

Energy Efficiency Mobile App

The IPUA, as a mentor of the India Insulation Forum (IIF), is proud to announce the launch of the Energy Efficiency Mobile App, a much needed tool for the building and construction industry in today's ecosystem demanding sustainability. This is a joint initiative of certain members BASF, Covestro, BASF, Expanded Polymer Systems, and Huntsman, who are all active members of the IIF and sponsors of the software development.

The Energy Conservation Building Code (ECBC) 2007 for commercial buildings that established minimum energy performance standards has been updated in 2017 to set higher performance benchmarks for building energy efficiency. This initiative to curb the carbon footprint of buildings is not limited to the commercial sector, as the BEE, Ministry of Power, is also in the process to unveil the ECBC for residential buildings in 2018.

However, the sector is beset by a neglect of this potential contributor to the country's GDP through material, manpower and mind. The IPUA & IIF, having understood that the lacuna was primarily caused by a knowledge gap, commissioned the development of the Mobile App. The aim was to educate the stakeholders – architects, builders, developers and owners – on the benefits environmentally, economically and healthily through a tool available at their fingertips!

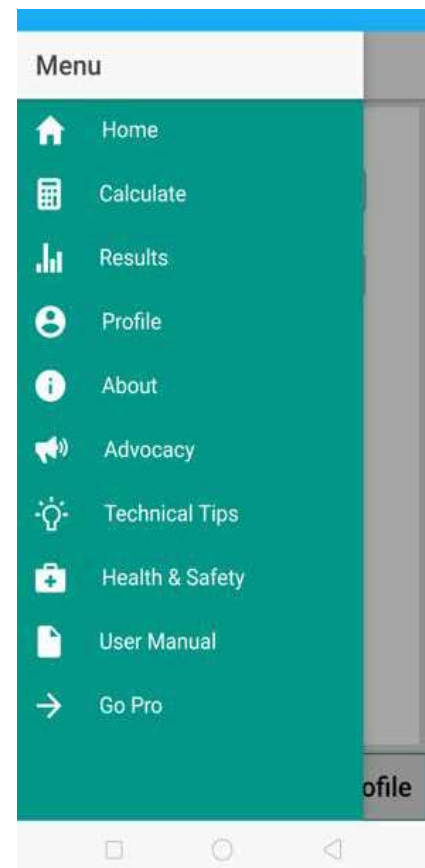
Scope:

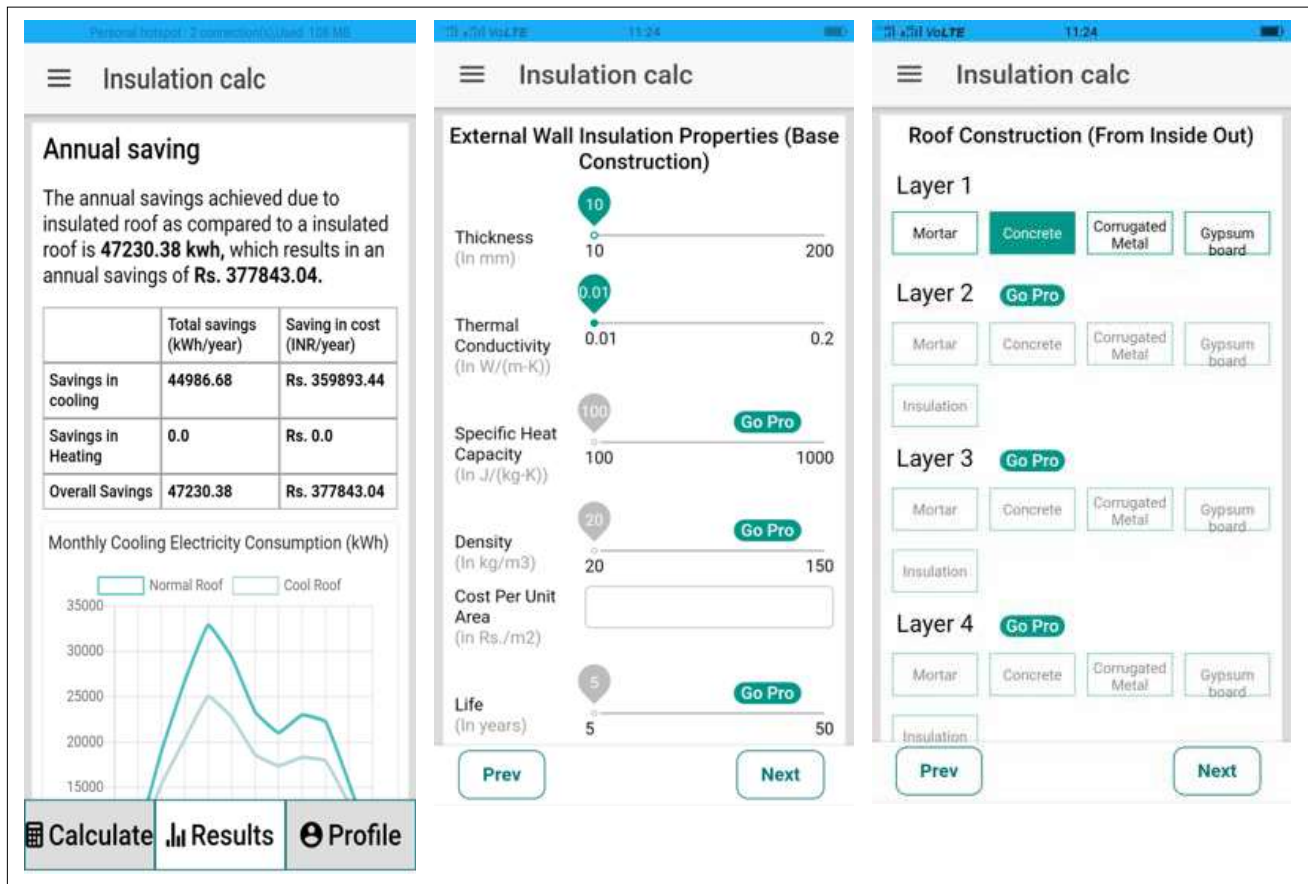
Mobile App has been designed and developed for the following objectives:

