Digital Documentation of Built Heritage - Batch 2

Mill Owner's Building, Ahmedabad

11th - 15th July 2023

CPP | CEPT UNIVERSITY

CHC CENTER FOR HERITAGE CONSERVATION | CRDF

The booklet has been compiled by G R SreeRam and Mrudula Mane for CHC - CRDF.

Cover Image Credits : View generated from the 3D point cloud model of ATMA House, Ahmedabad. Data collected by workshop participants under the guidance of M. Mane, Z. Pithawalla, SreeRam. Post processing and Visualization by M. Mane, Z. Pithawalla, and SreeRam for CHC - CRDF

About the program

The certificate program ‘Digital Documentation of Built Heritage’ collaboratively conducted by Center for Heritage Conservation (CHC) and CEPT Professional Programs (CPP) is designed for participants to develop the skills required for digital documentation of historic buildings and structures through hands-on engagement. The program was conducted for the second time from 11th to 15th July 2023. For this batch, the program was conducted at Mill Owner’s Building, also known as Ahmedabad Textile Mills Association (ATMA) House and at CEPT Campus at Ahmedabad. On-site hands-on documentation techniques were explored at ATMA House, while theoretical sessions were conducted at CEPT campus.The program covered three techniques: GIS Mapping, Photogrammetry, and 3D LiDAR Scanning. On the first day, the participants were introduced to the application of GIS in Heritage Documentation with an expert lecture by Shaily Gandhi (Ph.D.). Over the next two days, a workshop on architectural photography and photogrammetry by Maniyarasan Rajendran was conducted followed by post-processing and generating orthoimages and 3D models. During the last two days, a workshop by Mrudula Mane and Zeus Pithawalla introduced participants to understanding 3D LIDAR scanning as a technique for documentation which also included an onsite demonstration of the data collection using the scanner followed by the demonstration of post-processing and registration in FARO Scene of the data collected. The workshop ended with participants exploring exporting and visualization of the 3D data. Onsite support for the workshop came from MillOwner’s Building, ATMA, Ahmedabad. The tutors were supported by G R SreeRam (Teaching Associate, CHC - CRDF). The program content was curatored by Dr. Jigna Desai, Mrudula Mane and Jayashree Bardhan (Program Lead - Assessment and Training, CHC - CRDF).

Program Faculty

Mrudula Mane
Conservation Architect,
Program Lead -
Documentation,
CHC - CRDF, Ahmedabad

Dr. Shaily Gandhi
Geoinformatics, GIS, Data Science Expert
Deputy Center Head, CAG, CRDF
and Program Chair, Geomatics, CEPT
University, Ahmedabad

Maniyarasan R
Architectural Photographer
and Photogrammetry Expert
Associate Professor, CARE
School of Architecture,
Tiruchirappalli

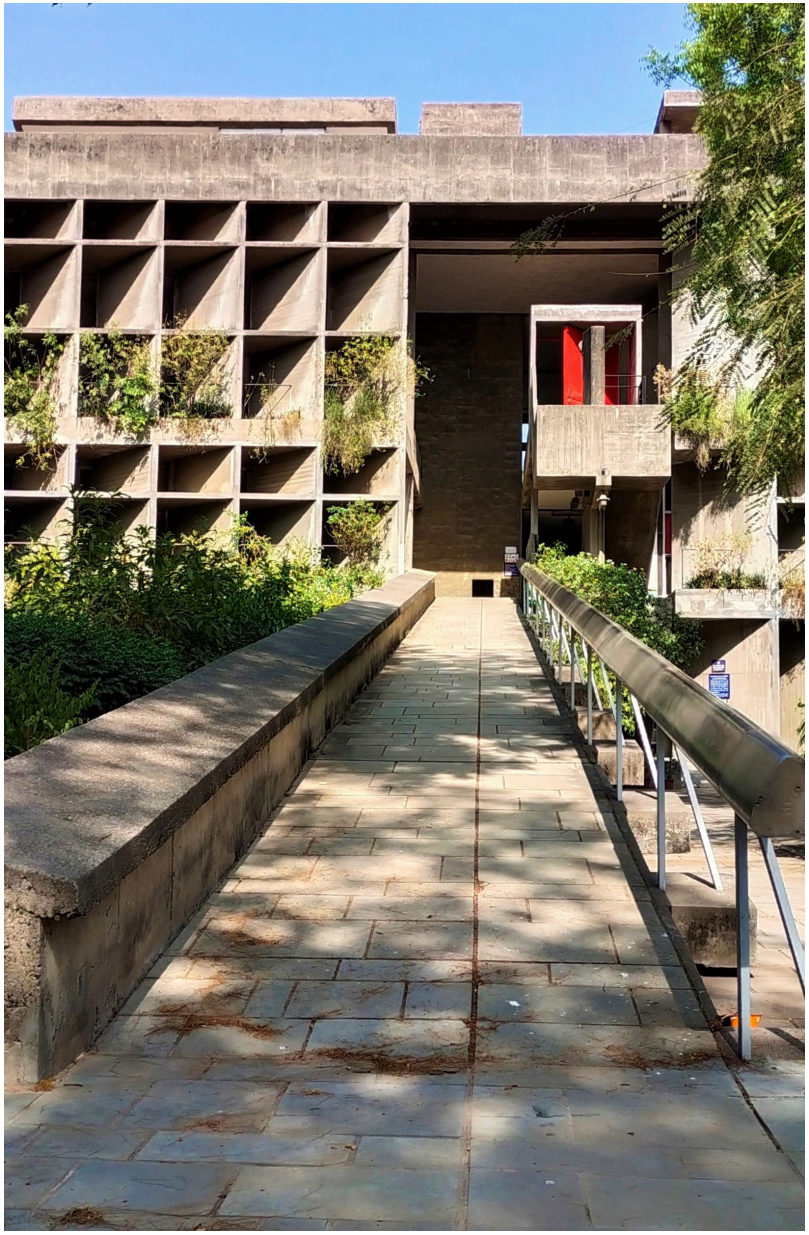
Zeus Pithawalla
Conservation Architect
Research associate,
CHC - CRDF,
Ahmedabad

About MillOwner's Building - Workshop Location

The workshop was conducted at the iconic 'Ahmedabad Textile Mill Owners' Association' (ATMA) Building, an internationally renowned example of modern heritage in India. The MillOwner's Building holds a momentous place in Ahmedabad's rich heritage of modern architecture as it seamlessly bridges the city's textile industry with the modern architecture of the world. When tasked with designing the headquarters, Le Corbusier perceived it as an opportunity to harmoniously blend his distinctive architectural language, drawing inspiration from a villa, with the essence of traditional Indian architecture. The resultant synthesis is beautifully showcased in the building and is also observed in the Millowners' stance on life which was deeply rooted in culture and religion along with a strong capitalist outlook that could use industrialization to its advantage.

