



**BUREAU D'INGÉNIEURS
FENÊTRES & FAÇADES SA**
ETUDES TECHNIQUES | DIRECTION DE TRAVAUX
PHYSIQUE DU BÂTIMENT | EXPERTISES

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THE CONCEPT OF BUILDING ENVELOPE

A GLOBAL CONCEPT FOR BUILDING ENVELOPE



THE BUILDING ENVELOPE

As a recognized specialist of the facade and energy assessment, BIFF develops projects with a global design for the building envelope. The experts engineers office controls all fields involving the facade allowing it to offer ideally suited solutions for **renovation and construction projects.**

Building envelope

Facades and components (windows, doors...), roofs, floors.

Goal

Marry aesthetics and functionality in a reflection on sustainable development.

AREAS OF EXPERTISE

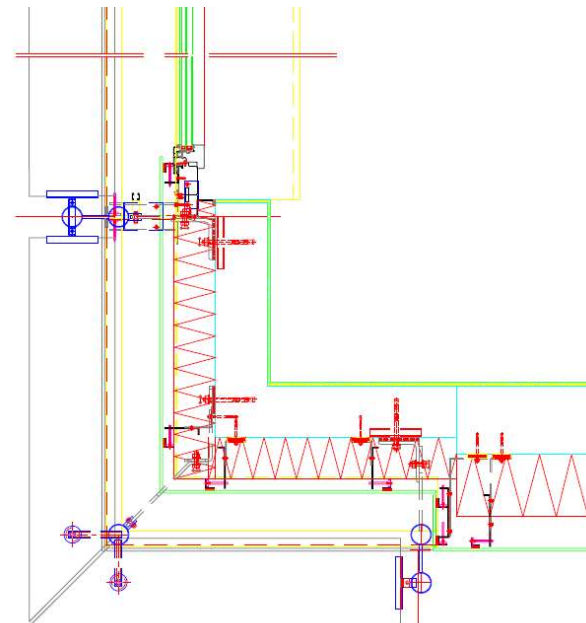
A GLOBAL APPROACH OF OUR SERVICES

TECHNICAL STUDIES
BUILDING PHYSICS
WORKS SUPERVISION
EXPERTISE

TECHNICAL STUDIES

As engineering office, the first task of BIFF is to **advise, design and develop the technical design** of the facades according to their structural qualities, their situation, their exposure and their functional needs.

- Building physics
- Optimization of architectural concepts
- Technical advice on materials behaviour (static, acoustics, thermal)
- Development of customized projects
- Variants
- Innovative solutions customized to the customer's request



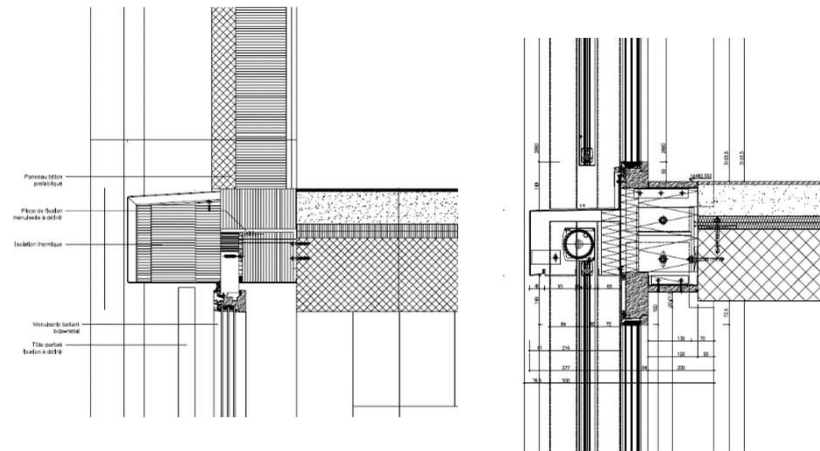
TECHNICAL STUDIES

Our main services:

