Copies of Gos	60 Mnts	TWED RP	Question and Answer Quiz
		Introduction to Project Monitoring and Communication Management	Lecture and Interaction	PPT, Projector, White Board, Markers	Exception Charts	30 Mnts	TWED RP	Question and Answer Quiz
		Introduction to various components of the package	Lecture and Interaction	PPT, Projector, White Board, Markers	Exception Charts	30 Mnts	TWED RP	Question and Answer Quiz
		Generation of detailed work progress report	Lecture and Interaction	PPT, Projector, White Board, Markers	Work sheets	30 Mnts	TWED RP	Question and Answer Quiz
		Introduction to Analysis report in the MIS package	Lecture and Interaction	PPT, Projector, White Board, Markers	Exception Charts	30 Mnts	TWED RP	Question and Answer Quiz

		Generation of Analysis report	Lecture and Interaction	PPT, Projector, White Board, Markers	Hand Outs, Reference Books	30 Mnts	TWED RP	Question and Answer Quiz
2	Tender procedures and Contract administration	Introduction to tender procedures	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Flow charts, Copies of GO's	15 Mnts	TWED RP	Question and Answer Quiz
		Pre tender activities	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Flow charts, Copies of GO's	15 Mnts	TWED RP	Question and Answer Quiz
		Guidelines on Tender systems	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Flow charts, Copies of GO's	15 Mnts	TWED RP	Question and Answer Quiz
		Bid Evaluation	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Flow charts, Copies of GO's	10 Mnts	TWED RP	Question and Answer Quiz
		Issue of LoA and concluding agreement	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Flow charts, Format work sheet	10 Mnts	TWED RP	Question and Answer Quiz
		Different clauses of contract Agreement	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Contract document copy	15 Mnts	TWED RP	Question and Answer Quiz
		General principles of closing contracts	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Contract document copy	15 Mnts	TWED RP	Question and Answer Quiz
		Completion of work and closer of contract	Lecture	PPT, Projector, WB&M, Charts, Sketch Pens	Contract document copy	15 Mnts	TWED RP	Question and Answer Quiz
3	Introduction to Green Building concepts in School buildings	Introduction of Green Building	Lecture	PPT, Projector, White Board, Markers	Exception Charts	20 Mnts	IGBC RP	Question and Answer Quiz
		Green building concepts	Lecture	PPT, Projector, White Board, Markers	Work sheets	30 Mnts	IGBC RP	Question and Answer Quiz

		Introduction to Green Building Rating system	Lecture	PPT, Projector, White Board, Markers	IGBC Rating Manual, Exception Charts	30 Mnts	IGBC RP	Question and Answer Quiz
		Credit scoring methodology	Lecture	PPT, Projector, White Board, Markers	Exception Charts, Compiled notes	15 Mnts	IGBC RP	Question and Answer Quiz
		Green building areas in School environment	Lecture	PPT, Projector, White Board, Markers	Work sheets	45 Mnts	IGBC RP	Question and Answer Quiz
		Existing construction practices matching with GBC	Lecture	PPT, Projector, White Board, Markers	Exception Charts, Performance charts	20 Mnts	IGBC RP	Question and Answer Quiz
		Appropriate practices for adpoting to GBC	Lecture	PPT, Projector, White Board, Markers	Exception Charts, work sheets	20 Mnts	IGBC RP	Question and Answer Quiz
4	Alternate construction technologies in construction of school building	Introduction of Alternate construction technologies in building construction	Lecture	PPT, Projector, White Board, Markers	Hand Outs	30 Mnts	NAC RP	Question and Answer Quiz
		Various building components which can be adpoted with alternate technologies	Lecture	PPT, Projector, White Board, Markers	Hand Outs	60 Mnts	NAC RP	Question and Answer Quiz
		Innovative practices being adopted in School building construction	Lecture	PPT, Projector, White Board, Markers	Exception Charts	60 Mnts	NAC RP	Question and Answer Quiz
5	Best practices in Rural Road Construction in tribal areas	Design parameters of flexibble and Rigid pavements	Lecture	PPT, Projector, White Board, Markers	Work sheets	30 Mnts	NAC RP	Question and Answer Quiz
		Important factors in design of flexibble and Rigid pavements	Lecture	PPT, Projector, White Board, Markers	Hand Outs, Reference Books	30 Mnts	NAC RP	Question and Answer Quiz
		Specifications of MoRD and PMGSY in Rural road construction	Lecture	PPT, Projector, White Board, Markers	Hand Outs, Reference Books	60 Mnts	NAC RP	Question and Answer Quiz

		Construction methodologies of Road layers and Good practices for Rural roads	Lecture	PPT, Projector, White Board, Markers	Hand Outs, Reference Books	60 Mnts	NAC RP	Question and Answer Quiz
--	--	--	---------	--------------------------------------	----------------------------	---------	--------	--------------------------

14. SESSION WISE ACTION PLAN FOR THREE DAYS TRAINING

This is the time schedule for all Learning units. Each learning unit is covered in one day. Each day will be scheduled with four sessions.

