Background
As a finalist of the Million Cool Roofs Challenge, we are looking forward to you submitting a blog post about your idea and your experience of the Challenge so far. This is an excellent opportunity to share your progress as we will feature this blog on the Challenge website (coolroofschallenge.org) and across social media channels.

We are keen to capture your journey on the Million Cool Roofs Challenge as authentically as possible – this is your opportunity to shout about your strategy for scaling up the deployment of sustainable and quality cool roofs, how you are progressing, and what your plans are for the future.

Template
We've developed a template on the next page to help you write your blog – please fill in the missing information and write brief paragraphs in response to the questions below. We'll then help refine the prose.

Please also share good quality photos from your project, along with captions – photos with people in are the most engaging.

Schedule
Please sign up on the schedule sheet (link here). This is first come, first served. We will get in touch with you individually about submitting your blog when it is your month on the schedule. First drafts are due 7th of the month and we will help you to refine the text for publication by the end of the month.

Tips
Below are some tips for writing your blog – please let us know if you have any questions.
- Ideally, a blog post is between 500-600 words in length.
- Use an informal tone – this blog is informal and is designed to reach all audiences.
- Try to use "I" as much as possible and bring in your own personal stories of what inspired you to enter the MCR Challenge.
- Provide a background on the local context and unique issues involved in your project. What is the human-interest story?
- Answer the question as fully as possible. Use anecdotes, if necessary. Try to imagine you are writing for someone who has no experience in your field. Don't use complicated language when a simple word will do the job well.
- If you make reference to stats, a quote, or research, please include a link to your source.
- Photos should be good quality, with a caption, and as many photos with people in as possible (e.g. a photo of someone installing a roof coating is better than a photo of the finished roof on its own).

Name: Beta Paramita

Job title: Assistant Professor

Team name: Cool Roofs Indonesia

Project country: Indonesia

Team organizations: Universitas Pendidikan Indonesia (UPI)

Website:

Twitter Handle (if applicable): https://twitter.com/roofs_cool

Cool Roofs Indonesia is one of ten Boost Awardees for our Million Cool Roofs Challenge, working in Indonesia. Here, Beta Paramita, an Asst. Professor at Universitas Pendidikan Indonesia (UPI), tells us more about their approach to scaling up the deployment of sustainable and quality cool roofs, and their experience of the Challenge so far.

Tell us about the country and region/ city you are working in. What is the particular need for access to cool roofs there?
We're interested in the geographical context of your project and why it's so important – please outline this in 150-200 words

Indonesia, as the tropical country lies between 6° north latitude until 11° south latitude and 95° until 141° east longitude. This geographical position causes cities in Indonesia have a day and night duration is not far away different. In general, coastal cities ($\pm$ 0 masl) and lowland area (10-20 masl) are having diurnal air temperatures maximum above 30 ℃. Meanwhile cities in the hilly area (above 500 meters above sea level) that are not many in number, such as Bandung and Malang have the lowest maximum air temperatures between 25 - 28 ℃.

Those conditions will give difficulty to offer thermal comfort, whether indoor of outdoor thermal comfort. Without selection or appropriate material treatment, 80% of the heat from the outside space will go into the inner room. This condition triggers the use of air conditioning (mechanical) in the form of a fan or air conditioning (AC). Data shows 24% of household electrical consumption is for AC compared to lighting equipment is 19% and cooking 9%. Meanwhile, for low-income people cannot afford AC will suffer and facing heat stress daily and low performance due to fatigue. Cool roof then is important to over the energy saving and indoor thermal comfort.

What is your approach for reaching scale?

Briefly explain your project approach and your strategy for scaling up the deployment of sustainable and quality cool roofs (Word limit 150-200 words)

Our project approach through institutional collaboration, between university to the municipal government or any ministries. Especially with the Ministry of Village, Development of Disadvantaged Regions and Transmigration of Republic of Indonesia to spread this project in rural and underdeveloped areas. This approach in research level as well as community service. Those project then has been measure through the techniques such as:

1. Microclimate
   a. real-time data obtained from BMKG (Meteorology, Climatology, and Geophysical Agency) weather stations;
   b. mobile data obtained from on spot measurement
2. Measurement of surface temperature, before and after, using hand-held laser instruments, and Infrared laser instruments.
3. Simulation of the area, before and after to study the condition of UHI.
4. Conduct survey of building occupants to gather data related to health and living comfort, before and after.
5. Industrial work productivity benefits through survey and data logs.

