

Solar Cooker

For High Rise Buildings

a project by

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Guided by:

Prof. B. K. Chakravarthy



The Cause

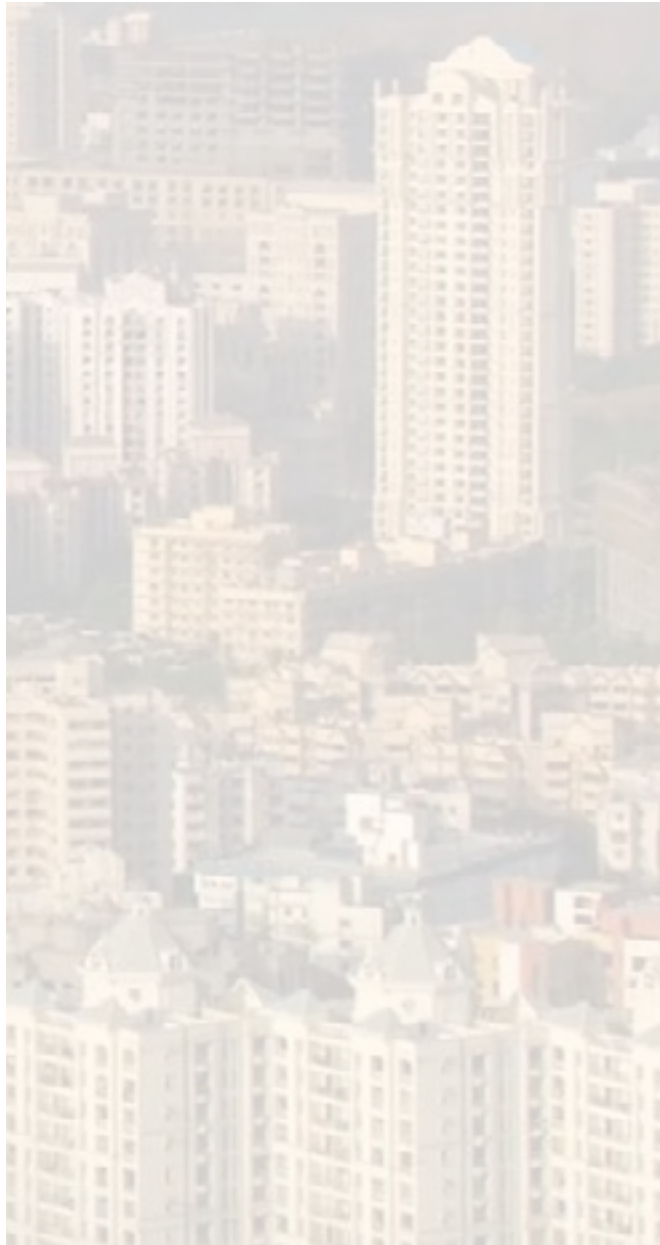
Why Solar Cooker?

Unfulfilled needs
of users living in
high rise buildings





Fuel Price Hike



Urbanization



Environmental
Awareness



Fuel Price Hike



Urbanization



Environmental
Awareness



Fuel Price Hike



Urbanization



Environmental
Awareness

The Study

Existing Products...



Box Type

- Common solar cooker in India
- Converts sun light into heat using black body
- Cost: Rs 3500 to 4500

Existing Products...

