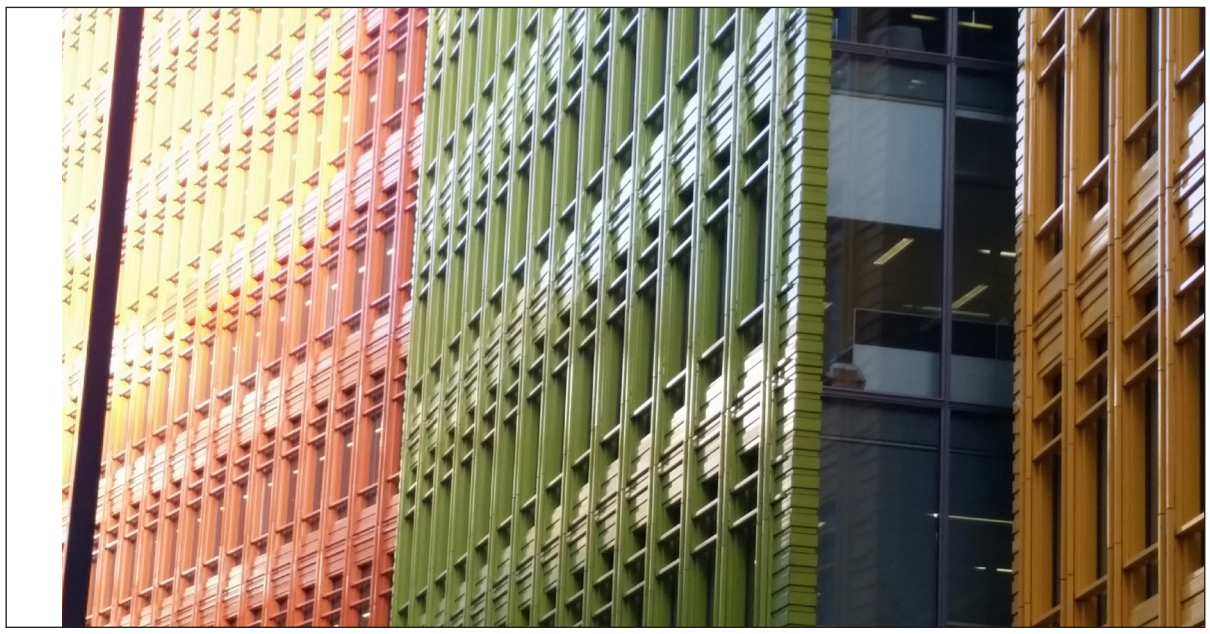
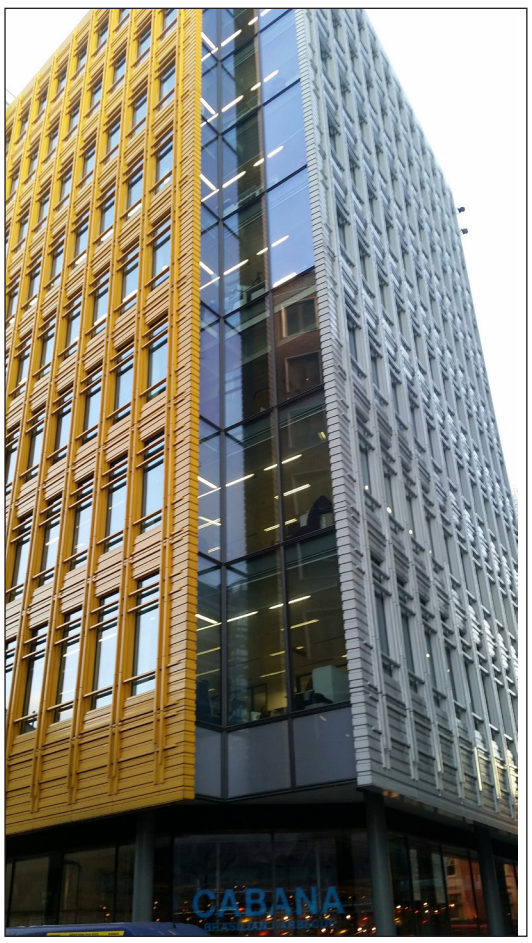