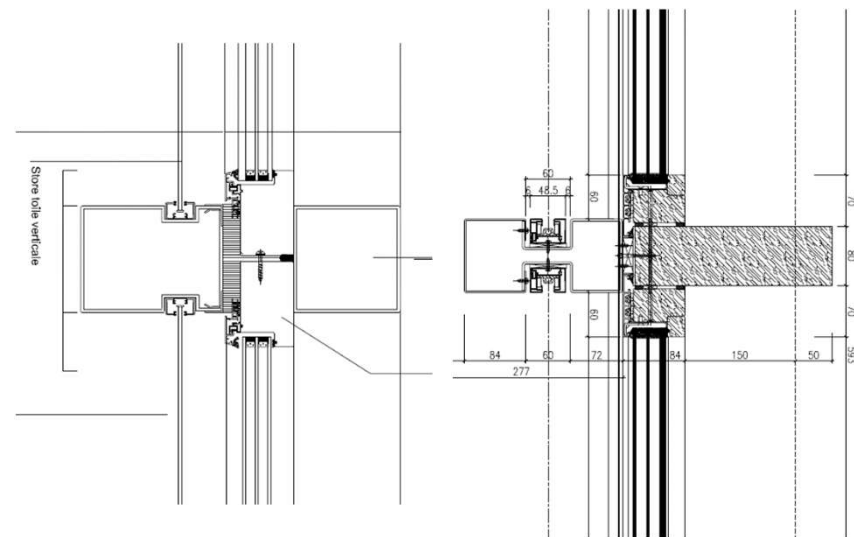
- Facade engineering
- Technical glazing
- Design
- Monitoring of production / reception
- Budgets & quotations
- Prototypes
- Advices



