



HIGH ENVIRONMENTAL QUALITY REFERENCES®

architecture - environment - urban planning - landscaping



Presentation

Architectural Company with a capital of 100 000 €

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THE COMPANY

Who are we ?

AR ARCHITECTES, architectural company, based in Paris since 2003, is specialized in architectural design combined with new engineering technologies in energy control and natural resources restoration for landscaping and building.

AR ARCHITECTES has many references within France as well as abroad :

eco-construction : industrial buildings, manufacturers, factories, waste water treatment plants.

eco-refurbishing : housing, factories, private houses...

eco-urbanism and landscaping: eco-districts, urban planning, urban parks

Under the management of **RUBA ALABED**, who an architectural degree from (Ecole Speciale d'Architecture ESA) and specialization in HQE® (High Environmental Quality), **AR ARCHITECTES** assists project owners and/or project managers in studies and work supervision in the public and private sectors,

AR ARCHITECTES has a multidisciplinary team in architecture, urban-planning, landscaping, environment, (HQE®).

A research and development department was set up to welcome : graduates and students.



KNOW-HOW

AR ARCHITECTES has designed many projects in France and abroad, integrating environmental approach.

AR ARCHITECTES have the following references in Saudi Arabia and Qatar :

- Winning a design competition for the future French embassy in Doha, Qatar (2016) certified HQE™ “Exceptional level”, with the following team (SUD ARCHITECTES, AUBERGER FAVRE, RBS, MATTA CONTRACTING, EUROPTIMA).
- Urban design of Jeddah bay (Saudi Arabia). 600 000 equivalent inhabitants (ARUP International/Wilkinson Eyre/ Aveco De Bont/Space Syntax/Urban Development Company/AR Architectes/Gilles Clément)
- Study for grey water treatment in Jeddah new airport in Saudi Arabia (ADPI, TNPLUS, and AEU).
- Project director for industrial constructions with low carbon footprint on the environment.



In 2022, the whole team of **AR ARCHITECTES** has followed the certified training course on the theme of « RE 2020 and new Energy/Carbon constraints for the architect » at the training centre : Environment, City, Architecture and Digital (EVA-aDig)

OUR APPROACH

AR ARCHITECTES participates and organizes lectures at several international and national trade shows:

- French trade shows: POLLUTEC LYON 2016, ECOBAT 2015 BATIMAT 2009, Export 75 organised by the Paris Chamber of Commerce and Industry (CCIP) (Conference “Innovate to succeed abroad”).
- International trade shows: Project Qatar 2011, Project Lebanon 2010 (Lecture “HEQ® approach in building and landscaping districts”), Pollutec Morocco 2011 (Lecture “Energy efficiency in France and Morocco”), El Baschek Trade Fair 2010, in Damascus , Syria, Big Five Show in Dubai 2010, United Arab Emirates.





associations and institutions

France and International





ASSOCIATIONS AND INSTITUTIONS

France and international

ASSOCIATIONS AND INSTITUTIONS

AR ARCHITECTES is member of several french and international environmental associations. Our company is an active member, we give lectures and provide our expertise in HQE® design. We also make visit our innovative projects.





Clients





Clients

Cities



OTHER PUBLICS INSTITUTIONS.....





PARTNERS

France and international



PARTNERS

France and international

engineering consultants



PARTNERS

France and international

ARCHITECTS, LANDSCAPERS



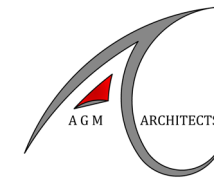
Pays-Bas



Maroc



Dubai - EAU



Liban



Maroc





PARTNERS

France and international

CONTRACTING COMPANIES





PARTNERS : Universities

France and international





Partners : Universities

France and international

Universities - SCHOOLS



École nationale
supérieure d'architecture
Versailles



école nationale
supérieure
d'architecture
de **paris-belleville**





Prizes, awards and nomination

France and international



Prizes, awards and nomination



HQE® Certification, Level “Exceptionnel”, of French Embassy in Doha, Qatar
 Certification awardee by CERTIVEA, with the CERWAY standard, December, the 16th of 2021



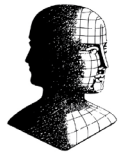
2018 International Success Award
 Prize awarded for the 120 year of the CCEF, October, the 5th of 2018



Green Solutions Awards 2017
 Big prize of the jury in the category Sustainable Infrastructures, in the competition Green Solutions Awards 2017, organized by “Construction 21” for the projet of the eco-sewage water treatment plant of Plantins in Beynes(78)



Prizes, awards and nomination



JANUS 2014

Award : Les Janus de la Cité 2014

Eco-construction of the sewage treatment plant in Beynes, France, awarded by the French Institute of Design on Octobre 2014



Award Batiactu Construction un 2014

Eco-construction of the bioclimatic building in Beynes, France, awarded in september 2016



National Prize of Wooden Construction 2014

Eco-construction of the sewage treatment plant in Beynes, France, was selected by the jury of the National Prize as a remarkable Wooden project. It has been published on july 2014.



Lauriers of the Wooden Construction un 2008, 2009,2010

3 projects were selected and have been published in 2009 : eco-construction of the sewage treatment plants in Claye-Souilly, Asnières-sur-Oise and a wooden house in Thomery, France





Press and Publications

France and international





Press and Publications

Last publications



Revue La maison écologique n°121 - February/March 2021

“Resilience, let’s take our chance” p.40-45, presenting the vision of Mrs Ruba ALABED of sustainable architecture.



Qualité constructions n°182 - September/October 2020

“Flood proof infrastructure and buildings” p12-14, presenting the project of the a sewage rain water pumping station in Vitry-sur-Seine - France

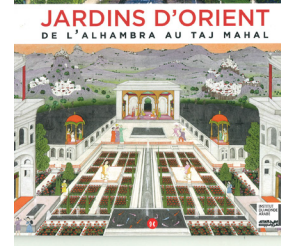


Magazine DNA n°8/8 - Sept./Nov., 2016

“Sustainable architecture” p.58-59, presenting the vision of Mrs Ruba ALABED of a plugged city in a circular economical vision.



Connaissance des Arts -Special issue 2016
“ Oriental Gardens - From Alhambra to Taj Mahal “, presenting the project of the Embassy of France to Doha in Qatar





List of references

Ile de France, France and International



PUBLIC CONSTRUCTIONS, OFFICE AND HOUSING, HQE®

PUBLIC EQUIPMENTS

- 2021 **Eco-design of a filtering system through a garden in the ashar tented resort, in Saudi Arabia - ACCOR - *Design Studies completed in 2021***
Competition Design concept, architecture HQE® and landscaping
- 2016 - 2018 **Eco-design of French Embassy and Ambassador's House in Doha - Qatar - *HQE® Exceptional Level certification***
Design concept and follow up mission, architecture HQE® and landscaping - 10 000 000 euros
- 2018 **Bio-climatical eco-construction of the municipal technical centre of Valenton city (94) - low carbon / positive energy label E+C-**
Design concept and follow up mission, architecture, environment and landscaping - 4 500 000 euros
- 2016 **Eco-design of the french secondary school, lycée Bonaparte in Doha - Qatar**
Competition Design concept, architecture HQE® and landscaping - 26 000 000 US dollars
- 2016 **Environmental feasibility study in Bagneaux-sur-Loing - France - *Study terminated in 2016***
Project management
- 2014 - 2016 **Environmental study for public moroccan buildings for the ministry of equipments, Rabat - Morocco - *Study terminated in 2016***
Project management - Design of a HQE® tutorial
- 2013 **Eco-design of The Flower Museum of Abu Dhabi - City of Abu Dhabi - UAE - *Study terminated in 2013***
Design concept, architecture HQE® and landscaping study
- 2010 **Eco-construction of an aquatic swimming center in Louviers- France**
Competition Design concept, architecture HQE® and landscaping - 3 400 m² - 18 000 000 euros

renovation

- 2022 - 2024 **Energy-efficient renovation of the administrative center of Saint-Just in Ivry-sur-Seine (94) - France - *Study in progress in 2023***
Competition Design concept, architecture HQE® and landscaping - 7 077m² - 1 800 000 euros
- 2023 **Program Design for the eco-construction of the European Embassy and the ambassador's residence in Riyadh, Saudi Arabia *Study in progress in 2023***
Design concept, architecture HQE® - 6 352m²



- 2023 **Energy-efficient renovation, interior design and landscape design of 3 factories for Eau de Paris**
Study in progress in 2023
Design concept, architecture HQE® and landscaping study
- 2023 **Energy-efficient renovation of the C1C2 building of the Vésinet site of the Institute of Radioprotection and Nuclear Safety (IRSN)**
Study in progress in 2023
Design concept, architecture HQE® - 4 000m² - 800 000€ HT
- 2020 - 2024 **Refurbishment of 36 high schools in Ile de France - france- *Study and Worksite in progress in 2023***
Competition Design concept, architecture HQE® and landscaping - 500 000 to 2 500 000 euros
- 2015 **Facade renovation in the building, 66 street Brancion, Paris - France - *Terminated in 2015***
Design concept and follow up mission - 39 000 euros
- 2012 **Eco-transformation a factory into conference center in Dordives - France - *Study terminated in 2012***
Design concept, architecture HQE® and landscaping study - 7 000 m² - 10 000 000 euros
- 2008 **Eco-renovation of an office building in Plaisir - France - *Inaugurated in 2008***
Design concept and follow up mission, architecture HQE® and landscaping - 1 000 m² - 100 000 euros
- 2008 **Eco-renovation of the Fortness in Buc - France**
Competition Design concept, architecture HQE® and landscaping - 2 000 m² - 1 400 000 euros
- 2008 **Eco-renovation of social housing in Drancy - France**
Competition Design concept, architecture HQE® and landscaping - 6 000 m² - 1 500 000 euros



- 2022 - 2024 **Refurbishment and handicap accessibility of the judicial court in Versailles (78) - France - *Study in progress in 2023***
Design concept and follow up mission - 5 320m² - 274 000 euros
- 2022 - 2024 **Refurbishment and disabled accessibility of 10 high schools in the grand est region, Troyes (10) - France - *Study in progress in 2023***
Design concept and follow up mission - 10 schools establishment - 2 700 000 euros
- 2020 - 2023 **Technical refurbishment of 14 high schools of Thionville and Longwy - France - *Study in progress in 2023***
Design concept and follow up mission - 16 schools establishment - 7 000 000 euros
- 2018 - 2020 **Disabled accessibility to 5 francilian high schools, West sector - France - *Study in progress in 2023***
Design concept and follow up mission - 5 schools establishment - 3 036 000,00 euros
- 2018 - 2020 **Disabled accessibility to 5 francilian high schools, Est sector - France - *Worksite in progress***
Design concept and follow up mission - 5 schools establishment - 3 675 000,00 euros
- 2017 - 2020 **Accessibility and fire exit study for secondary schools in Ile-de-France - France - *Study in progress***
Design concept and follow up mission - 14 schools establishment - 4 777 054,59 euros
- 2017 - 2018 **Accessibility and fire exit study for secondary schools in Ile-de-France - France - *Study terminated in 2018***
Study - 7 schools establishment - 6 238 528 euros
- 2015 - 2019 **Accessibility and fire exit study for secondary schools in Ile-de-France - France**
Design concept and follow up mission - 12 schools establishment - 3 423 483 euros
- 2014 - 2016 **Accessibility and fire exit study of the students building of the CROUS Mabillon in Paris - France - *Terminated in 2016***
Design concept and follow up mission - 200 m² - 450 000 euros



INDUSTRIAL SITES, ARCHITECTURE AND LANDSCAPING

Water, treatment AND PHYTOPURIFICATION (Water treatment with plants)

- 2023 **Architectural and landscape eco-design of the data hills's substation building in Aulnay-sous-Bois - France**
Architectural and landscaping design HQE® competition - 5 502 000 euros
- 2022 **Eco-design of a rainwater depollution station "The vegetalized Block" in Champigny-sur-Marne - France**
Architectural and landscaping design HQE® competition - 42 300 000 euros
- 2019 **Eco-construction of Harcourt's electrical substation building in Issy-les-Moulineaux - France**
Architectural and landscaping design HQE® - 6 000 000 euros
- 2014 - 2019 **Eco-design of a sewage rain water pumping station in vitry-sur-Seine - France - *Works receipt in 2019***
Architectural and landscaping design HQE® - 220m² - 15 000 000 euros
- 2011 - 2019 **Eco-construction of the operating building PR5, above the lifting station of the valley of Thèves and Ysieux in Orry-la-ville - France - *Works receipt in 2019***
Architectural and landscaping design HQE®
- 2017 **Eco-design of a sewage rain water storage plant in Deuil-la-barre - France - *Worksite in progress in 2023***
Architectural and landscaping design HQE® - 4 931m² - 11 055 665 euros
- 2015 - 2018 **Eco-environmental and landscaping design of a waste water treatment plant in Villiers-Saint-Frédéric - France**
Desing concept, Architecture HQE® and landscaping - 2 000 m² - 20 000 000 euros
- 2015 - 2018 **Eco-design of a sewage rain water storage plant in Ermont - France - *Inaugurated in 2018***
Architectural and landscaping design - 5 600 000 euros
- 2014 **Eco-design of technical of a pond in La Bonne Eau at Villiers/Seine - France**
Competition Design concept, architecture HQE® and landscaping - 300 m² - 1 500 000 euros
- 2014 **Eco-design of a sewage treatment plant in Saint Génies des Mourgues - France**
Competition Design concept, architecture HQE® and landscaping - 130 m² - 2 500 000 euros
- 2013 - 2018 **Eco-design of a sewage treatment plant in Tranche/Mer - France**
Competition Design concept, architecture HQE® and landscaping - 180 m² - 5 000 000 euros



