

CASE STUDY OF

NAGGAR CASTLE

by **VOXEL 3D TECHNOLOGY**



3D LiDAR Scanning &
Architectural Documentation



Location
Kullu, Himachal Pradesh



Project Type
Heritage Documentation



Technology
Terrestrial Laser Scanning
(FARO Focus 350)



Deliverables
3D Scan Data, Point Cloud,
Architectural Drawings,
3D Documentation



+91 8750901174



voxel3dtech.com



deepak@voxel3dtech.com

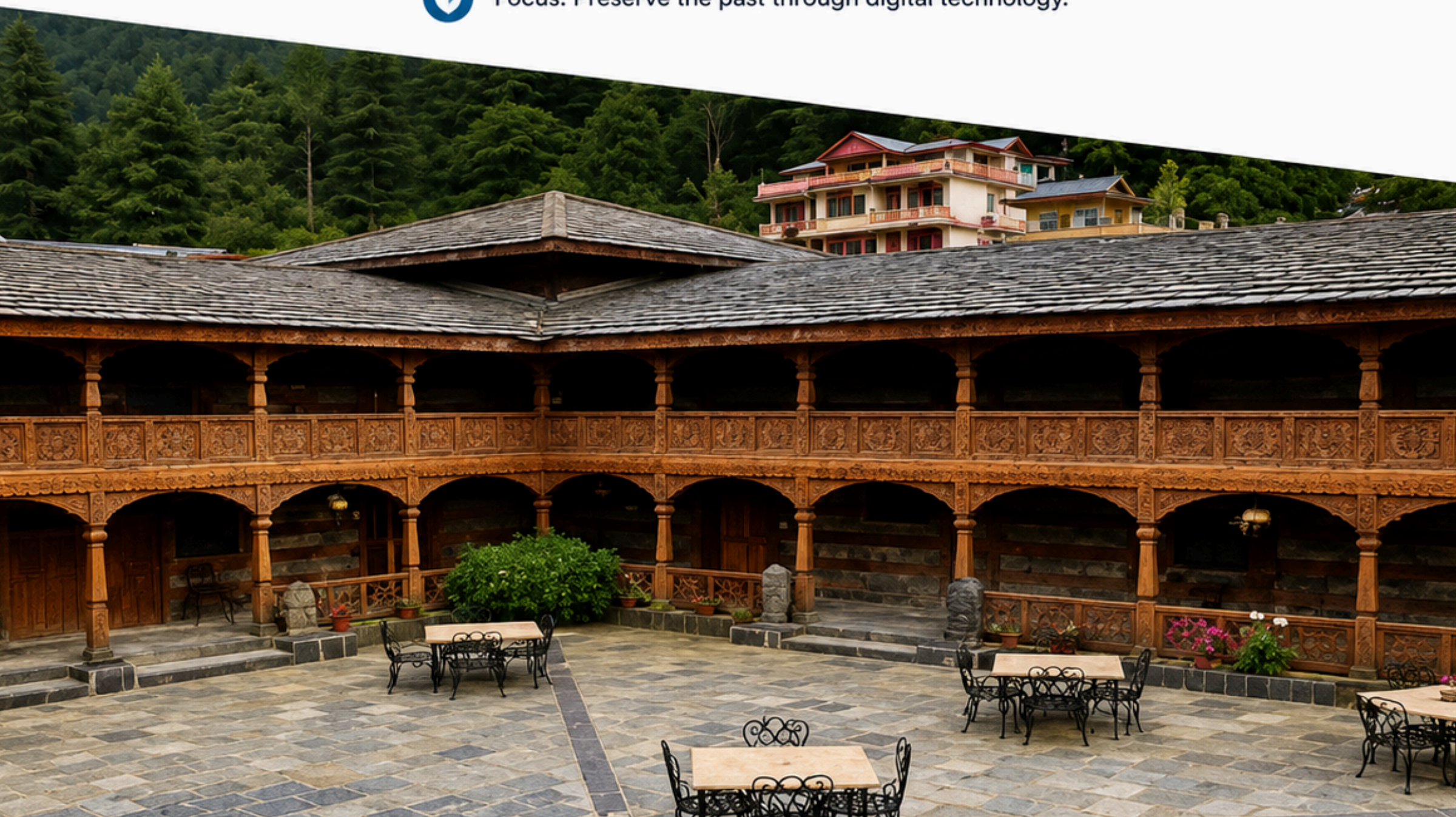


Noida, Uttar Pradesh
Mumbai, Maharashtra

Naggar Castle

DIGITAL HERITAGE DOCUMENTATION

-  Historic Naggar Castle, located in Kullu, Himachal Pradesh.
-  A unique example of traditional Himalayan stone-and-timber architecture.
-  Objective: digitally document the existing structure and architectural details.
-  Voxel 3D Technology used 3D scanning and reality capture.
-  The project transforms the physical structure into detailed digital data.
-  Focus: Preserve the past through digital technology.