TECHNICAL STUDIES
BUILDING PHYSICS
WORKS SUPERVISION
EXPERTISE



Vertical section



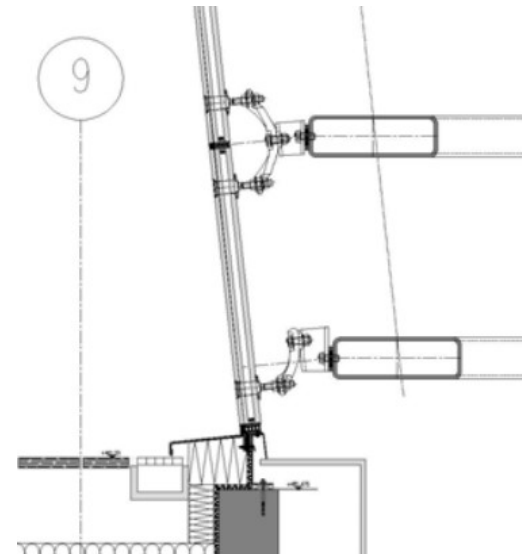
Horizontal section

TECHNICAL STUDIES

Technical application of glazing

- Thermal performances
- Sun protection
- Acoustic
- Security

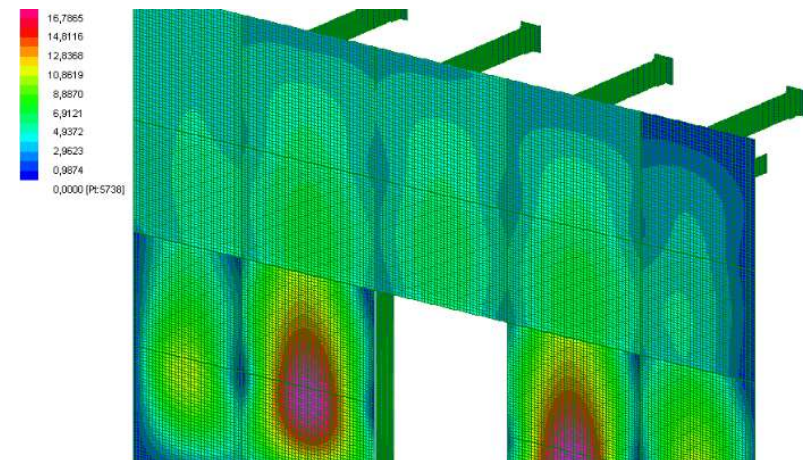
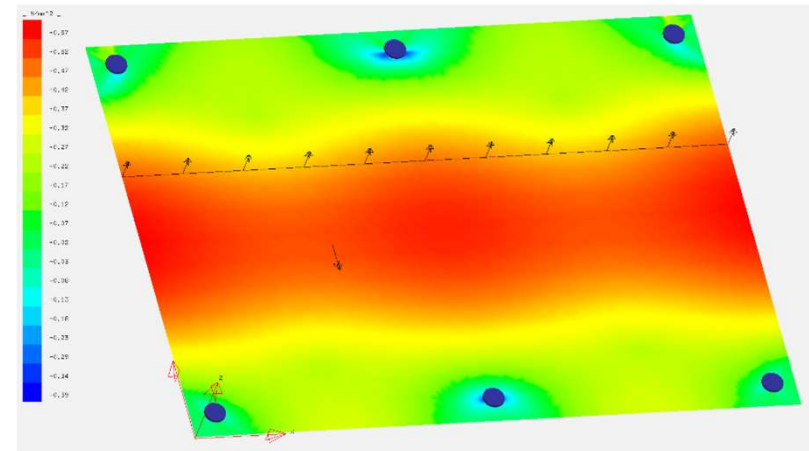
Preliminaries advices



TECHNICAL STUDIES

Glass engineering:

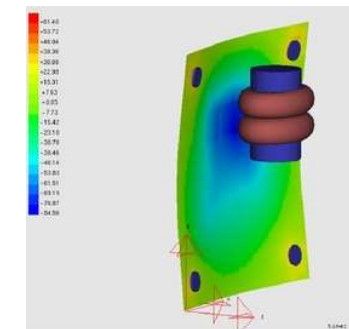
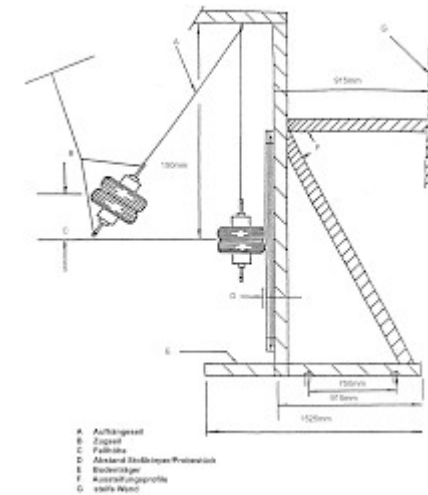
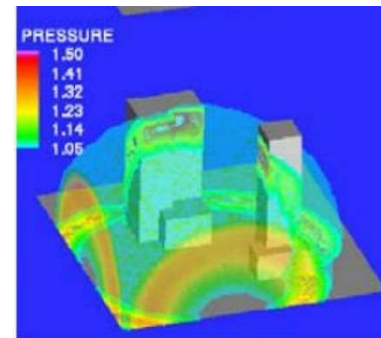
- Static evaluation including transmission of proof of calculation
- Control of glass / structure connections



TECHNICAL STUDIES

Façades with security functions:

- Fire protection
- Burglary protection
- Protection against projectiles
- Protection against vandalism
- Bomblast system
- Freestanding glasses
- Structural glass

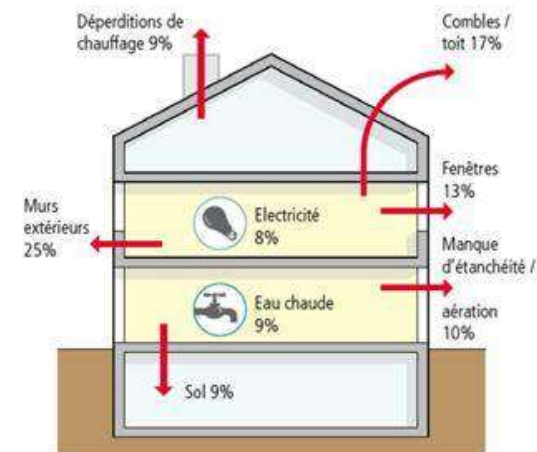


TECHNICAL STUDIES
BUILDING PHYSICS
WORKS SUPERVISION
EXPERTISE

BUILDING PHYSICS

BIFF engineers conduct **technical studies and analyses** for the renovation of the building envelope and establish a **detailed report of sanitation solutions**