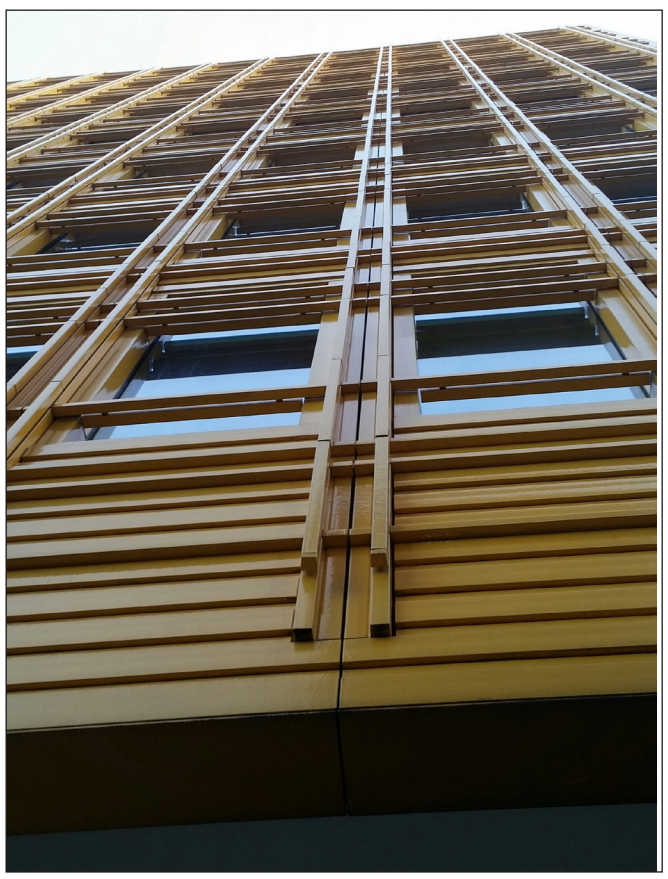
Zineb Sentissi
Technical studies
Materials Systems
Facade analysis