- 2010 - 2013 **Eco-design of a sewage treatment plant in Saint Michel Chef Chef - France - *Inaugurated in 2016***
Design concept and follow up mission, architecture HQE® and landscaping - 2 595m² - 9 700 000 euros
- 2008 - 2013 **Water pumping station in “Vallée de la Thève et de l’Ysieux” - Phase 1 - France - *Inaugurated in 2013***
Design concept and follow up mission, architecture HQE® and landscaping - 60 m² - 40 000 000 euros
- 2008 - 2013 **Eco-design of a sewage treatment plant in Beynes - France - *Inaugurated in 2013***
Design concept and follow up mission, architecture HQE® and landscaping - 465 m² - 4 500 000 euros
- 2010 - 2012 **Eco-construction of a waste water treatment plant in Méréville - France - *Inaugurated in 2012***
Design concept and follow up mission, architecture HQE® and landscaping - 220 m² - 1 700 000 euros
- 2009 - 2012 **Eco-design of a sewage treatment plant in Saclas - France - *Inaugurated in 2013***
Design concept and follow up mission, architecture HQE® and landscaping - 65 m² - 2 500 000 euros
- 2008 - 2012 **Eco-design of a sewage treatment plant in Thoiry - France - *Inaugurated in 2012***
Design concept and follow up mission, architecture HQE® and landscaping - 525 m² - 2 000 000 euros
- 2008 - 2011 **Eco-design of a sewage treatment plant in Asnières sur Oise - France - *Inaugurated in 2012***
Design concept and follow up mission, architecture HQE® and landscaping 400 m² - 17 000 000 euros
- 2008 - 2011 **Eco-design of a sewage treatment plant in Claye Souilly - France - *Inaugurated in 2011***
Design concept and follow up mission, architecture HQE® and landscaping - 318 m² - 7 800 000 euros
- 2011 **Eco-design of a sludge storage shed in Claye Souilly - France - *Inaugurated in 2011***
Design concept and follow up mission, architecture HQE® and landscaping- 2 500m² - 7 800 000 euros
- 2011 **Eco-design of a sewage treatment plant in Baie Mahault - Guadeloupe - France**
Competition Design concept, architecture HQE® and landscaping - 10 000 000 euros
- 2011 **Eco-design of water potable plant of Ormes - France**
Competition Design concept, architecture HQE® and landscaping - 1 100 m²
- 2011 **Eco-design of a methanation plant in Prahec - France**
Competition Design concept, architecture HQE® and landscaping - 2 600 000 euros
- 2010 **Eco-design of a sewage treatment plant in Nezel - France**
Competition Design concept, architecture HQE® and landscaping - 2 000 000 euros
- 2009 **Eco-design of a sewage treatment plant in Castelginest - France**
Competition Design concept, architecture HQE® and landscaping - 14 500 m² - 20 000 000 euros



- 2009 **Eco-design of a sewage treatment plant in Château Thierry - France**
Competition Design concept, architecture HQE® and landscaping - 2 500 m² - 15 000 000 euros
- 2009 **Eco-design of a sewage treatment plant in Gasny - France**
Competition Design concept, architecture HQE® and landscaping - 900 m² - 4 500 000 euros
- 2007 - 2009 **Eco-design of a sewage treatment plant in Lardy - France**
Competition Design concept, architecture HQE® and landscaping - 2 500 m² - 6 000 000 euros
- 2007 **Eco-design of a sewage treatment plant in Bois Le Roi - France - *Inaugurated in 2009***
Design concept and follow up mission, architecture HQE® and landscaping - 5 476 m² - 2 100 000 euros
- 2007 **Eco-design of a sewage treatment plant in Aubergenville - France**
Competition Design concept, architecture HQE® and landscaping - 1 500 000 euros
- 2007 **Eco-design of a sewage treatment plant in Briis-sous-Forge - France**
Competition Design concept, architecture HQE® and landscaping - 8 500 000 euros
- 2007 **Eco-design of a sewage treatment plant in Aÿ Mareuil - France**
Competition Design concept, architecture HQE® and landscaping
- 2007 **Eco-design of a sewage treatment plant in Laval - France**
Competition Design concept, architecture HQE® and landscaping

WASTES et VALUATION

- 2019 - 2020 **Eco-renovation of the waste treatment plant in Sarcelle - France**
Competition Design concept and follow up mission, architecture HQE® and landscaping - 10 050 m² - 9 000 000 euros
- 2019 **Eco-design of a platform of waste sorting system in Romilly-sur-Seine - France - *Inaugurated in 2022***
Design concept and follow up mission, architecture HQE® and landscaping - 45 710 m² - 2 400 000 euros
- 2013 - 2014 **Eco-design of a waste reception center in Bessancourt - France - *Inaugurated in 2014***
Design concept and follow up mission, architecture HQE® and landscaping - 250 m² - 800 000 euros
- 2012 **Eco-design of an innovative system to collect waste in a district by suckines off plant and system in Saint Ouen - France**
Competition Design concept, architecture HQE® and landscaping - 435 m² - 5 120 000 euros
- 2009 - 2012 **Eco-design of the house of environment in Sainte Rose - Guadeloupe - France - *Inaugurated in 2012***
Design concept and follow up mission, architecture HQE® and landscaping - 225 m² - 800 000 euros



- 2011 **Eco-design of a waste reception center in Montivilliers - France**
Competition Design concept, architecture HQE® and landscaping - 1 100 m² - 2 665 000 euros
- 2017 **Eco-renovation of the Technical center in Metz – France**
Design concept and follow up mission, architecture HQE® and landscaping - 1 200 m² - 1 214 000 euros
- 2011 **Design of an eco-factory with low environmental impact on the aerodrome in Villaroche - France - *Study terminated in 2011***
Design concept, architecture HQE® and landscaping study - 850 m² - 915 000 euros
- 2010 **Eco-design of an intercommunal technical center in Drancy - France**
Competition Design concept, architecture HQE® and landscaping - 6 000 m² - 2 500 000 euros



URBAN PLANNING AND LANDSCAPING

LANDSCAPING PARK

- 2012 **Eco-design of the Pompidou park in Bois Colombes - France**
Competition Design concept, landscaping HQE® - 10 200m² - 2 500 000 euros
- 2011 **Eco-transformation of a landfield into an ecological park in Saïda - Lebanon - *Study terminated in 2011***
Design concept, urbanism and landscaping HQE® study - 140 000 m² - 30 000 000 US dollars
- 2010 - 2011 **Eco-design of an educational garden in Rozay-en-Brie - France - *Inaugurated in 2011***
Design concept and follow up mission, landscaping HQE® - 4 750m² - 200 000 euros
- 2003 - 2006 **Eco-design of the ecological park "Chemin de l'Île" in Nanterre (92) - France - *Inaugurated in 2006***
Design concept and follow up mission, landscaping HQE® - 140 000 m² - 8 500 000 euros

ECO-DISTRICT AND PHYTOPURIFICATION OF RAINWATER

- 2011 - 2012 **Eco-design of a landscaping rainwater management in a district at Montceau Les Mines - France - *Inaugurated in 2012***
Design concept and follow up mission, landscaping- 40 000 m²- 2 000 000 euros
- 2010 **Eco-design of offices in a housing district in Dujiagyan - China - *Prize-winner competition***
Landscape HQE® competition - 8 000 m² - 30 000 000 US dollars
- 2009 **Eco-design of water management in the artificial island of Sir Ban Yas in Abu Dhabi - United Arab Emirates - *Study terminated in 2009***
Competition Design concept, landscaping HQE® - 4 000 m²
- 2009 **Eco-organization landscaping in Khalifa Oasis - United Arab Emirates - *Study terminated in 2009***
Design concept, landscaping HQE® study
- 2008 **Eco-design of a filtering system for grey water of the new airport of Jeddah - Saudi Arabia**
Design concept, landscaping HQE® study - 25 000 m²
- 2008 **Eco-design of a district in "Sommes" - France**
Competition Design concept, architecture HQE®, urbanism and landscaping - 5 000 m²



- 2008 **Eco-design of an area for the travellers in Vittel - France - *Terminated in 2008***
Design concept, urbanism and landscaping HQE® study - 9 000 m² - 750 000 euros
- 2008 **Eco-design of an industrial park in Vaux Le Penil - France**
Idea compétition
- 2007 **Eco-transformation of the “Fort of Vaujour” in platform of sorting materials - France - *Study terminated in 2007***
Competition Design concept, landscaping HQE® - Surface 3 000 m² - 1 500 000 euros

infrastructure

- 2012 - 2014 **Eco-design of a landscaping for the sewage treatment plant in Aubevoye - France - *Inaugurated in 2014***
Design concept and follow up mission, landscaping HQE® - Surface 15 000 m²
- 2009 **Eco-design of a landscaping for the sewage treatment plant in Aix en Provence (13) - France**
Competition Design concept, landscaping HQE®
- 2008 - 2009 **Eco-design of wetlands in the sewage treatment plant of Marines - France - *Inaugurated in 2009***
Design concept and follow up mission, landscaping HQE® - 1 600 m² - 130 000 euros



COMMUNICATION AN EDUCATION

EDUCATIONNAL TOURS

- 2013 **Graphic design of an educational tour inside the sewage treatment plant in Beynes - France - *Terminated in 2013***
Project management layout/logo/typography design
- 2013 **Graphic design of an educational tour inside the sewage plant in Asnières sur Oise - France - *Terminated in 2013***
Project management layout/logo/typography design
- 2011 **Graphic design of an educational tour inside the sewage plant in Rugles - France - *Study terminated in 2011***
Project management layout/logo/typography design
- 2011 **Design of a wooden educational booth for the trade show “Pollutec Morocco 2011” - ADEME / ADEREE - Morocco - *Terminated in 2011***
Design concept and follow up mission, architecture HQE®
- 2011 **Graphic design of an educational tour inside a park in Rozay en Brie - France - *Terminated in 2011***
Project management layout/logo/typography design
- 2010 **Graphic design of an educational tour inside the sewage treatment plant in Auneau - France - *Terminated in 2010***
Project management layout/logo/typography design
- 2009 **Graphic design of an educational tour inside the sewage treatment plant in Bois Le Roi - France - *Terminated in 2009***
Project management layout/logo/typography design





research and Development

Idea competitions

- 2013 **BWB Build Without Boundaries - T18 Magazine**
Competition Design concept, architecture HQE® and landscaping
- 2011 **Gardens of future - Park of Futuroscope, France**
Competition Design concept, architecture HQE® and landscaping
- 2009 **Eco-design of a cleaning sea water pollutions building- France**
Competition Design concept, architecture HQE® and landscaping - 700 m² - 2 000 000 euros
- 2009 **Small citizen structure in Villiers Le Bel - France**
Competition Design concept, architecture HQE® - 100 m² - 100 000 euros
- 2009 **International Festival of gardens in Chaumont sur Loire - France**
Competition Design concept, landscaping HQE®
- 2009 **Archipelaego - World festival of the submarine image in Mougins - France**
Competition Design concept, landscaping HQE®





BUILDINGS OPENED TO THE PUBLIC, OFFICE AND HOUSING

Ile-de-France, France and International

- Public buildings
- Renovation buildings
- Accessibility and fire exit studies



eco-Design OF THE FRENCH EMBASSY IN DOHA (QATAR) - a BIOCLIMATICAL ARCHITECTURE INSIDE A RESTAURED GREEN VALLEY

PUBLIC BUILDING : construction, HQE® certified BY CERWAY

Client Ministry of Foreign Affairs of France

Location Doha (Qatar)

Project Design and build of the french diplomatic campus

Mission MATTA CONTRACTING QATAR, SUD ARCHITECTES, AR ARCHITECTES, TEM PARTNERS, RBS, EUROPTIMA

CONSULTANT

area 5 282 m²

cost 10 500 000 Euros

Date Wining competition in January 2016
Project design completed in 2021



Embassy's entrance

SUD architectes ©

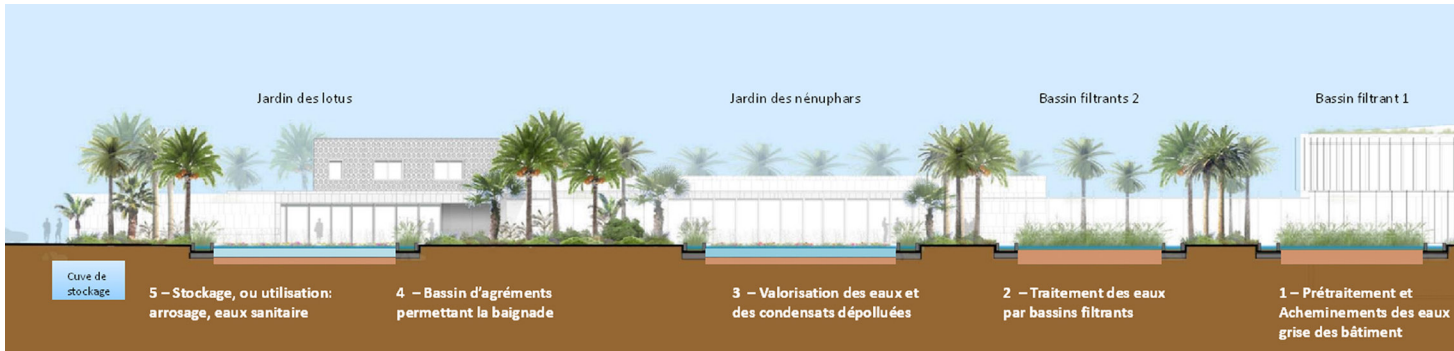


SUD architectes ©

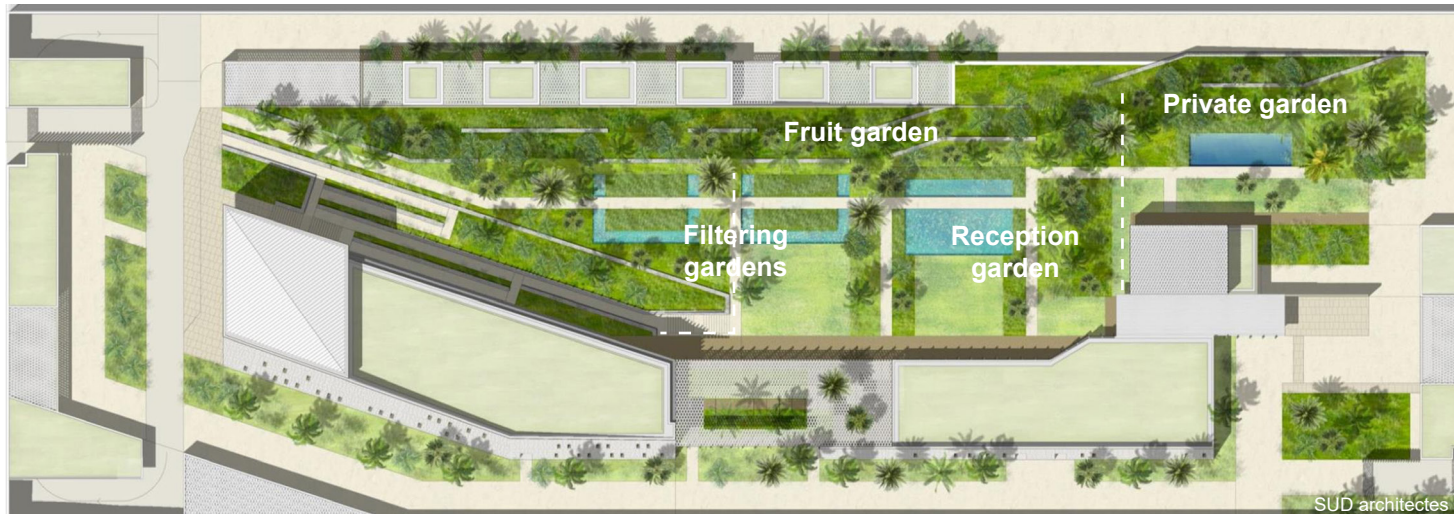
Perspective view of the project

Doha's embassy responds to a strong desire to protect buildings from high temperatures, offering at the same time a pleasant setting, integrated in its environment. The Northern facade is opened on the garden which was designed like a green valley, giving freshness and protection to the buildings. The valley goes from East to West on the plot. It is composed of palm trees and filtering gardens for used water. The landscaping design constantly communicates with the simplicity of the stoned buildings, giving shade, protection and a welcoming atmosphere to the users.