And for scaling up the deployment, UPI has submitted the research grant (RISPRO LPDP) for scaling up products with local material substitutions. By this substitution, it will reduce 21% of raw material cost. This means that the cool roof will be more affordable and can be applied to many rural areas / underdeveloped areas.

Tell us a story about the focus area for your blog (see the sign-up sheet – e.g. early lessons learned, a community engagement case study, reflections on the journey etc.)

Try to include personal anecdotes and storytelling. What were the challenges and what is exciting? What have you learned and what are you most excited about? (Word Limit 150-200 words)

Our first focus area is Tangerang City. This is because the mayor of Tangerang has a strong commitment to realize the Tangerang Cool City. Within four month we finished 15,000sq.m roof area including industrial building, elementary school, mosque, government office and low-cost housing. We identified three barriers, as follows: (1) people are not aware of cool roofs particularly cool paints and its impact; (2) reluctance to adopt newer technologies until proven; and (3) costs and skillsets required for cool roofs installation. With the cool roofs team collaboration we managed to achieve the target. The results achieved after painting are very satisfying. We take measurements before and after and do user perception questionnaire after applying paint cool roofs. At PT. Mayora Indah (industrial building) without air conditioning before the paint showed 39.7°C and after using cool roofs show the results of 29°C at 12.00 pm. So it reduces indoor temperature as much as 10.7°C. What make us most excited about is the sincerity of low-income community to help our project and 100% we've got positive comments.
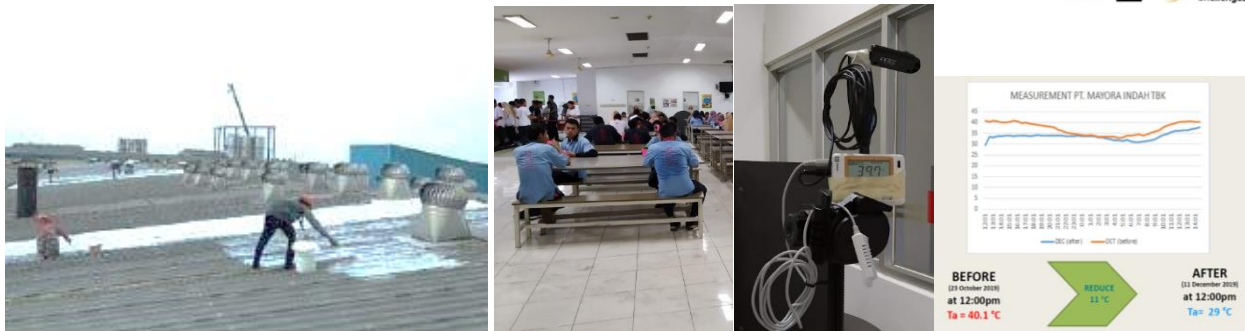
Fig 1. Cool roofs application at PT. Mayora Indah before: 23rd Oct – After: 13th Dec
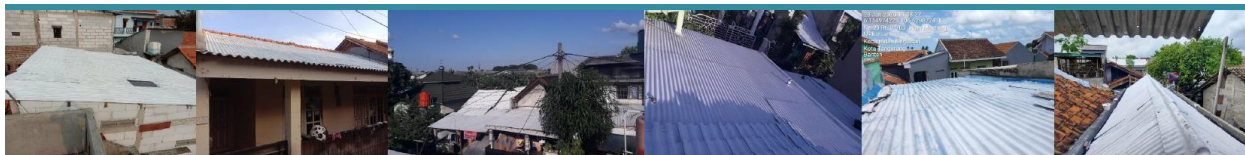

