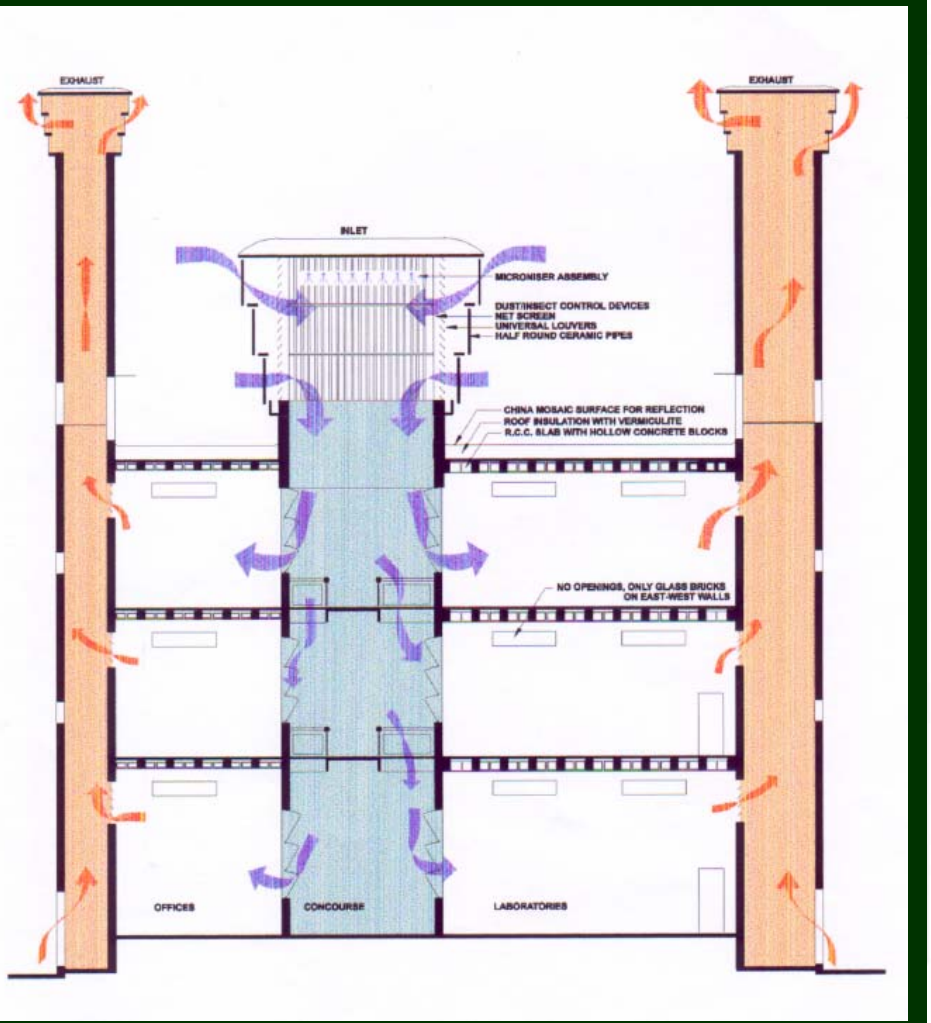