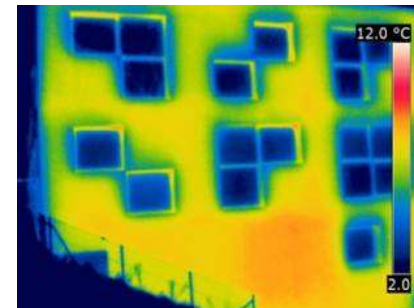
- Qualification of the envelope performance
- Identification of critical areas
- Advices in term of thermal comfort
- Range of measurement tools
- Variants
- Sanitations solutions adapted to customer demand



BUILDING PHYSICS

Our main services :

- Building thermography
- Blower Door test
- Heat balance
- Technical inspection
- CECB / CECB+
- IDC / subsidized Eco-advice



TECHNICAL STUDIES
BUILDING PHYSICS
WORKS SUPERVISION
EXPERTISE

WORKS SUPERVISION

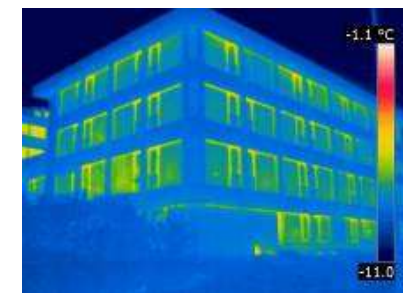
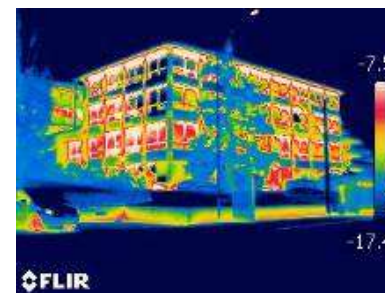
BIFF has the essential experience to master all phases and field of work for the realization of facade projects. From the design advice to the works supervision, it has the resources to plan and carry to completion the most complex projects while **respecting deadlines and budgets.**

- Sanitation keeping the initials architectural lines
- Prototyping

Before



After

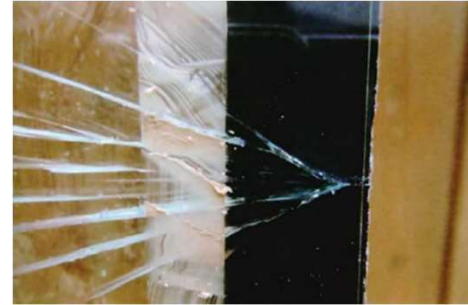


TECHNICAL STUDIES
BUILDING PHYSICS
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EXPERTISE

EXPERTISE

By its deep domain knowledge, but also in his quality as member of the UTS Swiss Engineering Experts and Swiss experts, BIFF is empowered to provide a full technical analysis of the building envelope and to issue an authoritative opinion for individuals, as well as institutional investors, insurance companies or courts.

- Identification of the origin of a disorder
- Responsibility
- Suggesting solutions
- Arbitration expertise