+91 8750901174



voxel3dtech.com



deepak@voxel3dtech.com



Noida, Uttar Pradesh
Mumbai, Maharashtra

THE PROBLEM

Challenges in Documenting Heritage Structures



Historic structures often have **complex and irregular geometries.**



Traditional manual measurements can be **time-consuming and difficult.**



Intricate architectural details require **comprehensive documentation.**



Capturing existing conditions accurately is important for **conservation.**



A reliable digital record can support **future restoration and reference.**



Challenge: How do we accurately capture centuries-old architecture?



THE PROCESS

From Scan to Digital Data



01

CAPTURE

Collect 3D spatial data from the structure.



02

REGISTER

Combine individual scans into a common dataset.



03

PROCESS

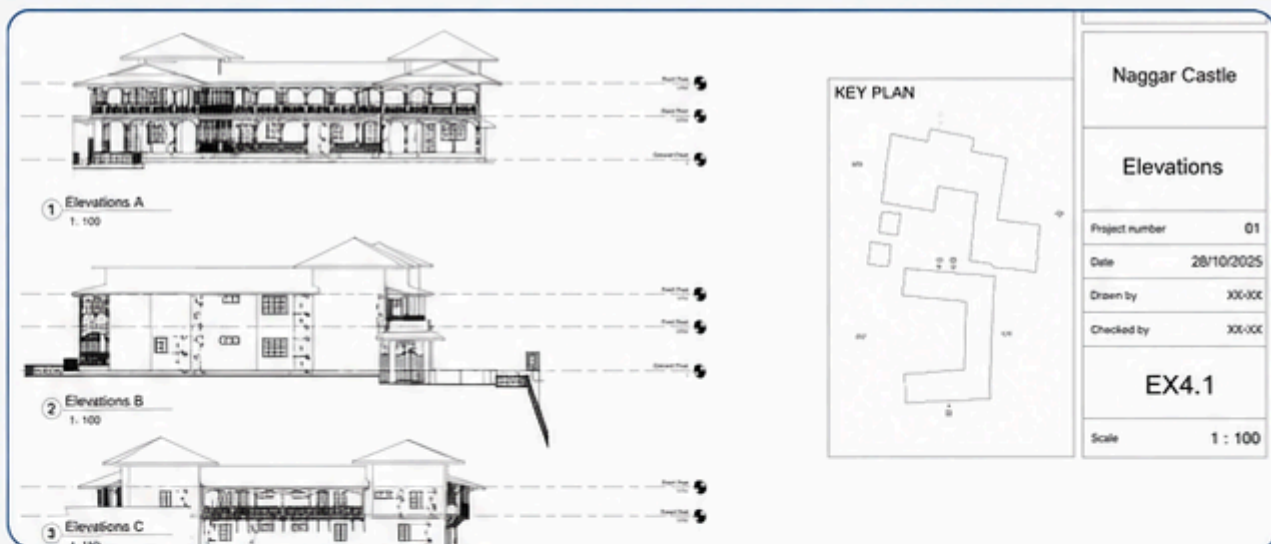
Clean and organise the captured scan data.



04

DOCUMENT

Create a measurable digital record.



05

RESULT: A detailed digital record of the captured structure.



+91 8750901174



voxel3dtech.com



deepak@voxel3dtech.com



Noida , Uttar Pradesh
Mumbai , Maharastra

DIGITAL OUTPUT

Turning Scan Data into Usable Information



3D scan data provides a **measurable digital reference.**



Captured geometry can be **viewed and studied** digitally.



Supports architectural and existing-condition **documentation.**



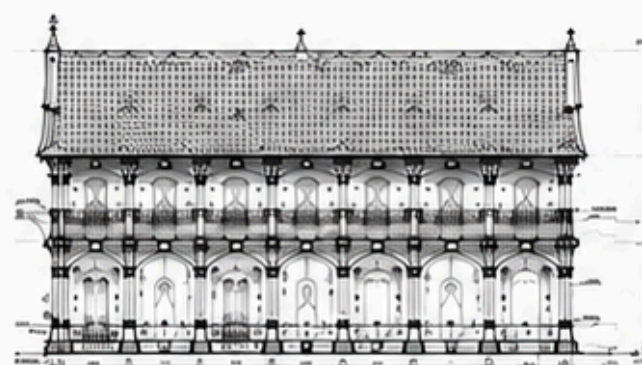
Provides reference data for **conservation and restoration** planning.