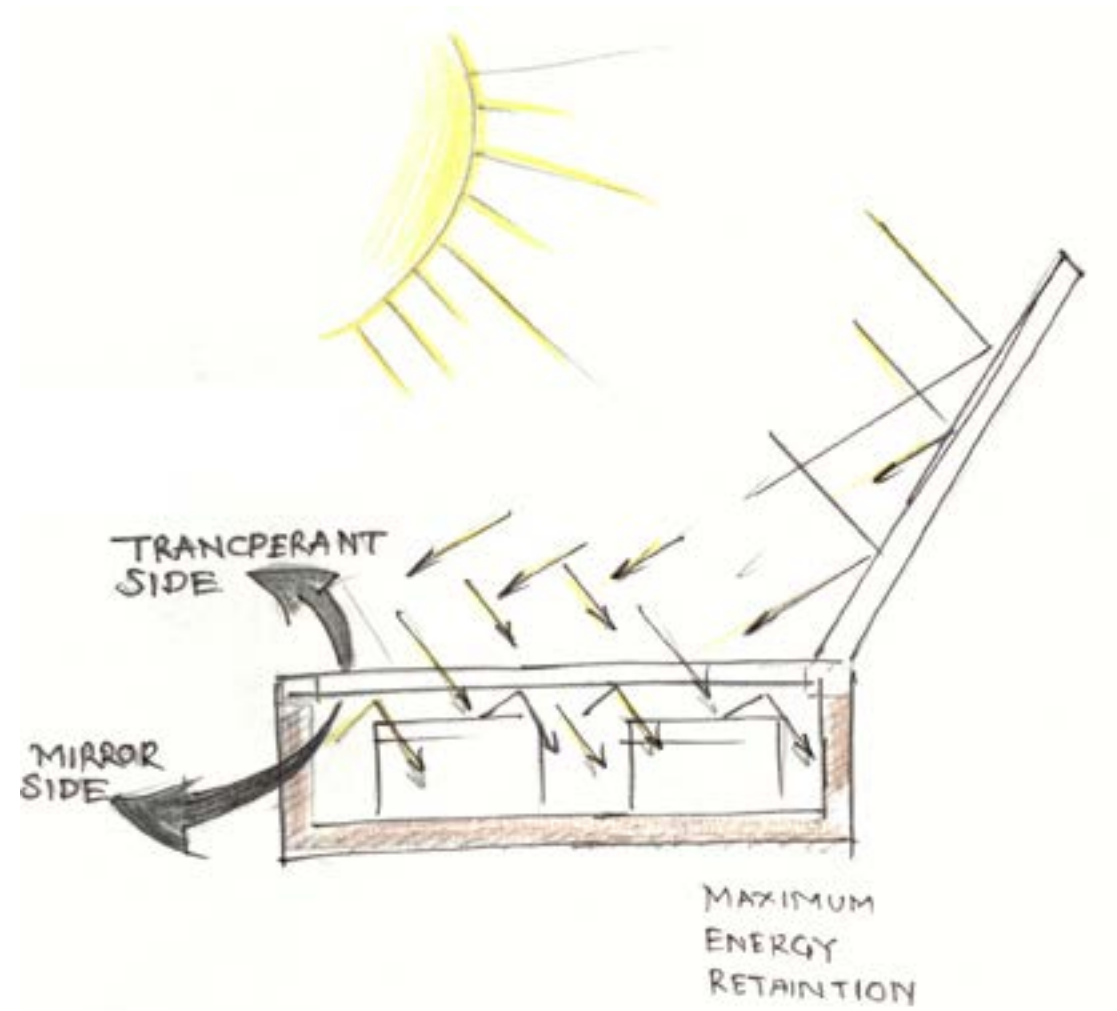


Parabolic Type

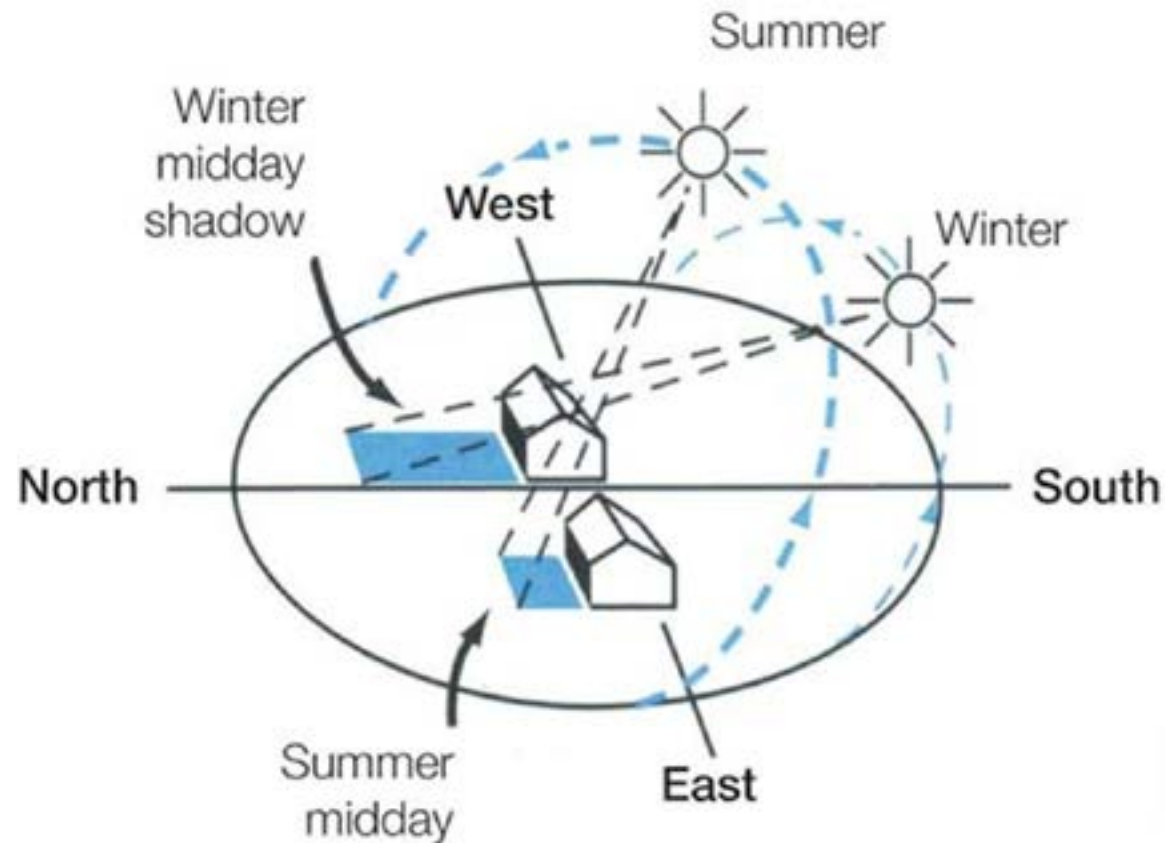
- Concentrating sunlight at focal point of reflective parabola
- Space consuming but faster rate of cooking
- Cost: Rs.7000 to 8000

Understanding Technology

Greenhouse effect



Sun Light Availability



Understanding Apartments



Typical Balconies



Typical Windows



Opinions

“Food tastes good”

“Save LPG up to 50%”

“Guests ask for
solar cooked food”

“Free cooking”

“Can cook almost
every thing”

“Preparations need
to be done”



Vipin Chitare
& Ms. Chitare
Thane.

Opinions

“Takes time”

“Cooking out side
the kitchen”

“Preparations need
to be done”

“Dubba kam ka
nahi hai”

“Jagah nahi hai”



Mrs. Phadke
Ahmednagar.

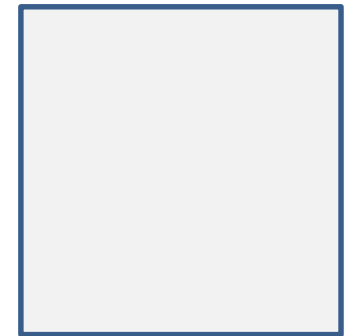
Opinions

“Nahi chalata hai”

“Time leta hai”

“Mehenga hai”

“Dopeher me hi use
kar sakata hai”

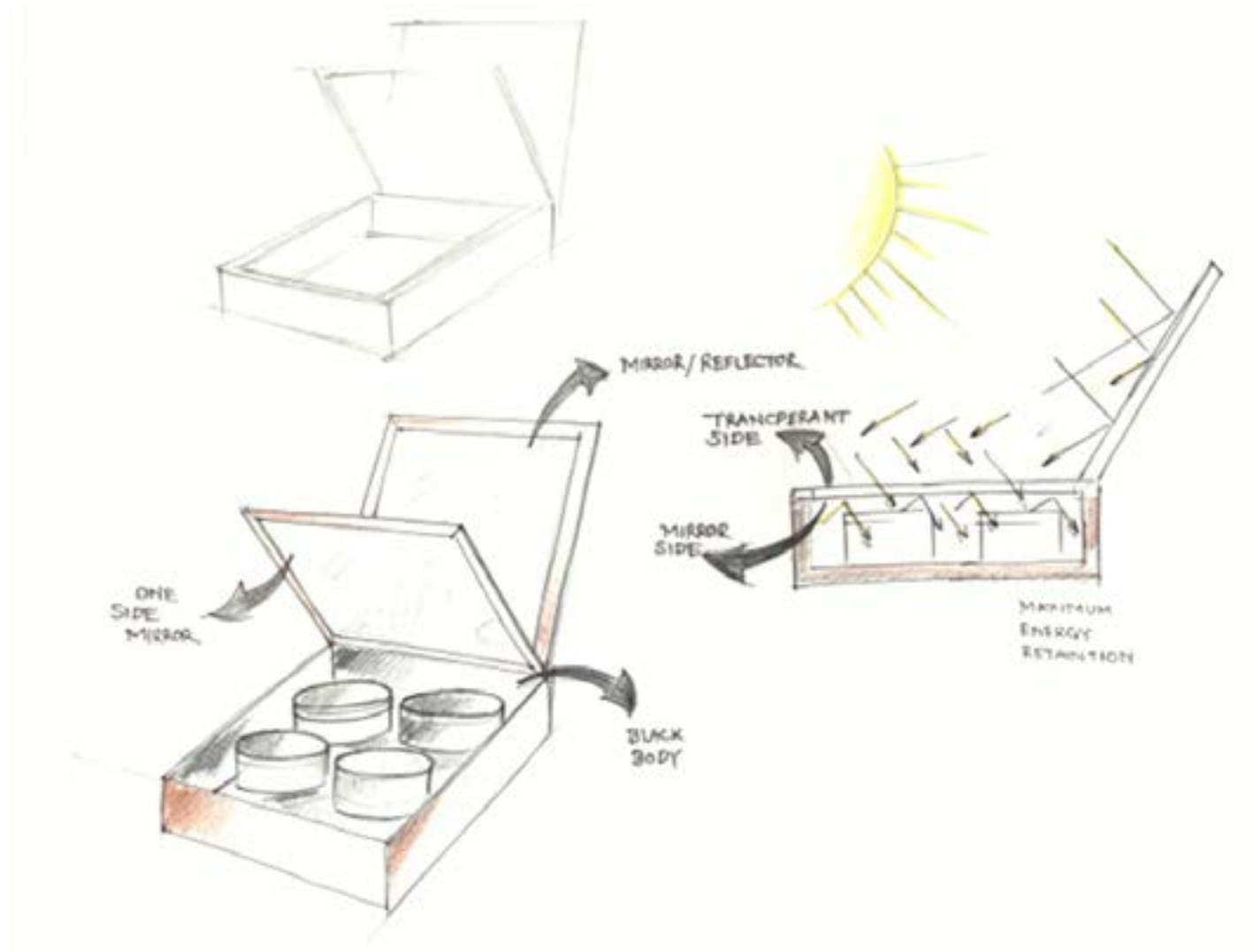


Mrs. Sawant &
'Mahila Mandal'
Mulund.

