OPEN FACE

Politecnico di Torino

Universidade do Minho

Keywords:
DfAM
3D-Printed Façades
Grasshopper
Performance-Driven Design

WASPer_3DP:

A Free Parametric Framework for Design-for-Additive-Manufacturing of Performative Façade Components

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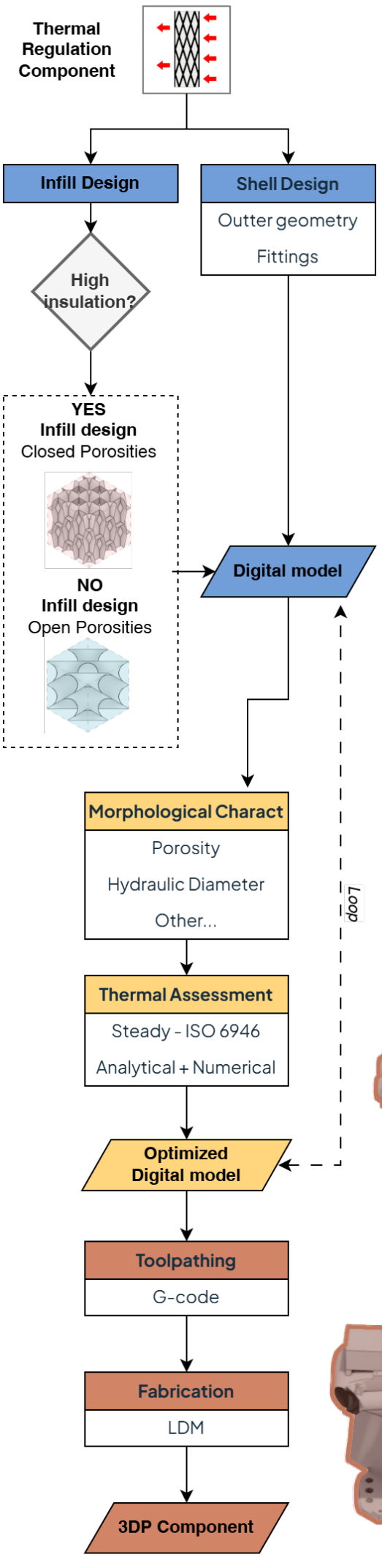
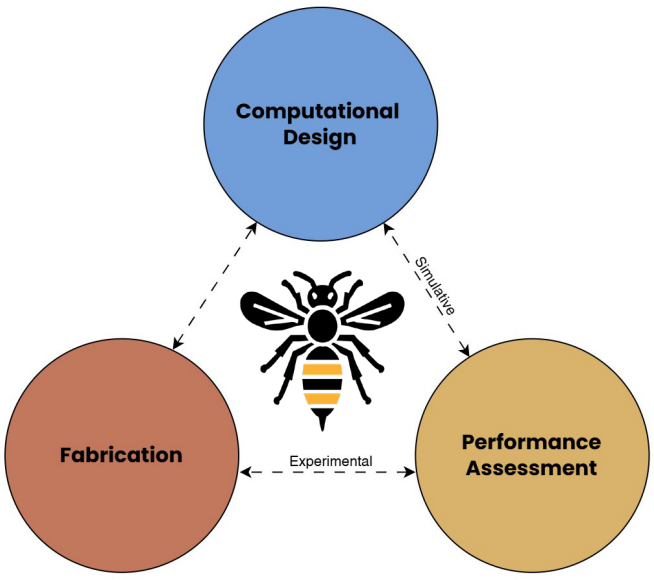
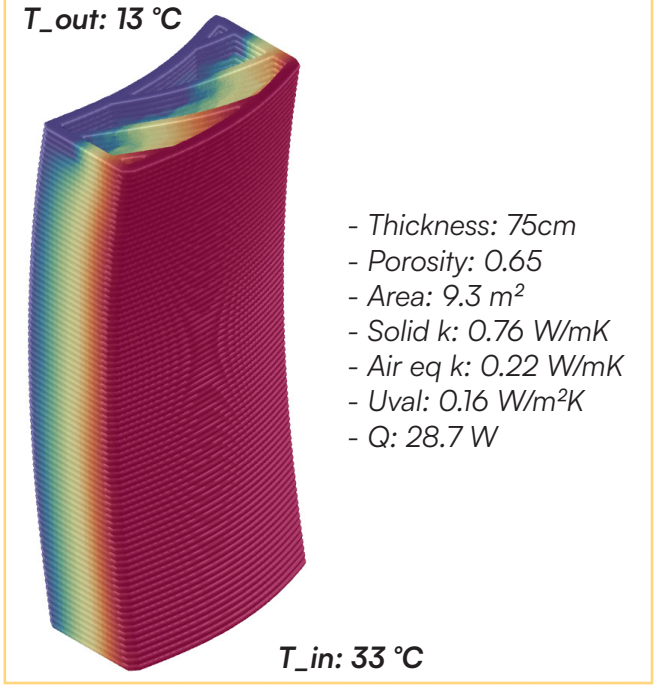
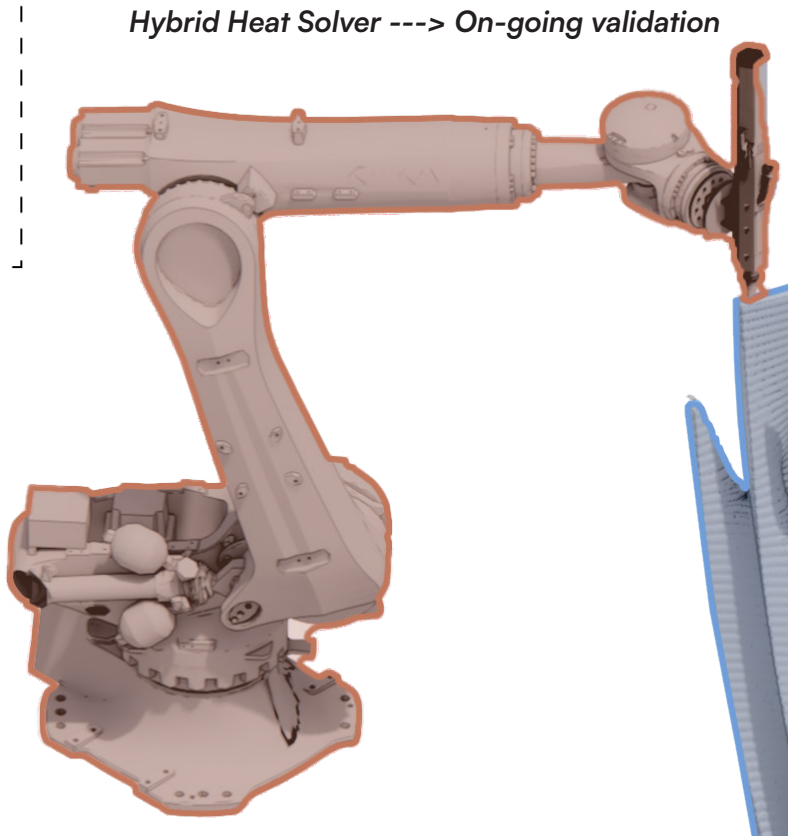