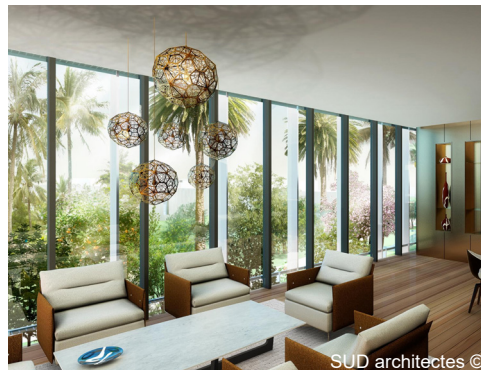
Section showing filtering gardens for grey water



Landscaping mass plan



Entrance of the public residence



Interior of the Ambassador's office



Reception garden

HQE® ACHIEVED TARGETS

TARGET 1: HARMONIOUS RELATIONSHIP BETWEEN THE BUILDING AND ITS ENVIRONMENT

The major idea is to protect buildings from high temperatures, offering at the same time a pleasant design integrated in its environment. Northern Facades are opened on a garden located in the heart of the plot, designed like a green valley bringing freshness and protection.

TARGET 2 : INTEGRATED CHOICES FOR CONSTRUCTION PROCESSES

- **Constructive choices** : sustainability, adaptability and easy maintenance of the materials of construction; design of an earth insulation wall on the South and wooden fiber insulation on the northern facades.

TARGET 4: ENERGY MANAGEMENT

- **Renewable energies** are used for cooling (earth pipeline system).
- Thermodynamic system for hot water.
- Low energy consumption for internal and exterior artificial lighting.

TARGET 5: WATER MANAGEMENT

- Wasted water is treated by **filtering gardens** planted with papyrus, water is then stored into a buried tank, then it is recycled for sanitary use, cleaning and irrigation.
- Exceptional rain water will be collected into **green roofs**; then it will be evaporated and driven into infiltration wells situated close to each building.
- **Porous infrastructure materials** : rain water can easily be infiltrated into the earth.

ENERGY OBJECTIVES

40% less than 50 Kw/m²/year have been achieved regarding 2012 thermal regulation standards.

CERTIFICATIONS

HQE© , Exceptional Level.

ENERGY-EFFICIENT RENOVATION OF THE SAINT-JUST ADMINISTRATIVE CENTER AT IVRY-SUR-SEINE (94) - FRANCE

OFFICE BUILDING : ENERGY-EFFICIENT RENOVATION - BIOSOURCED ISOLATION + DOUBLE-GLAZED WINDOWS + EXTERIOR & INTERIOR HEAT-PROTECTION SYSTEM - GLOBAL ENERGY PERFORMANCE GOAL : 90 kWh/m².YEAR, ANTICIPATING THE 2030 OFFICE BUILDING'S DECREE

CLIENT Ville d'Ivry-sur-Seine
LOCATION Ivry-sur-Seine (94), France
PROJECT MISSION Thermal Rehabilitation of the Saint-Just Administrative Center
CONSULTANT AR ARCHITECTES / VERDI

AREA 7 077m²
COST 2 000 000€ HT

DATE Lauret 2022 - Phase PRO/DCE



Building C of the Saint-Just Administrative Center - The former Lesquendieu perfume factory built in 1930



Main entrance facade of the Saint-Just Administrative Center after the energy-efficient renovation

The energy-efficient renovation of the Saint-Just Administrative Center aims to **improve the global energy performance of the buildings with the goal of 90 kWh/m².year (absolute value by 2030 – 15%) in comparison to the buildings' current energy consumption of : 146 kWh/m².year.** To achieve this goal, our solution is to propose an exterior thermal isolation by biosourced materials for the facades suffering from extreme summer heat, and those suffering from thermal loss in their winter, to replace all the current windows and doors by double-glazed frames equipped with different heat-protection system. Our mission is also to instore an architectural harmony to all of the building's facades in order to create a single architectural unity.





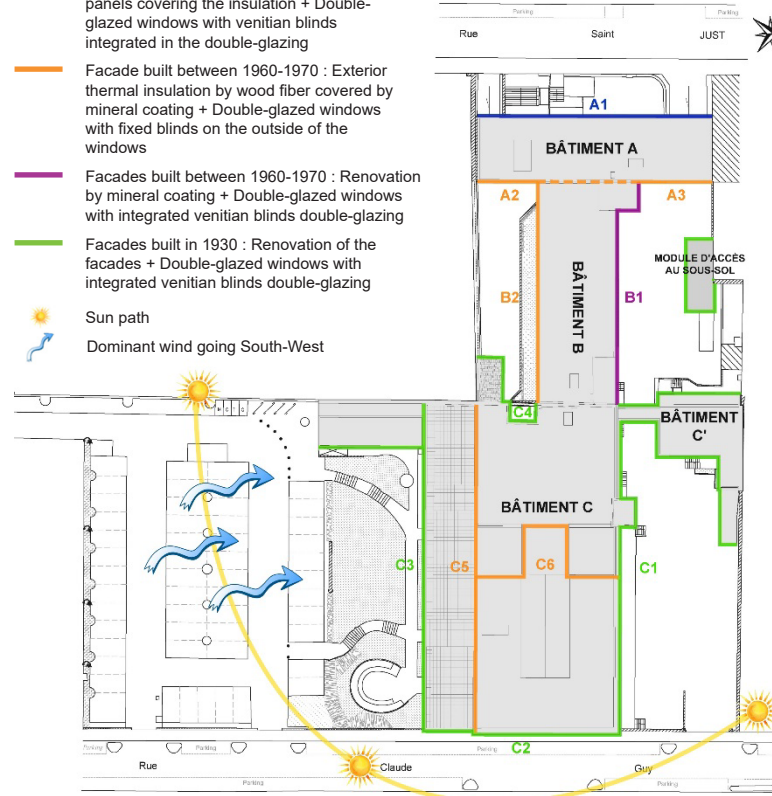
Current facade of Building C



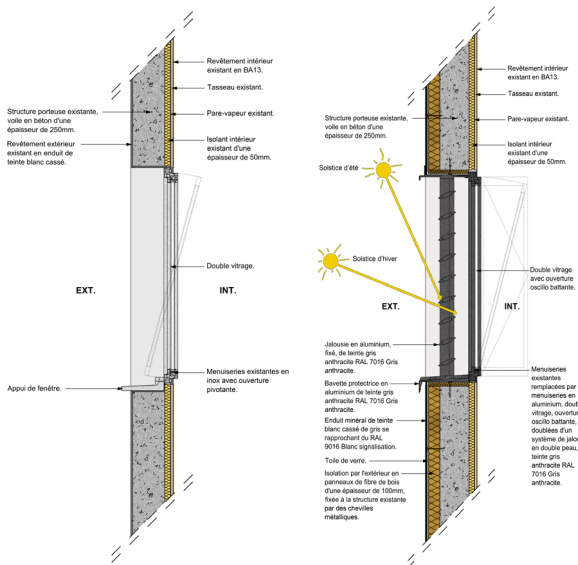
Thermally rehabilitated facade of Building C

Legend :

- Facade built between 1960-1970 : Exterior thermal insulation by wood fiber + metal panels covering the insulation + Double-glazed windows with venetian blinds integrated in the double-glazing
- Facade built between 1960-1970 : Exterior thermal insulation by wood fiber covered by mineral coating + Double-glazed windows with fixed blinds on the outside of the windows
- Facades built between 1960-1970 : Renovation by mineral coating + Double-glazed windows with integrated venetian blinds double-glazing
- Facades built in 1930 : Renovation of the facades + Double-glazed windows with integrated venetian blinds double-glazing
- Sun path
- Dominant wind going South-West



Master plan identifying thermal solution for each facade

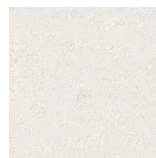


Typology 2 - Concept section Current state

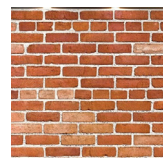
Typology 2 - Concept section Projected state



Metal panel



Mineral coating



Renovation of the brique facade



Color homogenisation for all exterior frames



Wood fiber panels for insulation



Double-glazed windows and doors



Venetian blinds integrated in the glass



Fixed blinds in front of opening frames

THE HQE® PROCESS

HARMONIOUS RELATION BETWEEN THE BUILDING AND ITS ENVIRONMENT :

Unification of all of the facades (by renovation, high-pressure cleaning and replacement of all of the windows and doors) :

- Light-toned mineral coating for all of the facades,
- Light-toned metal panels for the facade of the main entrance of the administrative center,
- Replacement of all of the windows and doors by dark-toned aluminium frames,
- Dark-toned coating for all of the exterior ironwork.

ENERGY MANAGEMENT :

- Exterior thermal insulation for the facades suffering from extreme summer heat and those suffering from heat-loss in the winter,
- Double-glazed windows with venetian blinds integrated and fixed blinds with sidings oriented at a specific degree, letting sunlight in the winter, and blocking all heat in the summer.

INTEGRATED CHOICES FOR MATERIALS AND CONSTRUCTION PROCESS :

Thermal insulation by wood fiber panels, a biosourced material, and double-glazed windows, guaranteeing an excellent insulation and a hygrometric comfort.

MAINTENANCE MANAGEMENT :

Replacement of the entirety of the windows and doors by new-generation and high-performance-quality materials enhance the lifespan of the building and the fixed blinds, as well as the venetian blinds integrated in the double glazing require minimal maintenance.

VISUAL COMFORT :

Visual comfort from the inside : The inclined sidings of the blinds guarantee a maximal visual comfort from the interior to the exterior.

ENERGY-EFFICIENT RENOVATION, INTERIOR DESIGN ET LANDSCAPE DESIGN OF THE FACTORIES OF eau de paris (PUBLIC WATER SUPPLY AND WATER WASTE COLLECTION FOR PARIS)

OFFICE BUILDINGS : ENERGY-EFFICIENT RENOVATION, INTERIOR DESIGN AND LANDSCAPE DESIGN

CLIENT	Eau de Paris
LOCATION	Montigny-sur-Loing (77), France Les Ormes-sur-Voulzie (77), France Longueville (77), France
Project MISSION	Framework Agreement Energy-efficient renovation, Interior Design Landscape Design
CONSULTANT	AR ARCHITECTES EUROELEC SMART ENERGY BOST INGENIERIE
area cost Date	N/A N/A Laureat 2023 - In process



Building C



West Facade



Building A
Sorques Factory - Montigny-sur-Loing (77), France



East Facade
Ormes Factory - Les Ormes-sur-Voulzie (77), France



Localisation of the 3 factories of Eau de Paris

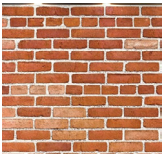
The site of the Sorque Factory, situated in Montigny-sur-Loing (77), France, consists of 2 factory buildings and 3 other buildings dedicated to various activities including working space, with architectural styles between the 1960-1970 and also the brick style. The energy-efficient renovation of the factory aims to improve the comfort for the occupants during both summer and winter, while decreasing the buildings' energy consumption at the same time.

Situated in Ormes-sur-Voulzie (77), France, the Ormes Factory of Eau de Paris est composed of one big building in which mutiple functions are gathered together. For this factory standing in the middle of a naturel habitat, the mission is to build an extension for the building, to improve the building's energy performance and to design the interior space for the personels at the same time.

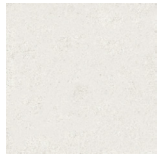




Main building
Longueville Factory - Longueville (77), France



Refurbishment of the brick facades



Mineral coating



Wood fiber panels for insulation



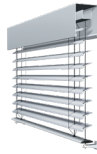
Photovoltaic panels



Double-glazed windows



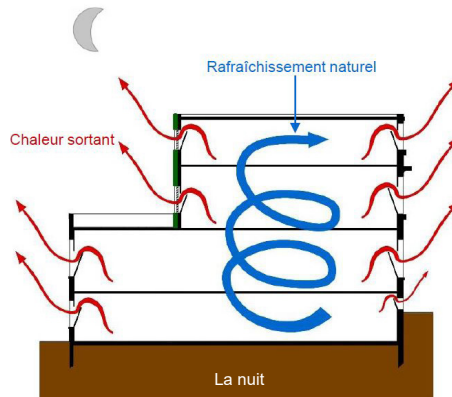
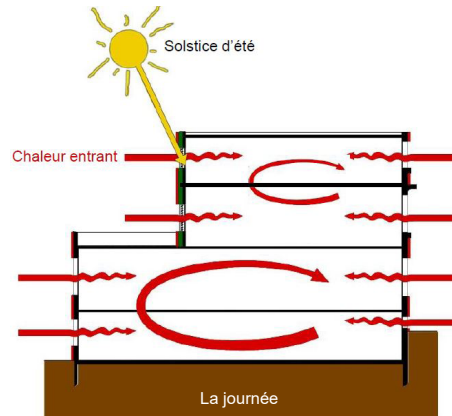
Venetian blinds integrated in the glass



Adjustable exterior sun protection



Fixed blinds in front of openings



Summer heat management concept - Free Cooling - During the day and during the night

THE HQE® PROCESS

HARMONIOUS RELATION BETWEEN THE BUILDING AND ITS ENVIRONMENT :

Unification and homogenization of all of the facades of each building by refurbishment, renovation, relooking, as well as the replacement of all of the windows and doors by energy-efficient windows and doors equipped with heat-protection systems.

ENERGY MANAGEMENT :

Each facade of each building has been studied in order to find energy-efficient solutions for the interior space while preserving and improving the exterior space (the current architectural style of the buildings). The solutions include exterior insulations for the buildings built between 1960-1970, coated with a tone that recalls the original architectural style. The windows and doors are replaced by energy-efficient materials with double glazing, as well as heat-protection systems.

INTEGRATED CHOICES FOR MATERIALS AND CONSTRUCTION PROCESS :

The insulants used in the project are biosourced materials (wood fiber panels), easily reused and recycled. The windows and doors proposed in the project are double glazing, guaranteeing an excellent insulation, and a maximum hygrothermic comfort. The existing frames and glasses will also be recycled.

MAINTENANCE MANAGEMENT :

Replacing the windows and the doors by those of the latest generation guarantee the performance of the buildings when it comes to energy efficiency in the long term, and the blinds (heat-protection systems) proposed also require almost no maintenance at all.

For the Longueville Factory, situated in Longueville (77), France, the goal of the mission is threefolded. First of all, the main building has to be thermally rehabilitated with the preservation and improvement of the brick facade. Then the interior of the building has to be reorganised and redesigned as well to become office space for the occupants of the factory. And finally, a landscape design for the exterior.

The High Environmental Quality® approach will be used not only for the improvement of the energy consumption of the building, but for the design of the interior space and the exterior space as well in order to create an architectural harmony with the nature surrounding the factory.