The construction of this building took approximately four years. The building displays Corbusier's principles of architecture such as the pilotis, free design of the floor plan, free design of the facade and space for roof garden. The building built in an exposed concrete structure has distinct architectural features such as the brise soleil or sun-breakers on its front and rear facade, the majestic ramp at the entrance, a visual and spatial play of large volumes of spaces, etc. A young Doshi was working at the time in Corbusier's Paris office and was stationed in Ahmedabad to oversee and complete this project.

Today, the structure provides a platform for diverse educational and cultural activities in the city of Ahmedabad. ATMA and CEPT University are collaborating to revitalize the use of the building and its premises as a design, architectural, cultural, and literary nerve of the city. The 20th-century heritage structure offers a unique set of challenges for exploring methods of digital documentation skills. The uniformity of concrete surfaces, the contrast in light conditions due to façade elements, and the scheme of the ramp and staircase offer plenty of challenges to push the boundaries of digital data capture and post-processing methods.

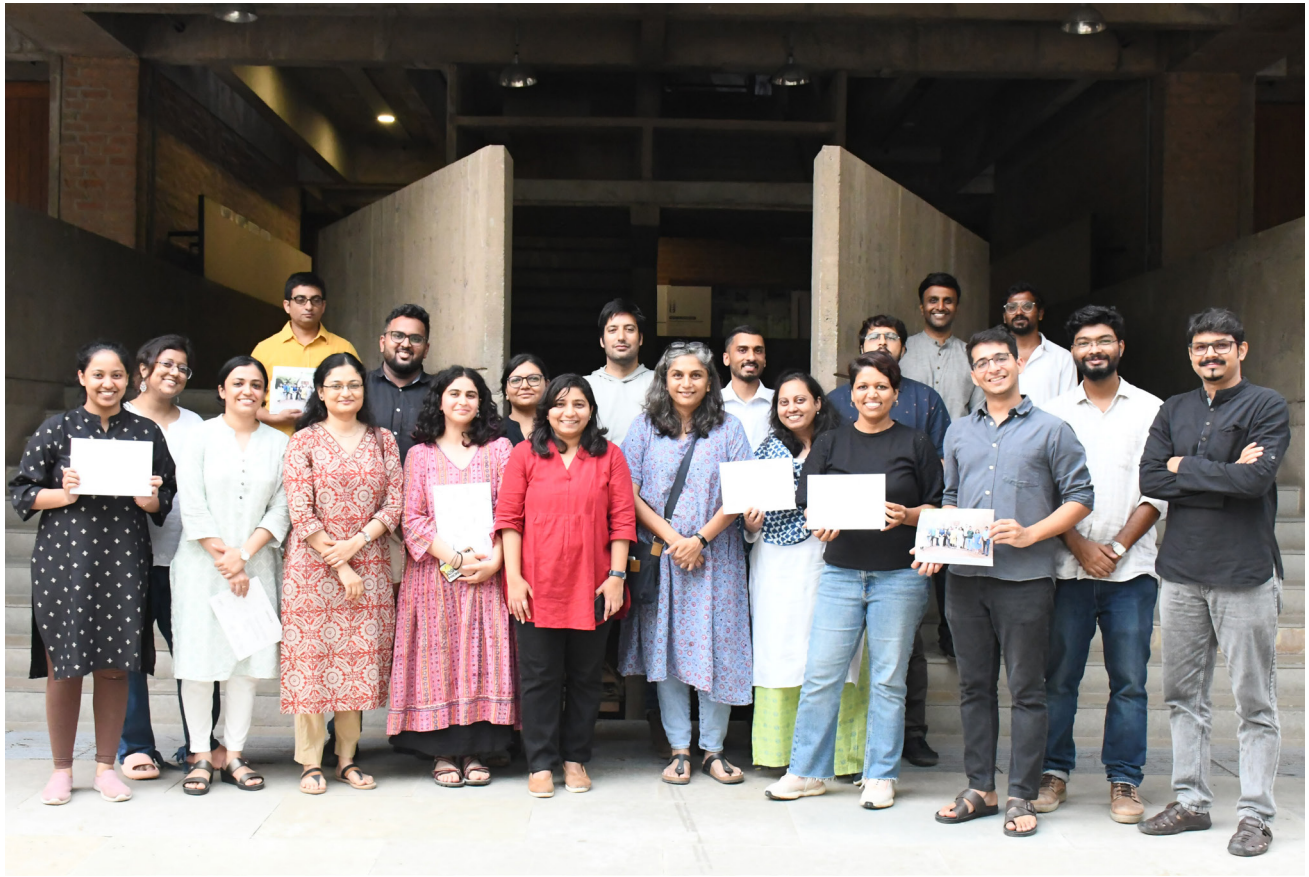


Based on: *https://www.atmaahmedabad.com/about*

Image Credits: D. Nakrani, CHC - CRDF

Participants:

01. Ananya R
    Architecture Student; Bangalore
02. Anindya Raina
    Architecture Student; Chandigarh
03. Ayushi Narayan Roy
    Architecture Student; Patna
04. Bilal Hassan Shah
    Archaeologist; Srinagar
05. D Shivam Reddy
    Assitant Professor, School of Arts and Design, Woxsen University; Hyderabad
06. Himanshu Garg
    Architecture Student; Punjab
07. Nithyana Shaji Kolenchery
    Architect; Kerala
08. Pavan Vinay Vadgama
    Freelance Architectural Designer at STP Architekten, Berlin, Germany;
09. Sagar T S
    Associate Professor, School of Architecture, Siddaganga Institute of Technology; Karnataka
10. Shriya Rajwade
    Conservation Architect; Thane, Mumbai
11. Shubham Anupam Mishra
    GIS Consultant, Inclusive Green Infrastructure for Urban Well-being; New Delhi
12. Shwetambari Shinde
    Founding partner, Sankraman Design Studio; Mumbai
13. Sourabh Rajshekhar Sahasrabudhe
    Architect, Raj Constructions; Pune



Workshop participants with CPP and CHC, CRDF team members at CEPT Campus.

GIS

(Geographic Information System)

Program Faculty: Dr. Shaily Gandhi
Geoinformatics, GIS, Data Science Expert
Deputy Center Head, CAG, CRDF and Program Chair, Geomatics,
CEPT University
Email id: shaily.gandhi@cept.ac.in

GIS (Geographic Information System) workshop involved an introduction to mapping techniques and hands-on mapping of ATMA House and its premises.

