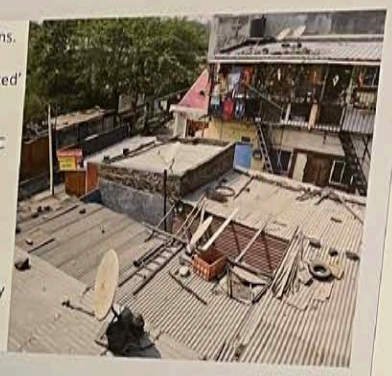
7-108-22	Confronting systemic neglect of the cooling needs of India's urban poor through mobilizing participatory design process and women's cooperatives	Vivek GILANI

Fostering Thermal Comfort in Informal Housing through a Women-Centric Political-Economy in India

THE PROBLEM



- 60% Indians live in informal settlements; yet their heat stress is largely ignored by 'cooling efficiency' programs.
- Only 5 to 10% of India's built-space is 'formal architecture'. Most of India 'builds itself' through 'self-constructed' housing; 1 architect per 20,500 citizens in India (European ratio is 1:1,880).
- Poorly weatherized housing : Lack of ventilation and heat absorbing house material - roof temperatures > 50^{0}C at air temperatures < 32^{0}C.
- Recurrent power outages and/or planned outages (load shedding) due to peak-demand from AC use by the affluent class; no backup power sources (diesel generators etc.) in informal homes to even operate a ceiling or floor fan for basic comfort.
- Midnight heat stress disproportionately affects women who wake up much earlier to fetch water and cook- they suffer the most from protracted sleep deprivation; families experience health problems such as nausea and dizziness; children cannot focus and study; the elderly cannot rest indoors.

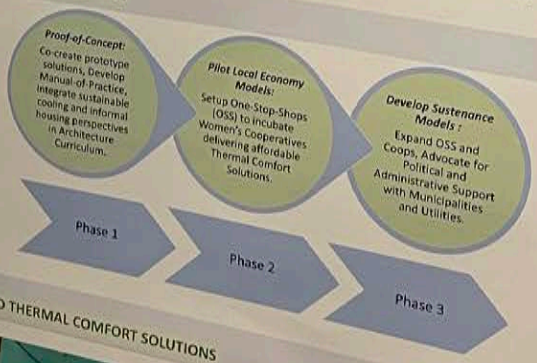
A CRITICAL PRAXIS

Scars of Past Top-Down 'Development'	- What makes marginalized individuals justifiably wary of our well-intentioned efforts? - Would we open our own homes to 'development' experiments?
Our Prejudices as Technocratic Elite	- Awareness is an issue – how aware/informed are 'we' of 'their' contextual needs/lived reality ? - Do we adopt 'sustainable' cooling solutions in our own contexts?
'Listening' Intently for Meaningful Change	- If all we have is a hammer, everything looks like a nail - are we listening to their real predicaments of those bearing the brunt of injustices or rationalizing our 'theory' of change?
Patience in an Emergency	- What makes us lurch towards large 'scale' in a hurry; after years of neglect? - Do we have the 'patience' and humility for decentralized autonomous 'scaling' models to emerge - with our modest support, but not 'controlled' by us?

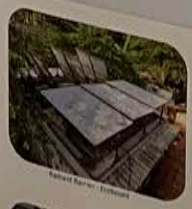


Facilitated co-creation through community engagement

THEORY-OF-CHANGE



CO-CREATED THERMAL COMFORT SOLUTIONS



Radiant Barrier - Exposed



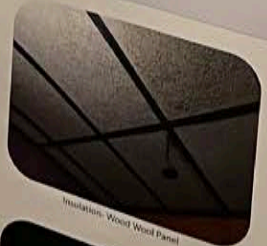
Thermal Mass & Shading - Rooftop Gardening



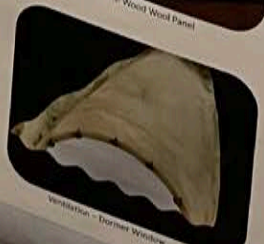
Radiant Barrier - Roof



Thermal Mass - Water Filled PET Bottles



Insulation- Wood Wool Panel



Ventilation - Dormer Window