Time Line / Session	Content/Activity	Trainer / instructor	Duration
Day-1			
9.00 AM to 9.30 AM	Registration	Course Director	30 Mins
9.30 AM to 10.30 AM	Inauguration, Introduction of Participants, Objectives of Intensive Training programme (ITP)	Course Director	60 Mins
10.30 AM to 10.45 AM	Tea Break		15 Mins
11.15 AM to 12.15 PM	Functional Roles and Responsibilities of TWED Field Staff	Subject Expert from TWD	60 Mins
12.15 PM to 1.15 PM	Introduction to Project Monitoring and Communication Management	Subject Expert from TWD	60 Mins
	Introduction to various components of the package		
1.15 PM to 2.00 PM	Lunch Break		45 Mins
2.00 PM to 3.00 PM	a) Generation of detailed work progress report	Subject Expert From TWED	30 Mins
	b) Introduction to Analysis report in the MIS package		30 Mins
3.00 PM to 3.05 PM	Short Break		05 Mins
3.05 PM to 4.00 PM	Introduction to tender procedures	Subject Expert From TWED	15 Mins
	Pre-tender activities		15 Mins
	Guidelines on Tender systems		15 Mins
	Bid Evaluation		10 Mins
4.00 PM to 4.05 PM	Tea Break		05 Mins
4.05 PM to 4.10 PM	Ice Break activity		05 Mins
4.10 PM to 5.05 PM	Issue of LoA and Concluding Agreement	Subject Expert from TWED	10 Mins
	Different clauses of contract Agreement		15 Mins
	General principles of closing Contract		15 Mins
	Completion of work and close of contract		15 Mins
5.05 PM to 5.15 PM	Assingment -I		10 Mins
Day-2			
9.30 AM to 10.00 AM	Recall & Recapitulation of Day-1 Activity	Subject Expert From TWED	30 Mins
10.00 AM to 10.45 AM	Introduction to Green Building Movement in India	Subject Expert From TWED	15 Mins
	Green Building Concepts		30 Mins
10.45 AM to 10.50 AM	Tea Break		05 Mins
10.50 AM to 12.00 PM	Sites and Facility Management	Subject Expert From TWED	30 Mins
	Water Efficiency, Energy Efficiency		20 Mins
	Health & Comfort, Innovation Category		20 Mins

12.00 PM to 12.05 PM	Ice Break activity		05 Mins
12.05 PM to 1.15 PM	Introduction to Green Building Rating systems	Subject Expert From TWED	30 Mins
	Case studies		30 Mins
1.15 PM to 2.00 PM	Lunch Break		45 Mins
2.00 PM to 3.00 PM	Flexible and Rigid Pavement Design as per Rural Road Construction Manuals, MORD and PMGSY	Subject Expert From TWED	30 Mins
	Important Factors affecting the design of Rural Road Construction		30 Mins
3.00 PM to 3.05 PM	Tea Break		05 Mins
3.05 PM to 4.05 PM	Design of Flexible Pavements	Subject Expert From TWED	30 Mins
	Specifications to be followed in Rural Road Construction		30 Mins
4.05 to 4.15 PM	Ice Break activity		10 Mins
4.15 PM to 5.00 PM	Construction Methodologies and Good Practices in Rural Road Construction	Subject Expert from TWED	45 Mins
5.00 PM to 5.15 PM	Assingment -II		15 Mins
Day – 3			
9.30 AM to 10.00 AM	Recall & Recapitulation of Day-2 Activity,	Subject Expert From TWED	30 Mins
10.00 AM to 11.00 AM	a)Introduction to Alternate construction technologies in Buildings b)Latest /New construction technologies in School Buildings / Hostels- RCC Items	Subject Expert From TWED	30 Mins
	Latest /New construction technologies in School Buildings / Hostels- Panel Walls		30 Mins
11.00 AM to 11.05 AM	Tea Break		05 Mins
11.05 AM to 12.05PM	Latest /New construction technologies in School Buildings / Hostels- Sanitary and Water Supply Items	Subject Expert from TWED	30 Mins
	Latest /New construction technologies in School Buildings / Hostels- Doors & Windows, Floorings		30 Mins
12.05 PM to 12.15 PM	Ice Break activity		10 Mins
12.15 PM to 1.15 PM	Various Building Components which can be adopted with alternate technologies- Architectural Modifications and RCC Items	Subject Expert from TWED	20Mins
	Various Building Components which can be adopted with alternate technologies- Panel Walls, Sanitary and Water Supply Items		20Mins
	Various Building Components which can be adopted with alternate technologies- Doors & Windows, Flooring		20Mins
1.15 PM to 2.00 PM	Lunch Break		45 Mins
2.00 PM to 3.00 PM	Establishment topic	Subject Expert from TWED	60 Mins
3.00PM to 4.15 PM		Subject expert from TWED	45 Mins
	End Test		30 Mins
4.15 PM to 4.30PM	Tea Break		15 Mins
4.30 PM to 5.45PM	Valedictory		75 mins

