

NANDIGRAM RESIDENCE

Project Location: OMAXE LTD, INDIA

Category: Residential Single/ Dual Family (Contemporary)

Project Synopsis: In tropical climates the human body feels a level of physical comfort within an ambient temperature range of 33 degrees C (91.4 degrees F) under shade with an artificial or natural breeze, to 18 degrees C (64.4 degrees F) with a very slight air movement. Humidity more than 50% at any temperature also affects the level of comfort experienced.

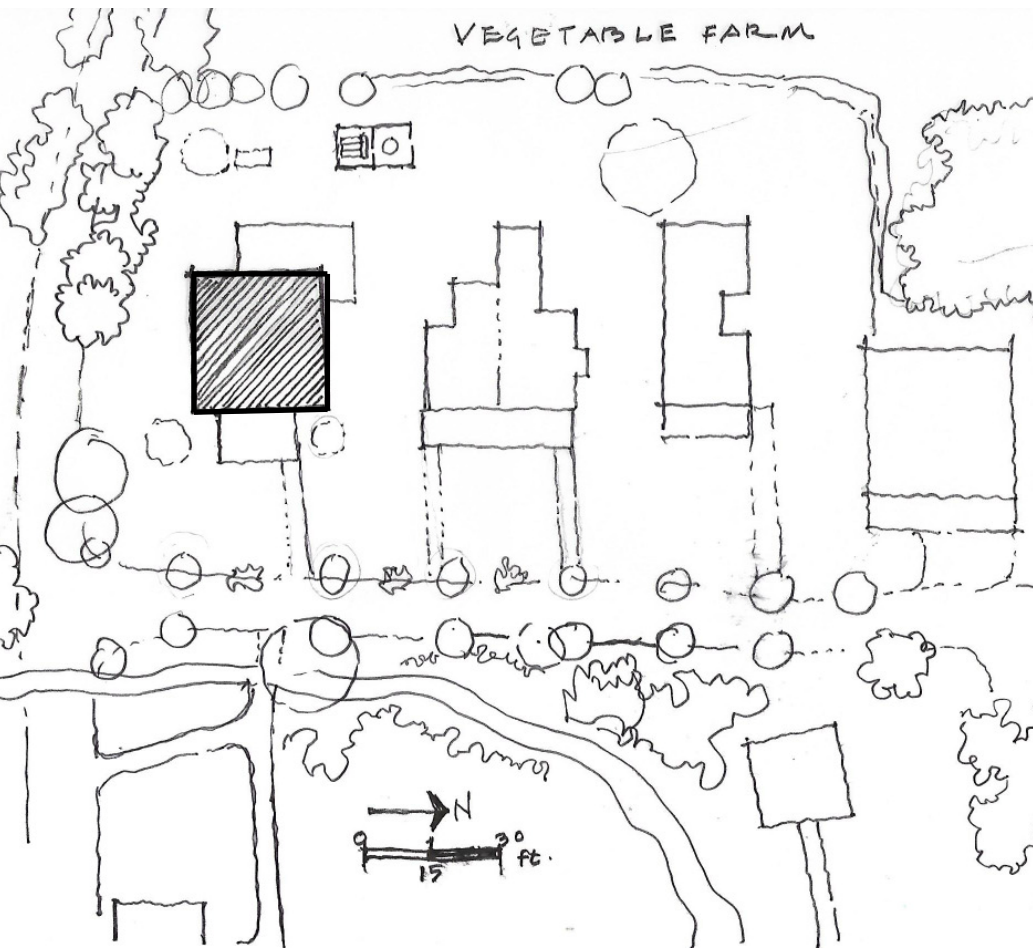
The design form is conceived as a 30'x30' (27 feet clear) cube with truncated top. It has a full floor below grade as a work/studio space. The main floor plan is a simple square divided into four spaces along an east-west spine, connecting two porches on each end of the spine. There is a reading/painting loft overlooking double height volume.

The disposition of functional spaces on the main floor, namely the living, kitchen, sleeping, and bathrooms, are site driven in terms of solar orientation, views, storm water drainage and site grading. The entire composition is based on a six foot square module, a three dimensional puzzle with a play of solid and voids to modulate the sunlight while controlling temperatures. Organically, it connects the occupants with the earth, surrounding natural environment and the sky.