ENERGY-EFFICIENT RENOVATION OF THE C1C2 BUILDING OF THE VÉSINET SITE OF IRSN (RADIOPROTECTION AND NUCLEAR SAFETY INSTITUTE) (78) FRANCE

OFFICE BUILDING : ENERGY-EFFICIENT RENOVATION – EXTERIOR INSULATION BY BIOSOURCED MATERIALS + TECHNICAL ROOF REFINISHMENT

CLIENT	Institut de Radioprotection et de Sécurité Nucléaire (IRSN)
LOCATION	Le Vésinet (78), France
PROJECT MISSION	Energy-efficient renovation by exterior insulation and roof refurbishment
CONSULTANT	AR ARCHITECTES
AREA	4 000m ²
COST	800 000€ HT
DATE	Laureat 2023 - Study in process



Location of the Vésinet site of the Radioprotection and Nuclear Safety l'Institut Radioprotection et de Sécurité Nucléaire (IRSN)



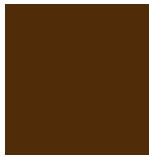
Main facade of the C1C2 building of the Vésinet site of the IRSN

The mission for the energy-efficient renovation of the C1C2 building of the Vésinet site of the Institut de Radioprotection et de Sécurité Nucléaire (IRSN) aims to improve the thermal comfort for its occupants during the summer and winter, as well as to reduce the carbon footprint of the building. Energy-efficient studies have been conducted on each façade in order to propose relevant and cost-effective thermal, architectural and environmental solutions following the High Quality Environmental procedure HQE® : The occupants' comfort, the economic and energy-efficient performance, the respect towards the environment and the responsible management of the building.





Light-toned mineral coating



Brown-toned window and door frames



Wood fiber panels for insulation



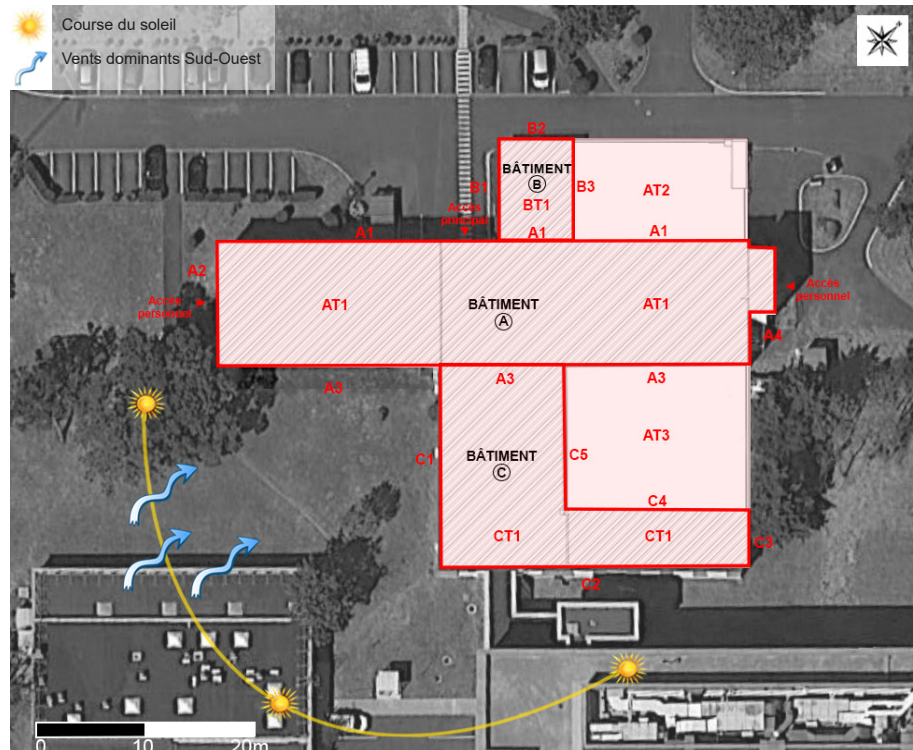
Double-glazed windows



Venetian blinds integrated in the glass



Adjustable sun-protection blinds



Bioclimate master plan of the buildings



Building A



Building B



Building C

THE HQE® PROCESS

ECONOMIC PERFORMANCE :

• This goal concerns the exterior aspect (attractiveness) and the integration of the buildings in their environment. The refurbishment and renovation of the existing facades (in dire condition) allow the building to reinvent itself as a more contemporary entity, blending perfectly with its surroundings.

• The refurbishment and renovation of the exteriors also aim to create a natural and sober color tone of the facades. New coatings for the window and door frames also participate to the overall homogenization of each and every single element of the building's exterior visual.

• The refurbishment of the roof's sealing also means less maintenance for the building's new roof. Furthermore, for this energy-efficient renovation project, the Free-Cooling concept is applied for the heat management of the building, instead of energy-consuming and cost-consuming ventilations.

RESPECT TOWARDS THE ENVIRONMENT - ENERGY MANAGEMENT :

• The proposition for the energy-efficient renovation by exterior insulation using wood fiber panels for the facades suffering from overheating in summer time and heat loss in winter time offers an excellent summer and winter comfort to the occupants while being environmentally friendly at the same time.

• The exterior thermal insulation also reduces considerably thermal heat loss during the winter and the extra layer added to the facades reduces direct heat coming into the interior of the building as well during summer.

• The exterior thermal insulation by wood fiber panels is extremely environmentally friendly due to the sources of the wood fiber panels being 80% biosourced with materials made from natural vegetal elements. This also means that the wood fiber panels not only stock the carbon emissions and reduce them as well.

PROGRAMS DESIGN FOR THE eco-CONSTRUCTION OF THE EUROPEAN EMBASSY AND THE AMBASSADOR'S RESIDENCE IN RIYADH, SAUDI ARABIA

PUBLIC BUILDING : ASSISTANCE TO THE CLIENT, ENVIRONMENTAL PRESCRIPTIONS, HQE @ PROCESS

CLIENT	European Union - European Delegation
LOCATION	Riyadh - Saudi Arabia
MISSION	Assistance to the client HQE@
CONSULTANT	AR ARCHITECTES, SUD ARCHITECTES, VOXOA
Area	6 352 m ² (plot) 1 700 m ² (building)
DATE	In process 2023



Location of the city of Riyadh in Saudi Arabia



Examples of the Salmani architectural style in Riyadh

The European Delegation of the Saudi Arabia was opened in Riyadh in 2004, representing the Golfe Cooperation Council for the European Union. The entity is comprised of six Arabic and Muslim monarchs in the Golfe : Saudi Arabia, Oman, Kuwait, Bahrain, The United Arab Emirates and Qatar.

The mission of assistance to the client consists of the elaboration of the programs for the construction of the future European Embassy and the ambassador's residence in the heart of the diplomatic district of the city of Riyadh in Saudi Arabia.

The mission aims to achieve very ambitious environmental certificates and labels as well, all while trying to integrate the specific climate conditions of the construction site and the European Union's construction and environmental requirements. In order to guarantee the fruition and construction of this exemplary and high-environmental-quality embassy, the local environmental constrains have to be taken into account in a serious manner.





REFURBISHMENT AND HANDICAP ACCESSIBILITY OF THE JUDICIAL COURT IN VERSAILLES (78) - FRANCE

PUBLIC BUILDING : REFURBISHMENT AND HANDICAP ACCESSIBILITY

Client Ministry of justice
Location Versailles (78)
Project Refurbishment and handicap accessibility of the judicial court in Versailles
Consultants AR ARCHITECTES, SEREB, PHOENIX DESIGN & BUILD
Area 5 320 m²
Cost 274 000€ HT
Date Design concept 2022



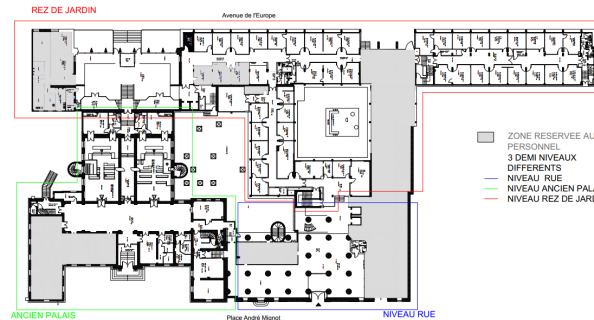
View from Place André Mignot



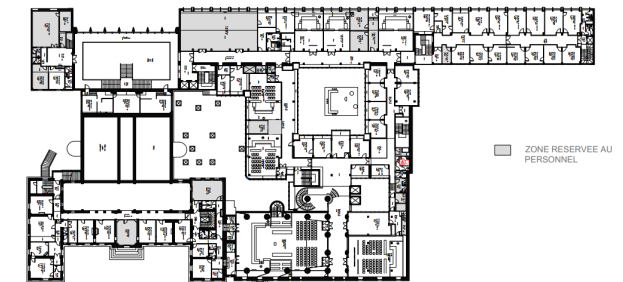
View from Avenue de l'Europe



Localization of the the Judicial Tribunal



Ground floor plan



First floor plan

The judicial court in Versailles is a public building of around 5,300 m². Welcoming public and many defendants, lawyers, judges, magistrates, clerks and police officers every day, this establishment must meet new regulations in terms of accessibility for people with all disabilities. So that each pathway is simple and without constrains for everyone. In this context, it was necessary to bring the sanitary facilities, stairs, access ramps, elevators and appropriate signs up to standard, as well as the creation of secure fire-resistant waiting areas, in order to protect users in wheelchairs in case of fire.



DEVELOPMENT OF A GUIDE OF ENVIRONMENTAL PRESCRIPTIONS FOR THE CONSTRUCTION OF ECO-FRIENDLY HOTELS FOR THE ACCOR GROUP

PUBLIC BUILDING : environmental requirements

Client
mission
ACCOR
Brand study and environmental prescriptions

CONSULTANT
Date
AR ARCHITECTES
Study completed in 2020



Facade of the Saint-Charles hotel, Marseille



The natural marking



The bar



The big table



The relaxation area



The shop furniture



The greet wall of memories

The ACCOR group is strengthening its position on sustainable developments by the creation of a new brand of eco-friendly hotels. The purpose of the environmental prescriptions guide is to deepen the proposed hotel program: the notion of positive hospitality combined with exemplary character for the protection and respect of the environment. Thus, the guide describes the brand's sustainable conceptual principles before comparing them to the expectations of the HQE® requirements and then proposing architectural, landscape and environmental solutions to be implemented in practice in order to make effectively hotels eco-friendly.



REFURBISHMENT AND DISABLED ACCESSIBILITY OF 10 HIGH SCHOOLS IN THE GRAND EST REGION, TROYES (10), FRANCE

PUBLIC BUILDING: REFURBISHMENT, ACCESSIBILITY AND FIRE SAFETY COMPLIANCE (ISS)

Client Region GRAND EST
SEBL GRAND EST Client Mandatary

Location Aube (10), France

Project mission Refurbishment and disabled accessibility of 10 high schools in the Grand Est region, Troyes (10)

consultants AR ARCHITECTES, ODEA, ACCESMETRIE, VARLET INGENIERIE

area 15 000 m² per high school

cost 2 700 000 €

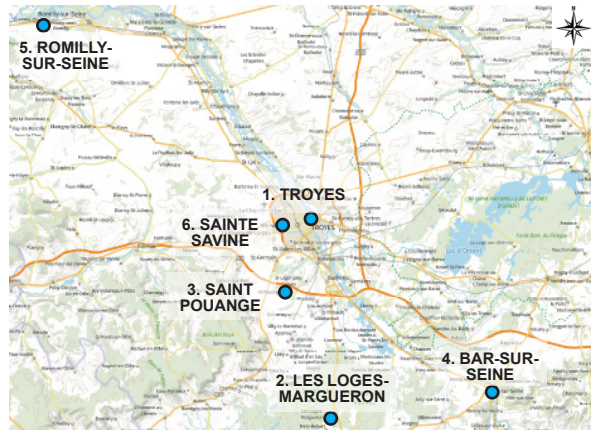
date 2022 - 2024



View of Marie de Champagne High School in TROYES (10), FRANCE



View of Edouard Herriot High School in SAINTE-SAVINE (10), FRANCE



- | | |
|---|--|
| 1. TROYES (10) :
CAMILLE CLAUDEL, LES LOMBARDS, CHRISTIEN DE TROYES, MARIE DE CHAMPAGNE and GABRIEL VOISIN | 4. BAR-SUR-SEINE (10) :
EPLLEPPA SITE DE BAR-SUR-SEINE and VAL MORE |
| 2. LES LOGES-MARGUERON (10) :
EPLLEPPA SITE DE CROGNY | 5. ROMILLY-SUR-SEINE (10) :
JOLIOT CURIE and DENIS DIDEROT |
| 3. SAINT POUANGE (10) :
EPLLEPPA SITE DE SAINT POUANGE | 6. SAINTE-SAVINE (10) :
EDOUARD HERRIOT |



View of EPLEPPA SAINT-POUANGE SITE (10), FRANCE



View of Joliot Curie High School in ROMILLY-SUR-SEINE (10), FRANCE

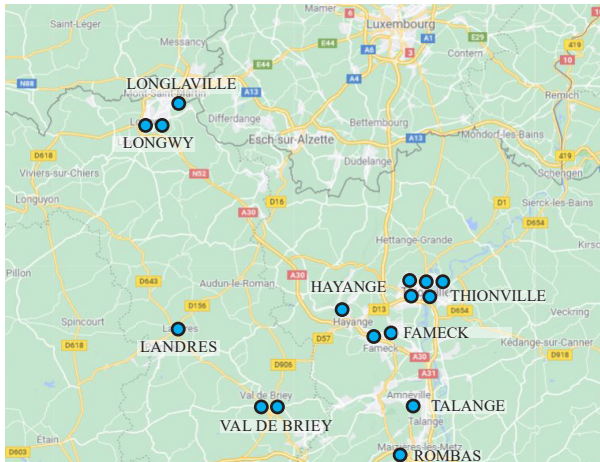
The 10 high schools in the GRAND EST Region are public buildings of around 15,000 m² each, spread over different levels varying from one establishment to another. Welcoming many high school and / or college students every day, these establishments must meet new regulatory requirements in terms of accessibility for people with all disabilities. So that each trip is simple and without constraints for everyone. In this context, it was necessary to bring the sanitary facilities, stairs, access ramps, elevators and appropriate signage up to standard, as well as the creation of secure fire-resistant waiting areas, in order to protect users in wheelchairs in case of fire.