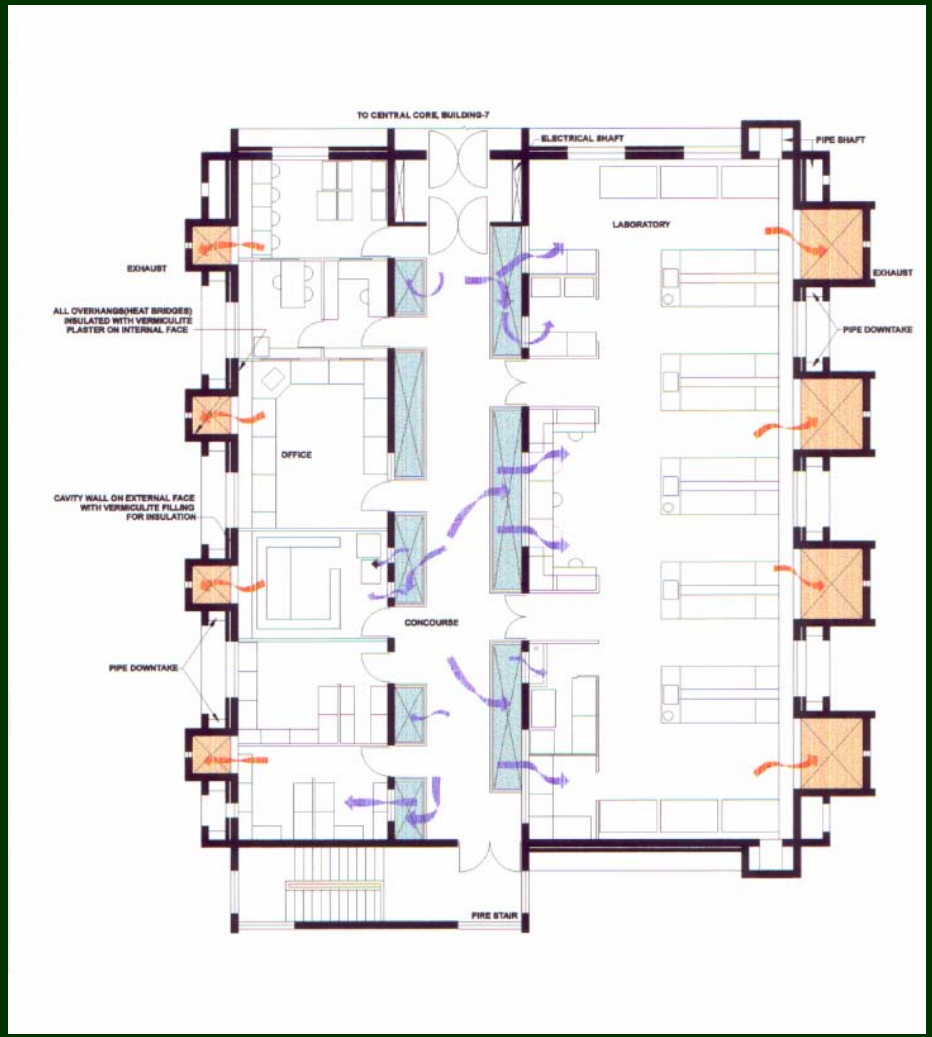


