

## VAULTED STRUCTURES

### SEGMENTAL GROINED DOME



*Segmental groined dome completed in 5 days with 4 masons*

This segmental groined dome has been built free spanning to cover the kitchen/living room of a cost effective house in Auroville. This groined dome has been generated by the intersection of two segmental vaults.

The segmental groined dome has been in 5 days with an average of 4 masons. The segmental groined dome and vault presents these features:

- Segmental section of 3.48 m span and 50 cm rise
- Total vaulted roof length: 13 m
- Thickness of the vault and dome: 7 cm



*Segmental groined dome used for the cost effective house*

### CONSTRUCTION SEQUENCES



*Starting the side vaults*



*Building the side vaults*



*Fixing the steel template and starting the groined dome*



*Building the segmental groined dome*



*Segmental groined dome near completion*



*Segmental groined dome completed in 5 days*

**CONSTRUCTION DETAILS**



*Building the segmental vault on the window frame as a template*



*Building the segmental vault by steps to start with*



*Building the segmental vault above the bedroom*



*Completing the vault and controlling the shape with a straight edge*



*Finishing the side vault*



*Starting the segmental groined dome*



*Building the segmental groined dome*



*Adjusting a block in the corner of the groin*



*Building the segmental groined dome with 4 masons*



*Laying blocks in the corner*



*Segmental groined dome in progress*



*Laying blocks*



*Completing the groined dome*



*Finishing the dome with 1 mason*



*Groined dome towards completion*