15. Instructional Strategy/ Training Methods

a. Lecture Method

This is method applied for transmission of information on

- TWED Staff equip Knowledge and Skills on Monitoring and Supervision
- Topics introduction.

b. Group Exercises

- Team Building
- Communication in Construction
- Identification of different green building elements in a building
- Identification of various raw materials used in building construction
- Change requirements in Architectural elements in a building
- Suggestions for usage of raw materials in green building concept
- Recommendations for appropriate construction practices

c. Project Work

- All the participants will be given with a back to work project by sub dividing the different elements in a School Complex

d. Action Plan

- The participants will be given with a schedule of action plan to continue the usage of MIS application in their day to day work.
- The participants will be given with a schedule of action plan to bring out their individual projects completed to be implemented with Green Building Concepts

16. Course Material

The Course materials will be arranged by the IGBC as per their course guidelines which will be included in the cost of training.

a) Learner Materials (The course Coordinator of TWED, IGBC will supply)

- Activities & Exercises
- Handouts
- Checklists & Other Performance Aids
- Case Studies
- Action Plan Format

b) Trainer / Instructor Materials (Scope of TWED, IGBC)

- Presentations
- Lesson / Session Plans
- Visual Aids
- Workbooks

c) Course Administration

- List of participants (Annexure-1)
- Registration Forms (As per MCRHRD & IGBC)
- Attendance Forms (As per MCRHRD & IGBC)
- Day wise Time table / Schedule (Annexure-2)
- Feedback Forms
- Assessment / Evaluation Forms

➤ Completion / Accreditation Certificates

The course attendance certificate will be given to each participant. Once they complete their back to work project, they will be given option to appear for sitting for an examination for Accreditation Certificate.

Assessment

- Continuous assessment shall have done by providing Group Exercise and Question and answer during the training.
- Assessment shall have done by data reporting and data presentation by the end of the day with appropriate remarks, if any.

17. Validation

- Continuous assessment and feed on the content and the quality of the session shall be taken from the participants in order to validate training internally.
- A feedback of the training shall be taken at the end of training.
-

18. Trainer Review

A review of the training by the trainers shall be taken at the end of the course in order to enlist the Questions, FAQs, Practical difficulties and suggestions by the participants in order to improve the structure and content of the course in the future.

19. Transfer of Learning

- Feedback on the performance of participants will be collected from their concerned officers regarding improvement in Monitoring and Supervision Skills among the TWED Staff.
- A Seminar of the trainees who attended the course is to be conducted in the subsequent year for post course evaluation.

20. Module Development and Implementation Plan / Schedule

S.No	Time Line	Activity	Resource Required
1	07-12-2020	Approval of Design Brief by TWD & MCRHRD	MCRHRDIT, Hyd
2	09-12-2020	Approval for conducting virtual Training	Commissioner, Tribal Welfare, Hyderabad
3	12-12-2020	Intimation to IGBC & NAC for module development for the identified E.Os	IGBC & NAC Resource Persons
4	13-12-2020 to 20-12-2020	Preparation of Modules for the proposed Training	IGBC & NAC Resource Persons
5	21-12-2020	Approval for Training Date	Commissioner, TW, Hyd
6	24-12-2020	Information to TWED staff for attending Training	Chief Engineer, TW, Hyd
7	04-01-2021 to 06-01-2021	Training for TWED staff	