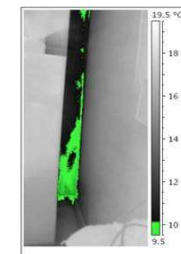
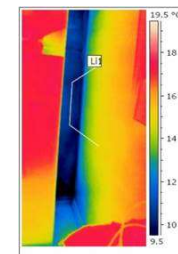
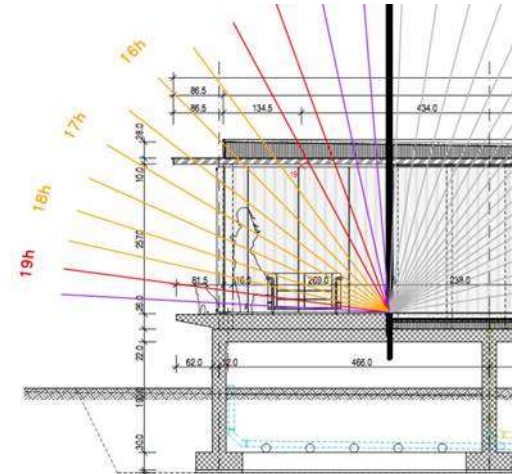




EXPERTISE

Our main services :

- Defects of the facade
- Air infiltration
- Water infiltration
- Condensation & Mould
- Summer overheating
- Thermal / acoustic discomfort



ORGANIZATION

Internal organization of the office

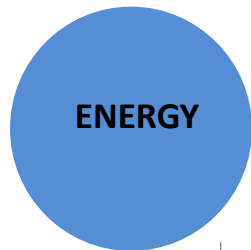
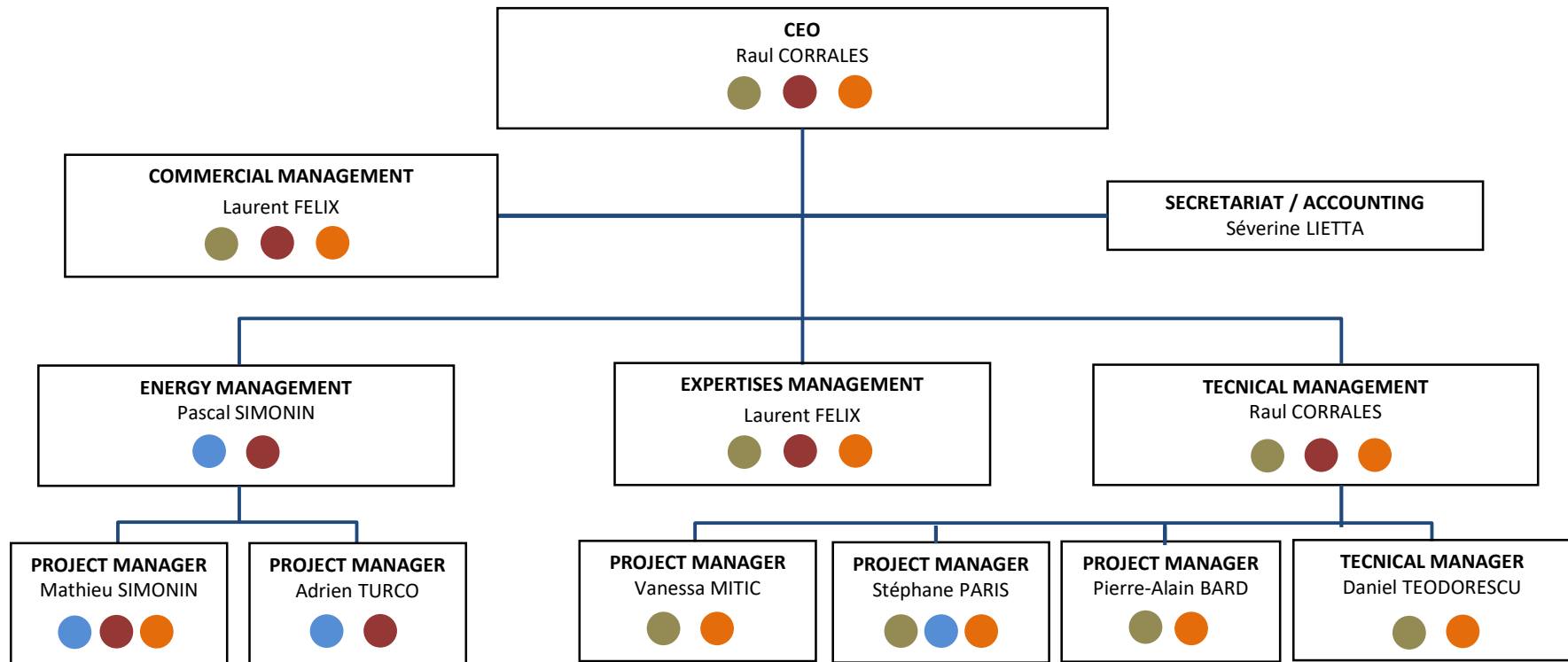
Established in 2001, BIFF SA is an design office composed of engineers and designers experienced in the field of building envelope (roof and facade).