Concepts

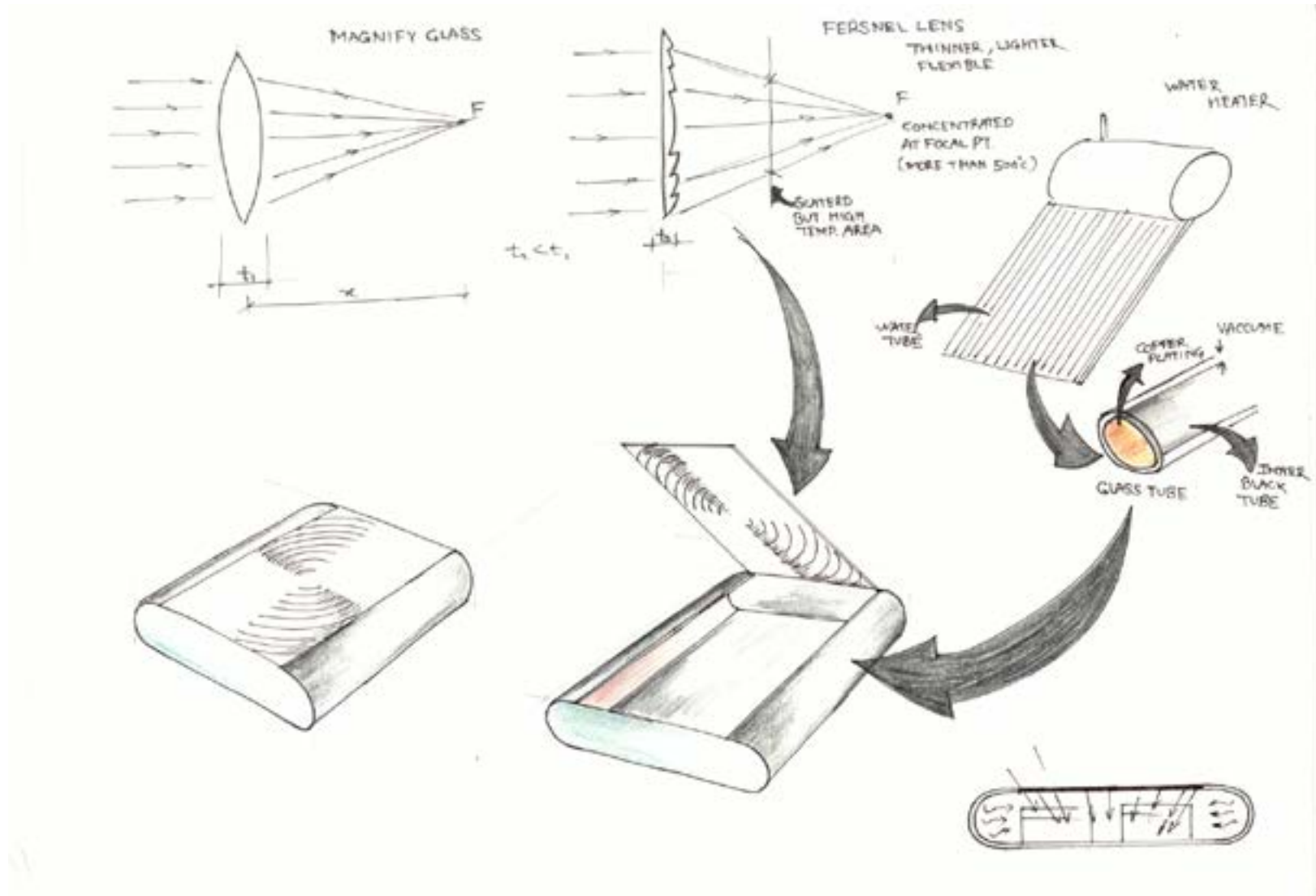
Concept 1

Use of one-sided mirror



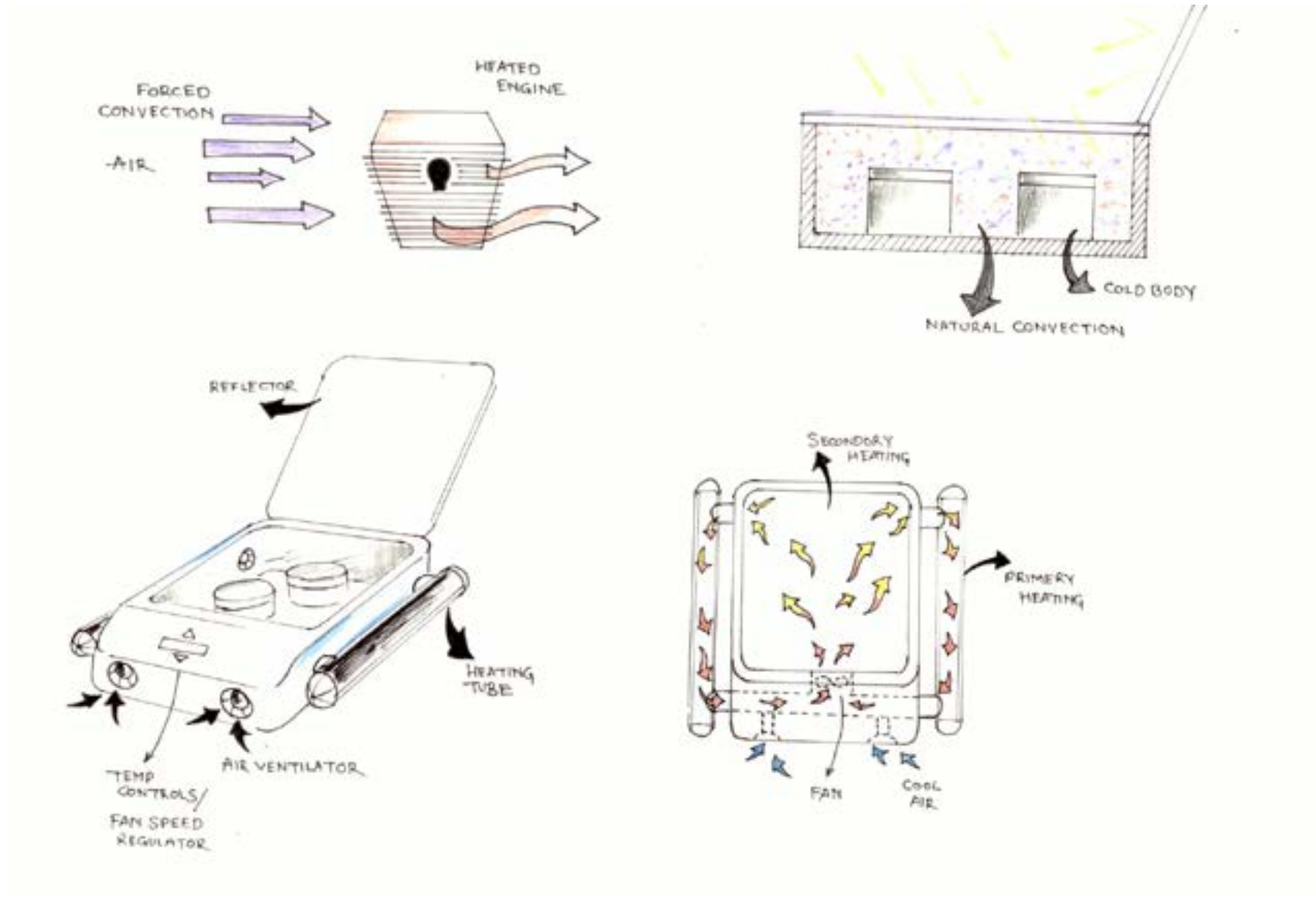
Concept 2

Fresnel Lens Concentrator



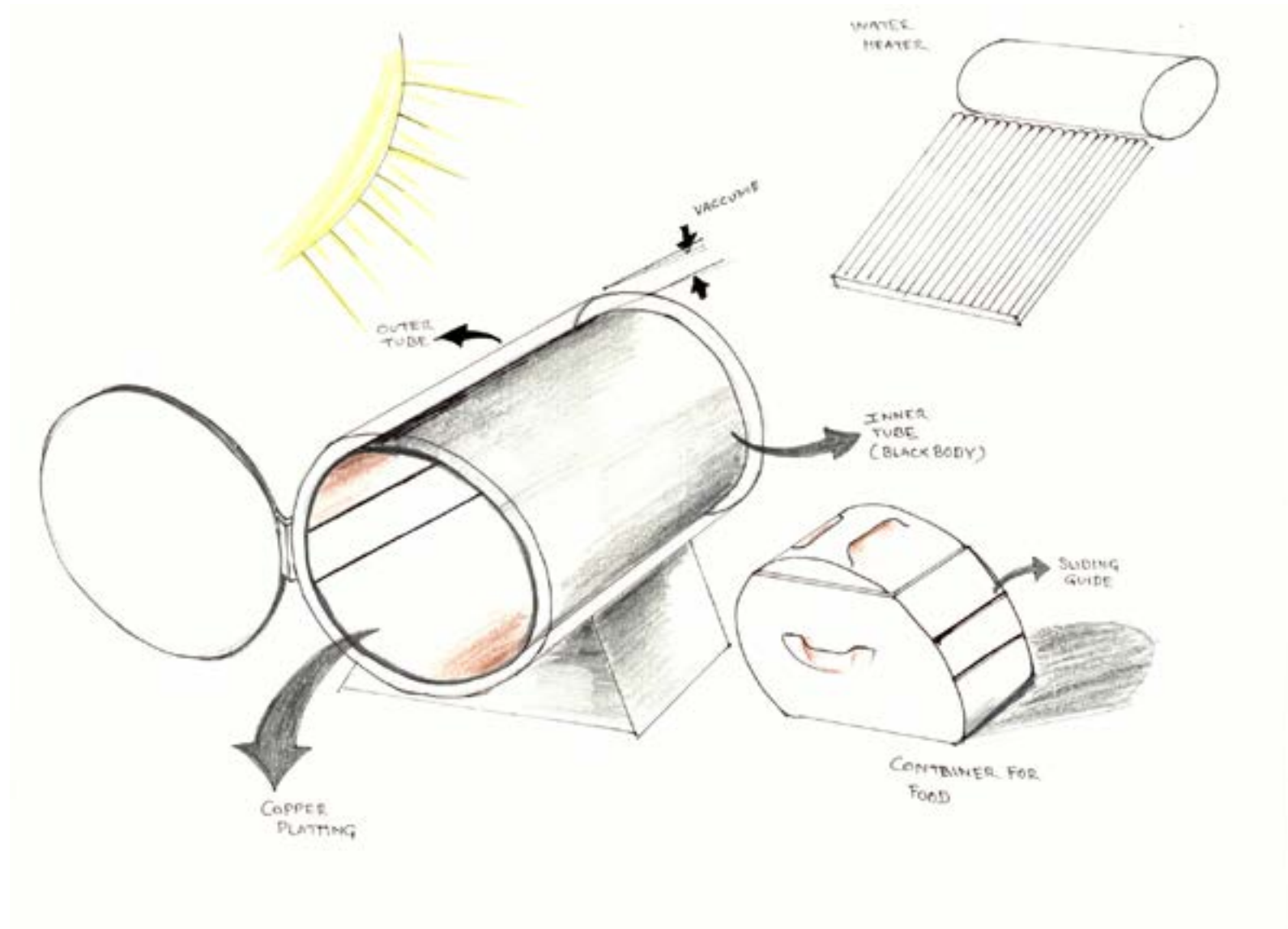
Concept 3

Forced Air Circulation

