

151' HIGH LORD HANUMAN STATUE AT SOLAN, HIMACHAL PRADESH

FACT FILE

• **CLIENTS NAME :** Manav Rachana International University Solan

• **SCULPTOR /PROJECT ARTIST:** MR. NARESH KUMAWAT, TEMPLESMAC Gurgaon & Maturam Arts Centre.

• **STRUCTURAL CONSULTANT:** SKELETON CONSULTANTS PVT. LTD.

• **PROJECT COST:** INR 4.00 crore

• **CONSTRUCTION STATUS:** COMPLETED

PROJECT BRIEF:

A 151 feet high Lord Hanuman Murti is constructed at the top of a hillock in the standing posture as per vision and concept of Manav Bharti University and Sculptor Mr. Naresh Kumawat. There is a MACE (Gada) in one hand of Hanumanji. Surroundings are developed as a tourist pilgrimage place. This is being considered for inclusion in Books of records as Tallest Standing Statue in Hills.

The main elements of creating this monument are architectural and aesthetics of Lord Hanuman in the desired expressions by Sculptor, Structural Engineering & Design of main frame supporting the external shell and the design of shell itself, site geology and slope stability, A resourceful construction agency with lots of rich experience and capabilities, a well-defined construction methodology for Foundations, Main load resisting frame, external shell skin and finally the statue organ shapes.

STRUCTURAL GEOMETRICS

The RCC skin of the statue is supported on RCC beams projected from two main RCC columns till shoulder level,

i.e., 120feet level. Above that level, there is single column. The beams are provided at every 3.05 meter c/c distance and are projected till skin. Three columns (800mmdia) are proposed at 5.185m behind the main columns C/C from base to knee level. Main Columns are varied in size to fulfil the serviceability requirements. Overall Surface area of Murti is about 1391.26 square meter. Total height of Lord Hanuman Murti including visible platform is approx.50m (151feet). Invert Mace (Gada) supported by hand of lord hanuman started from 3.05 to 24.4 meter (80 feet). There is 150mm thick shell skin and a hollow space inside. Approximate dia of skin 4.17m. Tail of Lord Hanuman is hollow steel pipe of 300mm dia.

Concrete grade of columns is M40 and of beams & Skin is M 25. Design life of Statue is considered as 100 yrs. Seismic zone IV and importance factor 1.5 considered in design. Statue main frame is designed as moment resisting frame and as per IS 1893-2002 and other relevant Indian design codes.

STRUCTURAL CHALLENGES & EXPERTISE

This is second one in the series of SIX such gigantic statues Skeleton has engineered with the support of Sculptor Mr. Naresh Kumar of Templemac. Starting with World's third tallest concrete statue "351-feet Lord Shiva Statue at Nathdwara near Udaipur", Skeleton has engineered six such structures, right from 51-feet to 351-feet high and in various postures. Few upcoming ones are 125-feet high Dr. BR Ambedkar statue at Amarawati AP, 151-feet high Ulgulan Bandhu at Raanchi



etc. Skeleton has developed a special methodology to convert conceptual statue to structural analysis model and then analyze the structural frame and skin for longevity of 100 to 250 years. The jointless concrete skin has been subjected to thermal and other stresses and wind pressures. Wind tunnel testing is also conducted whenever required. Irregular geometry of human figure is highly complex to be converted to equivalent structural framing at various levels right from bottom to top. Accuracy of structural placements is very important since the skin casting on site depends on it. Using glass fibre moulds for skin casting is a skilled job and well done by sculptor Mr. Naresh ji. Entire design of such complex structures is peer reviewed by experts like Prof. Prem Krishna. Skeleton team is fully equipped with resources and expertise in delivering more such monumental structures.

Working Team:

Er. Vandana Verma, and Mr. Sobhan Rawat have provided complete engineering under the guidance of Er. (Dr.) Abhay Gupta.

Contact:

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