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Image Credits: R. Shukla

Image Credits: P. V. Vadgama

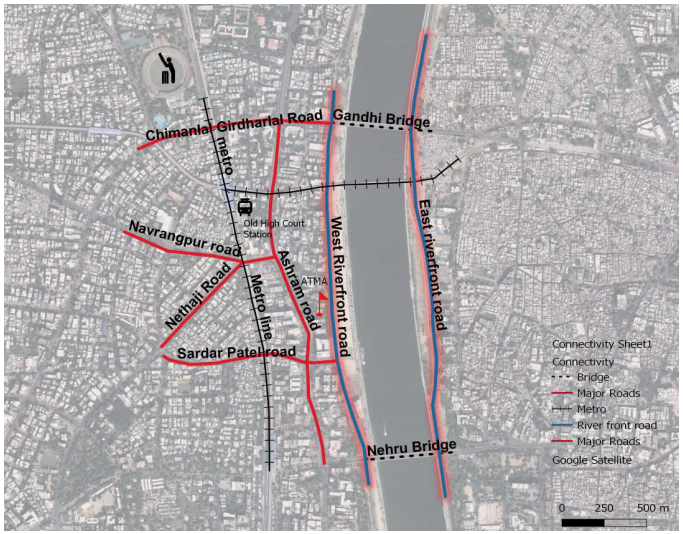

Image Credits: A. Raina

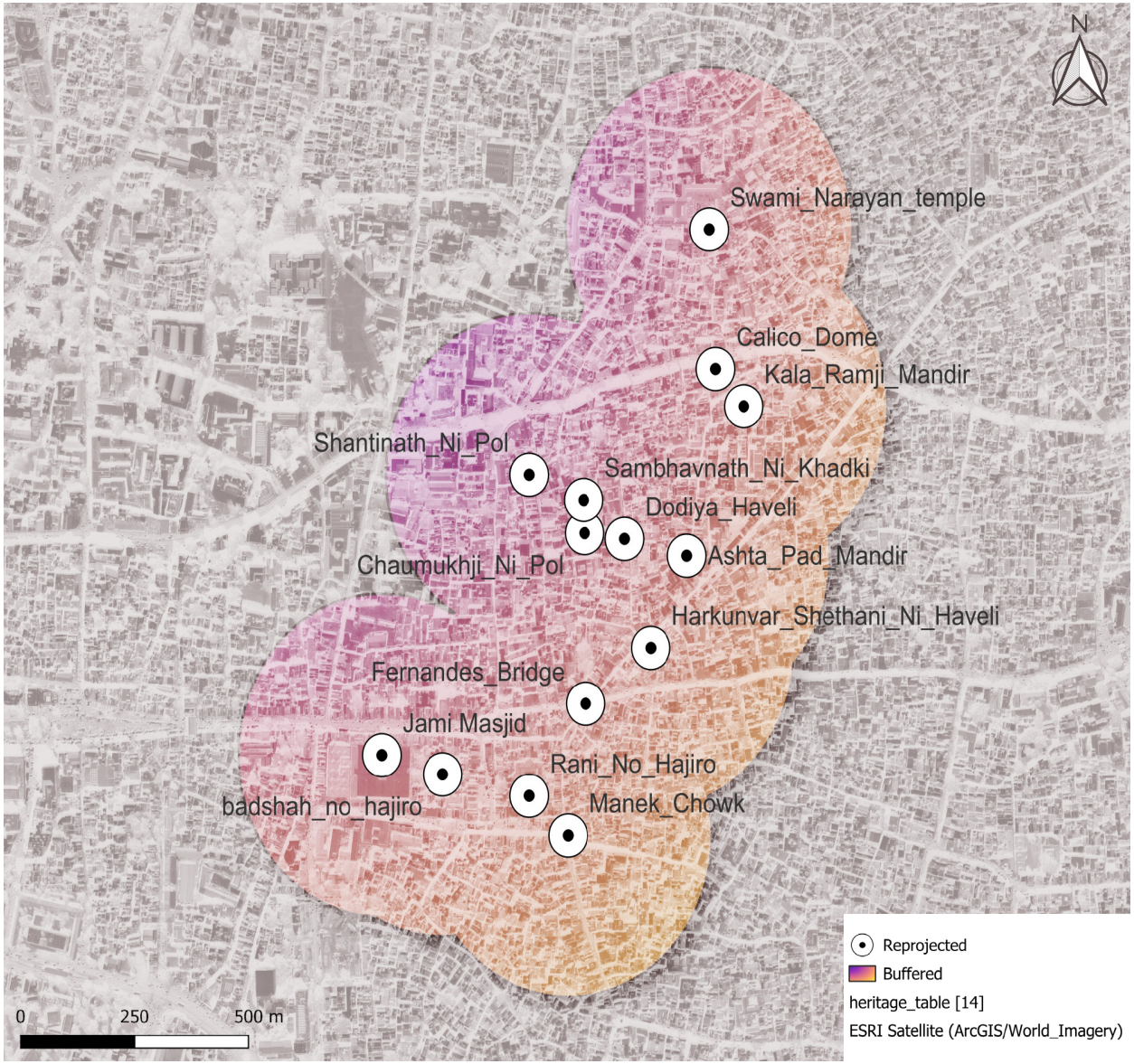

Image Credits: A. N. Roy

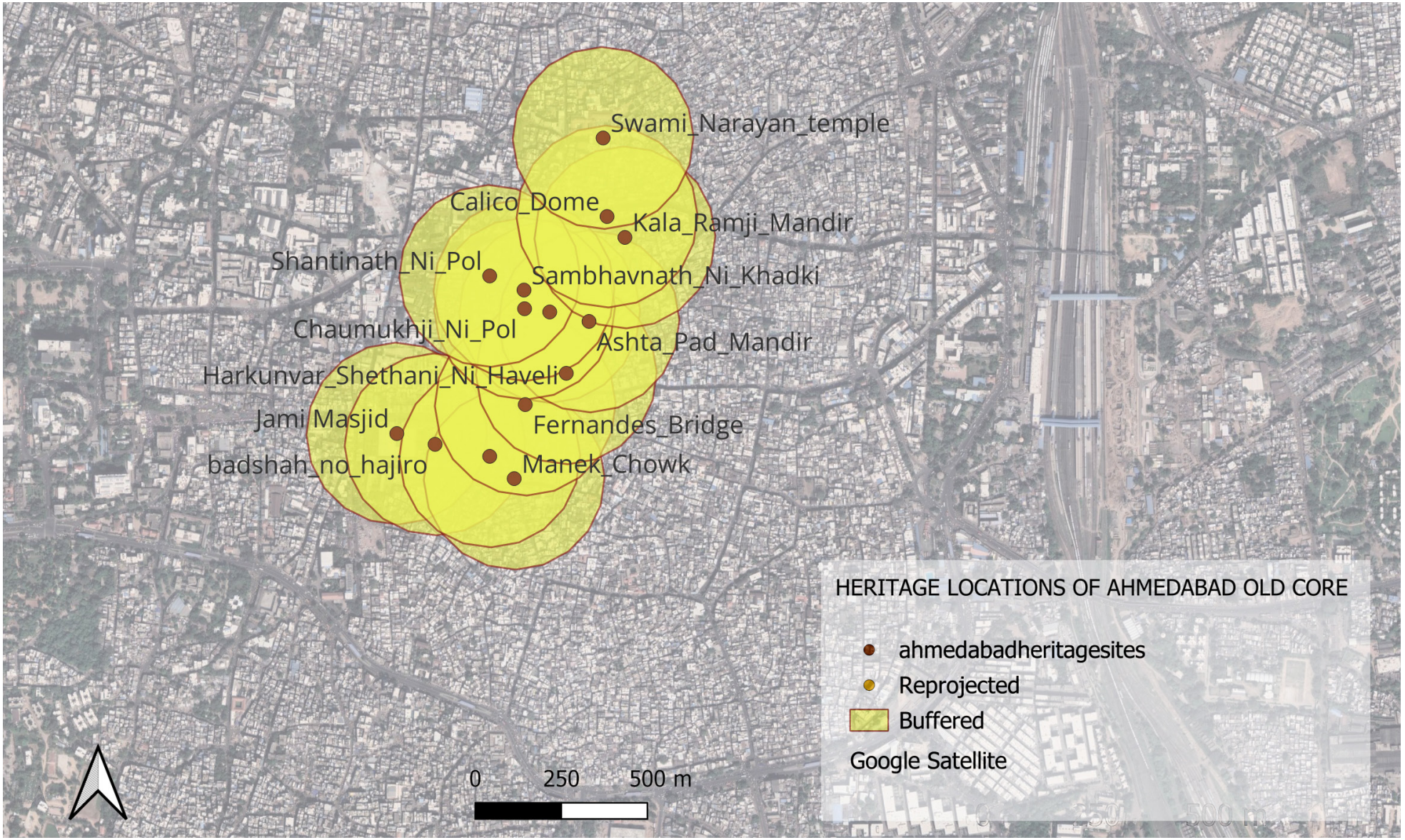

Image Credits: Sagar. T. S

Architectural Photography

Program Faculty: Maniyarasan R.
Architectural Photographer and Photogrammetry Expert,
Associate Professor, CARE School of Architecture, Tiruchirappalli
Email id: maniyarasan@gmail.com

The Architectural Photography workshop involved understanding the selection of appropriate cameras, lenses, and settings, light conditions as per the site situations, and capturing information in different formats as per the output requirements alongwith its onsite application.