The building envelope emulates the layered approach of skin. The brick walls are double: outside 4" + 4" cavity + 9" of interior brick wall. The cavities are ventilated with weep holes top and bottom. The roof is composed of two layers: the inside is ¾' plywood with tar sheet on top + 6" of space topped with clay tiles. The glass is strategically placed for view and daylight infusion to balance with the brick walls to mitigate the heat gain in summer and penetration of sunlight in the winter. Twenty four percent of the wall surface is glass. All the glass at the clerestory level is shaded by roof overhang when heat gain is at its peak.

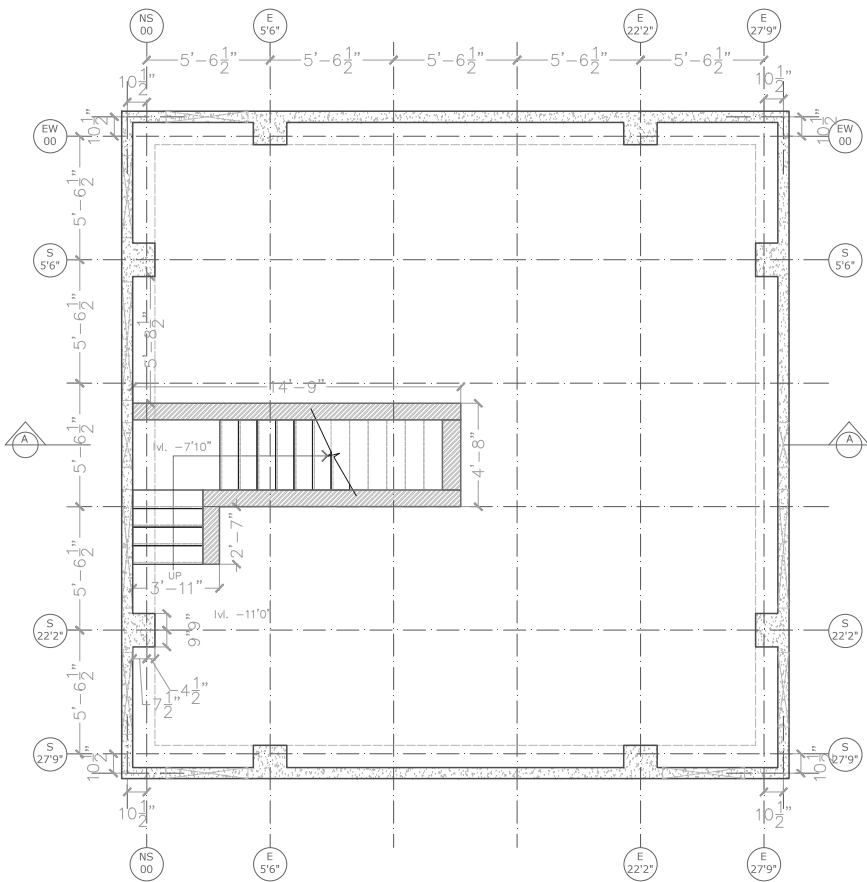
The house was designed to incorporate

- Regional character of the indigenous building typology
- Solar hot water supply
- Training of local labor
- Earth cooling through cellar
- Energy use minimized through natural ventilation and daylight