With over 500'000 m2 of facades, and more than 1'000 observations and expertise made in Switzerland and abroad, BIFF SA occupies a leading position in the engineering of the building envelope.

Our team consists of 10 employees with different profiles guided by professionalism, commitment, flexibility, responsiveness, ethics and team spirit, as well as an apprentice draftsman-builder on metal.

ENGINEERS				PROJECT LEADERS/ TECHNICIANS / DESIGNERS	
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Material resources

Our tools

EXPERTISE

- Thermometer, hygrometer, anemometer, barometer
- Laser Glass thickness measurer
- Tempered glass detector and indicator
- Low emissivity layers detector
- Distometer laser

CALCULATION / BIDS

- BEC Partners

INFRARED THERMOGRAPHY

- Thermal camera T440 BX
- Thermal camera T640BX
- Logiciel FLIR Tools+

TECHNICAL DESIGN

- AUTOCAD 2015
- ATHENA
- REVIT
- QUOTER PLAN

SOLAR THERMAL / PHOTOVOLTAIQUE

- PVsyst 6.3.2
- Polysun 8.1

ENGINEERING / STATIC CALCULATION

- glaCE
- SJ Mepla
- RDM6
- ATHENA
- SolidWorks 2011

WRITING / REPORT

- Office Professionnel 2013 suite

ENERGY BALANCE/ DYNAMIC SIMULATION/ ECOBILAN

- LESOSAI 2019
- DIAL+
- WUFI Pro 6.0

THERMAL BRIDGES

- THERM
- Flixo 8

INFILTROMETRY

- Blower Door standard DG-700; DG-1000
- Software TECTITE EXPRESS 5.1
- Smoke generator, sealing box
- Bau.Tools
- Portable device SwemaAir 5



REFERENCES

OUR ACHIEVEMENTS



*Centre Audi AMAG à Vernier
Architectes : Bugna & Barro Architectes, De Giuli & Portier Architectes SA
Facade engineering / fire protection according to OPAM
2007 - Env. 2'700 m2*



*Mon Repos 14 à Lausanne
Architectes : RDR - Richter – Dahl Rocha & Associés architectes SA
Renovation of the building envelope - organization of a prototype
2008 - Env. 3'200 m²*



Résidence Grand-Pré - Genève
Architectes : Cittolin Polli et Associés SA
Design - studies – tenders
2010 - Env. 6'000 m²



*Le Rosey Carnal Hall in Rolle
Architectes : Bernard Tschumi Architectes, Fehlmann Architectes SA
Facade and roof studies - interior partitions – tenders - technical work inspections
2010 - Env. 5'300 m2*



*Collège La Combe - Prangins
Architectes : Coretra SA
Studies - Tenders
2011 - Env. 1'800 m2*



La Praille - Genève
Architectes : Pont 12
Project studies - tenders
2011 - Env. 30'000 m2



Sagrave
Architectes : Archibald / Losinger Marazzi
Pré-étude - étude - planification - conseils DT
2012 - Env. 2'200 m²



*Le Bureau International du Travail à Genève
Architectes : Groupe H
Etude - plans d'étude - soumission - assistance MO
2012 - > 20'000 m2*



Centre Aquapôle
Architectes : Richter – Dahl Rocha & Associés SA
Conseils techniques et soumission
2013 - Env. 3'500 m²