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Image Credits: M. Mane

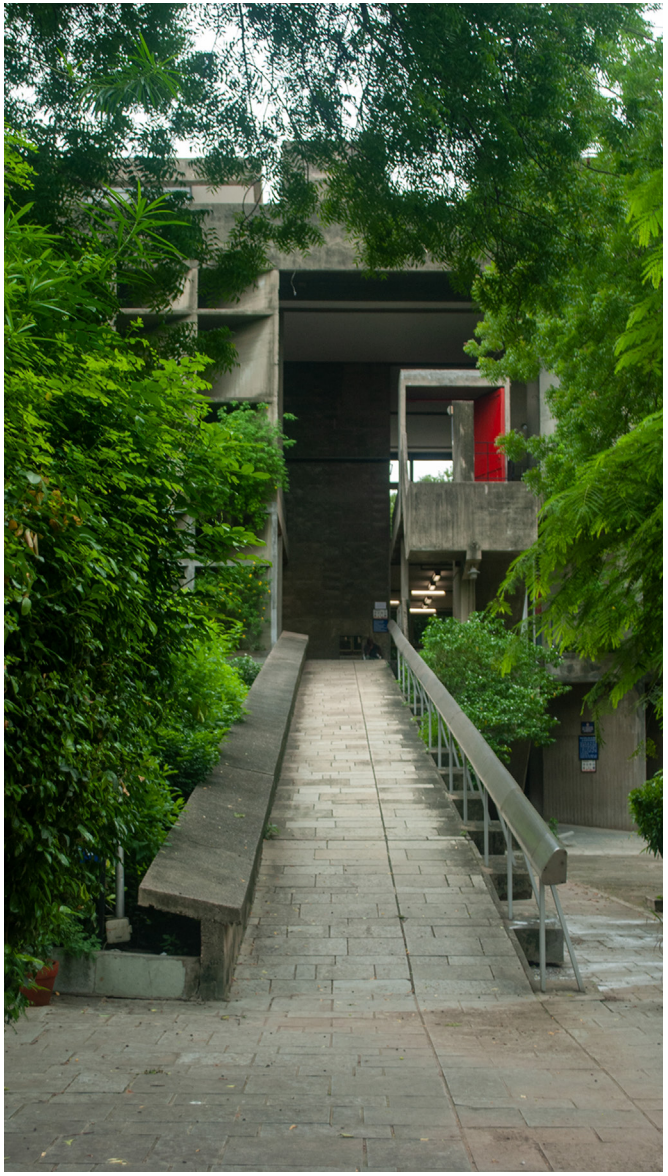

Image Credits: Nithyana S.

Image Credits: A. Raina

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Image Credits: A. N. Roy

Architectural Photogrammetry

Program Faculty: Maniyarasan R.
Architectural Photographer and Photogrammetry Expert,
Associate Professor, CARE School of Architecture, Tiruchirappalli
Email id: maniyarasan@gmail.com

The Architectural Photogrammetry workshop involved capturing photographs at ATMA House and its premises and post-processing of the captured data in the prescribed software for generating the photogrammetric output.