SECTION
TYPICAL LABORATORY BLOCK



FIRST FLOOR PLAN
TYPICAL LABORATORY BLOCK

The design of the typical laboratory block was evolved jointly by Abhikram and Short & Ford Associates (SFA) with Brian Ford of SFA, contributing to all the scientific and simulative aspects of the design and Nimish Patel of Abhikram contributing to the aspects covering the architectural design, the materials and technologies, construction detailing, internal and external finishes as well as the final built-form.

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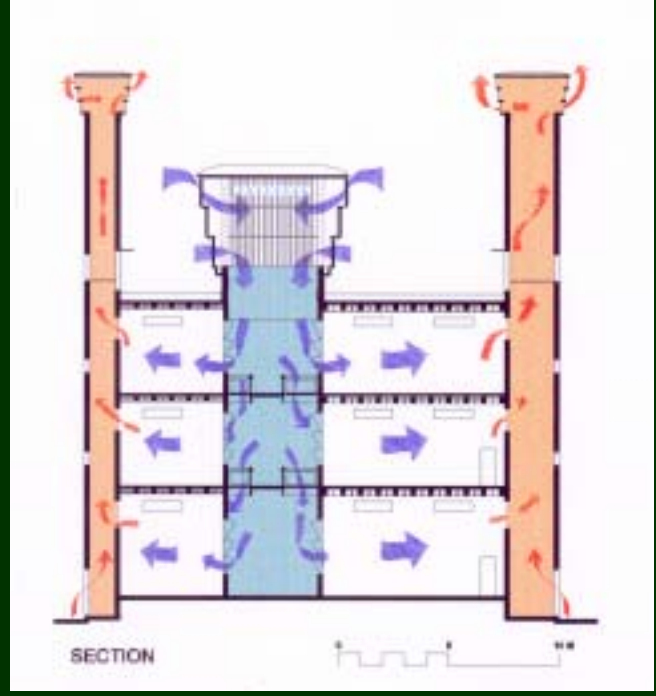
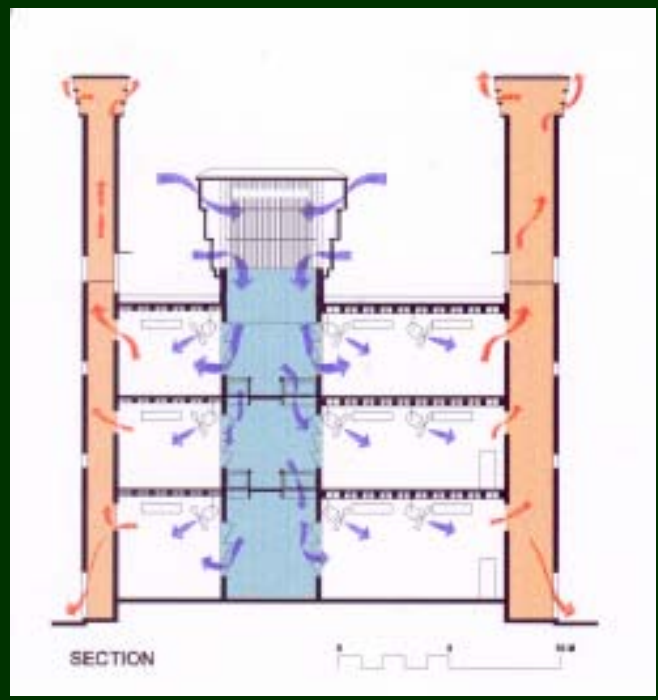
HOT SEASON STRATEGY (MARCH – JUNE)

- Passive evaporative cooling
- micronisers provide a down draft of cool air.
- Night ventilation.
- Ambient temperature 41 to 43 C.
- Insulated building mass and roof.
- High air change rates achievable (8 – 15)
- Air moves across the laboratory through risk of short circuiting.
- Controls: Micronisers to be controlled automatically by reference to ambient temperature and relative humidity.



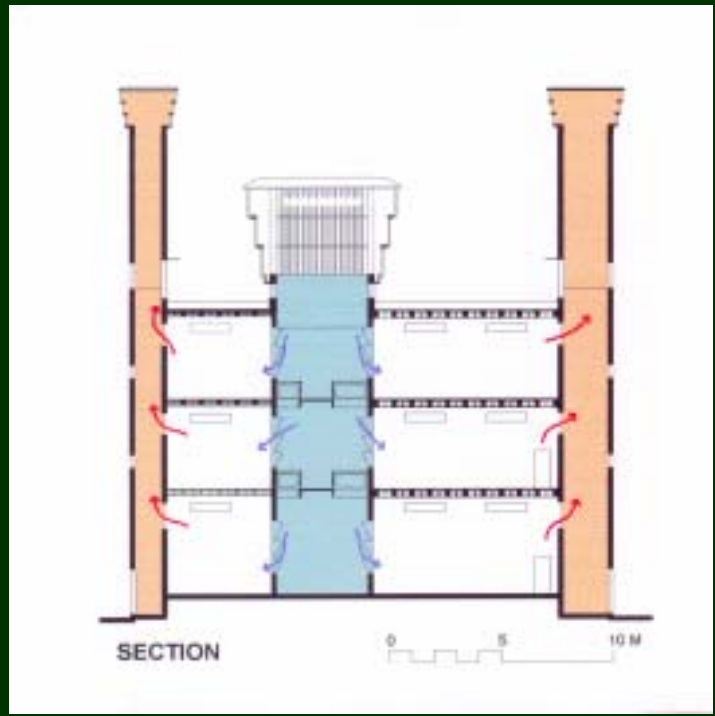
MONSOON SEASON STRATEGY (JULY – SEPTEMBER)

- Maximise ventilation rate with micronisers switched off.
- Ceiling and wall fans to induce air movement in the same direction as natural flow.
- Air speed upper limit 1.5 Mt./Sec.
- Possibly close all exhausts in the afternoon.