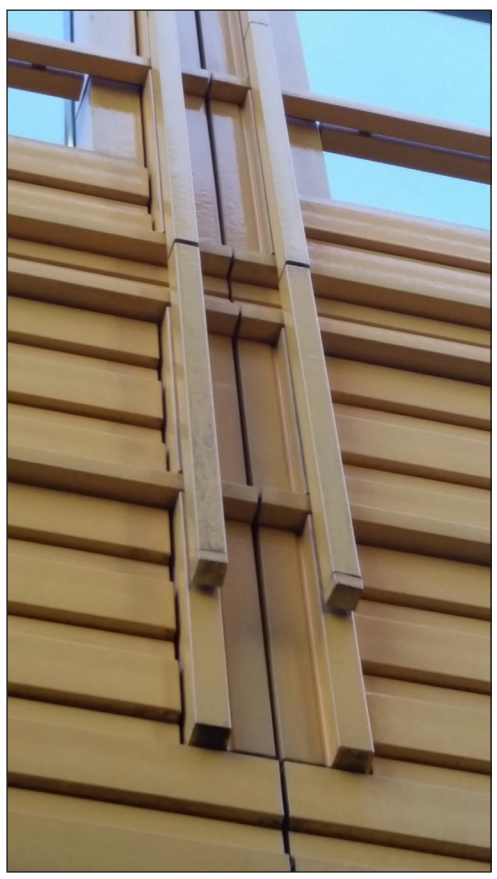
FACADE OVERVIEW

Renzo Piano
Central St Giles
St Giles High Street, London WC2H
2010





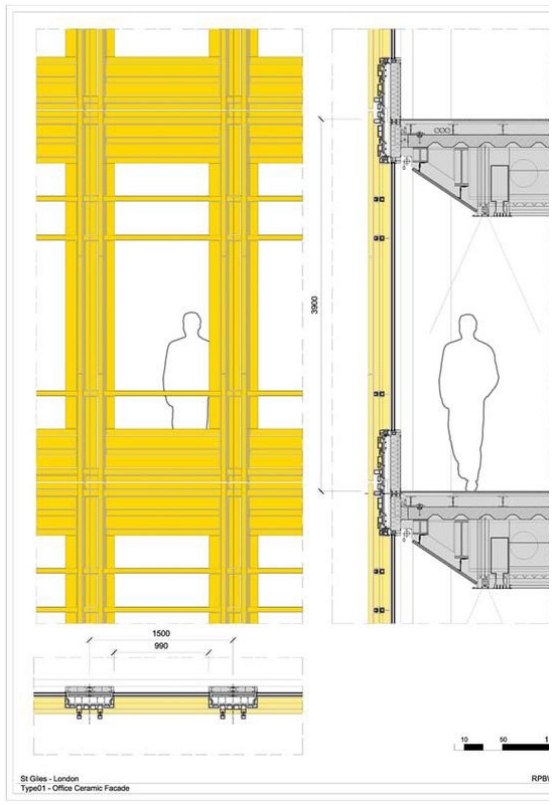




Three main types of facade in the project: the ceramic cladding
the ground floor double-glazed facades (300mm-deep triple-layered glass fins evenly spaced apart and located behind the glass)
the triple fully glazed facades located on the ninth and tenth floors of the office buildings and in the set-back facades between each coloured ceramic-clad “facet”.

The extrusions are arranged to obtain an articulated surface and gives the building a highly crafted appearance, which changes constantly under different daylight conditions.

SECTION DETAIL



370 mm deep facade element

EXTRUDED GLAZED CERAMIC ELEMENTS
terracota
glazed finish
NBK Emmerich (germany)