TECHNICAL REFURBISHMENT OF 14 HIGH SCHOOL OF THIONVILLE AND LONGWY - France

PUBLIC BUILDING : REFURBISHMENT - ACCESSIBILITY - FIRE SAFETY SYSTEM

Client SEBL GRAND EST
Location Thionville (57) & Longwy (54)
Project Accessibility and fire of 14 high schools in Thionville and Longwy
missions AR ARCHITECTES, CETEC,
consultant ECO3E
area 20 000m² per school
cost 7 000 000 € HT
Date Lauréat 2021



Localization of 14 high schools in the GRAND EST sector



View of the Saint-Exupery's high school in FAMECK



View of the Julie Daubie's high school in ROMBAS



View of the Jean-Baptiste Colbert's high school in THIONVILLE



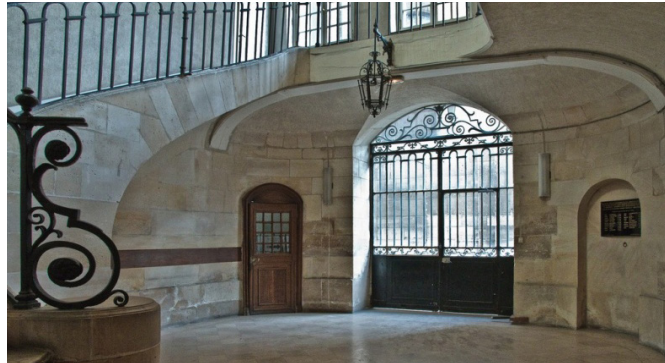
View of the Alfred Mezieres' à LONGWY

The 14 high schools in the GRAND EST Region are public buildings of around 20,000 m² each, spread over different levels varying from one establishment to another. Welcoming many high school and / or college students every day, these establishments must meet new regulatory requirements in terms of accessibility for people with disabilities. So that each trip is simple and unconstrained for everyone : upgrading of sanitary facilities, stairs, elevators, fire safety, ISS (fire safety system) and creation of secure waiting areas.

REFURBISHMENT OF 36 HIGH SCHOOLS IN ÎLE-DE-FRANCE - FRANCE

PUBLIC BUILDING : REFURBISHMENT - ACCESSIBILITY

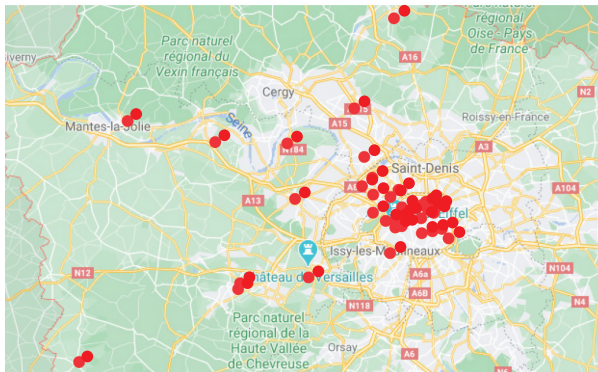
Client	Île-de-France Construction Durable
Location	Région Île-de-France
Project Mission	Refurbishment of 36 high schools in Ile-de-France
Consultant	AR ARCHITECTES, VERDI, CITYACCESS, SI PREV
Area	10 000 m ² per school
Cost	Between 90 000 € and > 2 000 000 €
Date	Concept design in progress



Main staircase of the Charlemagne's high school in PARIS



A view of the René Auffray's high school in CLICHY



Localization of the 36 high schools



A view of the Jean Jaurès' high school in ARGENTEUIL



Frontage of the Kleber building

The 36 schools are about 10 000m² each, spread over in different levels. Welcoming each day many students, these institutions must meet the new rules and regulations in matter of accessibility, sanitary facilities, stairs, elevators and exterior joinery.



TECHNICAL REFURBISHMENT OF ISAAC NEWTON'S HIGH SCHOOL IN CLICHY - FRANCE

PUBLIC BUILDING : REFURBISHMENT - ACCESSIBILITY - FIRE SAFETY SYSTEM

Client Île-de-France Construction
Location Durable
Project Région Île-de-France
Missions Project management
Sanitary plan and director diagram
Consultant AR ARCHITECTES, VERDI,
CITYACCESS, SI PREV
Area 10 000m²
Cost Sanitary plan : 400 000€
Director diagram : 1 500 000€
Date Sanitary plan : end of work 2021
Director diagram : detailed design
in progress



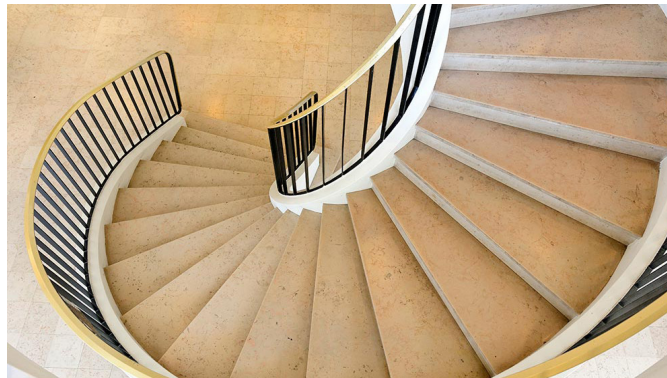
Yard of the high school



Cafeteria of the high school



Localization of the Isaac Newton's high school



Inside stairs of the high school



Facade of the Kleber's building

The Isaac Newton high school must meet the new rules and regulations in matter of refurbishment, security and accessibility. Thus, three missions are necessary. The director diagram consists of bringing the high school's fire safety system back to conformity. The sanitary plan aim to bring all of the school's sanitary facilities up to actual standards. Finally, another mission of accessibility for disabled people and fire exit security are as well brought up to actual regulations.



accessibility and fire exit study fourteen schools in Île-de-France France

PUBLIC BUILDING : REFURBISHMENT - ACCESSIBILITY - FIRE SAFETY SYSTEM

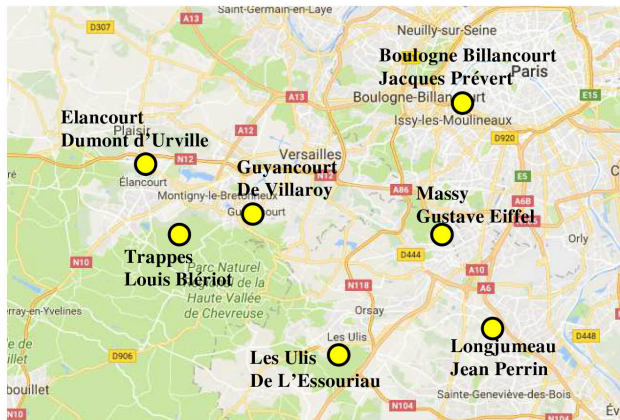
Client Île-de-France Construction Durable
Location Région Île-de-France
Project Accessibility and fire exit study
mission Design concept and follow up mission
consultant AR ARCHITECTES, VERDI BATIMENT COEUR DE FRANCE BEFSIA SSI and CITYACCESS
area 10 000m²
cost 4 777 054,59€
Date Work in progress



View of Jacques Prévert's high school in BOULOGNE BILLANCOURT



View of Claude Monet's high school, PARIS



Map of the location of 7 secondary schools in South West of Paris



View of Villaroy's high school in GUYANCOURT



View of Louis Blériot's high school in TRAPPES

These 14 schools are about 10 000m² each, spread over in different levels. Welcoming each day many students, these institutions must meet the new rules and regulations in matter of accessibility for disabled people and fire exit security.

STUDIES OF ACCESSIBILITY AND FIRE EXIT STUDY FOR SEVEN HIGH SCHOOLS IN ÎLE-DE-FRANCE - FRANCE

Bâtiment ERP : REFURBISHMENT - ACCESSIBILITY - FIRE SAFETY SYSTEM

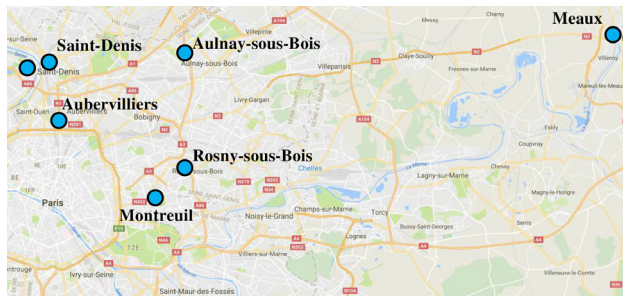
Client Île-de-France Construction Durable
Location Région Île-de-France
Project Accessibility and fire exit study
missions Design concept and follow up
consultant AR ARCHITECTES, VERDI BÂTIMENT CŒUR DE FRANCE, GAYET SSI, Phœnix DB, ACAUDIT
area 20 000m² env/établissement
cost 6 238 528 € HT
Date studies finished in 2018



View of Frédéric Bartholdi's high school in SAINT-DENIS



View of Henri Moissan's high school in MEAUX



Localization of 7 high schools in East of Paris



View of Jean Zay's high school in AULNAY-SOUS-BOIS



View of Paul Eluard's high school in SAINT-DENIS

These 7 Île-de-France high schools in the North-East sector are public buildings of around 20,000 m² each, spread over different levels varying according to the establishments. Welcoming many high school and / or college students every day, these establishments must meet new regulatory requirements in terms of accessibility for people with disabilities. So that each trip is simple and unconstrained for everyone: upgrading sanitary facilities, stairs, elevators, creation of secure waiting areas ...



accessibility and fire exit study for twelve secondary schools Île-De-France - France

PUBLIC BUILDING: accessibility

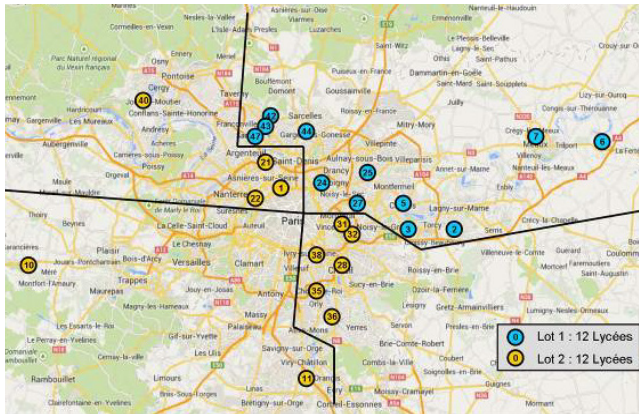
client	Île-de-France Construction Durable
Location	Ile de France
Project mission	Project management Design concept and follow up mission
consultant	AR ARCHITECTES, SDI, PAZIAUD, CITAE and GAYET SSI
area	10 000 m ² per school
cost	3 500 000 €
date	Receipt of the Works in 2019



Hall of the Paul Robert school in LES LILAS



A view of the Louis Armand school in EAUBONNE



Localization of the schools



Hall of the Charles de Gaulle school in ROSNY SOUS BOIS



Samuel Beckett school in LA FERTE-SOUS-JOUARRE

These 12 schools are about 10 000m² each, spread over in different levels. Welcoming each day many students , these institutions must meet the new rules and regulations in matter of accessibility for disabled people and fire exit security.



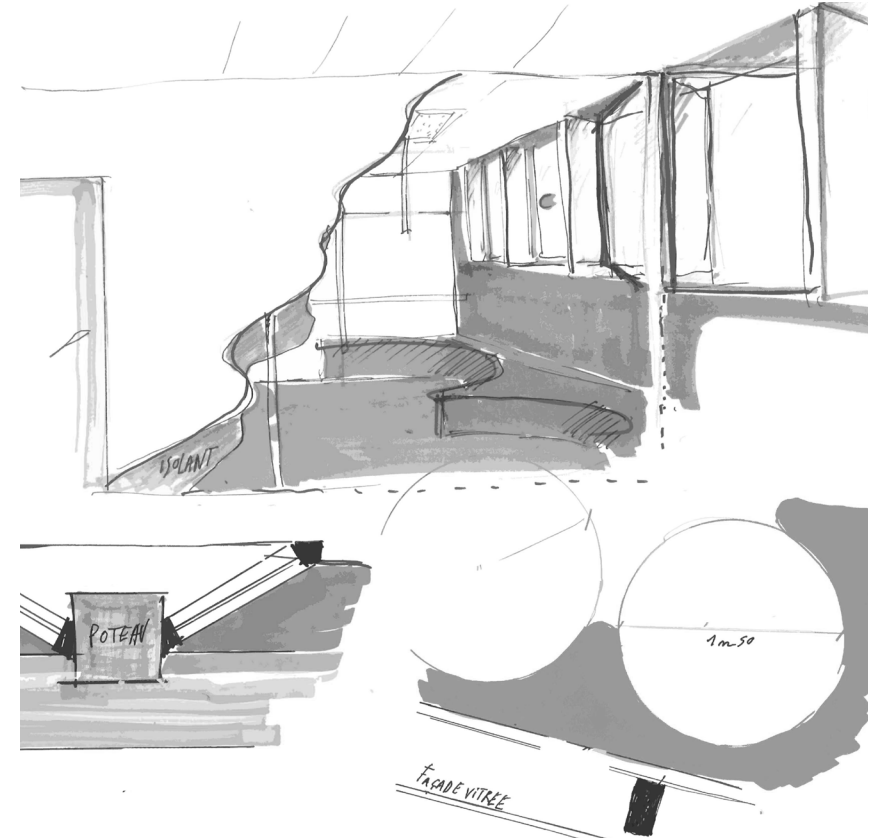
accessibility and fire exit study of the professor restaurant of the Crous Mabilion in Paris - France

PUBLIC BUILDING : accessibility

Client	CROUS of Paris
Location	France
Project	Accessibility and fire exit study of the professor restaurant
Mission	Design concept and follow up mission
Consultant	AR ARCHITECTES, NOX and LMPR
Area	200 m ²
Cost	600 000 €
Date	2016



4th floor of the Crous Mabilion



Sketches fire exit solutions



View on Crous Mabilion's building



Crous Mabilion restaurant

- The objective is to create a new space accessible in the restaurant of the CROUS Mabilion includes several sectors:
- creation of a secure waiting room.
 - removal of asbestos of the false ceilings of the restaurant space.
 - modification of the air extractors of the kitchen.
 - creating a clean pathway in the kitchen.



BIO-CLIMATICAL eco-CONSTRUCTION OF THE MUNICIPAL TECHNICAL CENTRE OF VALENTON CITY (94) - LOW CARBON / POSITIVE ENERGY LABEL e+c-



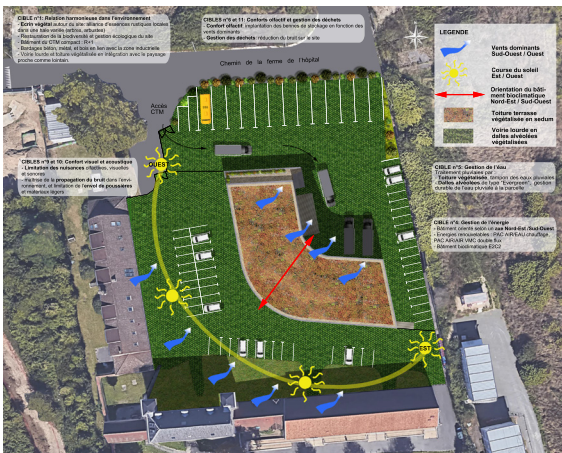
INDUSTRIAL SITE, HQE® APPROACH: TECHNICAL CENTER

Client Valenton city
Location Valenton (94)
Project Architectural, environmental and landscaping design of the municipal technical center
CONCEPTION PRODUCTION MAITRE CUBE, AR ARCHITECTES, ARCHIMEN, GAMBA ACOUSTIQUE
MISSION Architectural, environmental and landscaping design
area site 1: 1 778 m²
 site 2: 516m²
Date Competition 2018



View of the entrance on the south side, bioclimatic technical building in pre-grayed larch wood cladding, textured concrete and metal cladding

The new technical centre is located on site 1 near the hospital's farm road in Valenton. The center is located on a plot that already has municipality buildings. The objective of this design is to establish a dialogue with the center surroundings: volumes, heights and coatings allow the technical centre to be harmonized with its immediate environment, and ensure its integration. The primary objective is to reduce the environmental impact by implementing construction processes and techniques to achieve environmental performance through the implementation of an experimental low-carbon positive energy label (E+C-). The Center is designed bioclimatic and will be claded with wood and metal cladding, textured concrete and green vegetalized roofs.

