

PROJECT SUMMARY

Ref No.: MRIC/IBG3-BG/P01	Title: Natural-fibre based bio-composite panels for heat regulation in the built environment
Local Institution: University of Mauritius	
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TECHNICAL ABSTRACT One of the prominent impact of climate change is the progressive increase in ambient temperature, resulting in turn in the impoverishment of the indoor environmental conditions by both the radiative (surface) and convective (air) effects. For the concrete structures in Mauritius, the high thermal capacity of concrete combined with the relatively high thermal conductance (U-value) leads to poor thermal comfort in summer conditions, which is anticipated to worsen as global warming becomes more severe with increase in carbon emissions. The increase in peak power demand, achieving record levels of 567.9 MW, largely due to excessive heat gains into the building interiors and consequently heavy reliance on air-conditioning. The unsustainable use of air-conditioning to adapt to the increased summer temperatures and associated heat gains need to be dealt with using fundamental passive building design principles. Moreover, this approach allows vulnerable communities and low income families to cope with this pressing challenge, typically referred to as heat health. The project aims to develop nature-fibre based composite panels for heat gain regulation as a means to passively control heat gains through the building envelope by improving the thermal properties of concrete fabric using local natural-fibre based composites.	
Key Words: Climate adaptation, Heat health, Climate resilience Thermal comfort, Energy Efficiency, Air-conditioning, Heat regulation, Passive building design	