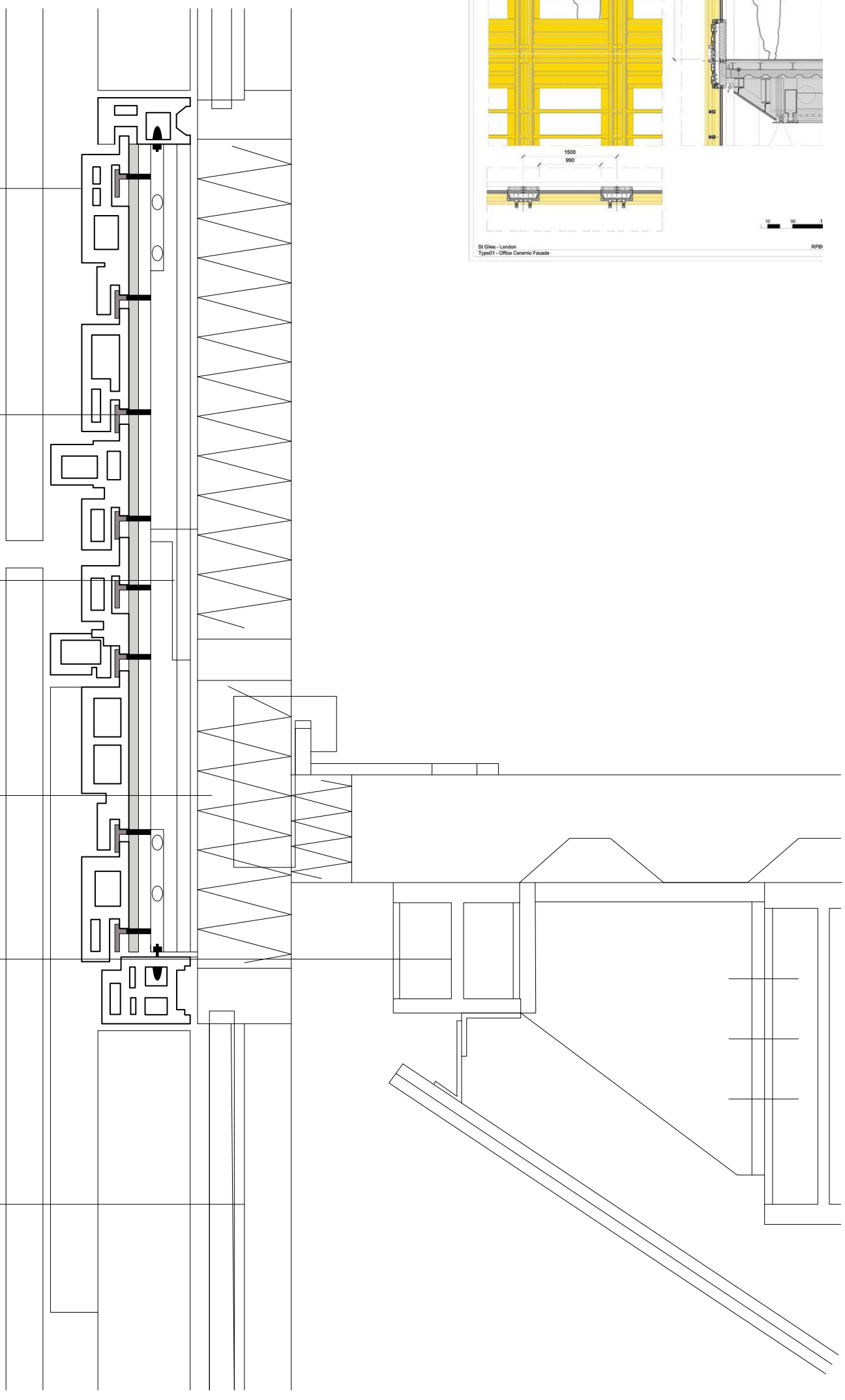
CERAMIC FIXING BRACKET
aluminium

ALUMINUIUM SUB-STRUCTURE PROFILE ON UNIT
aluminium thermally broken frame profile
Shneider Fassadenbau (Germany)

ALUMINUIUM INSULATED UNIT
opaque infill with thermal insulation

STEEL BEAM

FIXED DOUBLE GLAZING
300 mm deep triple layered glass



Each façade element is approximately 370mm deep, and contains everything: the ceramic extrusions, the aluminium thermally broken frame profiles, \
the selective coating glass and the opaque infill with thermal insulation.
The typical facade unit is 1.5m wide and varies in height from 3.9m for the offices to 3m for the residential.