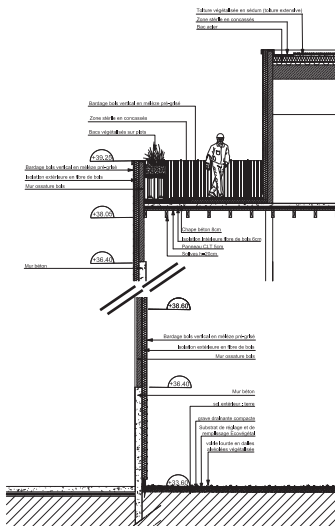


bioclimatical mass plan and project location

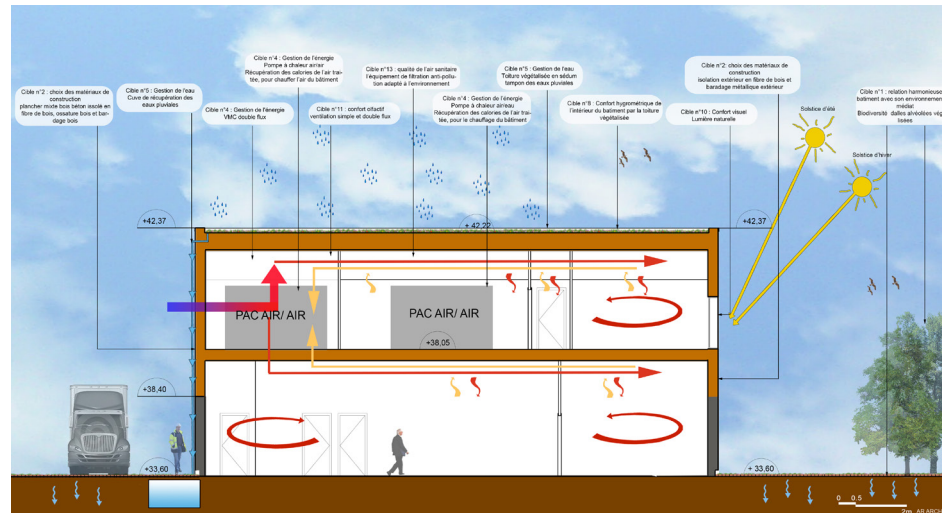




View from the hospital farm road: technical back stage design of the building



Detail sections



HQE® principles section

HQE® targets

Target 1 : Harmonious relation between building and its environment

- Vegetable crown around the site: combination of local rustic species in a varied hedge (trees, shrubs)
- Biodiversity restoration and ecological site management
- compact CTM building: r+1
- Concrete, metal and wood cladding in connection with the industrial zone
- Heavy roads and green roof in integration with the surrounding and distant landscape.

Target 4: energy management

- Building oriented along a northeast/southwest axis
- Renewable energies: air-to-water heat pump for heating, air-to-air heat pump controlled mechanical ventilation double flow
- Bioclimatic building e2c2

Target 5: water management

- rainwater treatment by:
- Green roof, rainwater buffer
 - Evergreen" honeycomb slabs, sustainable rainwater management on the plot

targets 6 and 11: olfactory comfort and waste management

- Olfactory comfort: location of storage bins according to prevailing winds
- Waste management: noise reduction on site

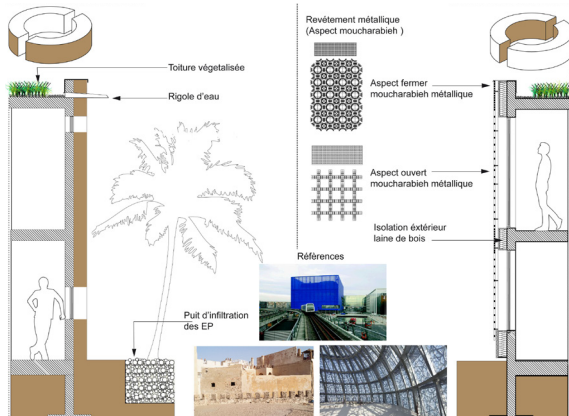
Targets 9 and 10: visual and acoustic comfort

- Limitation of olfactory, visual and noise pollution
- Control of noise propagation in the environment, and limitation of dust and light materials flight

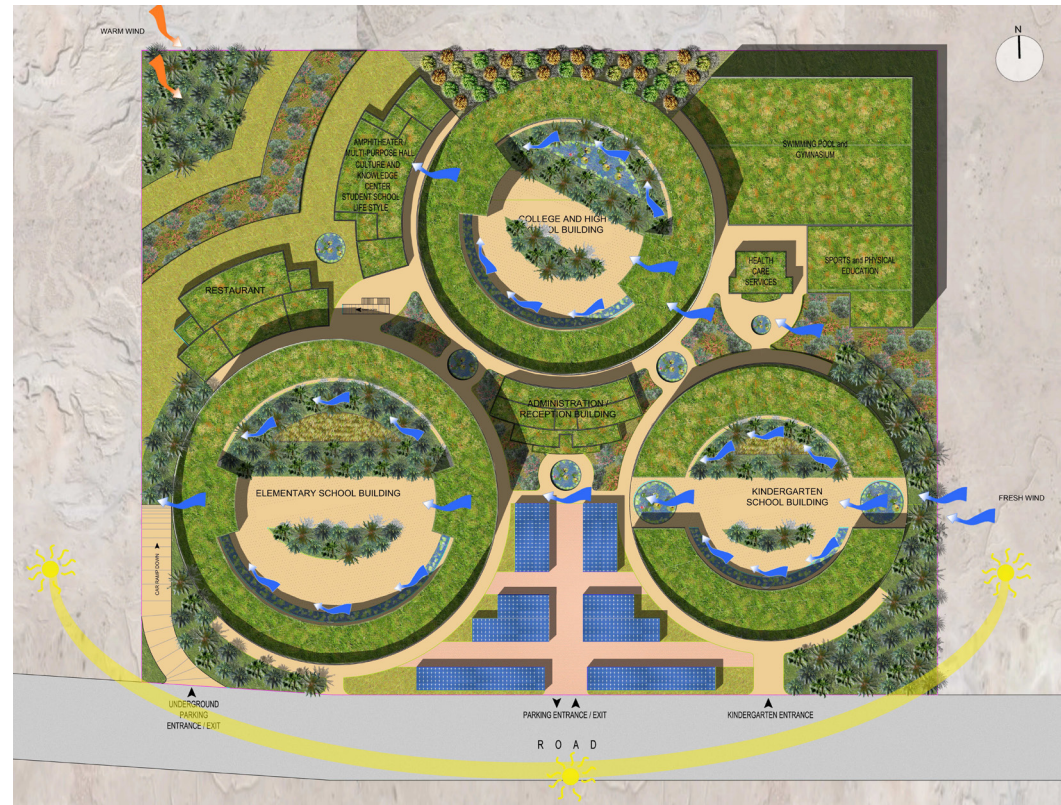
eco-Design OF THE FRENCH SECONDARY SCHOOL LYCÉE BONAPARTE IN DOHA (QATAR)

PUBLIC BUILDING : construction, HQE® certification

Client French secondary school, Lycée Bonaparte
Location Doha (Qatar)
Project Construction of the french secondary school
Mission Environmental landscaping design
Consultant AGM ARCHITECTS and AR ARCHITECTES
Area 9 580m² - area 28 000m²
Cost 25 Million US Dollars
Date Competition 2016



Wall sections

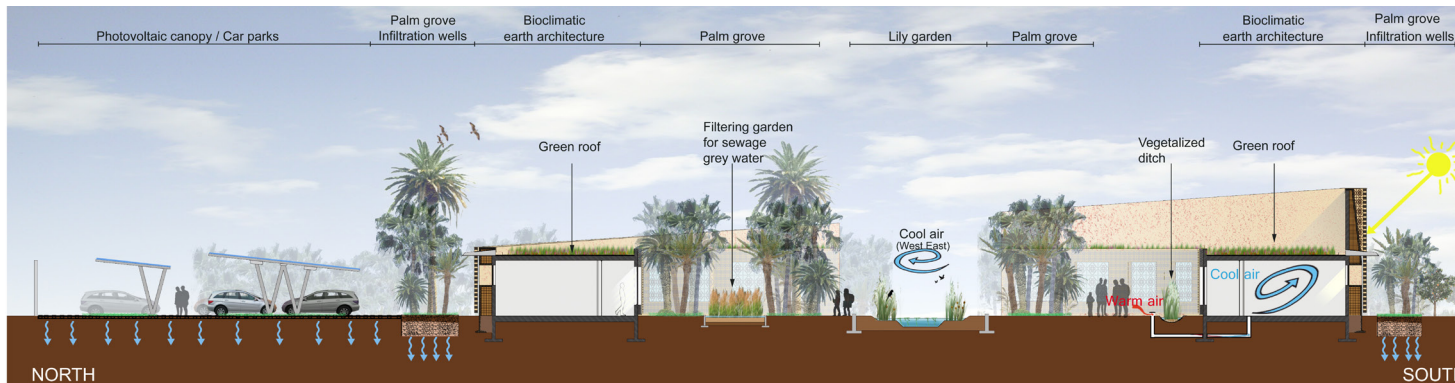


Mass plan

The design concept is to propose circular shaped buildings as “sundials” in the desert. These 3 buildings are constructed with sustainable materials (steel structure insulated with earth insulation). Planted Court wards with local endemic plants cools architecture and outside shaded spaces. Green roof tops refresh the building during hot weather. Sewage water coming out of the buildings is treated by an innovative way through filtering ponds located outside of the buildings. Papyrus plants are used to purify water. Clean water is then recycled inside of the buildings for sanitary use. «Green dials” a sustainable project of Lycée Bonaparte designed with low impact on the environment.



Perspective view of the project



HQE® section

HQE® targets

Target 1: Harmonious relationship between the building with its surroundings

- Mass plan: 3 buildings "sundials" with courtyards, parking protected by photovoltaic cells in the entrance of the site
- Recyclable materials : steel and earth wall
- Outdoors area's quality for users : best views on natural areas : planted roofs and thematic gardens, palm groves and citrus trees are planted between the buildings

Target 2 : Integrated choices for construction procedures

- Earth wall : sustainable material, local and easy to build
- Metallic Moucharabieh: mineral and sustainable materials; long-lasting and with low maintenance.

Target 4: energy management

- Building orientation, to optimize air circulation and windows with moucharabieh to keep out from the heat when the temperatures are very high.
- Successful woodwork with break of thermal bridges
- Refreshment by a Canadian well, geothermal ventilation trough piping.
- Photovoltaic cells are designed as a canopy for parking . It products of electricity used for the outside lighting.

Target 5: water management

- Storm water is stored on green roofs
- Hollow-core slabs are designed above the roads letting rain water to be infiltrated into the soil
- green planted ditches are designed to collect exceptional storm water
- Sewage water coming out of the buildings is treated by an innovative way through filtering ponds located outside of the buildings. Papyrus plants are used to purify water. Clean water is then recycled inside of the buildings for sanitary use.

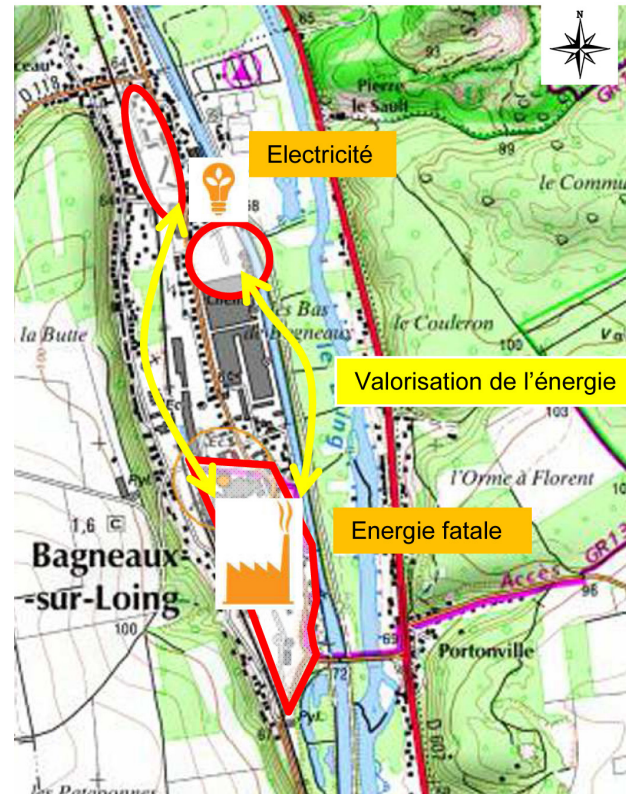
ENVIRONMENTAL FEASIBILITY STUDY FOR THE MUNICIPALITY OF BAGNEAUX-SUR-LOING - FRANCE

PUBLIC BUILDING : ENVIRONMENTAL STUDY

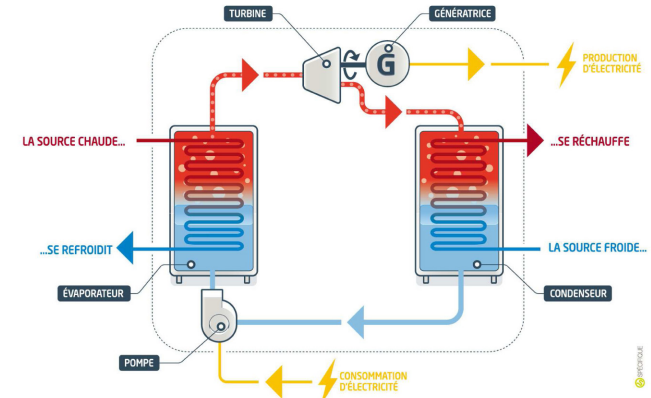
Client	VAL DU LOING HABITAT Municipality of Bagnaux-sur-Loing
Location	Bagnaux-sur-Loing
Project Mission	Environmental feasibility study
consultant	AR ARCHITECTES
cost	-
Date	2016



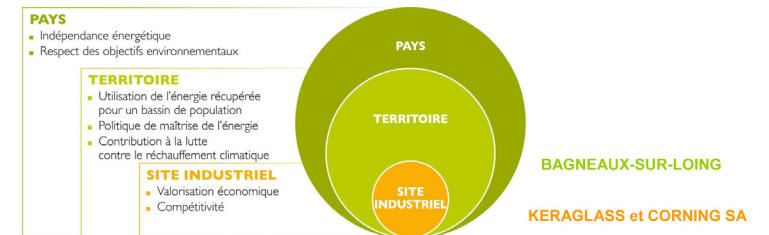
View of the industrial site



Principal plan showing the circular energy economical



Schema showing heat transformed into electricity



Recycling energy in Bagnaux-sur-Loing

Bagnaux-sur-Loing, long and narrow city, situated in Seine et Marne built itself around the history window: the quality of the sand and the abundance of forests attracted, from the XVIIth century, glassworkers to the municipality. Two industries, have an activity of industrial glass production (vitreous ceramic, insert of fireplace, ophthalmic glass); producing several thousand tons of glasses a year, through several working glass-making ovens 24 hours a day and 7d./7, and producing fatal energy that could be recycled/reused for the urban projects to come in the city.