IATA
Architectes : Grenier Architectes
Etude - soumission - suivi technique et assistance DT
2014 - Env. 1'000 m²



Pallin 4 - Pully
Architectes : CCHE Architecture et Design SA
Etude - plans de façades - soumission - suivi technique
2014 - Env. 4'000 m²



CHI Gland
Architectes : Böttge et collaborateurs
Etude - plans de façades - soumission - suivi technique
2014 - Env. 5'000 m2



Galaise 32

Architectes : Richter Dahl Rocha & Associés architectes

Étude - plans de façades - soumission

2015 - Env. 12'000 m²



*CERN bâtiment n° 107
Etude - plans de façades – soumission – suivi technique et AMO
2015 - Env. 5'000 m²*



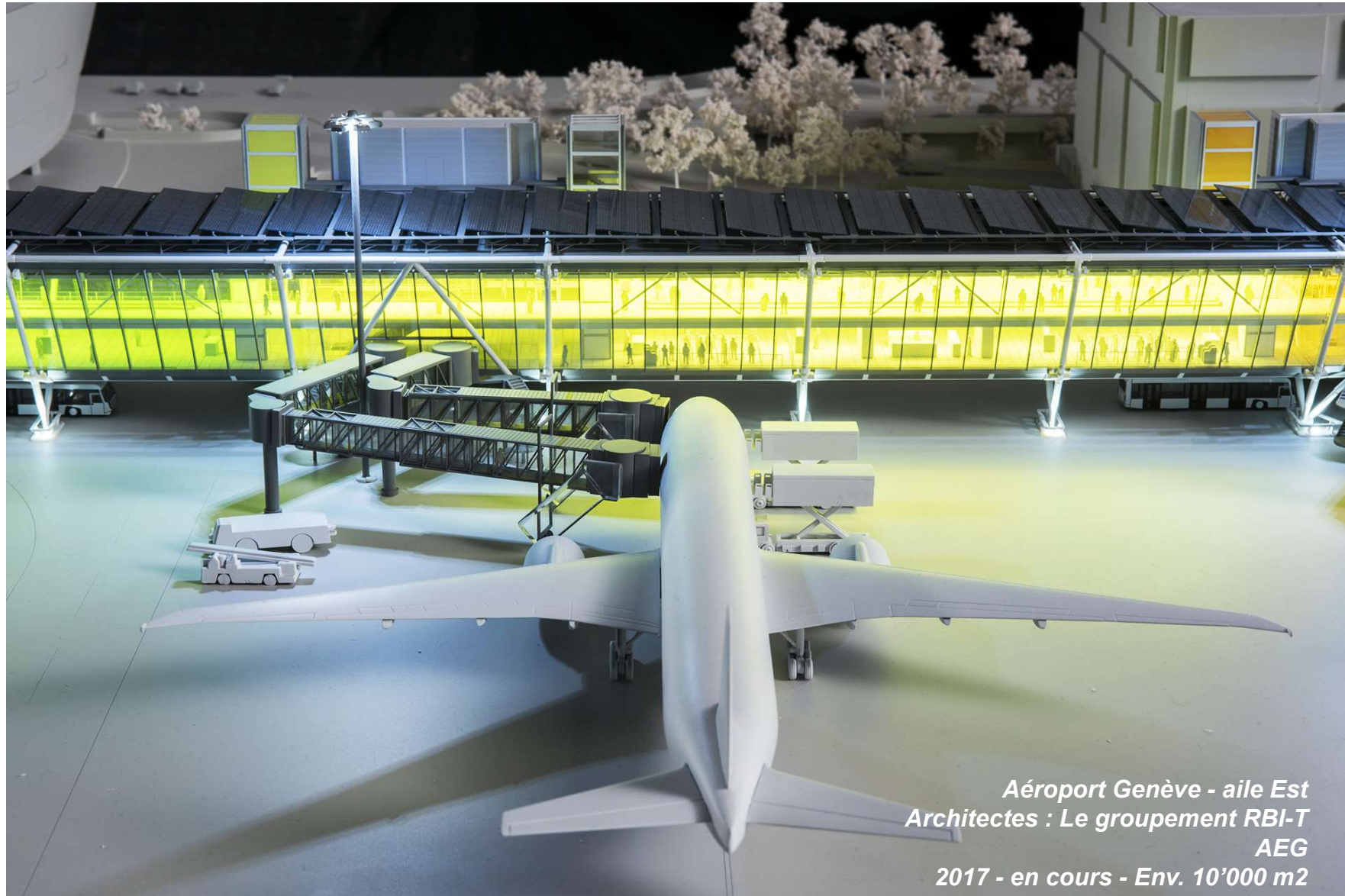
*Synathlon Bâtiment administratif et universitaire
Architectes : Karamuk Kuo Architekten GmbH
Etude - plans de façades - soumission – suivi technique - physique du bâtiment – labélisation SméO
2015 - Env. 4'000 m2*