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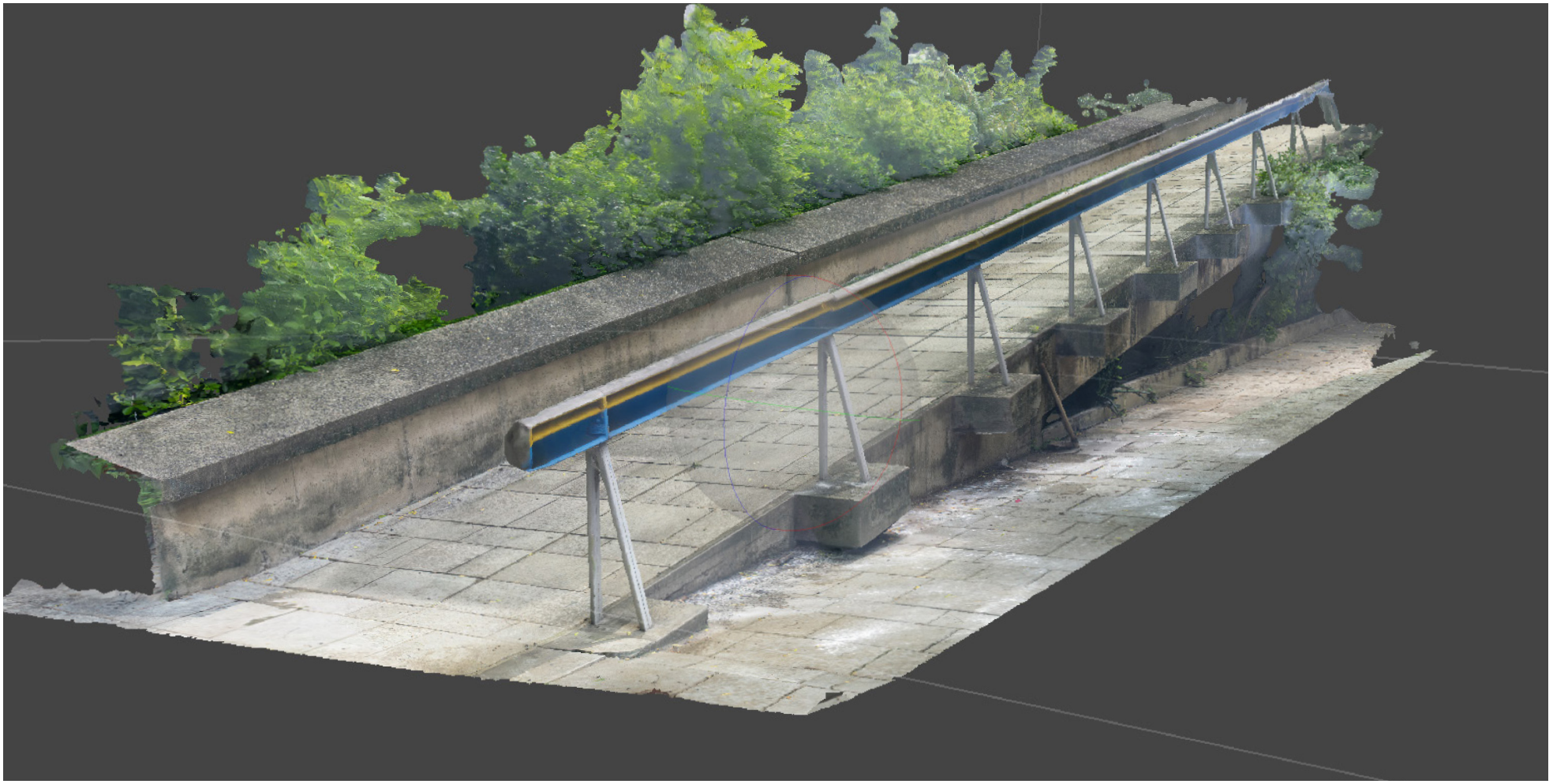
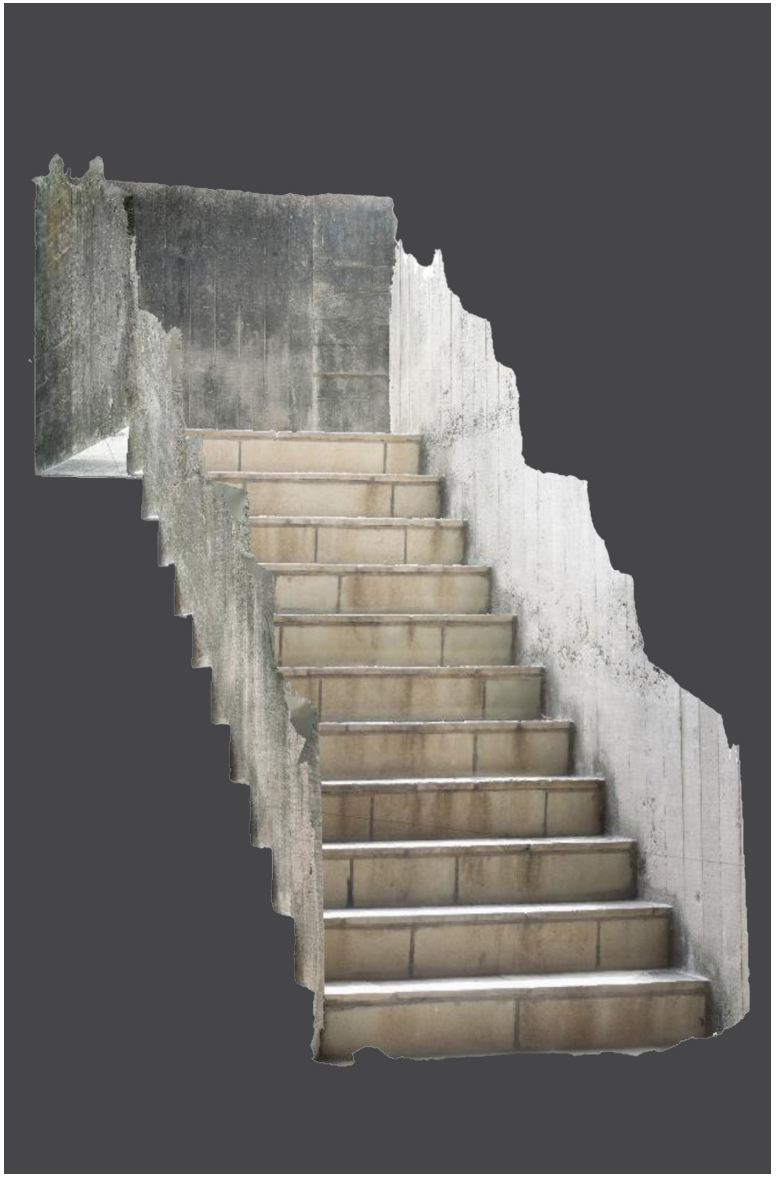
Author: Ananya R.