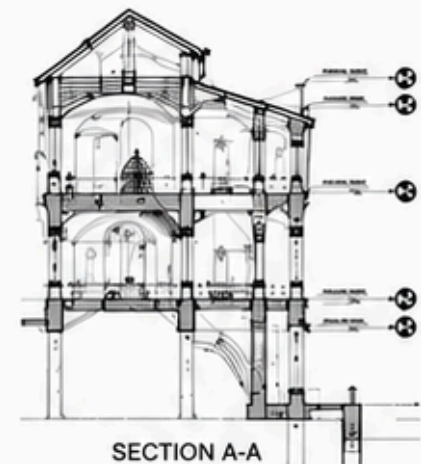
Digital information can be used for future **comparison and analysis.**



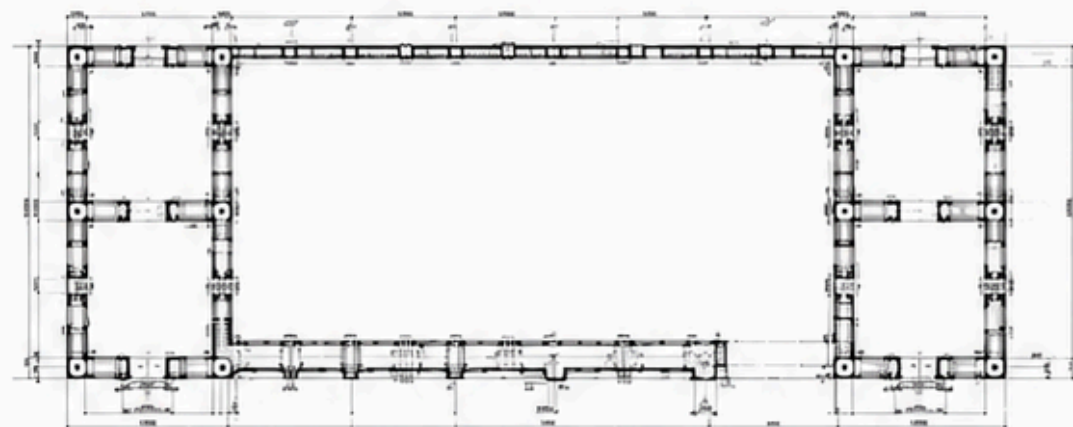
From physical heritage to a lasting digital record.



FRONT ELEVATION



SECTION A-A



MASTER PLAN



+91 8750901174



voxel3dtech.com



deepak@voxel3dtech.com



Noida , Uttar Pradesh
Mumbai , Maharastra

THE BENEFIT

Preserving Heritage Through Technology



01 ACCURATE DOCUMENTATION

Creates a precise digital record of the captured structure.

02 BETTER UNDERSTANDING

3D data helps visualize complex geometry and architectural details.

03 CONSERVATION SUPPORT

Provides valuable reference for restoration and conservation planning.

04 TIME & EFFICIENCY

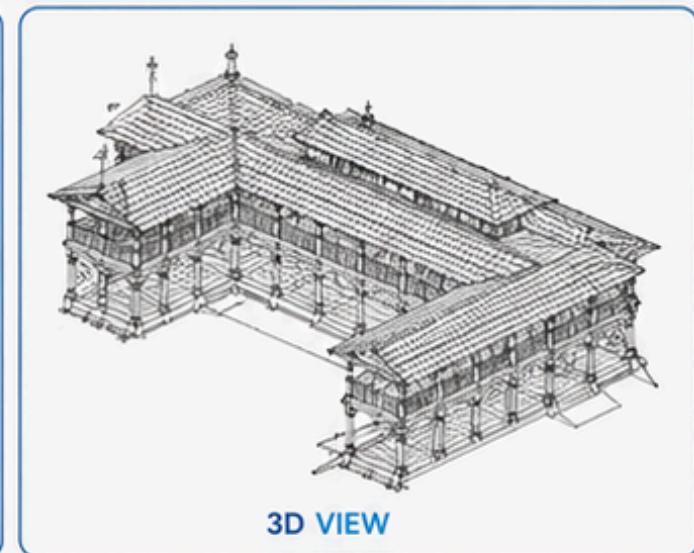
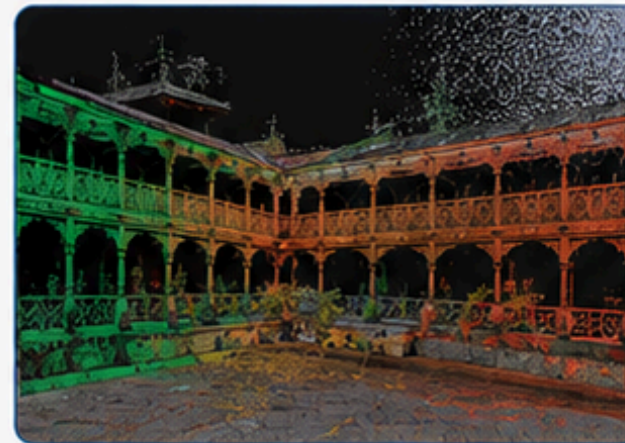
Reduces dependency on traditional manual measurements.

05 FUTURE REFERENCE

Digital data can be revisited for future inspection, comparison and analysis.

06 HERITAGE DIGITISATION

Preserves valuable architectural heritage in a lasting digital format.



RESULT: A detailed digital record with accurate 3D data and architectural documentation that supports conservation, restoration and the future of our heritage.



+91 8750901174



voxel3dtech.com



deepak@voxel3dtech.com



Noida ,Uttar Pradesh
Mumbai ,Maharastra