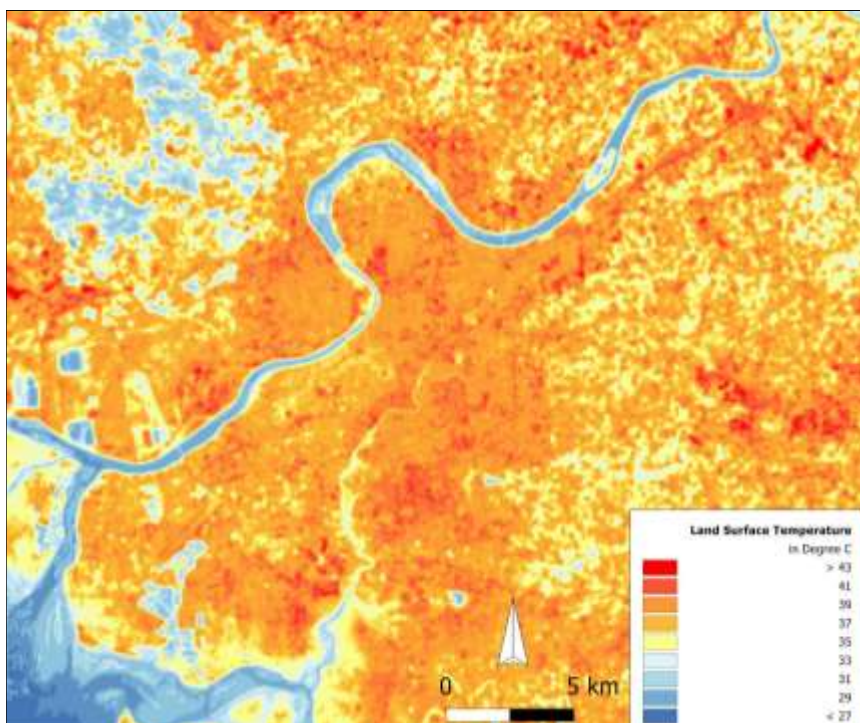


# Urban heat island and achieving thermal comfort

Dr. Mahesh Rajasekar  
Climate resilience and built  
environment



The GRIHA Summit 2015  
12<sup>th</sup> March, 2015



## LST

Acquired by Landsat as on 08<sup>th</sup>  
April, 2014

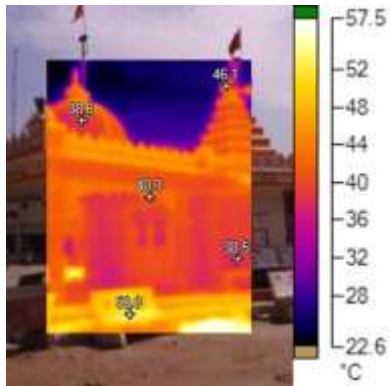
Captured for the city of Surat

Time of Acquisition: Morning

The areas with surface temperature are visible as red pockets and you can see the relative temperature difference of water bodies

## Thermal Emissivity varies across built environment

Thermal image of a temple within the city indicating the different in material used their exposure to sun and their respective change in emissivity



Thermal Infrared Image  
3:16:51 PM



Visible Light Image  
3:16:51 PM

## Options

Top Image

Left: Construction of bamboo shading screen, Right: Finished design

Bottom Image

Left: Untreated terrace, Right: Treated with cool roof paint



## Options

Top Image

Left: Construction using inverted earthen pots, Right: Construction using hollow clay tiles