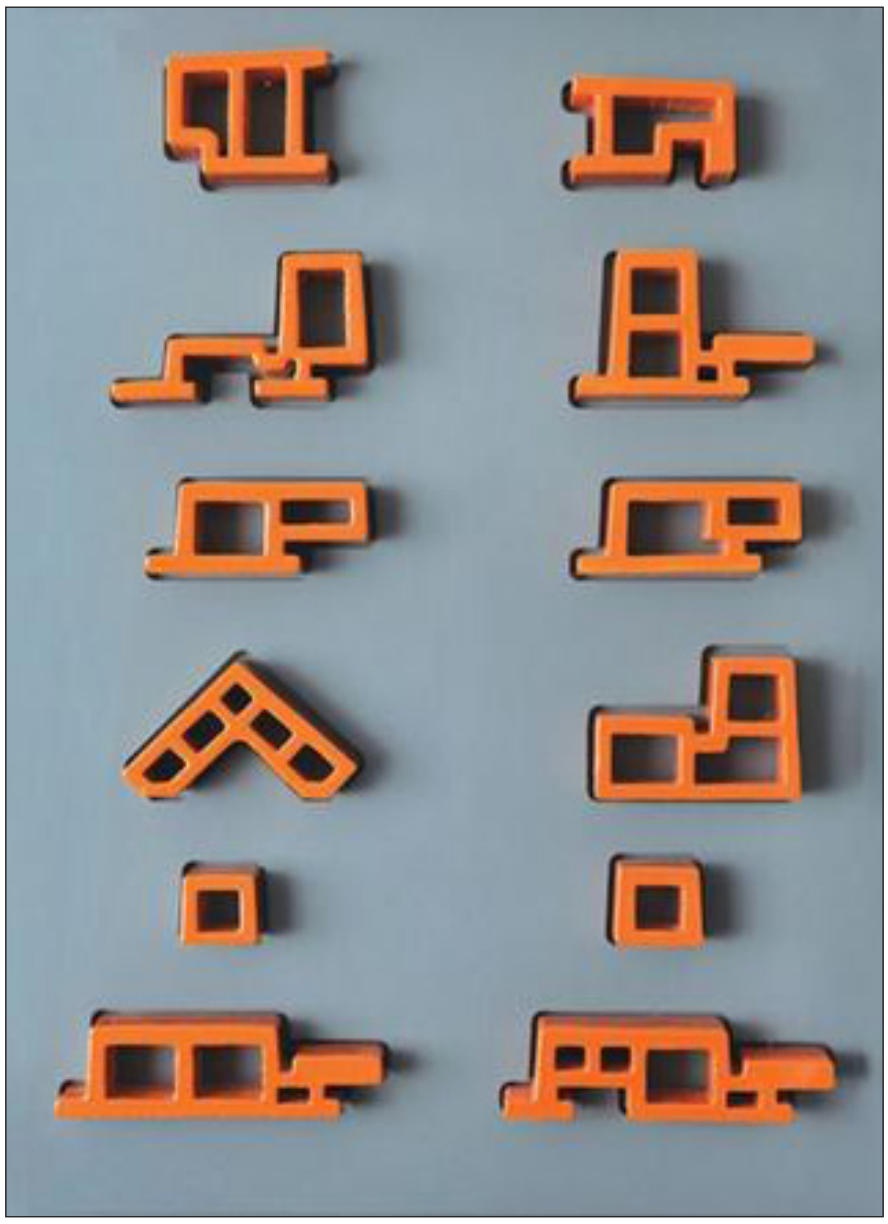
CERAMIC ELEMENTS

Manufacturer: NBK from Emmerich in Germany, and mounted on facade units produced by Schneider Fassadenbau from Stimpfach in Germany

Terracota advantages: resistant to cold and heat
shape doesn't deform over time
achieving unusual shapes

