

TRANSFORMING SPACES FOR CHILDREN

CONTEXT AND ISSUES

- Schools and students have been affected by the harsh climatic condition be it hot or cold climate.
- In colder climate, students are compelled to take classes outdoor due to thermal discomfort in class hours.
- At national level, there are 36094 schools with almost 14,217,920 students enrolled from Early Childhood Development to higher secondary level.



SCHOOL DESIGN ACROSS ALL THE BIO-CLIMATIC ZONES



EARTHQUAKE AND RECONSTRUCTION SCENARIO

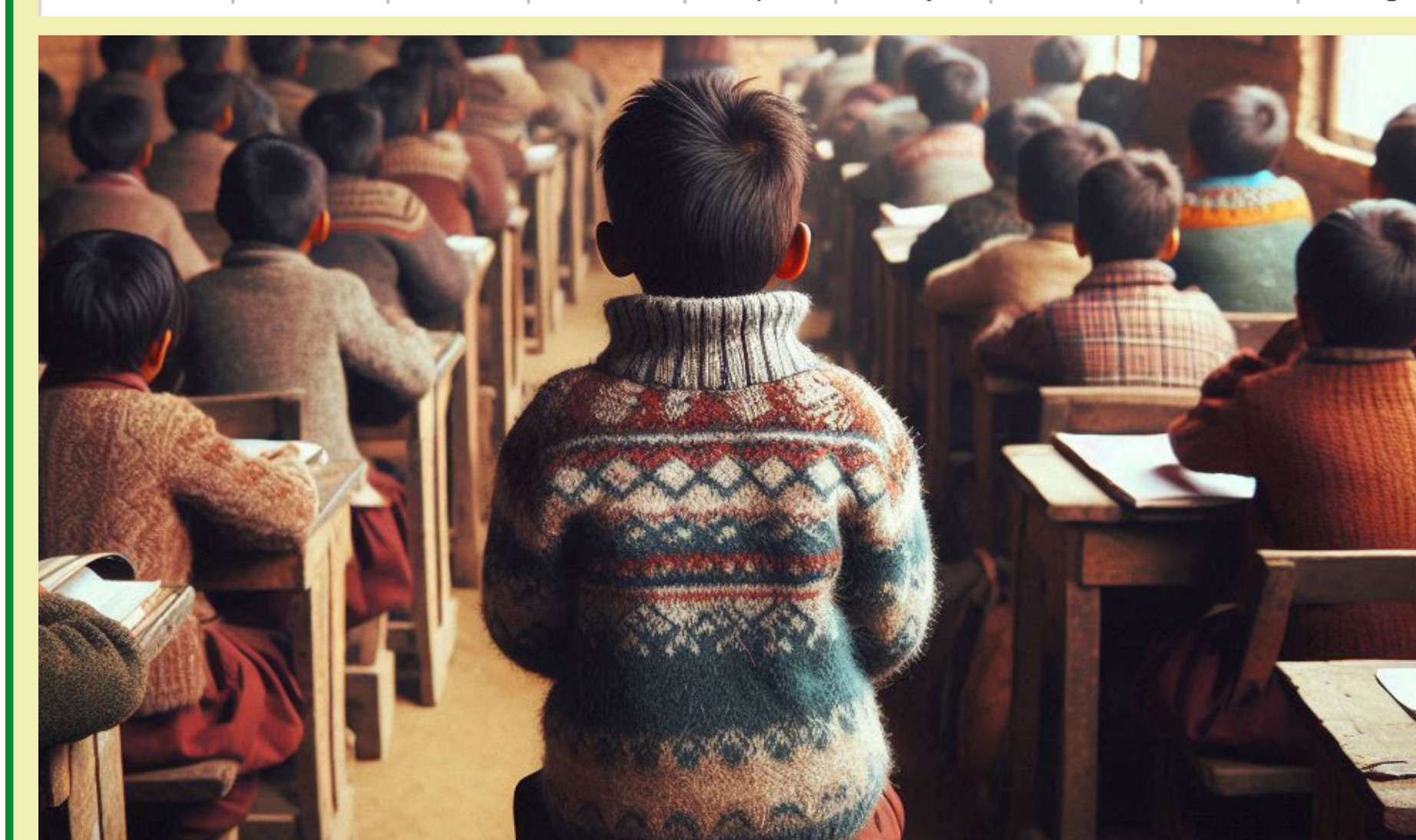
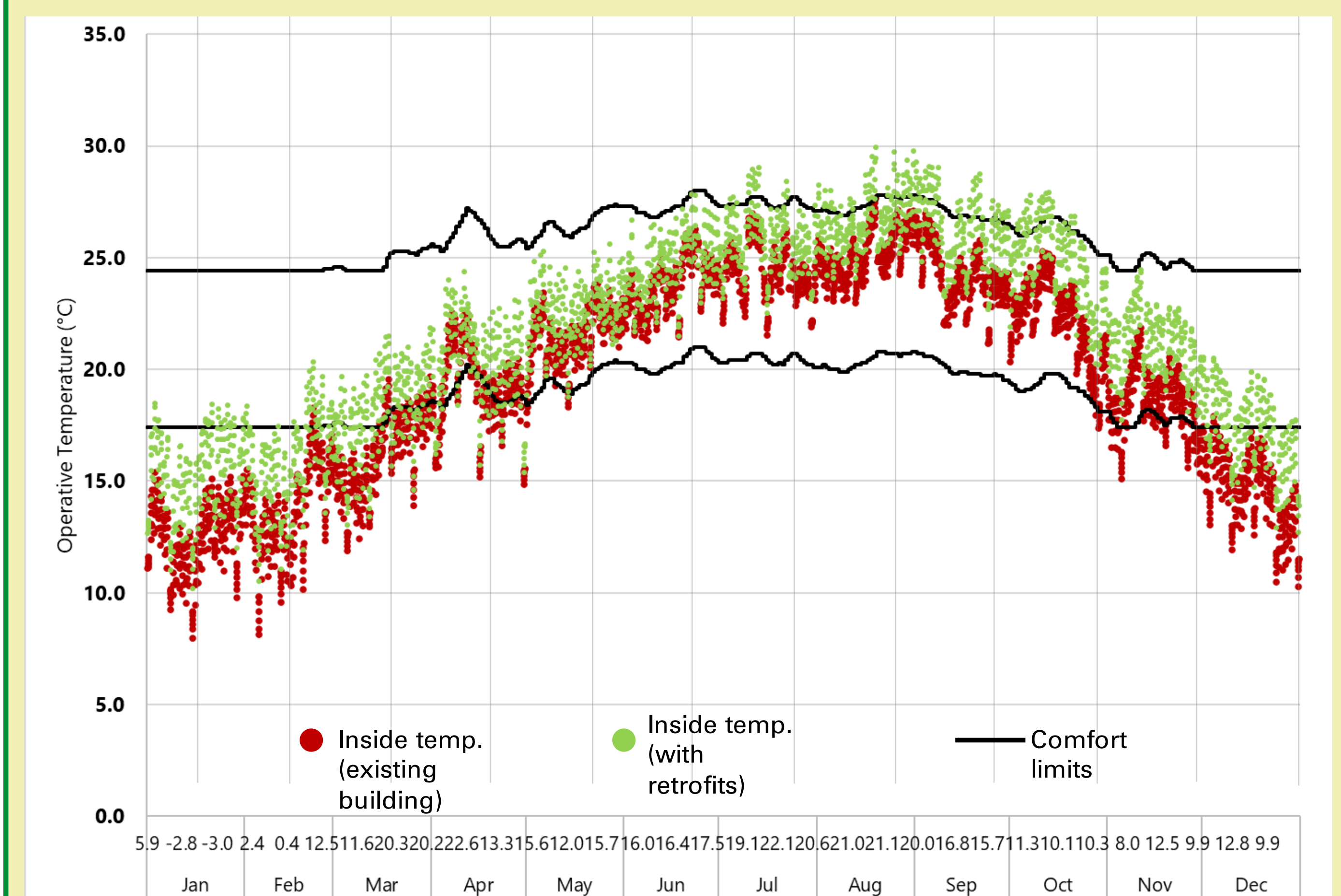
- Around 8000 schools and 36000 classrooms were destroyed by the 2015 earthquake affecting education of around 1.5 million students.
- Reconstruction carried out for almost 6900 schools but with similar construction practice irrespective of their bioclimatic zone ending up in thermally uncomfortable classroom hours.

<p>9 inch thick Solid Burnt Clay Brick U Value: 2.05 W/m².K</p>	Wall Assembly	
	External Walls	
	Layer 01	Cement Plaster (12mm)
<p>Plaster Punning Cement Screed RCC Plaster Punning U Value: 3.56 W/m².K</p>	Layer 02	Solid Burnt Clay Brick (230mm)
	Layer 03	Cement Plaster (12mm)
	Roof Assembly and Internal Floors	
<p>Single Pane Clear Glass U Value: 5.79 W/m².K SHGC: 0.83 VLT : 85%</p>	Layer 01	Cement Plaster (12mm)
	Layer 02	Cement + Sand Screed (60mm)
	Layer 03	Reinforced Cement Concrete (125mm)
	Layer 04	Cement Plaster(12mm)
Glass Assembly		
	Layer 01	Clear Glass (6mm)

THE RETROFITTING OF ECD IN DHUNCHE (2030 m), RASUWA

- With the average recorded low of 3°C in Dhunche, the ECD classroom is extremely cold in winter affecting the attendance of the students.
- Energy retrofitting in collaboration with Local Governments has been carried out for thermal comfort in the classrooms.

Results



Indoor temperature increased by 2.5°C - 3°C