Rainbow School Nerok
Zanskar Multi-Purpose
Auditorium Hall
Progress Report 2025

- **Financed by TCEF and APECIH**
- **Technical Support by HAIL Ladakh**

Construction Report No2

- **Report on Multi-purpose Auditorium Hall from 22nd June to 2nd of September 2025**

Filling of Foundation

After raising the foundation up to 3 feet above ground level, we have started filling the foundation with gravel of random sizes. The filling is carried out with proper levelling using shovels, and labourers have ensured an even surface.
On top of the gravel filling, insulation will be provided using straw-clay bricks, followed by a 4-inch layer of PPC (Portland Pozzolana Cement). Finally, the structure will be completed with finished wooden flooring.

Wall Construction

The walls are being constructed using a cavity-wall system. The cavity is filled with sawdust, which serves as an insulation material. The sawdust is compacted (rammed) in layers to achieve the required density and stability, resulting in a total wall thickness of 24 inches. To enhance structural integrity, geo-mesh reinforcement is installed at every 4 feet of height, effectively tying the two wall leaves together and ensuring overall strength and durability of the wall system.

Wall Construction

Soil Testing

Soil testing was carried out under the supervision of **HAIL Architect, Mr. Shubham Ray**, in coordination with **Contractor, Mr. Deb Bahadur Sunar**. The primary objective of the testing was to determine the relative proportions of clay, silt, and sand in the locally available soil, in order to identify its suitability for the production of high-quality mud bricks as well as for compacted straw–clay bricks.

Different testing methodologies were applied to evaluate soil composition and performance, ensuring optimal mix ratios for strength, durability, and workability in brick preparation. The results will guide material selection and standardization for subsequent construction activities.

Installation of Interior Windows and Door Frames

The installation of interior window and door frames has been initiated as per the approved architectural layout. Frames are aligned vertically and horizontally using water levels and plumb lines to ensure accuracy in placement. Proper anchoring methods are employed to secure the frames firmly within the wall cavities, thereby maintaining structural stability and alignment.

Student Contribution – Plastic Bottle Collection for Thermal Wall

Students of our institution continue to contribute actively towards sustainable construction practices by collecting empty plastic bottles. This initiative serves a dual purpose: firstly, it supports environmental cleanliness by reducing plastic waste from the community; secondly, the collected bottles are repurposed in the construction process for the fabrication of thermal bricks.
These thermal walls, incorporating plastic bottles as insulating elements, enhance energy efficiency while simultaneously addressing waste management concerns, thereby aligning with the project's vision of eco-friendly and sustainable building practices

Fabrication and Placement of Thermal Bricks

Workers carefully prepare thermal bricks by filling empty plastic bottles with salt and subsequently adding water to enhance their thermal mass. These filled bottles are then cast into concrete blocks, forming composite thermal bricks.

The thermal bricks are strategically installed along the **south-east facing walls** of the building to maximize heat retention and improve overall thermal performance. This method not only contributes to passive heating but also incorporates waste materials into functional construction elements, supporting both sustainability and energy efficiency objectives of the project.

Transportation of Exterior Window Frames

Exterior window frames, fabricated at the local workshop as per approved design specifications, have been transported to the construction site. Care was taken during handling and transportation to prevent damage, bending, or warping of the frames.
The frames will undergo inspection upon arrival to verify dimensional accuracy, surface finish, and structural stability prior to installation. This step ensures quality compliance and readiness for integration into the building envelope.

Installation of Exterior Windows

The installation of exterior windows has commenced for the side rooms. Skilled technicians are carrying out the process with precision, ensuring proper alignment and positioning. A water level pipe is employed to verify both horizontal and vertical alignment, thereby guaranteeing accuracy and uniformity across all window Frames.

Installation of Traditional Shinsak

To preserve the cultural aesthetics of the building, local carpenters have installed **Shinsak** (traditional carved wooden elements) over the exterior windows. These handcrafted wooden details not only enhance the architectural character of the structure but also reflect the traditional craftsmanship of the region.

The Shinsak elements have been securely fixed above the window frames, ensuring both durability and alignment with the overall façade design. This integration of traditional artistry with modern construction provides the building with a distinctive cultural identity while maintaining functional performance.

Interior Plaster Work Update

The interior plaster work has been completed in the side rooms, which include the boys' and girls' changing rooms with store room, as well as the cafeteria and kitchen. The plastering has been done using **mud plaster**, a traditional material known for its excellent **moisture absorption capacity** and its ability to **retain temperature for a longer duration compared to cement**.

Impact of Unseasonal Weather on Work Progress

Construction activities were adversely affected due to unseasonal weather conditions beginning on **25th August**, when Ladakh experienced **four consecutive days of heavy rainfall** followed by **two days of unexpected snowfall**. Against the normal average rainfall of **15 mm in August**, the region recorded an unprecedented **47 mm**, leading to widespread disruption.
The excessive rainfall and snowfall resulted in flash floods, causing damage to roads and bridges across Ladakh. The situation was further compounded as **Manali, Himachal Pradesh** emerged as one of the worst-affected areas, with road connectivity from **Delhi to Manali** remaining cut off to date. This has directly impacted the timely transportation of construction materials and supplies to the site, leading to unavoidable delays in the progress of work

Impact of Unseasonal Weather on Work Progress

Status of Work as on 02/09/2025

We are pleased to report that the **brickwork for all sides of the building has been fully completed**. The project has now progressed to the **plastering phase** for both the exterior and interior façades.

Additionally, the **boys' and girls' changing rooms, cafeteria, and kitchen** have reached completion with respect to major structural works, including roofing and plastering. These milestones mark significant progress towards the overall completion of the project and set the stage for subsequent finishing works.

Status of Work as on 02/09/2025

Work Status Update

The **civil works of the boys' and girls' changing rooms, cafeteria, and kitchen** have been completed, including plastering and roofing. In the coming days, **painting, glazing, and electrification** works will be initiated.

The **electrification of the Main Hall** and the completion of the **steel truss roofing** are scheduled for the **end of September**. By the same timeline, the **installation of door shutters and glazing of the south façade** will also be completed.

The above-mentioned timelines remain **subject to road clearance and favourable weather conditions**, as the Meteorological Department has announced another **four days of inclement weather**. At present, the site is experiencing rainfall, which may affect ongoing activities.

We remain grateful for your continued **support and encouragement** throughout this journey. The next detailed update, **Report No. 03**, will be shared before the end of this working season.

Thank you All.