Author: P. V. Vadgama

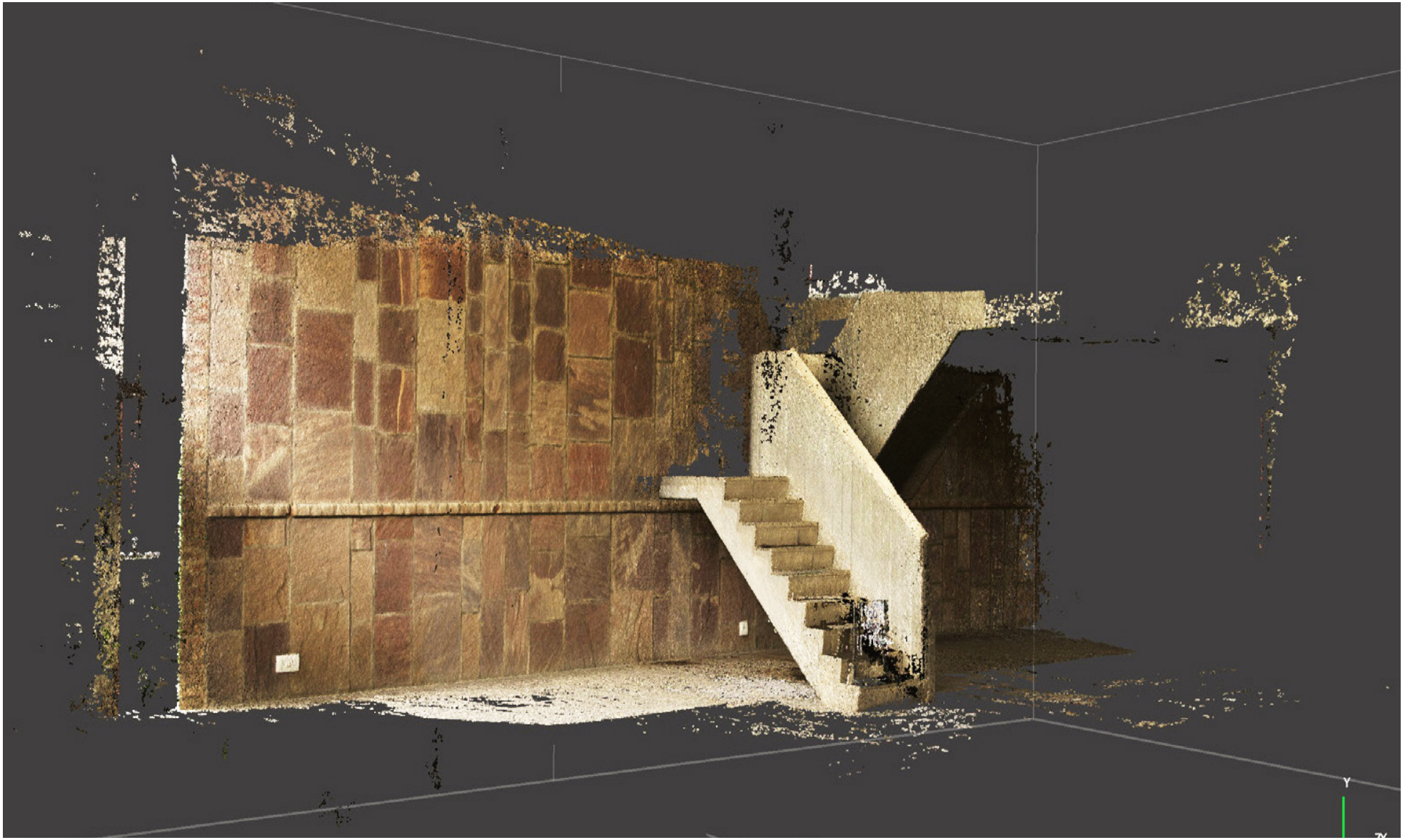


Author: H. Garg

Author: S. Shinde



Author: S. A. Mishra



Author: P. V. Vadgama

3D LiDAR Scanning

Program Faculty: Mrudula Mane
Conservation Architect, Program Lead - Documentation,
CHC - CRDF, Ahmedabad
Email id: mrudula.mane@cept.ac.in

Program Faculty: Zeus Pithawalla
Research Associate, CHC -CRDF, Ahmedabad
Email id: zeus.pithawalla@cept.ac.in

3D LiDAR Scanning workshop involved the understanding of the scanner and its interface, planning for data collection as per the site conditions, managing quantity and quality during data capture, and the post-processing of data that includes the demonstration of data transfer, registration and creation of a base model for vectorisation and quantification.

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Image Credits: SreeRam

Overview Map generated from the 3D point cloud model of ATMA House, Ahmedabad. Data collected by workshop participants under the guidance of M. Mane, Z. Pithawalla, SreeRam. Post processing and visualization by M. Mane, Z. Pithawalla, and SreeRam for CHC - CRDF.

View generated from the 3D point cloud model of ATMA House, Ahmedabad. Data collected by workshop participants under the guidance of M. Mane, Z. Pithawalla, SreeRam. Post processing and visualization by M. Mane, Z. Pithawalla, and SreeRam for CHC - CRDF.

