

KNOWLEDGE SHARING AVD WORKSHOP REPORT

Date, Name & Venue:

Knowledge Sharing Workshop on Arch, Vault and Dome in Masonry Construction at Aurangabad on 15 & 16 March 2016.

Introduction:

Nandadeep is practicing in stone masonry construction using beautiful geometrical forms of arches, vault and dome for last two decades. It remained our inspiration to spread awareness on using age old technologies which makes structure to last for last 500 to 1000 years. This workshop is one of such effort, wherein the architect, engineers and masons could actually construct these geometrical forms and understand them.

Guest Faculty:

Satprem Maini –

Director at the Auroville earth Institute. Master in earthen Architecture. Occasional consultant for the United Nations. A member of ISET and a member INHAF. He has trained more than 11,000 people from 82 countries. Active in 36 countries for consultation, lectures and workshops.

Lara Devis –

Co-director at the Auroville Earth Institute Architect, Structural masonry expert, UNISCO chair of Earthen Architecture. Specialist in Thin-Shell Masonry vaulting. She has worked as a Mason, Foreman, Architect, Junior Engineer and Project Manager, Leading key Constructions and Teaching Workshops. Her work has been exhibited at the modern museum of art, The MIT Museum, The cooper-Hewitt National Design museum and the Venice Biennale.

Participants:

Students of Architecture and Engineering, Architects, Engineers, Mason, Contractor are participated in this workshop and some of participants are enthusiastic.

Scope of Work:

15 March 2016 – Demonstration & Construction of Arches

1. How to do leveling and centering of frame for construction of Arch.
2. Arrangement of frame with wedges.
3. How to align bricks of arches.
4. How to fill the mortar in joints of arches for perfect geometry.
5. Geometry of crown.
6. Removal of centering.

7. Construction of Arch without mortar.
8. Failure of Arch.

Type of arch constructed.

- A. Hemispherical Arch
- B. Pointed Arch
- C. Catenary Arch

16 March 2016 – Demonstration & Construction of Vaults & Dome

1. Leveling of base layer of bricks
2. Marking for Vault and dome.
3. Laying base layer of bricks.
4. Filling of mortar in joint.
5. Alignment of brick layers.

Type of vault and dome constructed.

- A. Segmental Dome
- B. Cloister Dome
- C. Igloo / Hemispherical Dome
- D. Pendantive dome / Domical Vault
- E. Semicircular Vault
- F. Egyptian Vault

Outcomes:

1. Fun learning new methods of construction.
2. While designing the structure geometry also plays the important role along with the strength of the structure.
3. Very well managed workshop giving insights to the unexplored world of mud and brick architecture.
4. Very well informative & very well presentable.



Levelling with Tube Level



Levelling and Fixing of centering



Cheking of centering with Plumb bob



Laying of Bricks



Crown arrangement



Crown Stone



Crown arrangement



Crown arrangement



Pointing



Removal of centering



Removal of centering



Caterenary Arch



Pointed Arch



Semicircular Arch



Leveling of semicircular Vault



Alignment of bricks (Semicircular vault)



Alignment and leveling of bricks (Igloo)



Igloo



Egyptian Vault



Egyptian Vault



Levelling of pendentive Dome



Pendentive Dome



Segmental Dome



Segmental Dome



Cloister Dome



Cloister Dome