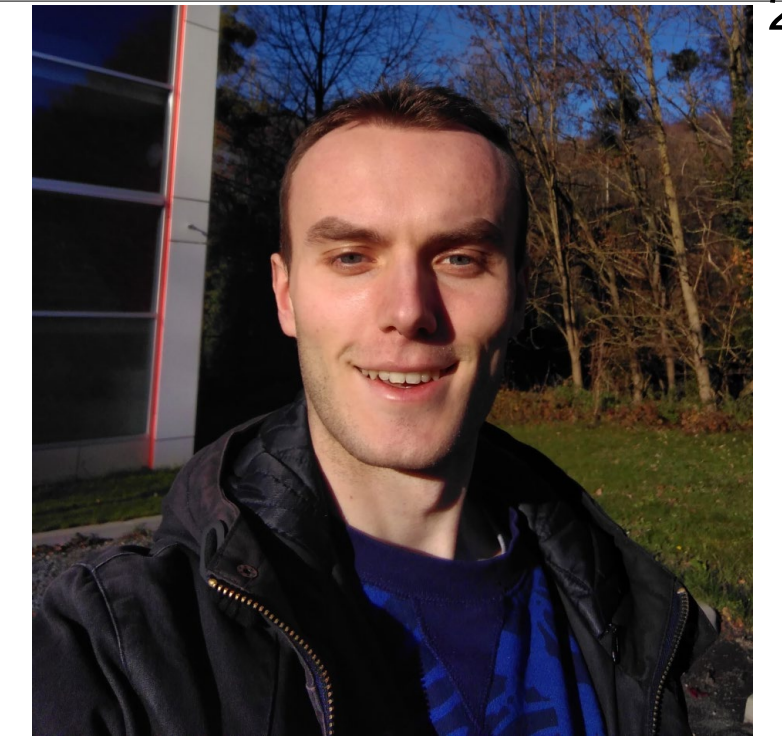


A light shed on the solar road

A study on the degradation of power output of the solar road due to weather and traffic influences

Jos Simons, Giel Embregts, Zeger Vroon, Christian Mass-Protzen and Jörgen Boumans



Goal

How do weather and traffic affect the power output of the solar road?

Introduction

Space suited for PV

Roof surface suited for PV-panels: 400km²

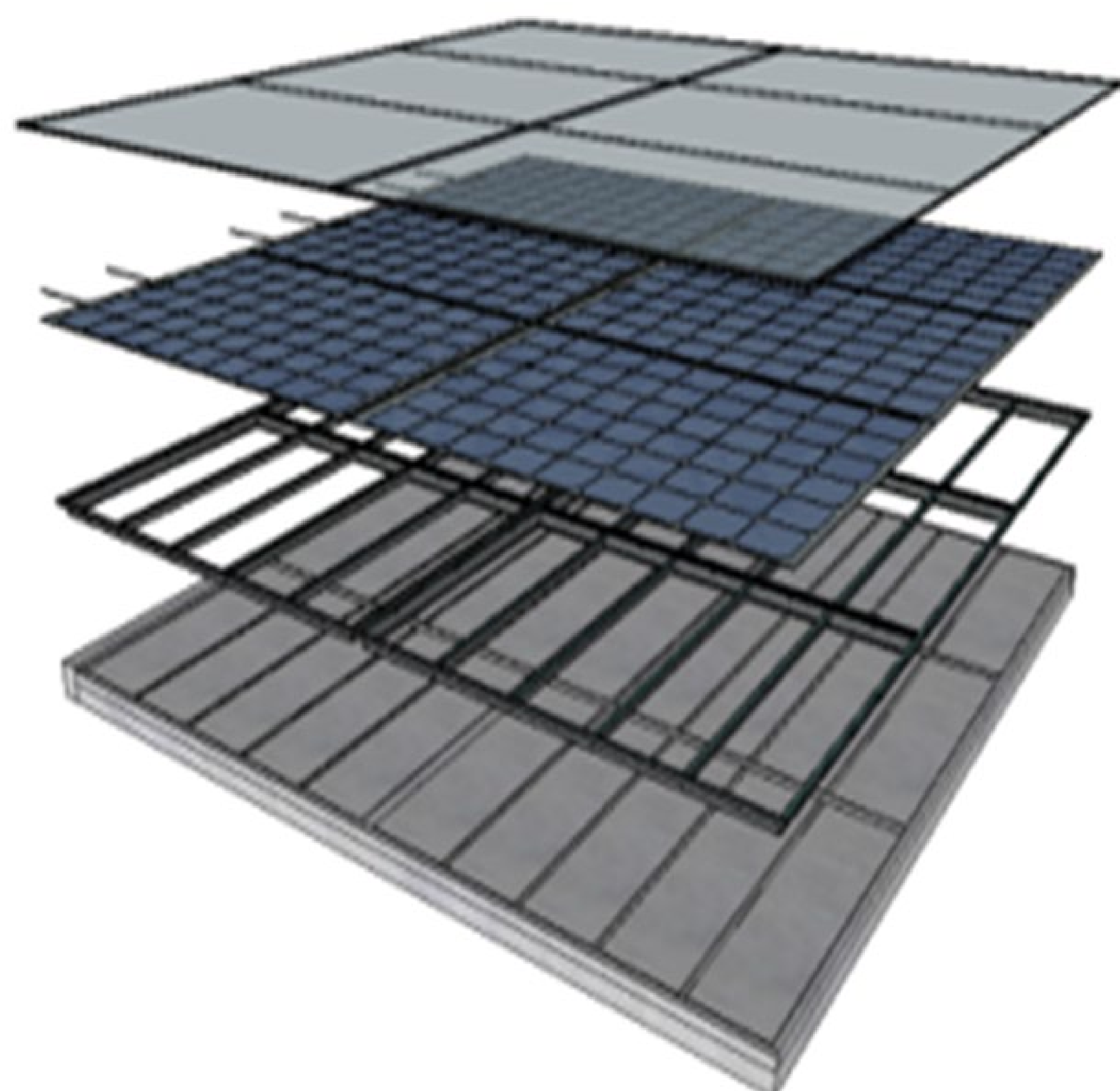
Infrastructure surface suited for PV: 400km²
(HollandSolar)