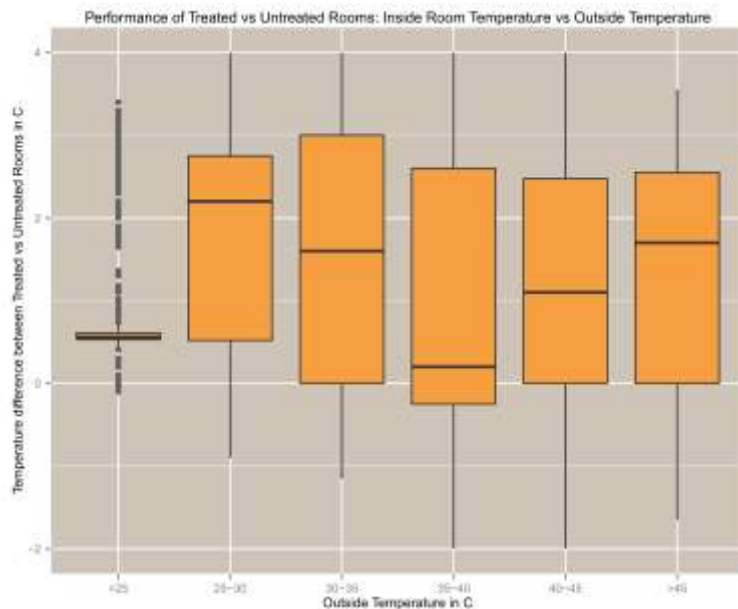
Bottom Image

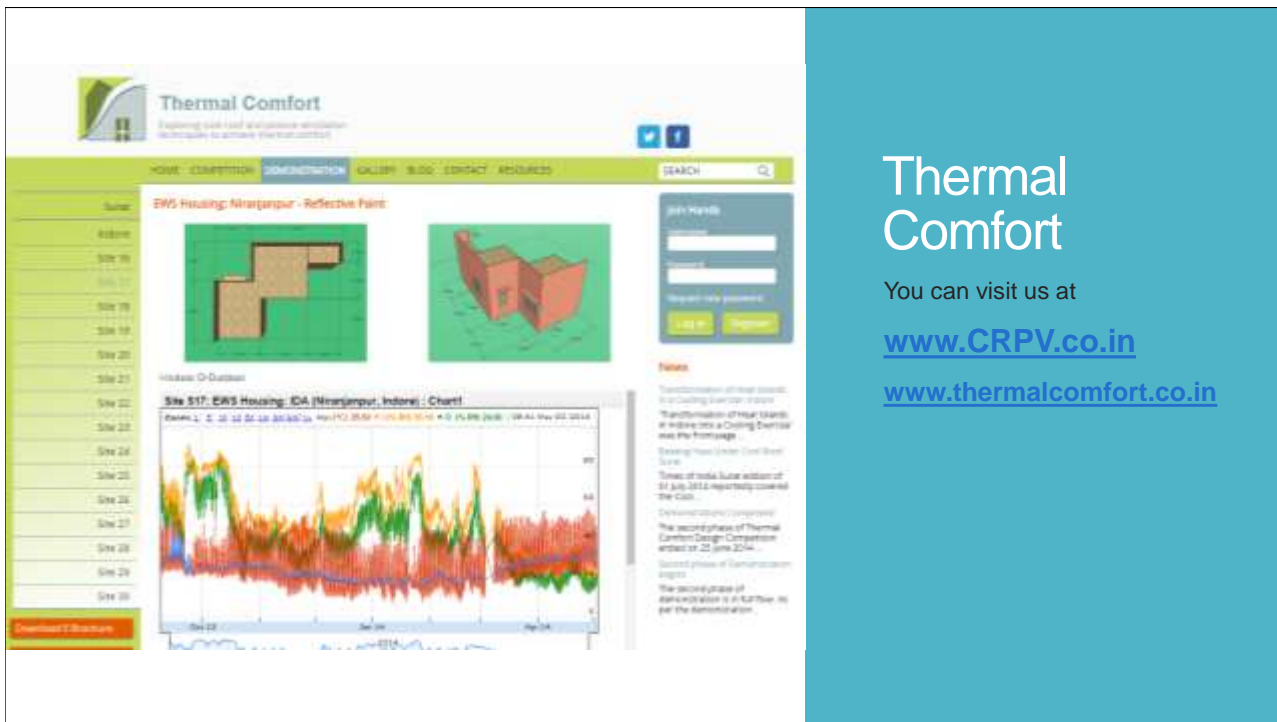
Left: Green shading, Right: Treated with Extruded Polystyrene Foam Sheets



## Temperature Performance

Box plot indicating the difference between a treated and untreated roof with respect to the different scales of outside temperature





**Thermal Comfort**  
Exploring cool roof and sustainable construction techniques to promote thermal comfort.

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**EWS Housing: Niranjanpur - Reflective Paint**

History: 0-Duration

**Site 31: EWS Housing - DA (Niranjanpur, Indore) - Chart!**

Series 1: 2 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

Download Chart

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# Thank You

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