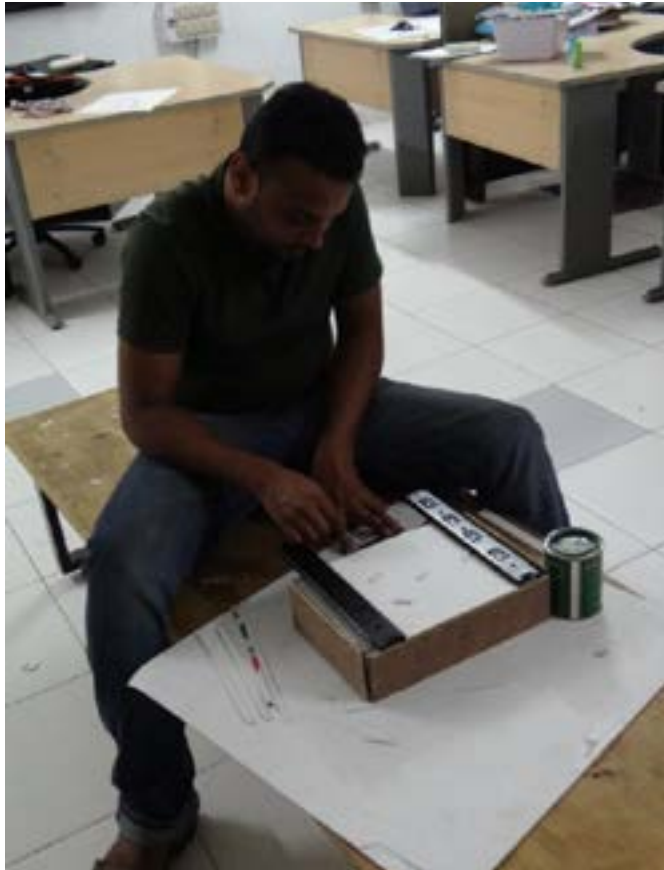


Concept 4

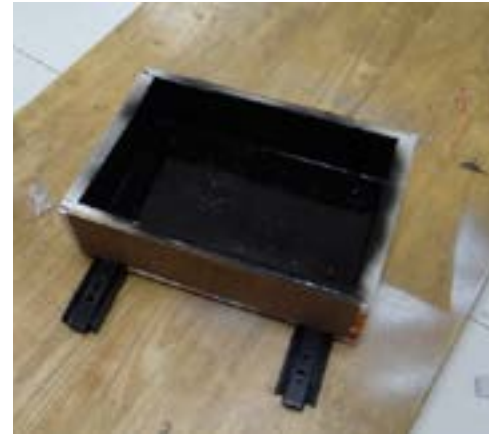
Vacuum Tube



Quick Dirty Mock Ups



Sliding Drawer Cooker



Quick Dirty Mock Ups



Solar Tube



Quick Dirty Mock Ups