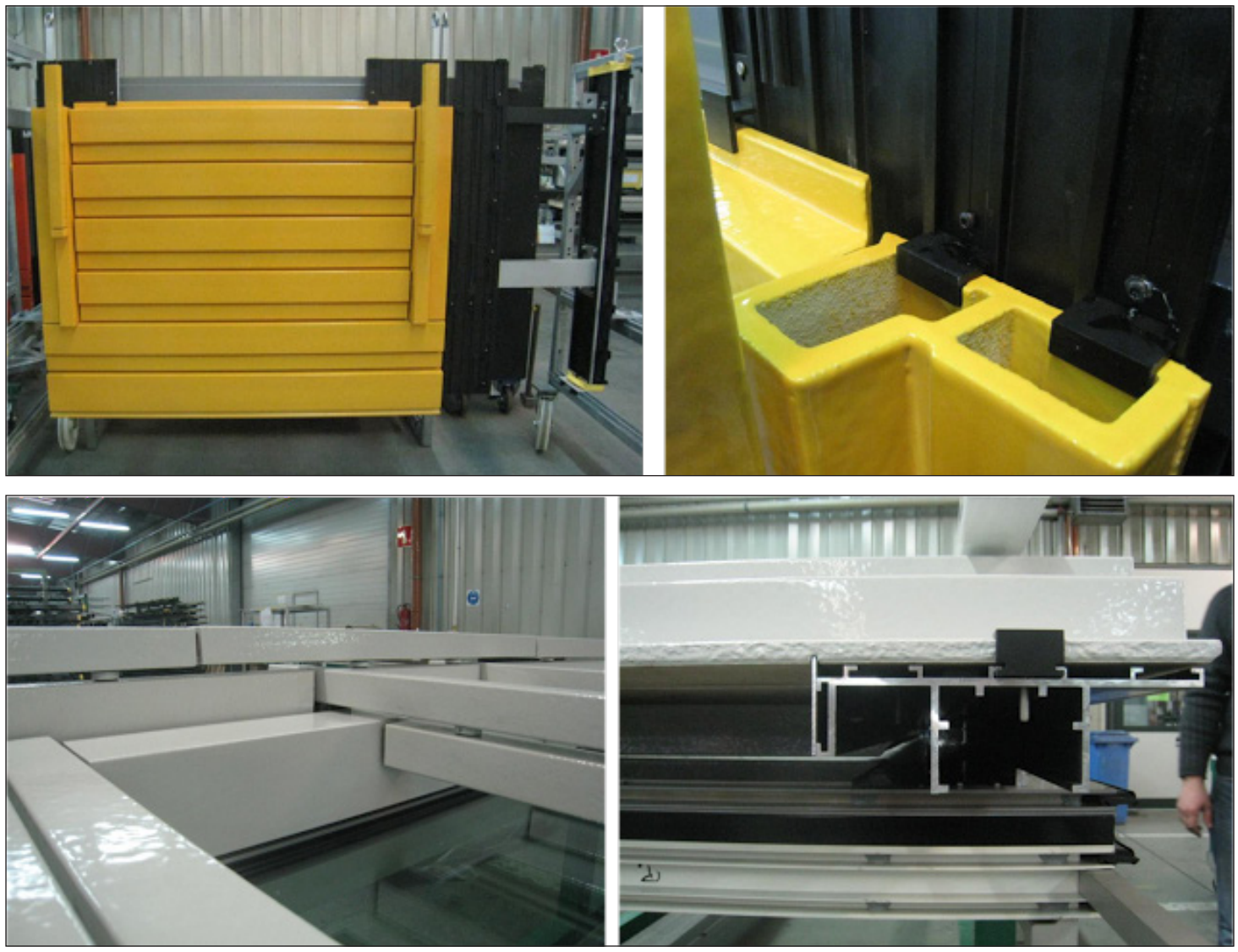
Fabrication method: The extrusions are pressed from a highly sophisticated mix of different types of clay, subsequently dried for several days, and then burned at a high temperature for around 24 hours. After being cut to size, the glazing material is brought on in liquid form, and the pieces are burnt a second time.

Statistics: 18 different terracotta extrusion profiles in six different colours
700 different tiles in length and colour
3,306 ceramic clad facade units on the buildings
Each unit contains 32 ceramic elements on a total of more than 400 components
The total number of tiles 121,000
The ceramic clad facades account for 60% of all upper floor facades



12 samples of the main ceramic extrusion profiles

ALUMINIUM SUB-STRUCTURE



NBK and Schneider worked together a set of detail connections between the terracotta profiles and the aluminium elements behind them. Terracotta profiles completely cover the unit outside face, so that the curtain wall looks like an opaque facade punched by windows (fix units at the offices, opening vents at the housing). The inside face of the panels is clad with white painted aluminium profiles and sheets, no ceramic being present at this side.
Terracotta acts as a rainscreen on the outside, with a pressure equalized intermediate space between the outer skin and the glass / aluminium face.