Fig 2. Cool Roofs application in several low-cost housing

Fig 3. Temperature measurement in (one) low-cost housing

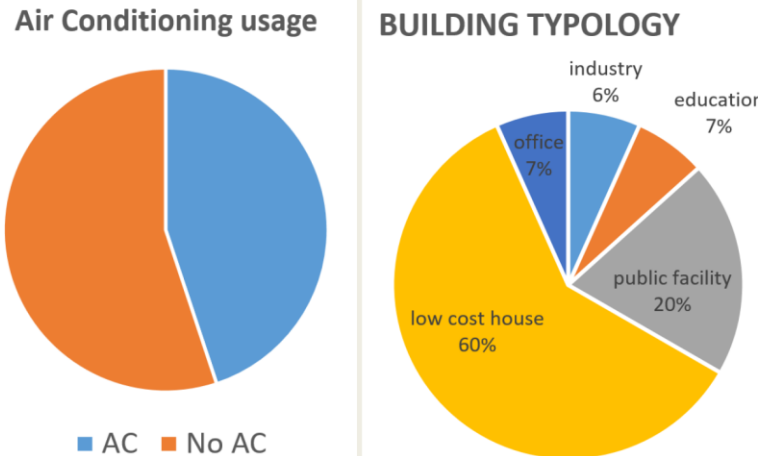Fig 4. Cool Roofs Application and physiological test at Elementary School
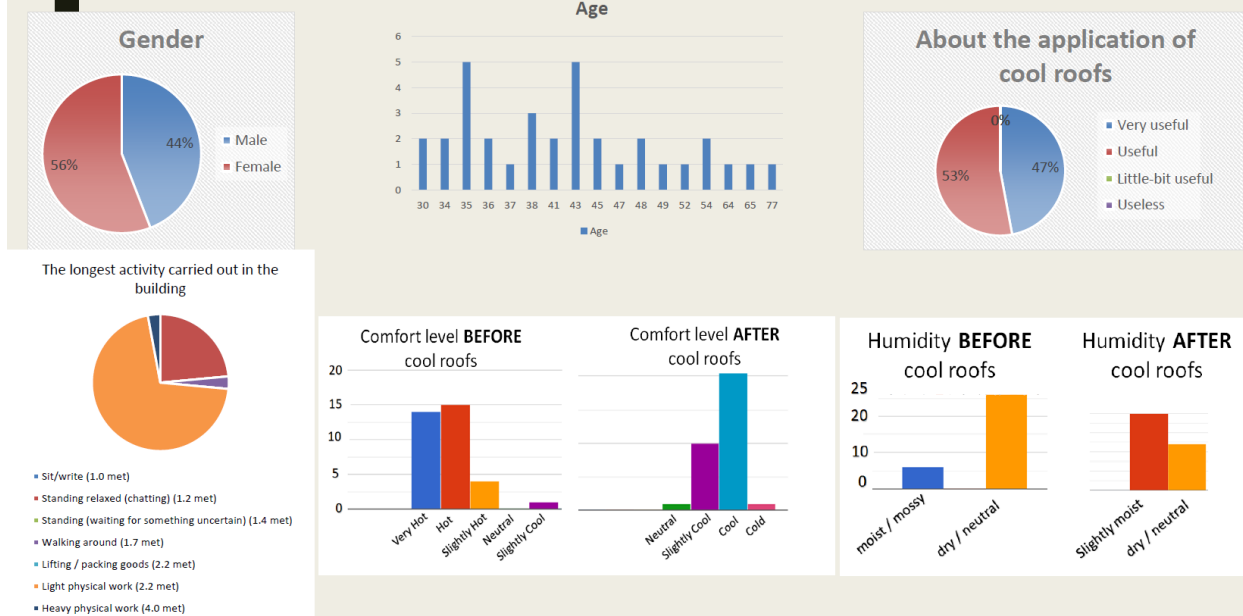
Fig. 5. Building Typology in Cool Roofs Application

Fig 6. Result of Cool Roofs Thermal Perception