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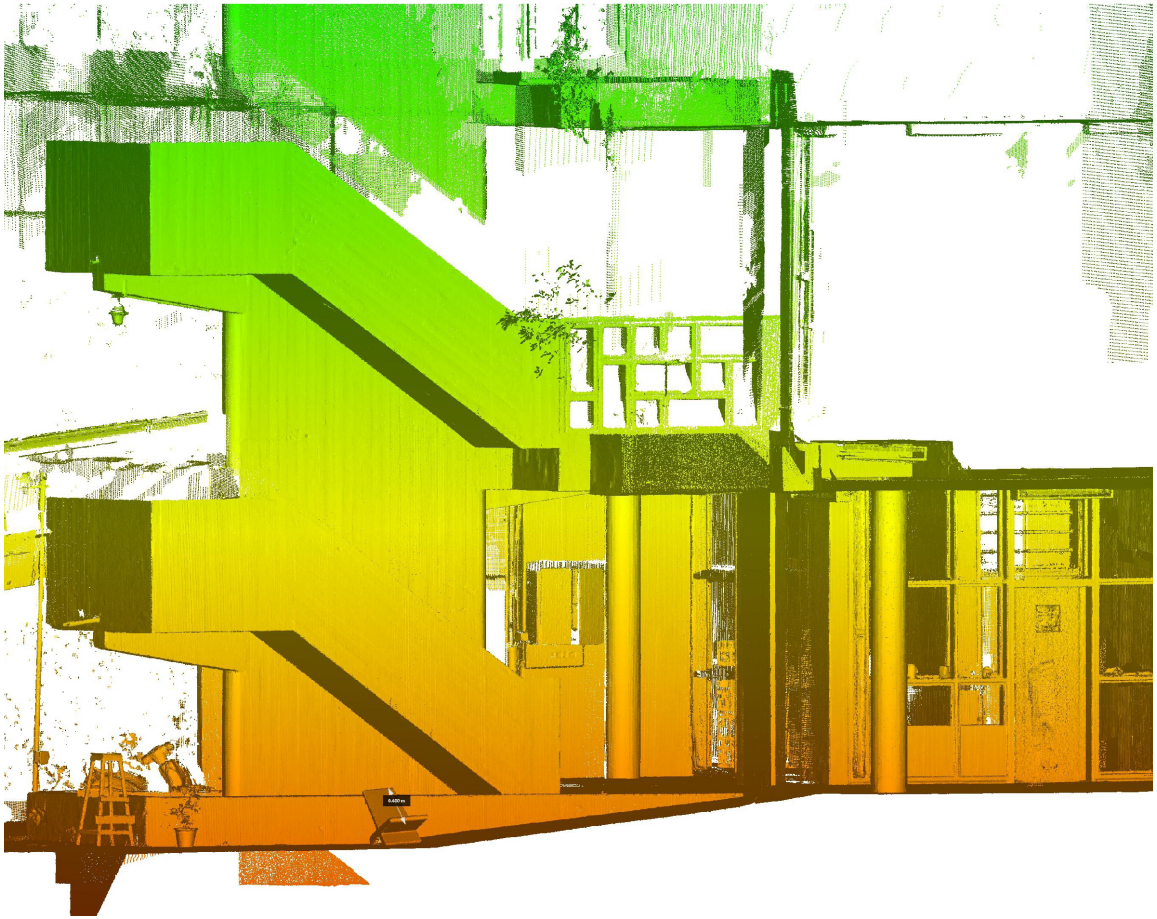
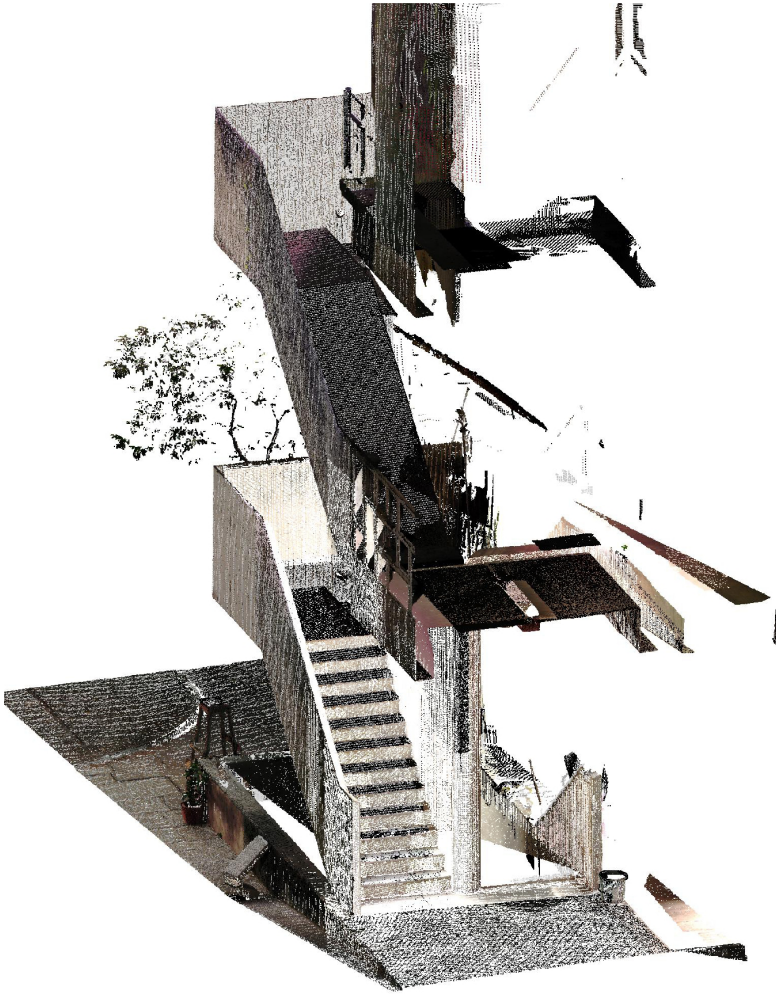
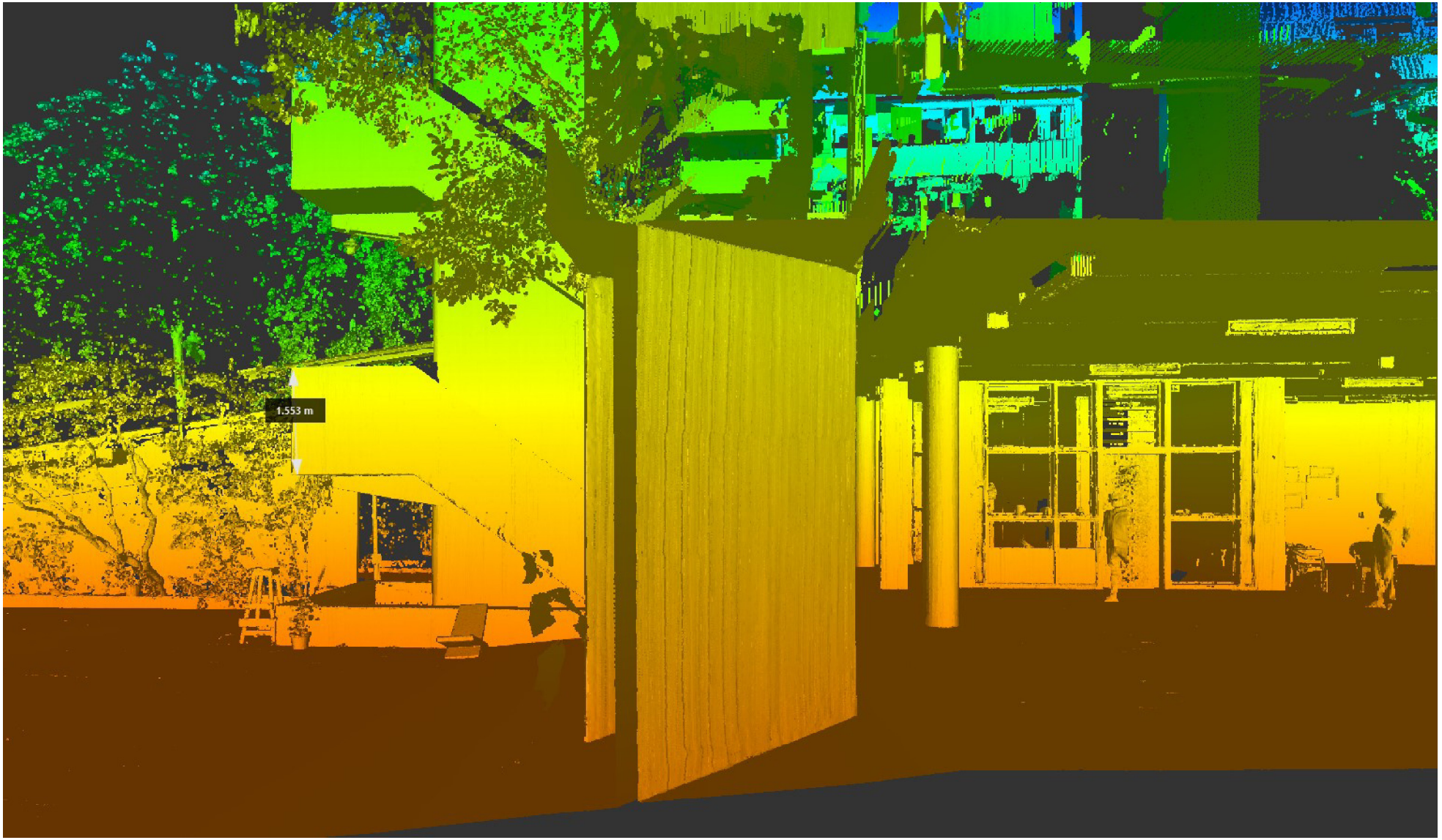