Hybrid Heat Solver ---> On-going validation

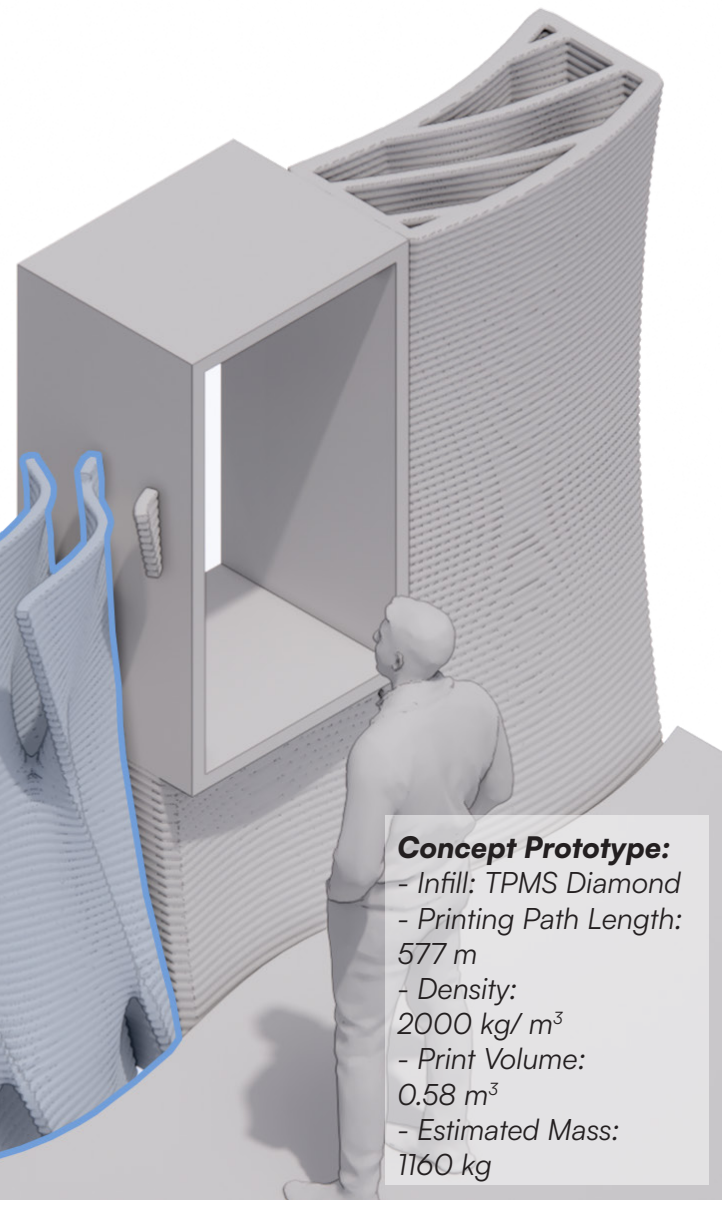


Additive Manufacturing with LDM methods

The design process of building envelopes is often fragmented, with geometry generation, performance assessment, and fabrication handled through disconnected tools and workflows. WASPer_3DP is a free **Design for Additive Manufacturing** framework for 3D-printed building envelopes. Developed for Grasshopper, it integrates **computational design**, **performance assessment**, and **fabrication** within a single source of truth. The framework enables **performance-based** and **fabrication-informed** design of customizable opaque envelope components featuring cellular infills with open and/or closed cavities. As a first implementation, WASPer_3DP embeds thermal-assessment methods for **early-stage decision-making**, positioning geometry as the link between design intent, environmental performance, and fabrication constraints.

PoliTo (DENERG + DAD) - U Minho (ACTech Hub)

Available on food4Rhino & Package Manager



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