*William-Fraisse 3 - Lausanne
Architectes : Vernet Hogge Architectes SA
Etude - plans de façades - soumission - suivi technique
2016 - Env. 3'300 m2*



*Siège romand de la Mobilière - Nyon
Architectes : Atelier d'architecture Jacques Bugna - Genève
Etude - plans de façades – soumission - suivi
2016 - Env. 13'000 m²*



*Aéroport Genève - aile Est
Architectes : Le groupement RBI-T
AEG
2017 - en cours - Env. 10'000 m²*



*Concorde L école - Vernier
Architectes : Ferrari Architectes - Lausanne
Etude - plans de façades - soumission - suivi technique
2016 - Env. 6'000 m2*



Les Fiches Nord - Lausanne
Architectes : NB.ARCH Architectes
Minergie-P-ECO
2016 - Env. 3'500 m2



*Chemin de la Vulliette 3 - Lausanne
Architectes : Tribu architecture SA
Labélisation Minergie-P
2017 - Env. 650 m²*



*Arena – Narbonne (France)
Architectes : Agence Marc Mimram / Alain Escriva architecte
Calculs et optimisation
2018 - Env. 15'000 m²*



***Maison des Sports et de la santé (Choisy-le-Roi) - France
Architecte : Ateliers Alfonso Femia
Etude – calcul – suivi technique – contrôle plans
2019 - Env. 20'000 m2***

OTHERS REFERENCES



Heathrow Airport T2A – Londres
Forster + Partners architects



Chep Lank Kok Airport Hong Kong
Forster + Partners architects



Manchester Airport Terminal 2
SBT Architects



Malaga Airport
Bruce Fairbairns



Tour Iberdrola – Bilbao
Cesar Pelli & associates



Triana Tower – Seville
Cesar Pelli & associates



Bancomer Tower – Mexico
SOM architects



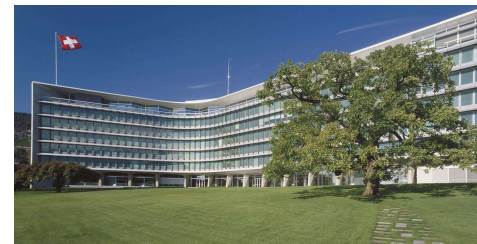
Bluewin Tower – Zurich
Rolf Läubli & Hans Zimmermann



Kilometro Rosso Bergamo
Architecte : AJN - Jean Nouvel



Holborn Place - Londres
Forster and partners



Nestlé En Bergère Head Quarter
J. Tschumi - Richter & Dahl Rocha



Banque Bruxelles Lambert, Genève
Mario Botta - Urs Tschumi

The employees of BIFF SA have extensive international experience, here are some examples of their achievements.

Ces clients nous font confiance

Administrations :



Real estate agencies:



Insurance and Investment Funds:



General contractors:



International organizations:



Large companies:



Mobility :



THANK YOU FOR YOUR ATTENTION

SEE YOU SOON TO STUDY
YOUR MOST COMPLEX PROJECTS

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