At 1.05pm,
 29°C

At 1.25pm,
 70°C

Solar Tube



Quick Dirty Mock Ups



At 9.55 am,
 27°C

At 10.15 am,
 84°C

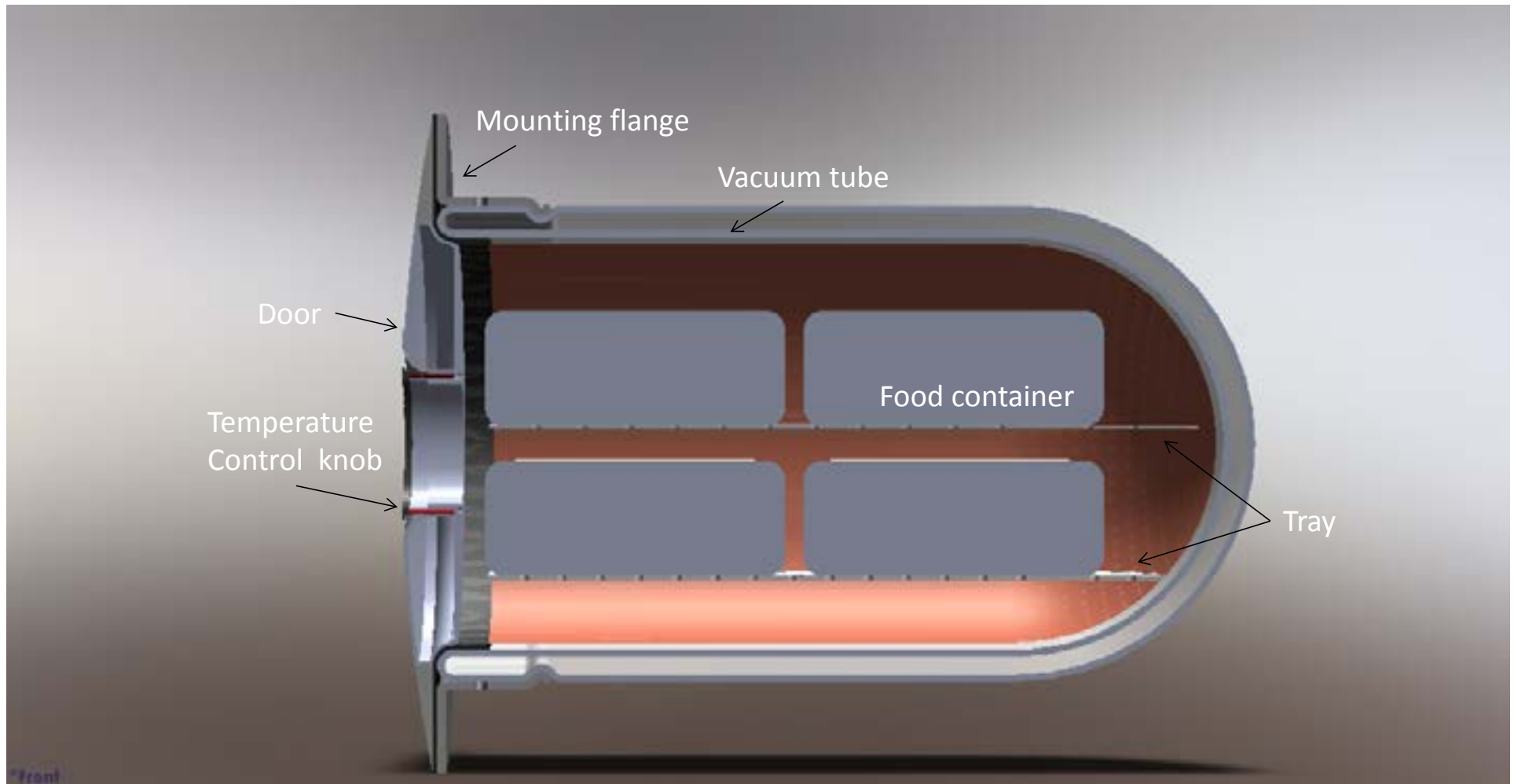


Solar Tube



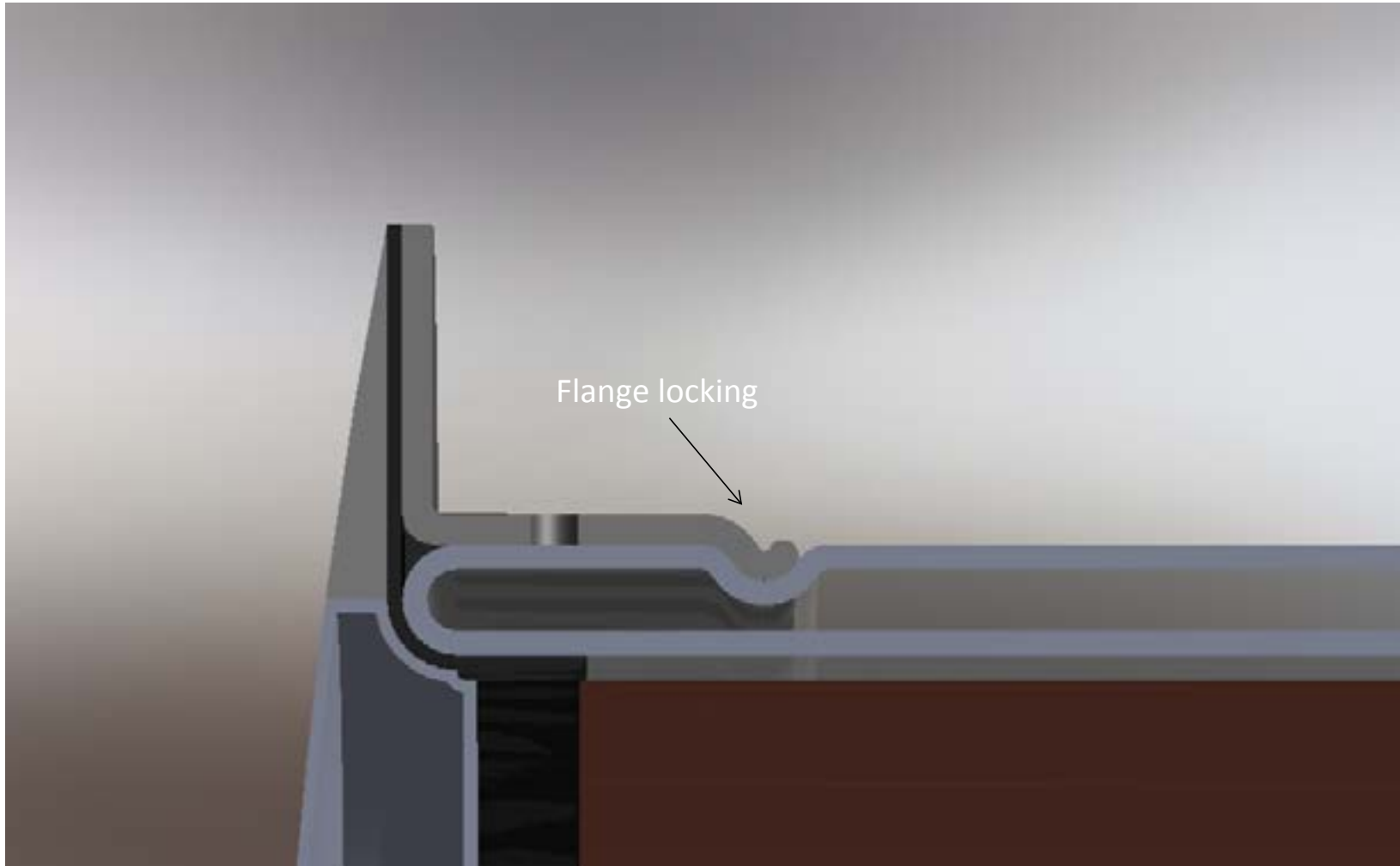
Final Concept

Solar Tube



