M6.1, 6.2 Design and realisation of the façade specimen

WP6. Façade Innovation, T6.1

Authors. Avesani S. (EURAC), Reifer M. (F&R), Weitlaner R. (HELLA)

Date: 12/2019

Table of Contents

1 Introduction

The FACEcamp project tackles the challenge of Complex Fenestration System (CFS) performances. Nowadays, a practical relevant issue connected to one specific technology within the CFS family (the Double Skin Façade – Window box type) concerns the characterisation of the whole façade construction, depending from the kind of air cavity ventilation regimes. Starting from this, the choice has been taken to design and realise a window-box façade specimen able to be configured with different air-cavity ventilation regimes, as well as to fit with the two kind of outdoor laboratories (EURAC and UIBK).

2 Objective

This report describes the process of designing, assembling and installation of the FACEcamp window box specimen.

3 Design

The sketches of the concept are reported in Figure 1 and Figure 2, as discussed by the FACEcamp partners.

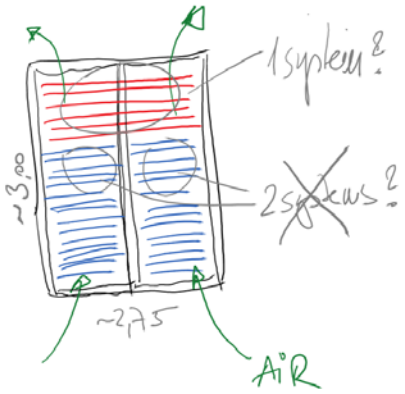

Figure 1: Front view sketch of the window box type façade and shading system typology.

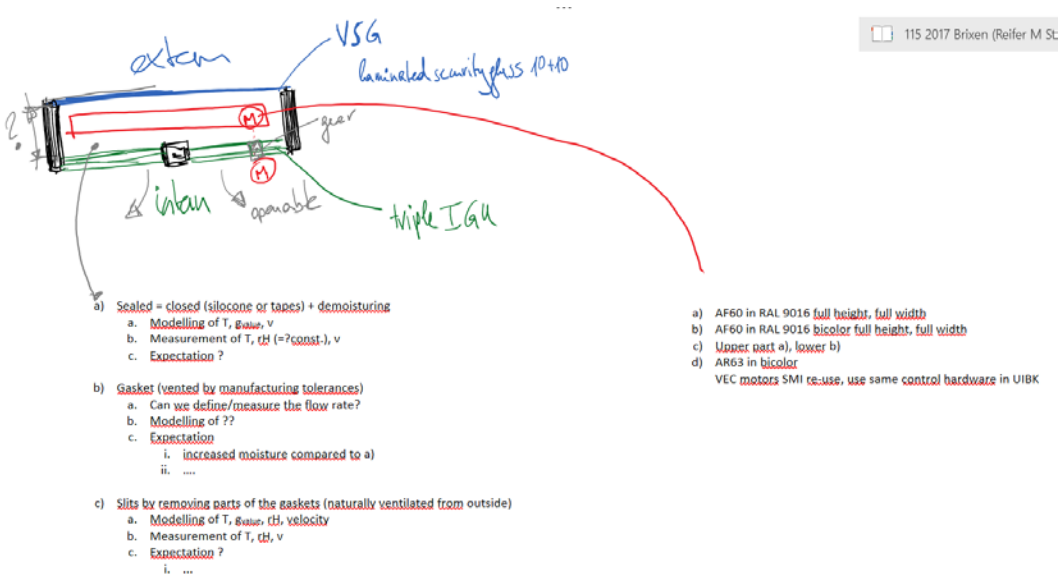

Figure 2: Specification on façade and shading systems requirements.

The external glass is openable with a manual pantograph (able to realise a plane shift of the external skin), differently from the internal one. Different openings' types on the external glass fixing system (metal sheet closure) allow verifying different natural ventilation strategies of the façade cavity. The internal skin is a traditional window that can realise top and side openings. The whole specimen is sketched in Figure 3.

The executive design has been assigned to a subcontractor through a tendering procedure, which included also the manufacturing and the transport.