Sectional view (Color mode - Intensity) generated from the 3D point cloud model of ATMA House, Ahmedabad. Data processing and visualization by Himanshu, Anindya & Shwetambri under the guidance of M. Mane, Z. Pithawalla & SreeRam.

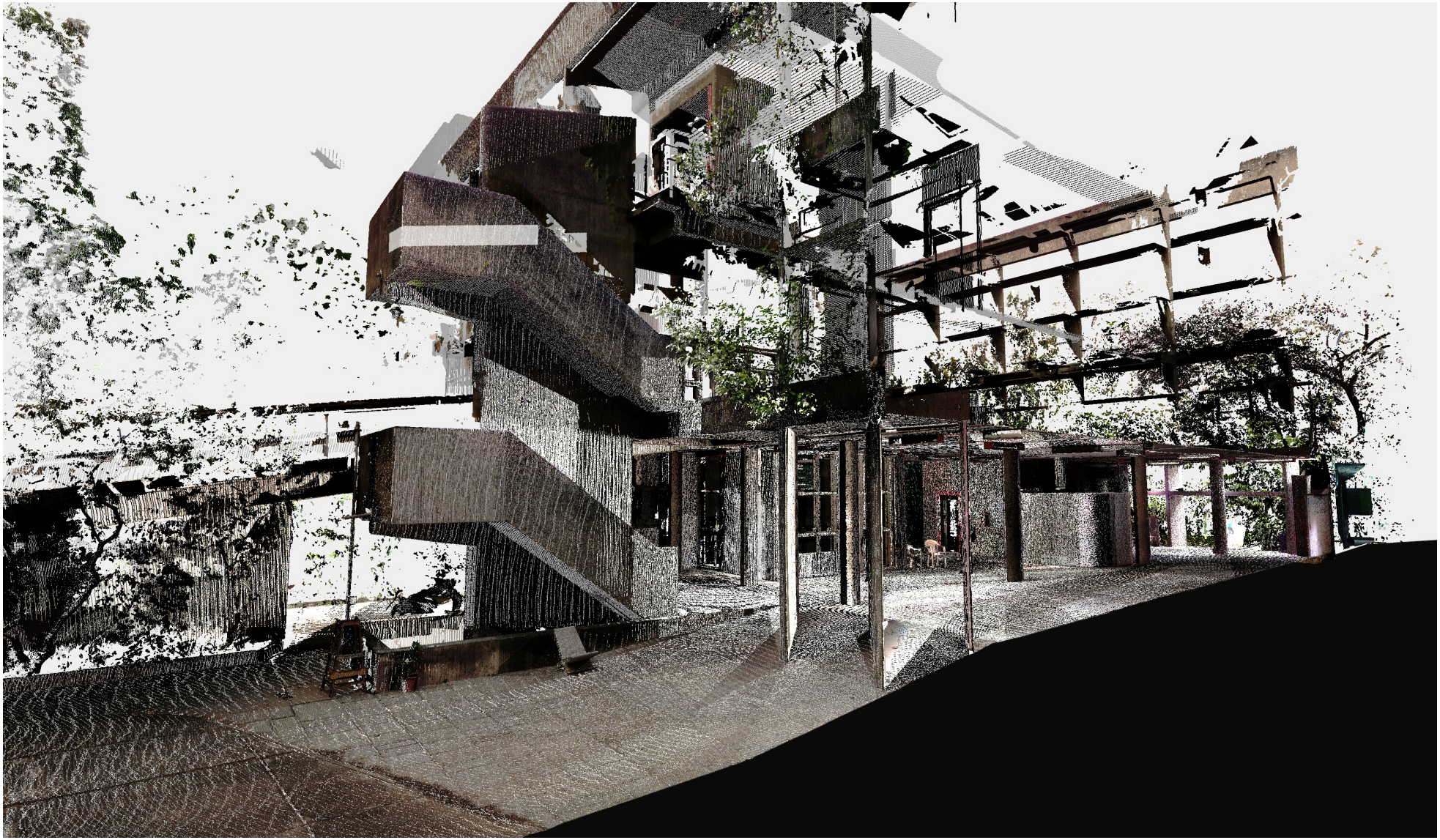


Isometric Sectional view generated from the 3D point cloud model of ATMA House, Ahmedabad. Data processing and visualization by Himanshu, Anindya & Shwetambri under the guidance of M. Mane, Z. Pithawalla & SreeRam.

Axonometric view generated from the 3D point cloud model of ATMA House, Ahmedabad. Data collected by Ananya R. under the guidance of M. Mane, Z. Pithawalla, SreeRam. Post processing and visualization by M. Mane, Z. Pithawalla, and SreeRam for CHC - CRDF.



Sectional Intensity view generated from the 3D point cloud model of ATMA House, Ahmedabad. Data processing and visualization by A. N. Roy under the guidance of M. Mane, Z. Pithawalla & SreeRam.



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