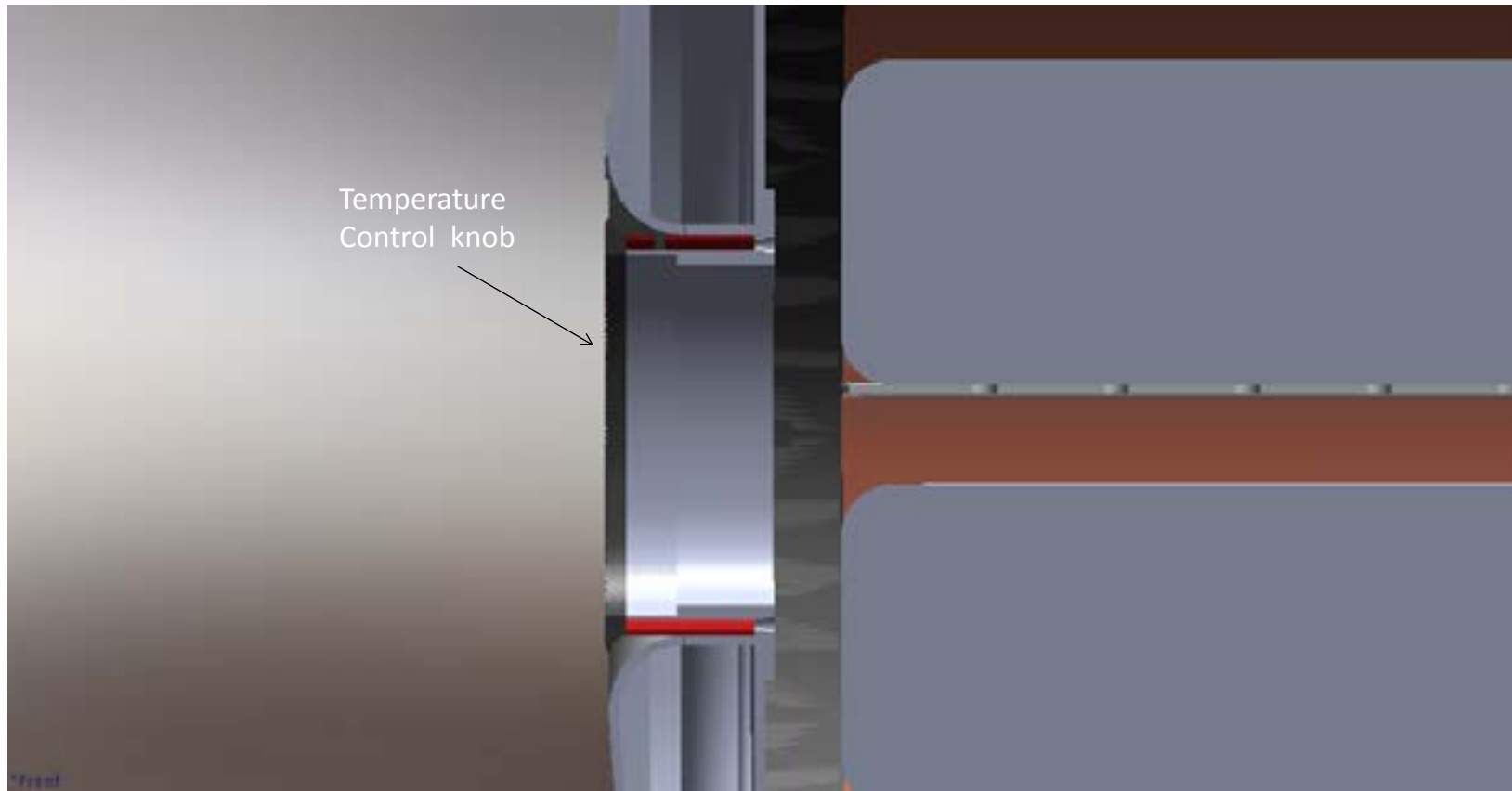
Final Concept

Solar Tube



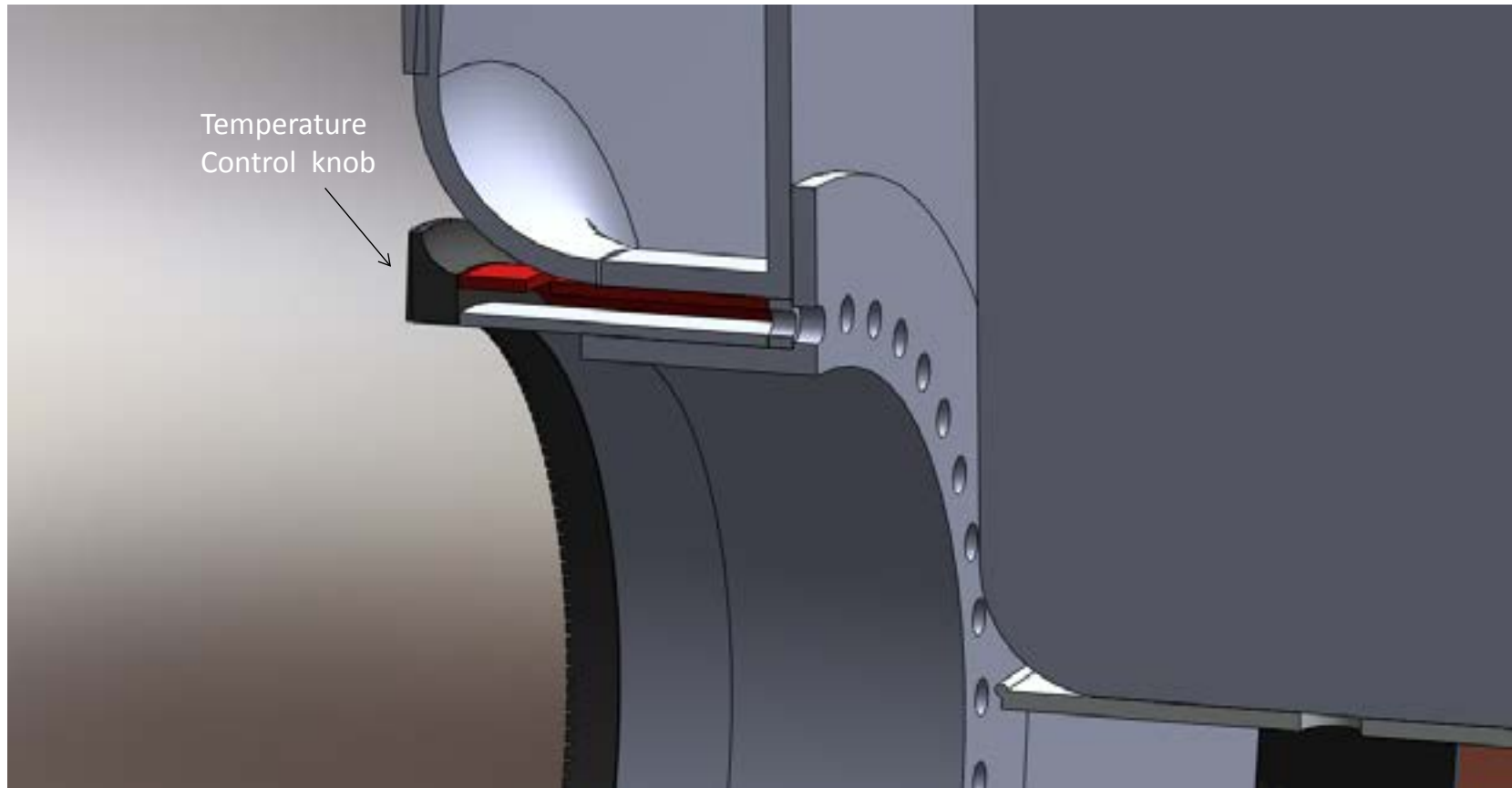
Final Concept

Solar Tube



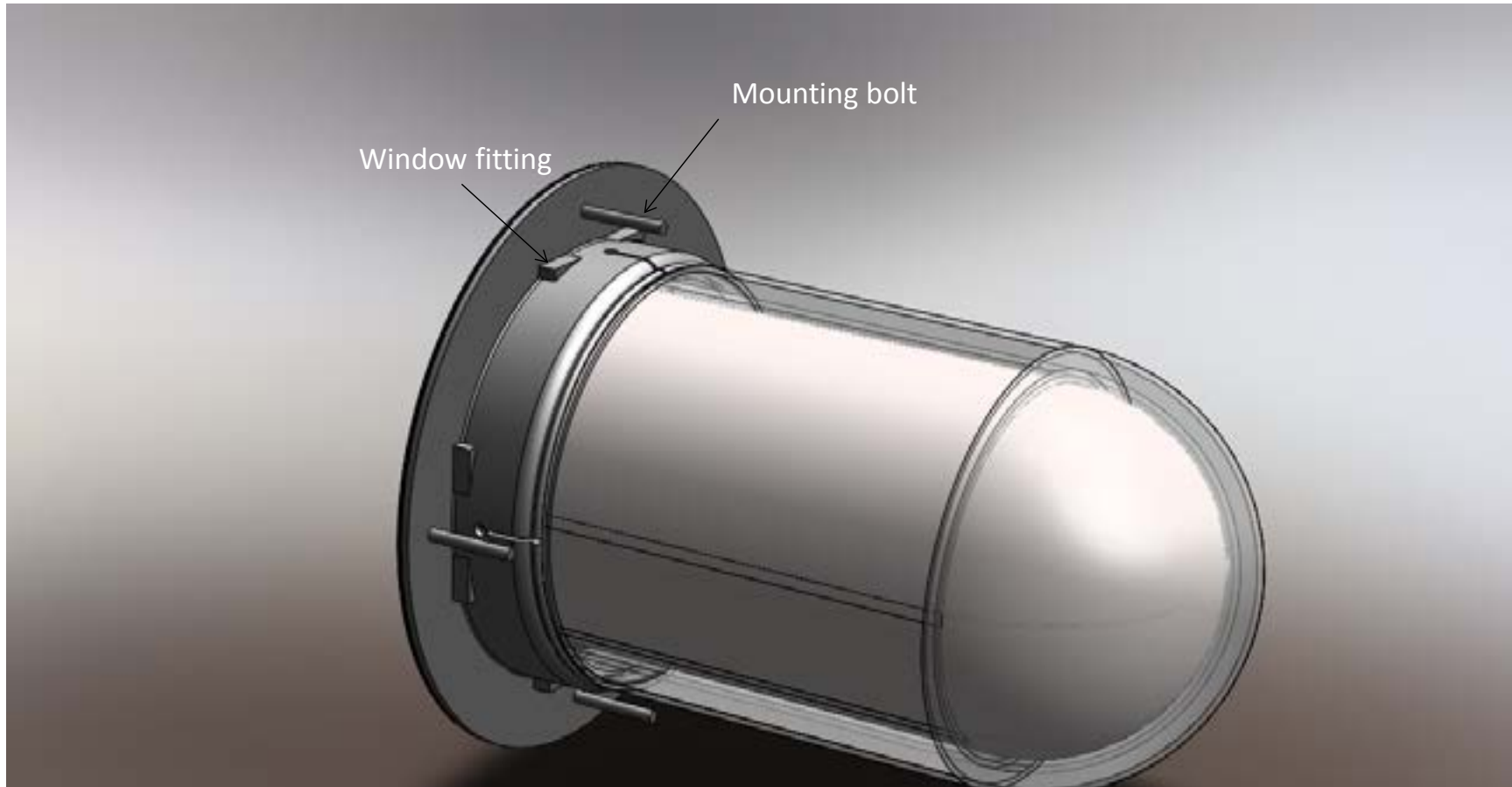
Final Concept

Solar Tube



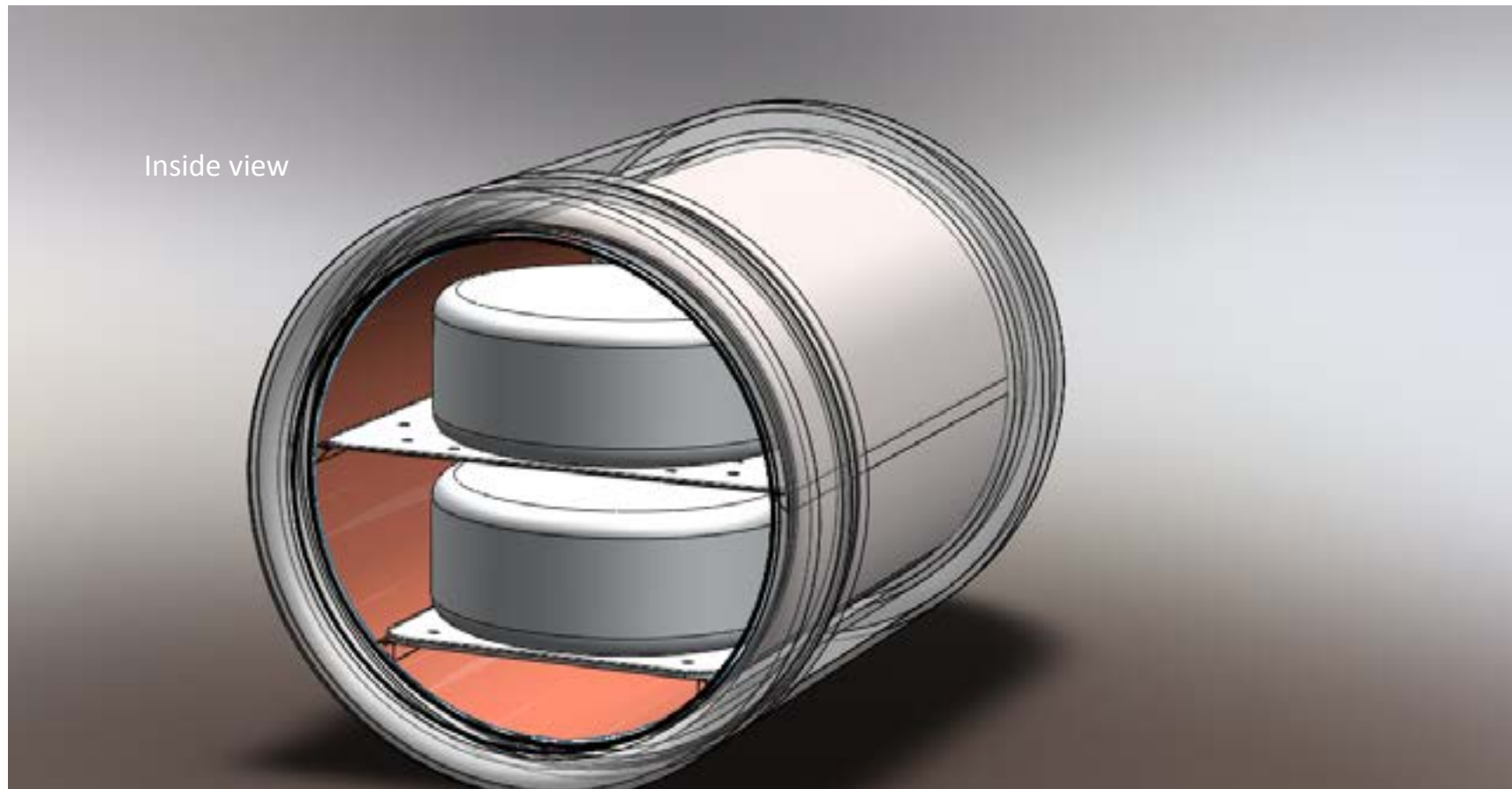