- 1. About:** Introducing the concept of building insulation, its relation to energy efficiency & conservation and how to understand the implications.
- 2. Calculator:** the actual algorithms with inputs on location, construction type, etc., and output of energy and cost savings.
- 3. Technical:** Tips on how to improve efficiency
- 4. Health & Safety:** Tips on how to apply insulation safely. Very basic to start with and later on additions.
- 5. Advocacy:** Regulations and how IIF is working with the authorities and the stakeholders.

Features:

1. The APP users are those in the Metros and Smart Cities in India.
2. We will have its availability in Android to start with and then iPhone.
3. The App will be free initially and later needs to be enhanced for payments.
4. The App will have dynamic contents.
5. Parameters for the cool roof calculator are given below.





The tool would have following inputs for 5 zone core and parameter model –

S.No.	Parameter	Input value
1.	Location	Total 100+ Indian locations provided in ISHRAE Weather Data book.
2.	Orientation	Min 0, Max 360, Step 5 degree
3.	Building type	Office, Retail, Residential, Institute
4.	Number of floors	Min 1, Max 90, Step 1
5.	Height of each floor	Floor to Floor height
6.	Builtup area	Min 2000 sqft, Max 50,000 sqft per floor
7.	Aspect Ratio	Min 1, Max 5
8.	Window area and type for each façade	Regular Windows or Strip windows, Window to Wall Ratio
	Window construction	Single, Double glazed (Properties: U value, Shading Coefficient, and Visible Light Transmittance)
9.	Overhang and fin	Depth of shade, Distance from Window
10.	Roof construction	Construction layers
11.	External wall construction	Construction layers
12.	Reflectivity of external surfaces	White, Grey, Dark, or input exact known value
13.	Insulation material properties	Thermal Conductivity, Specific Heat, Density
14.	HVAC Type	PSZ, PTHP, Packaged DX, Central system with air cooled chiller, Central system with water cooled chiller.
15.	Cost of insulation	Rs. per area or volume
16.	Electricity Charges	kWh and kW charges

Output parameters –

1. Electricity Consumption per year
2. Cost of electricity use
3. Payback of using insulation material over provided base construction

IPIUA has over a period of time evolved as the voice of the Industry and this initiative is a clear step towards demonstrating that we

walk the talk, thus strengthening our leadership position to influence core economic & fiscal policies of the Government and its implications to the industry at large.

Under the IPIUA, the India Insulation Forum was launched in 2013 with the support of Bureau of Energy Efficiency to consolidate and strengthen the insulation implementation in building

sector. It conducts programs for awareness, applicator training and building the ecosystem to support implementation of the ECBC. Through this App, we believe the building and construction industry will receive the much needed fillip to benefit from the most efficient insulation material made by man so far – polyurethanes.

BACKEND