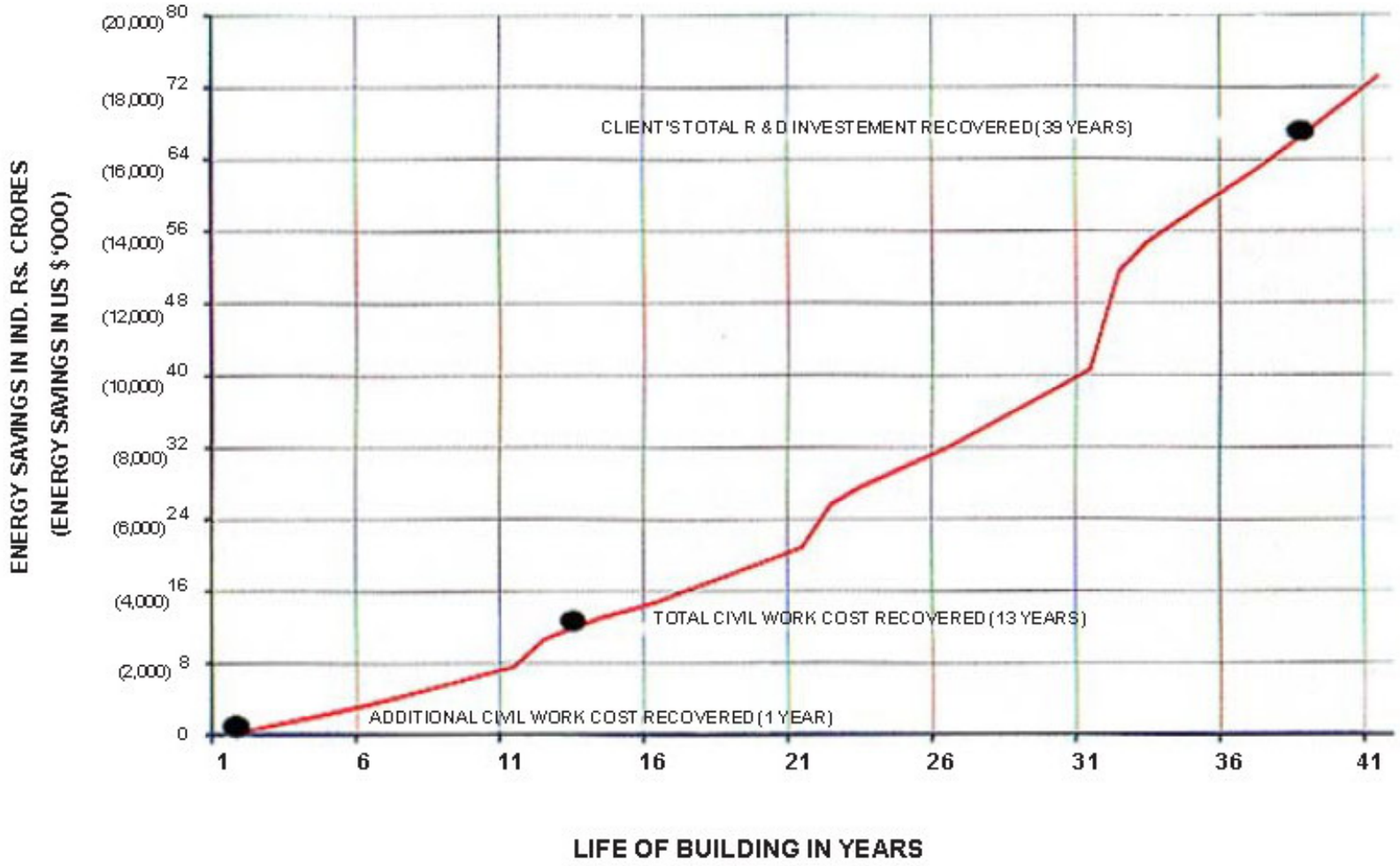
COOL SEASON STRATEGY (OCTOBER – FEBRUARY)