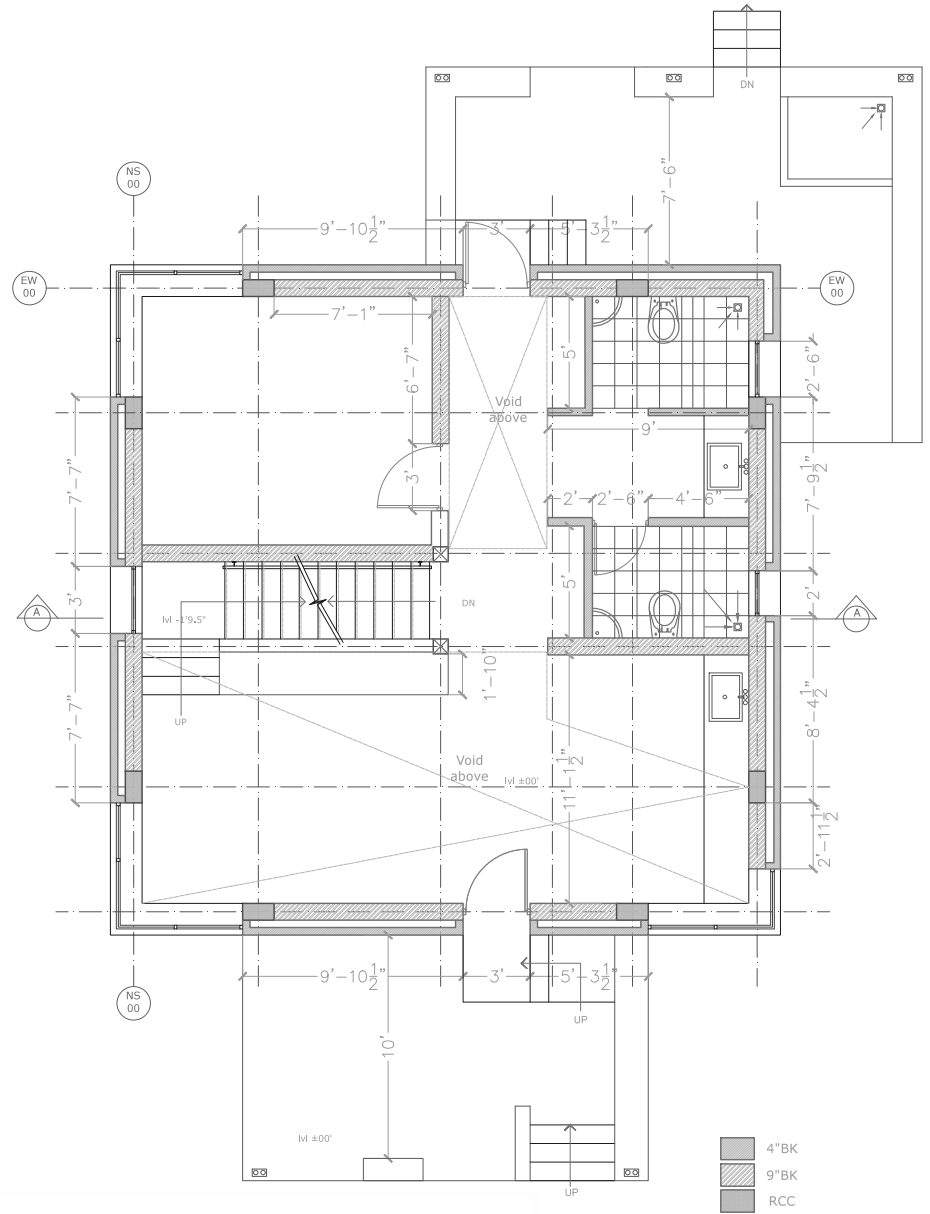




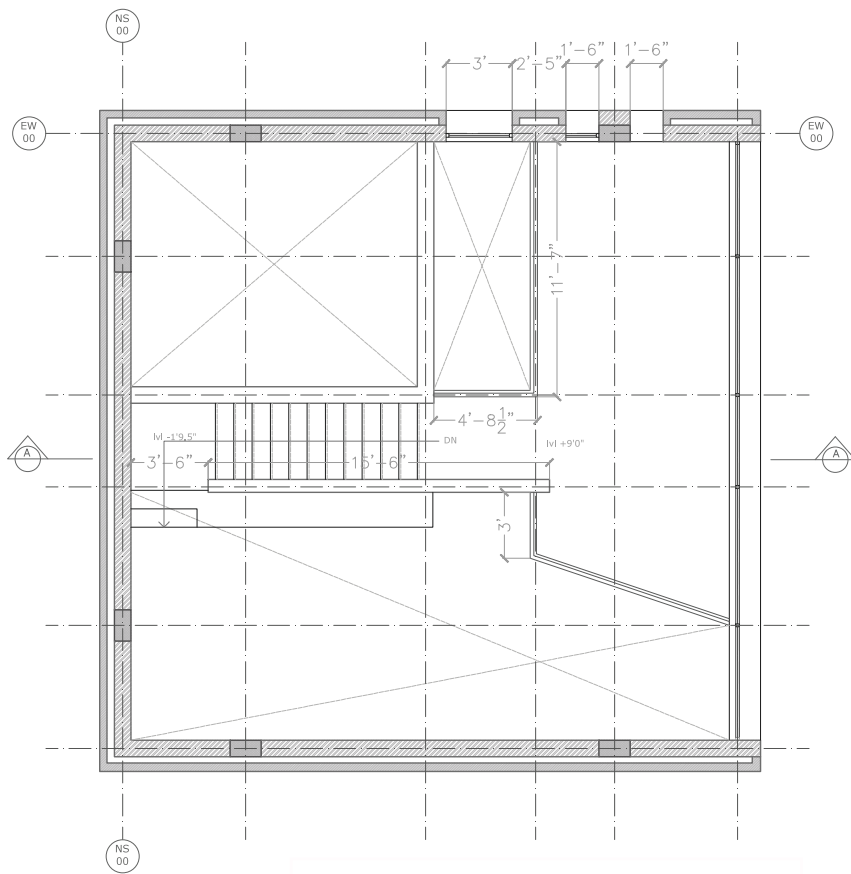