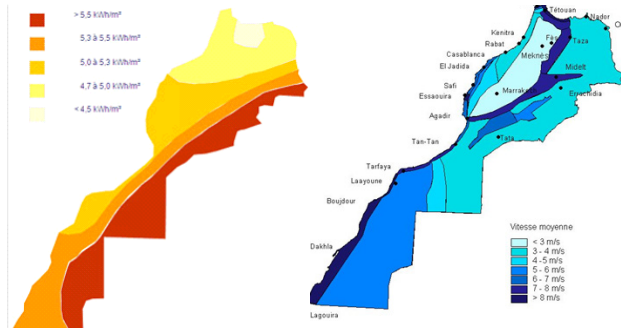


environmental study for public buildings in Morocco

PUBLIC BUILDING : environmental study

Client
Location
Project
Mission
Consultant
Date

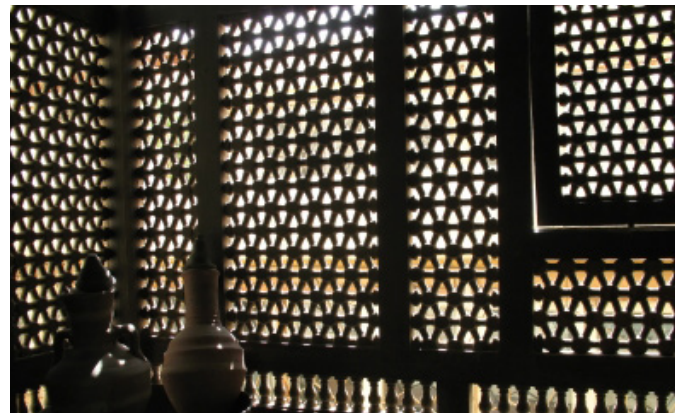
Ministry of Equipments, in Morocco
Morocco
Environmental study
Project management
AR ARCHITECTES, CLEAN TECH
Study in progress



Internal patio that participated in inside freshness

The environmental study will give birth to a tutorial for local :

- Designers;
- Urban planners;
- Consultants ;
- Providers ;
- Public insitutions ;



Moucharaby, wooden lattice : local solar protection



Earth and "Bejmat" construction materials

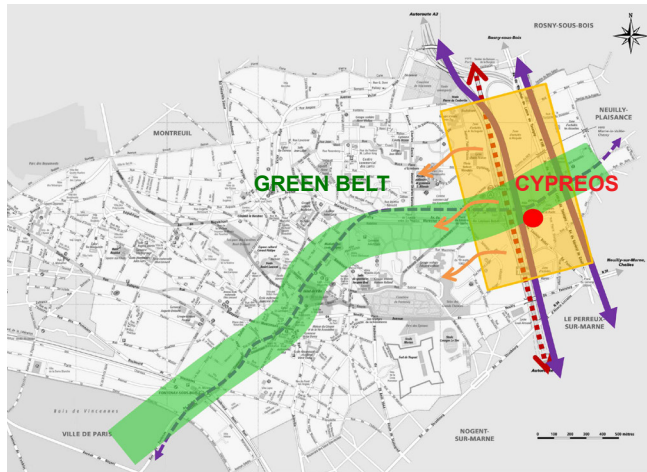
The objectif is to study the local moroccan environment and to propose solutions for sustainable design for public buildings in Morocco. The study will lead to a tutorial that will help local institutions making environnemental oreinted decisions.



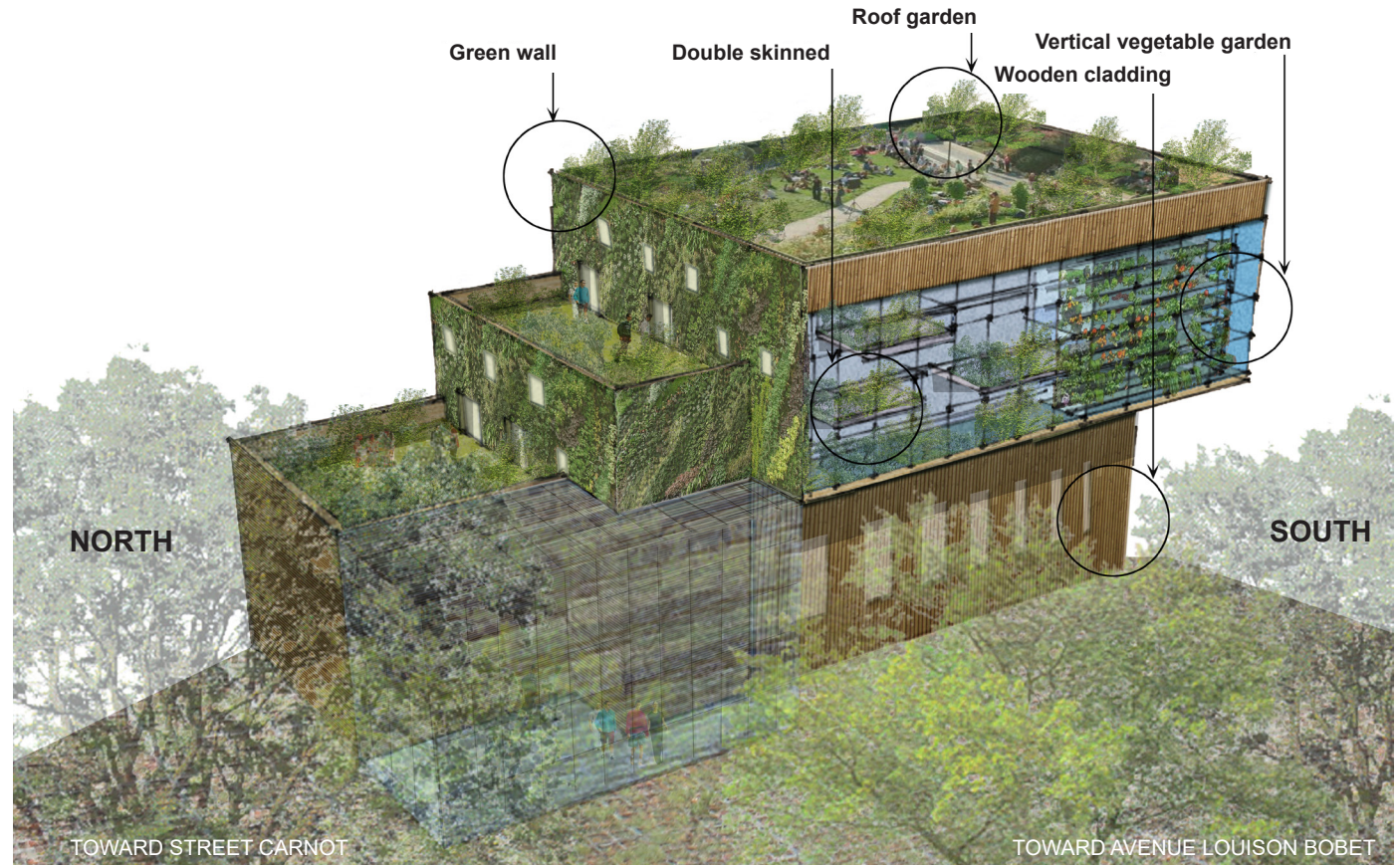
eco-renovation of "CYPREOS" INDUSTRIAL BUILDING AND OFFICES a Green architectural concept design in Fontenay-sous-Bois - France

PUBLIC BUILDING : renovation and transformation

Client	Private "CYPREOS"
LOCATION	Fontenay-sous-Bois - Ile De France
MISSION	Design concept and faisability study
CONSULTANT	AR ARCHITECTES
area	5 000 m ²
Date	2016



Concept plan - Urban landscaping



View on the building

The client's objective was to create an eco structure for an existing industrial building "CYPREOS" in order to integrate sustainable development in the town and to improve the current industrial infrastructure surroundings. Our proposal was to complete the architectural environmental and landscaping faisability study of the building located at the entrance of the industrial zone "De La Pointe" which is in the east of Fontenay-sous-Bois. We designed a bioclimatic building wich is part of a green belt, and a low energy consumption building.

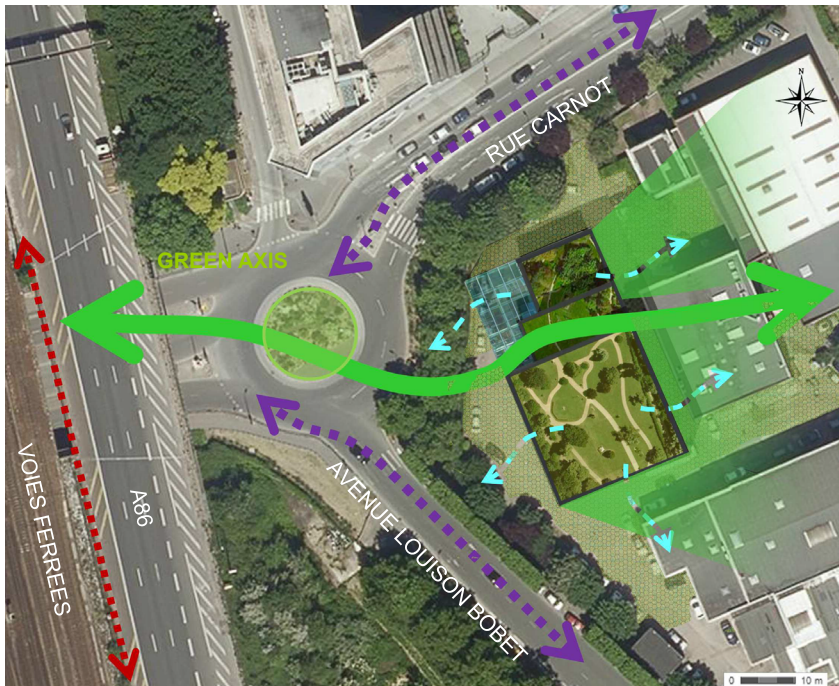




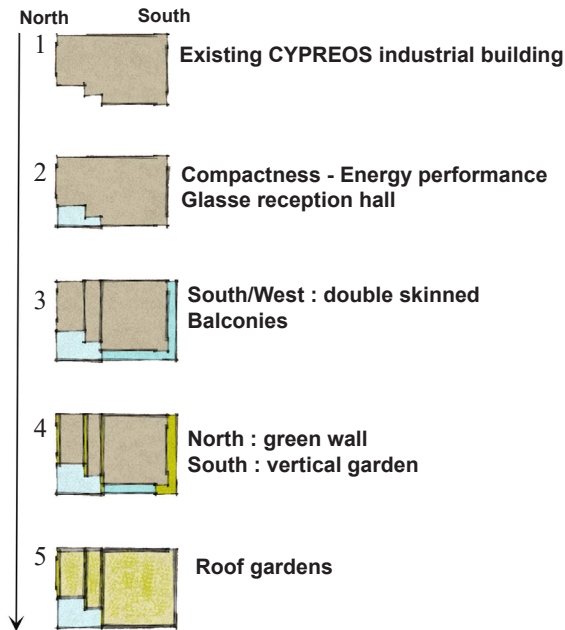
View on the existing building "CYPREOS"



Vegetalized balconie reference



Mass plan : architectural, environnemental and landscaping objectives



Concept design steps

architectural, environmental and LANDSCAPING OBJECTIVES:

The existing CYPREOS building will be a base to the new construction which will be above it such as companies, offices, private dwellings and company restaurants, that include the following:

- A reception hall with glass on the three sides facade.
- Green roof terraces constructed on the top of the new building.
- All along the south/west facade is designed a greenhouse including plantations. A double glass structure offers humidity and temperature regulation inside of the building.
- The south facade is covered by photovoltaic panels. Electricity generated by the panels will be used for interior lighting of the building.
- On the north, a green wall is designed to treat the depoluted air coming out of the building.
- This new sustainable development will act as a continuity of the green axis crossing the city from east to west. At a mid term this eco-friendly development design will give an example to the existing industrial surroundings such as how to eco-renovate their buildings taking into consideration sustainable issues.
- The existing building will be covered with wood cladding used as sustainable and recyclable material.

The new sustainable building will be an extension of the green axis which will continue to the East of the city. This will improve the current surrounding of the industrial infrastructure.



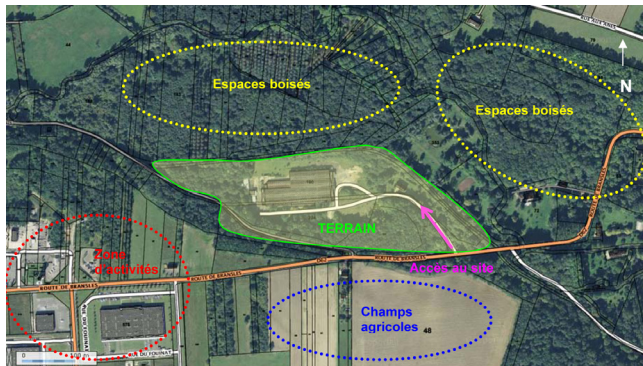
eco-transformation of a factory into a conference trade center in Dordives - France

PUBLIC BUILDING : renovation and transformation

Client	Private
Location	Dordives
Project	Architectural, landscaping and environmental study for the transformation of a factory into a conference center
Mission	MOE Architecture HEQ®
Design Built area	AR ARCHITECTES
Cost	7 000 m ²
Date	10 000 000
	Februar 2012

This project concerns a study for the eco-transformation of a factory of 7 000 m² in Dordives, in conference trade center and a center for seminars, including youth hostel intended to welcome national and international groups, on a plot of land of 78 055 m², in the Northeast of the department of Loiret, 90km from Paris - France.

AR ARCHITECTES studied the architectural, technical, environmental, to define the technical feasibility of the project.