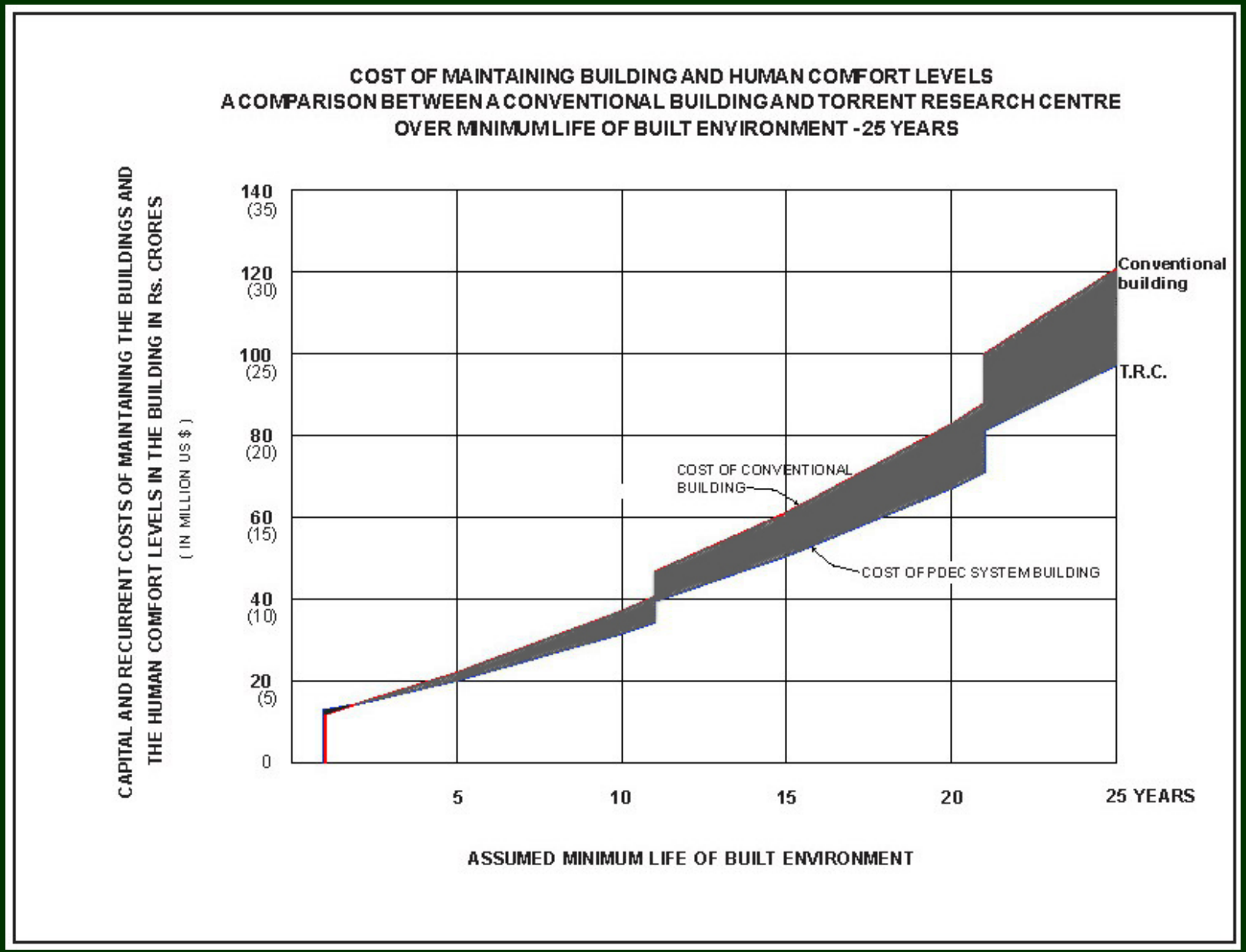
- Minimize ventilation rates.
- Inlets closed by shutters.
- Exhausts also closed by shutters.
- Insulated walls and roof reduces heat losses.
- Internal gains raise temperature.
- Encourage ventilation during the day (possibly evaporatively cooled on hot days).
- Close inlets and exhausts at night.



Buildings other than the typical laboratory Building no. 2, and buildings 3 and 5, which are extra-polated from Building No. 2 have been designed by Abhikram and vetted by Dr. C.L. Gupta of Solar Agni International, Pondicherry.

TORRENT RESEARCH CENTRE, AHMEDABAD, INDIA
AN OVERVIEW OF PAYBACK FROM SAVINGS OF ELECTRICAL ENERGY





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