

VAULTED STRUCTURES

SEGMENTAL GROINED DOME

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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