Reference-element Testing site Steet-element



Composition of the solar road

- Toplayer (epoxy and glas granulate)
- PV-cells and electrical equipment
- Steel frame
- Concrete basis

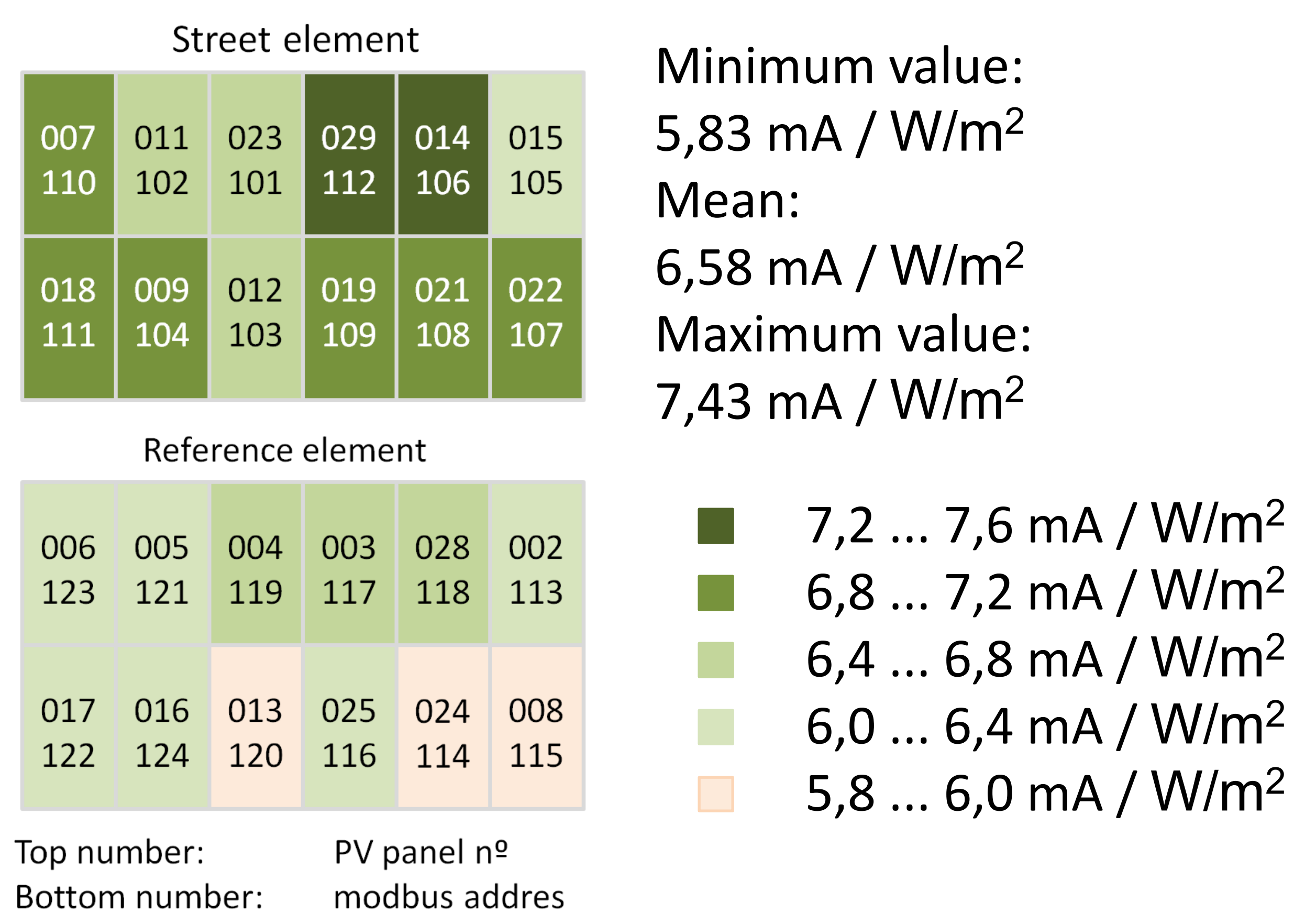
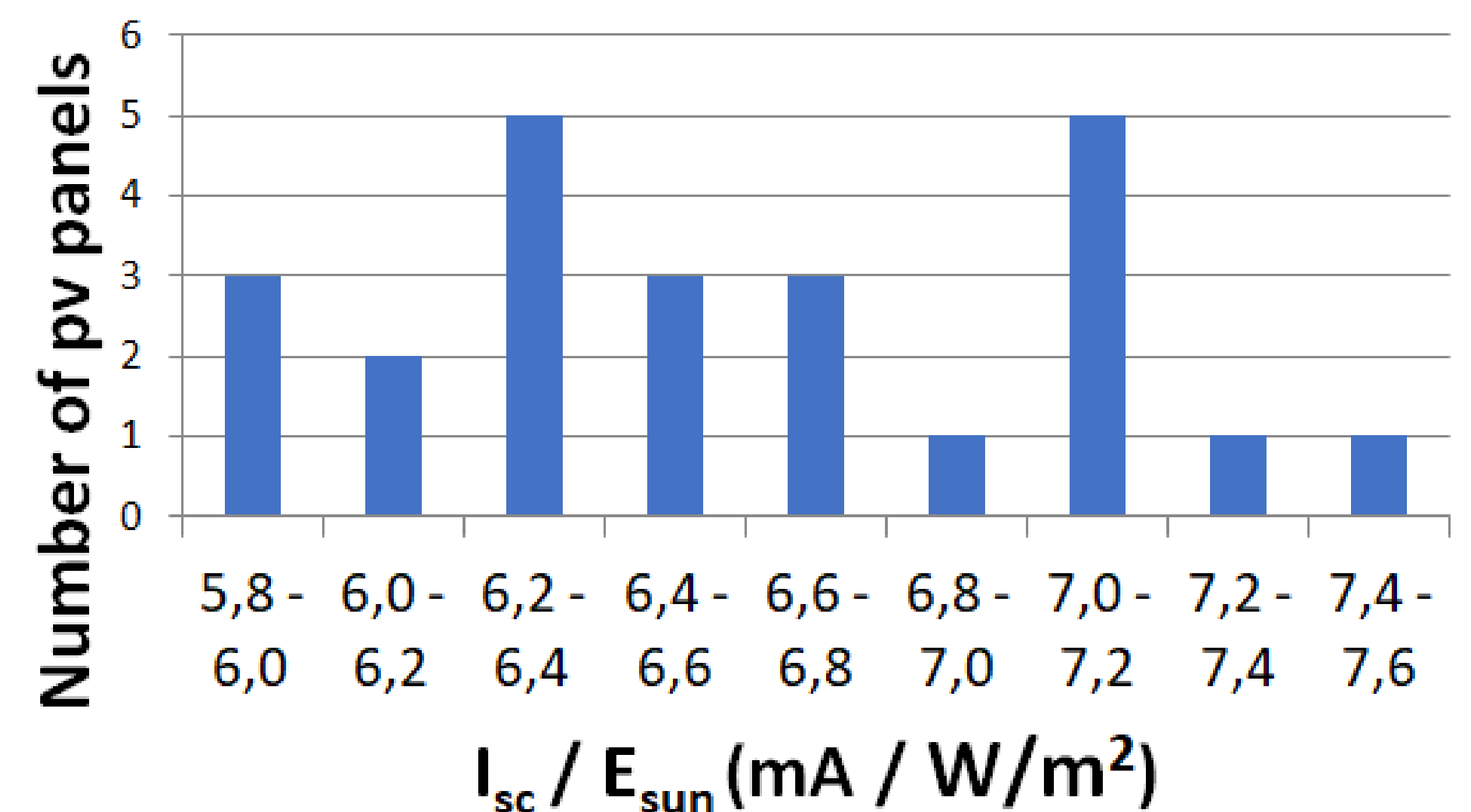


Research questions

1. What is the power output of the solar road at the start of the measurements?
2. How much energy is lost at the moment that traffic passes the solar road?
3. How does the power output of the solar road degrade over time with respect to weather and traffic conditions?
4. What are the temperature profiles of the solar road in various weather conditions?

Results

Distribution of qualityfactor for all PV panels



Discussion and conclusions

- All solar panels are functioning and suited for further research
- No correlation was found between white spots or other pollution of the top layer on the one hand and reduction in quality factor on the other hand.
- The lower quality factors in the reference element are probably caused by shading of the bicycle shed

Title

Subtitle

CfD members

Introduction

Cras mattis consectetur purus sit amet fermentum. Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Maecenas faucibus mollis interdum. Morbi leo risus, port a ac consectetur ac, vestibulum at eros.

Materials & Method

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Results

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Discussion & conclusion

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Word of thanks (optional)

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