Final Concept

Solar Tube



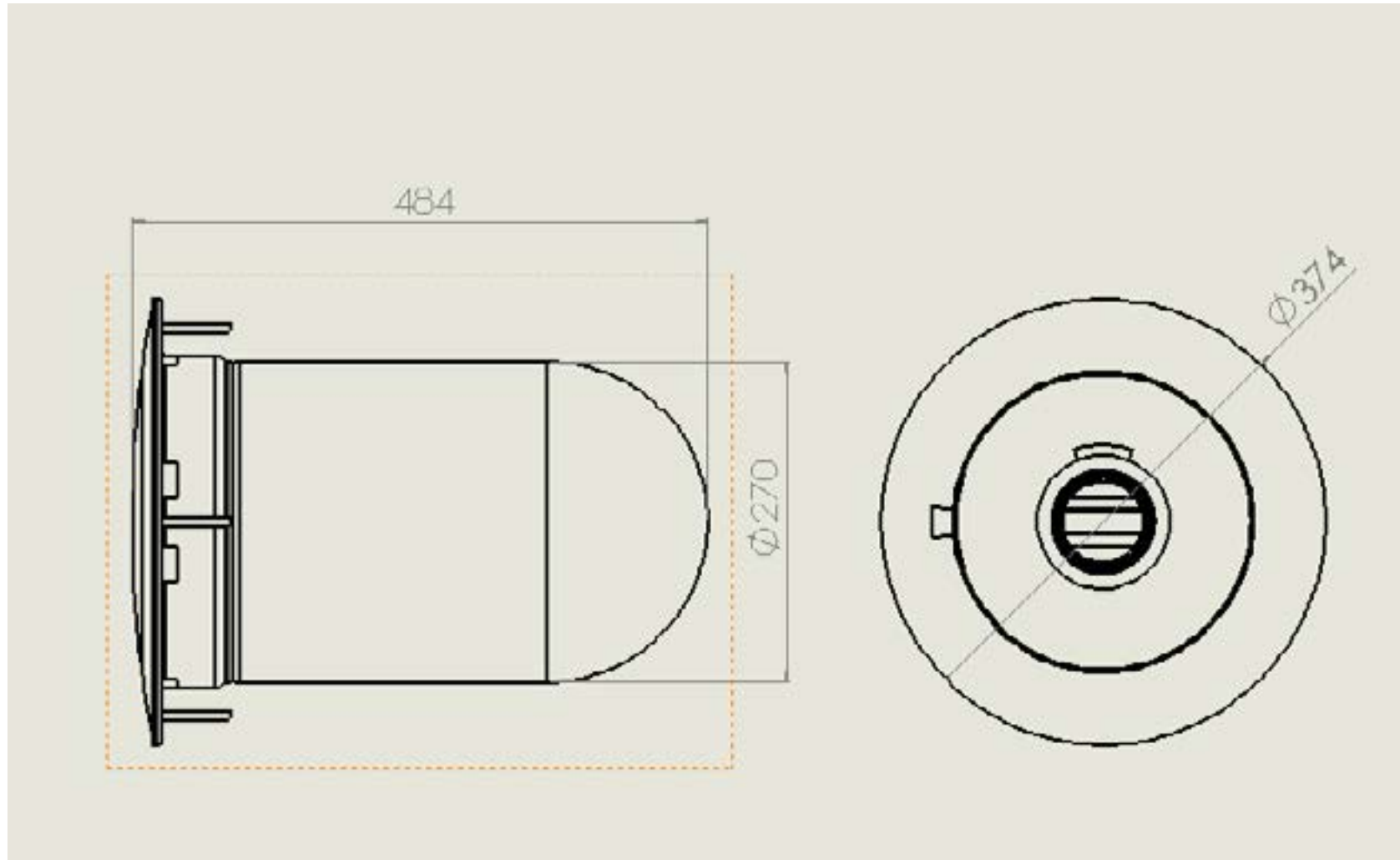
Final Concept

Solar Tube



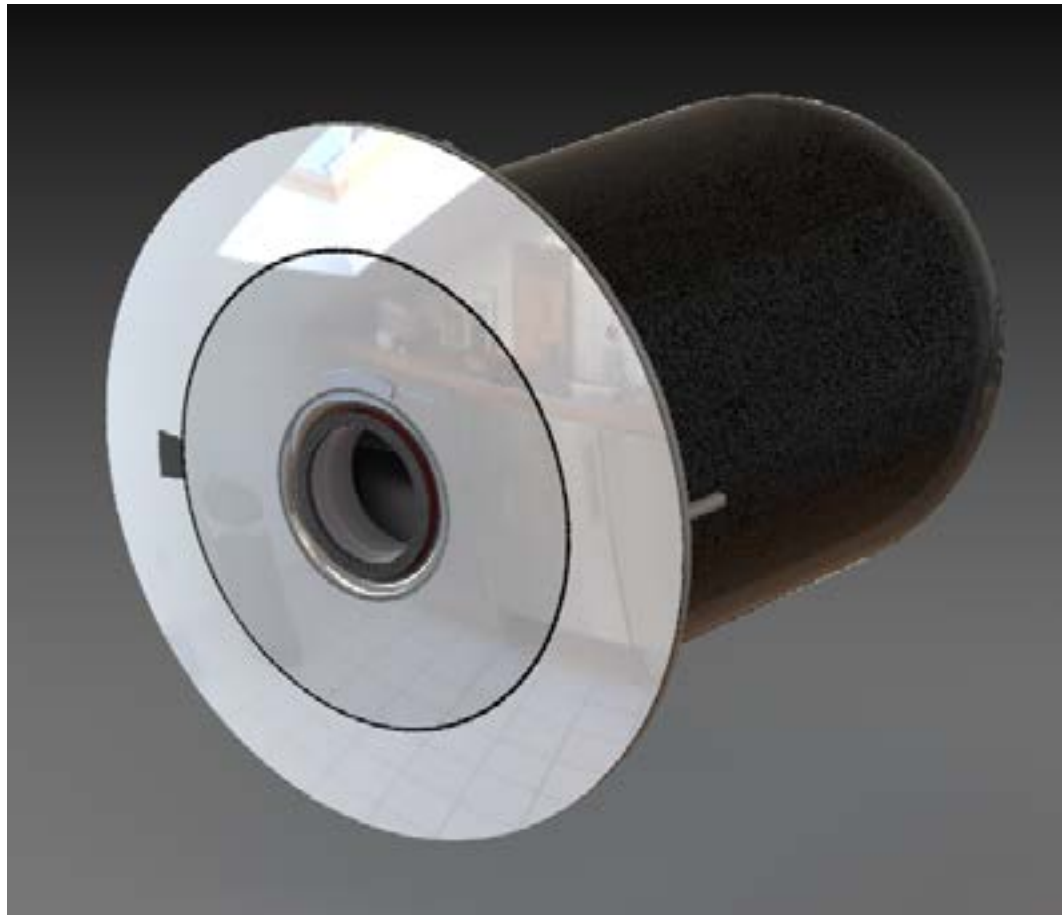
Final Concept

Solar Tube



Final Concept

Solar Tube



Thanks to

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- Mr. Vipin Chitre, Thane
- Mrs. Sawant and Aaji
- Housing Societies Mahila Mandal, Mulund
- Mrs. Phadke, Ahmednagar
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- All my classmates