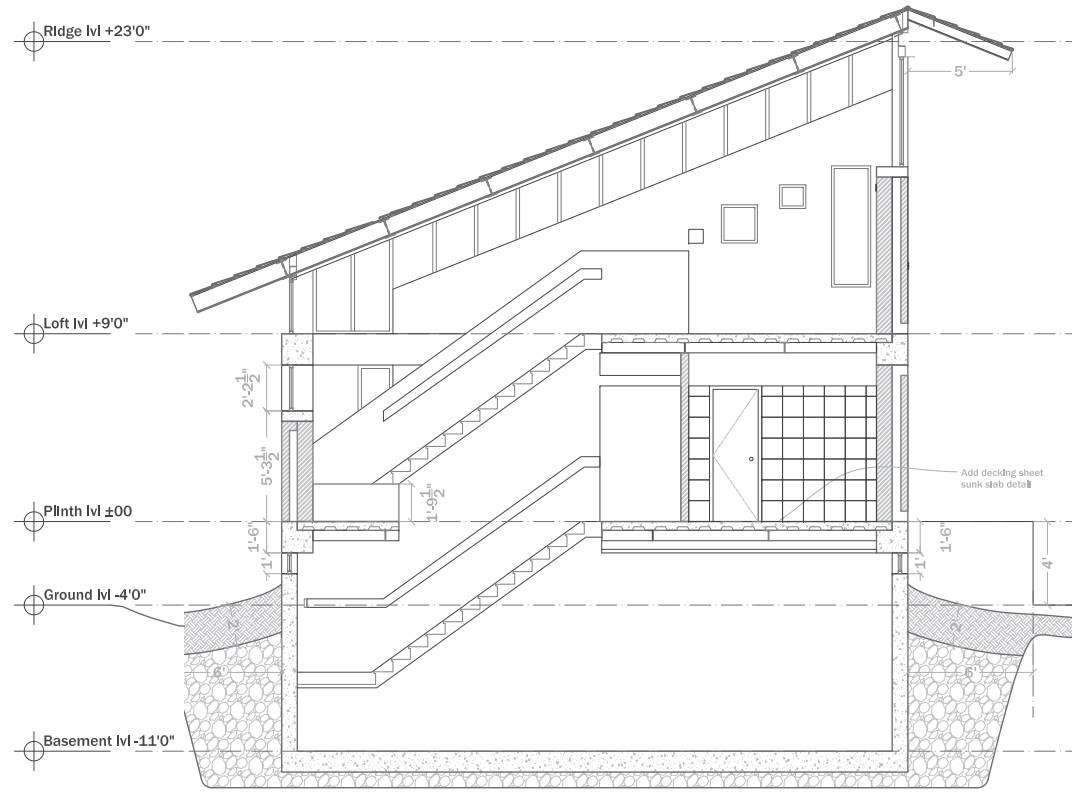
Basement Plan



Ground Floor Plan



Mezzanine Level Plan



Section A-A