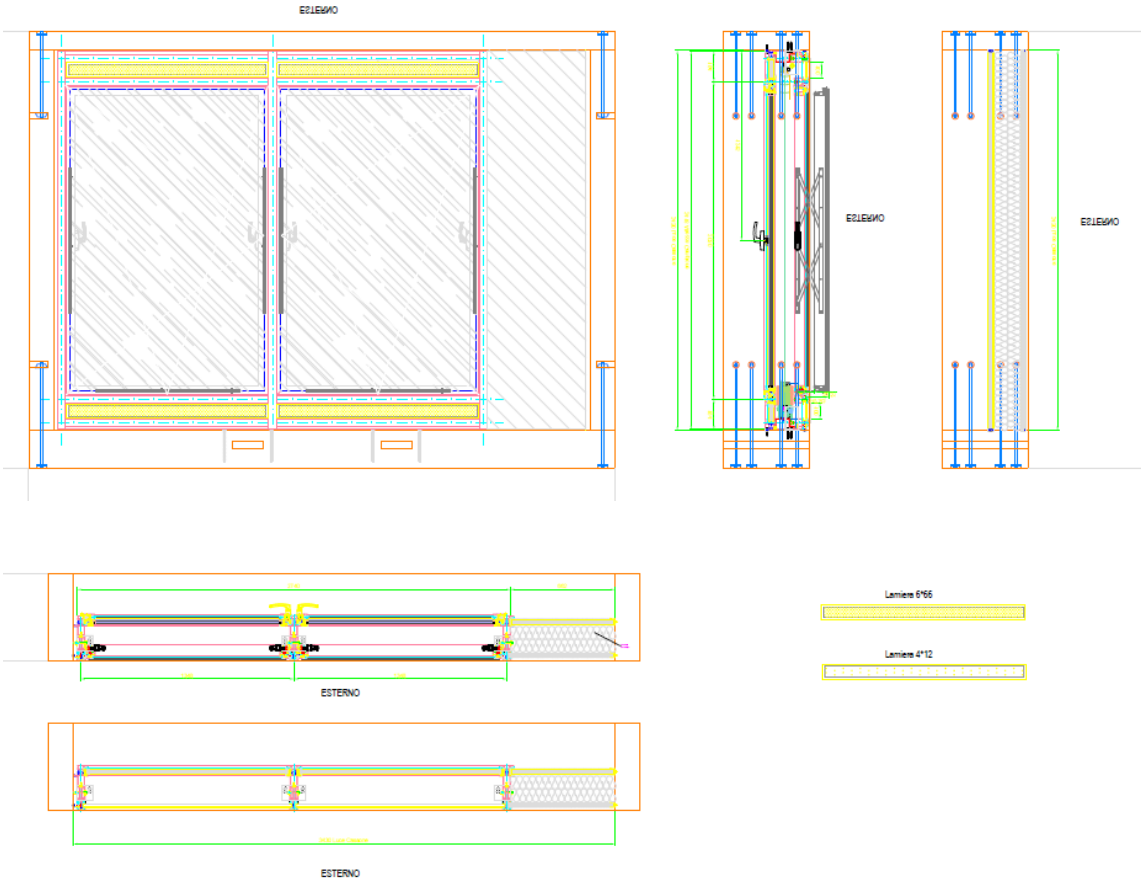

Figure 3: Executive design as proposed by the subcontractor.

4 Manufacturing and installation

Two façade specimens have been manufactured and transported to the EURAC outdoor lab, as documented by the Figure 4.

Figure 4: Transportation, installation of the FACEcamp façade specimen at EURAC outdoor lab.

5 Conclusions

Two façade specimens have been designed, manufactured and installed at EURAC outdoor lab. The chosen façade type and design allows to verify the performance of different kind of ventilation in the façade air cavity.

FACEcamp partners

eurac research	EURAC Eurac Research, Institute for Renewable Energy	Coordinator
IDM SÜDTIROL ALTO ADIGE	IDM IDM Suedtirol - Alto Adige	Partner
universität innsbruck	UIBK Universität Innsbruck, Arbeitsbereich Energieeffizientes Bauen	Partner
HELLA Jalousien. Markisen. Rollläden.	HELLA HELLA Sonnen- und Wetterschutztechnik GmbH	Partner
Bartenbach	BB, Bartenbach GmbH	Partner
glassAdvisor	gA, Glassadvisor Srl	Partner
FRENER REIFER	F&R, FRENER & REIFER SrL	Partner

Contact points:

Project coordinator, Stefano Avesani stefano.avesani@eurac.edu

FACEcamp website www.facecamp.it

Acknowledgement:

This work is part of the research activities of the project FACEcamp n. ITAT1039, funded by European Regional Development Fund and Interreg ITA AUT programme.