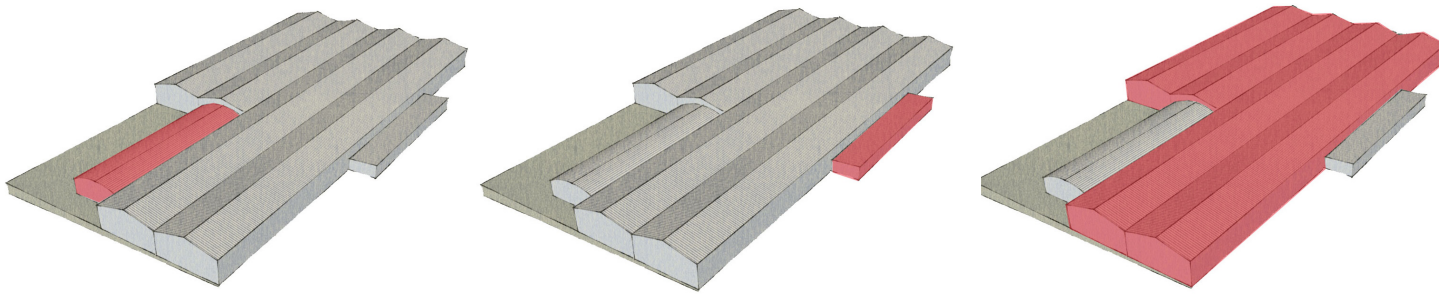
Aerial photography of the site



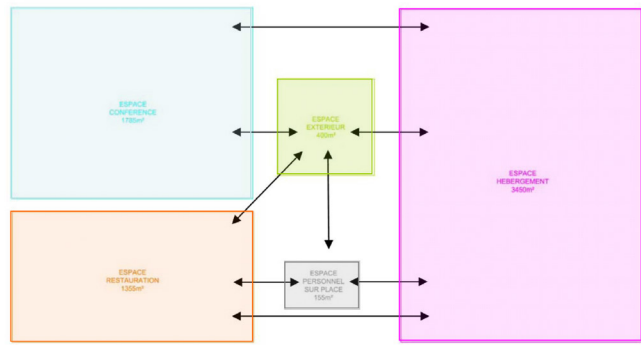
Dordives is a city of 2900 inhabitants has a surface of 15km².

The landscaped and the cycle of water through wetlands and greens ponds were taken into consideration in the design. The surroundings of the environmental plot are mainly wooded spaces, fields, and nearby business park. Some housing are located east of the site.

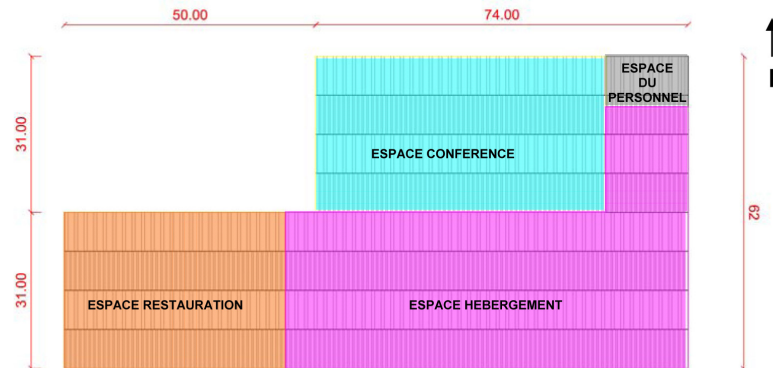




Composition of the architectural volumes of the factory



Organization program



Program

SCENARIO 3 PUBLIC DE 600 PERSONNES	
ELEMENTS PROGRAMMATIQUES	SURFACES en m²
ESPACE CONFERENCE Sous total	1 785,00
ESPACE RESTAURATION Sous total	1 354,50
ESPACE HEBERGEMENT Sous total	3 449,25
ESPACE PERSONNEL SUR PLACE Sous total	151,20
TOTAL	6 739,95
ESPACES EXTERIEURS Sous total	393,00

Programmatic board of surfaces



The project in the heart of the forest

HQE® targets OPTIMIZATION OF THE PROGRAMMATIC scenario

- AR ARCHITECTES defined several scenarios according to the accommodation facilities of the existing volumes, in respect of the requests of the client :
Scenario 1 reception of 1200 pers., scenario 2 reception of 850 pers., scenario 3 reception of 600 pers ., scenario 4 reception of 450 persons.

Target 1: HARMONIOUS RELATIONSHIP Between the BUILDING WITH ITS SURROUNDINGS

- **The site** is situated at the heart of a forest, with an objective of interpenetration of the forest at the heart of the buildings.
- **Spatial reorganization** of the building with the demolition of unloading docks situated in the East and the West.
- **Local architecture**, the homogeneity of treatment of the facades of the building by the use of biodegradable materials: wood.

Target 2 : INTEGRATED CHOICES FOR CONSTRUCTION PROCEDURES

- **Materials:** insulation of all the buildings by eco-friendly materials.

Target 4 : ENERGY MANAGEMENT

- **Internal comfort** : creation patios and winter gardens
- Openings are done according to the orientation of the sun.

Target 5 : WATER MANAGEMENT

- **Green ditches** are designed to collect rain water, and constructed wetlands are designed to treat sewage water.





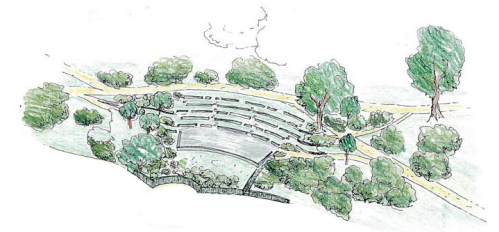
INDUSTRIAL sites, architecture, LANDSCAPING

Ile-de-France, France and International

- Water, treatment and phytoepuration
- Waste treatment
- Technical centers, HQE® approach



eco-Design OF A PLATForm OF Waste Sorting System IN Romilly-sur-Seine (10) - France "THE GREEN AMPHITHEATER"



The Green Amphitheater

INDUSTRIAL site, HQE® APPROACH: WASTE AND RECYCLING, HQE® SUSTAINABLE APPROACH

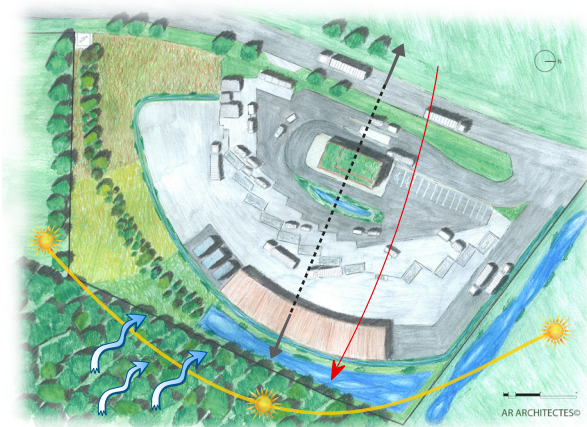
Client Communauté de communes des portes de Romilly-sur-Seine
Location Romilly sur Seine (10), FRANCE
Project Creation of an environmental platform (recycling center)
Mission Design and landscape
CONSULTANT AR ARCHITECTES
 CABINET MERLIN
area Plot : 45 710 m²
 Building : 715.87 m²
cost 2 400 k€
Date Inaugurated on September 24th, 2022



Photo of the environmental recycling waste plant



Photo of the south-west facade in terracotta and aluminium



Bioclimatic mass plan of the "Green Amphitheater"

The objective of the project is to reduce the impact on the environment. The infrastructure, as well as the landscaping and the operating building have been designed taking into consideration the natural slope of the plot, the climate (the course of the sun and the prevailing winds).

Therefore, the operating building (178.57 m²) was designed bioclimatic and was constructed in wooden frame, insulated by wooden fiber and equipped with green roofs.

A sustainable management of rainwater by the use of aquatic ponds and green ditches was also used to create a project with low impact on the environment. Treatment of polluted rain water by the use of plants, restauration of the biodiversity on site has been achieved.

Operating building's energetic performance : **Bbio (79.50 kwh/m²/year) ≤ Bbiomax : 84 kwh/m²/year** (French 2012 Thermal Regulation).





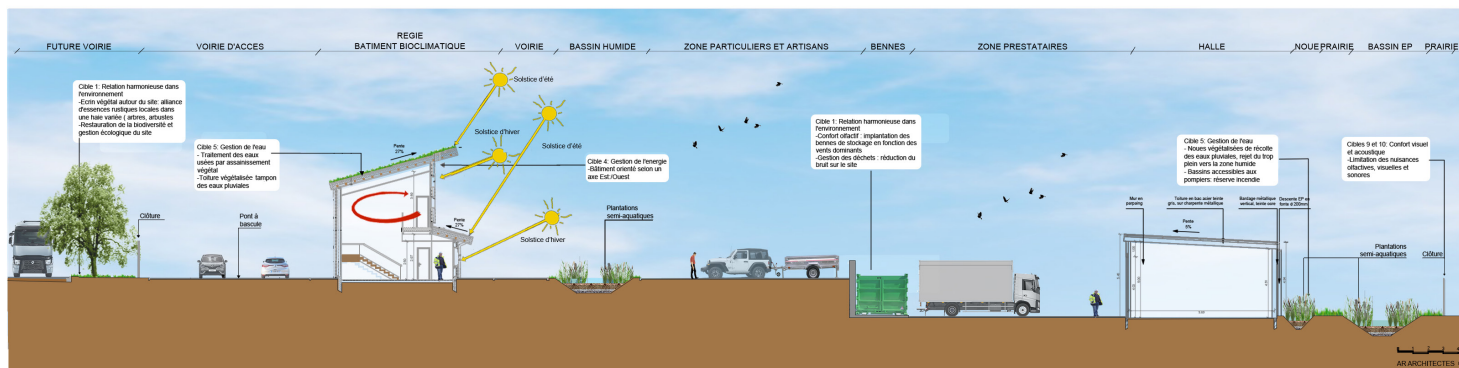
Photo of the North-East facade with aluminium cladding



Photo of the environmental recycling waste plant on the day of the inauguration



Perspectives of the project integrated into its environment



Sustainable HQE® targets

HQE® targets

Target 1: Harmonious relation Between Building and its environment

- Olfactory comfort is ensured by the implantation of the storage dumpsters based of the prevailing winds.
- Establishment of a greenery around the site : Combination of a rustic locals plant (trees, green hedges and shrubs).
- This landscape project restores and protect biodiversity

Target 2: CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- Sustainable materials are used : aluminium cladding, terracotta cladding, metal structure, wooden construction, green roofs, wood wool (insulation), roof insulation.

Target 4: ENERGY MANAGEMENT

- The building is oriented to a south-east / north west axis to establish a bio-climatic strategy taking into consideration rays of the sun.

Target 5: WATER MANAGEMENT

- Water is managed by green roofs that are designed on the top of the building.
- green planted ditches are designed to collect exceptional storm water.
- All the rainwater are stored inside green planted ponds and they can be used by fire-fighters.
- The rainwater is managed by plants and infiltrated into the soil inside valleys vegetated green planted ditches.

Target 9 et 15: VISUAL CONFORT AND BIODIVERSITY

- The landscapes area are planted with a rustic plants, red, yellow and blue promoting protection of biodiversity on this industrial site.
- The fence limits visual impact.

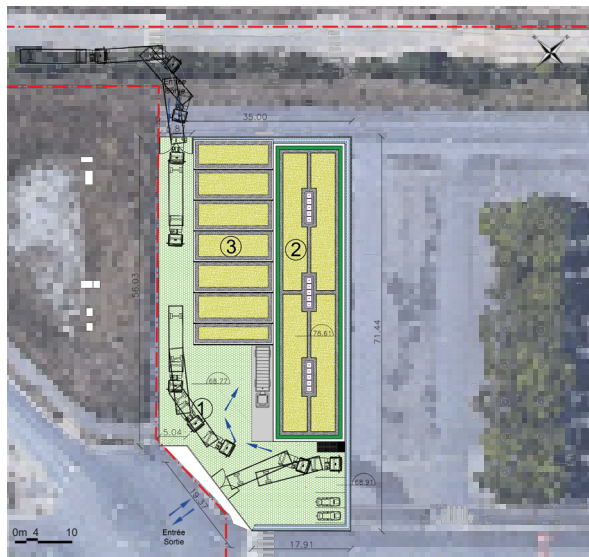


ARCHITECTURAL AND LANDSCAPE ECO-DESIGN OF DATTA HILLS'S SUBSTATION BUILDING IN AULNAY-SOUS-BOIS (95)



INDUSTRIAL site, HQE® APPROACH : ELECTRICAL SUBSTATION

CLIENT	RTE
LOCATION	Aulnay-Sous-Bois (95), France
PROJECT	Architecture and landscape design of DATA HILLS's electrical substation (data centre)
CONSULTANT MISSION	AR ARCHITECTES, architectural and landscaping project management
ELECTRICAL CAPACITY SURFACE	225kV Building : 1 230m ² Plot : 2 320 m ²
BUDGET	5 502 000 euros HT
TIMELINE	2023 competition

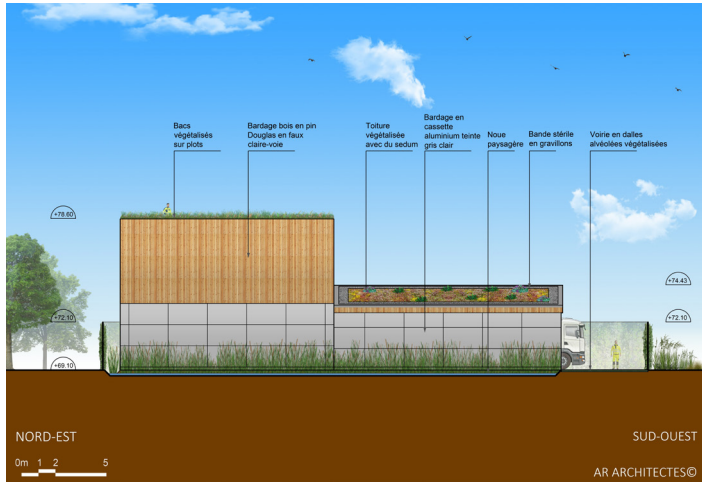


Masterplan

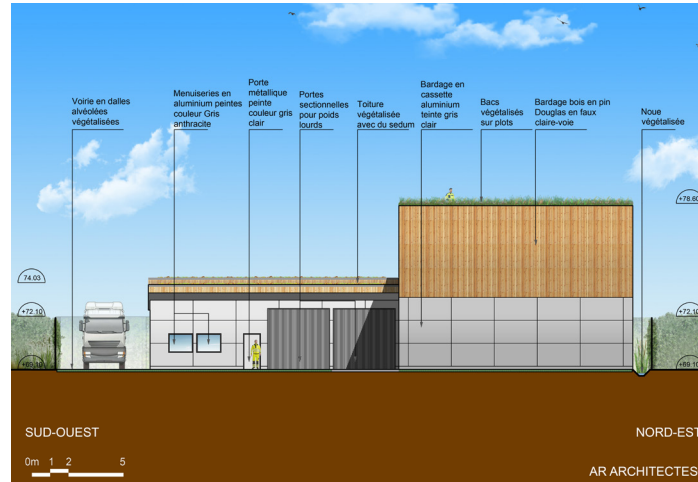


Perspective of the project integrated into its environment

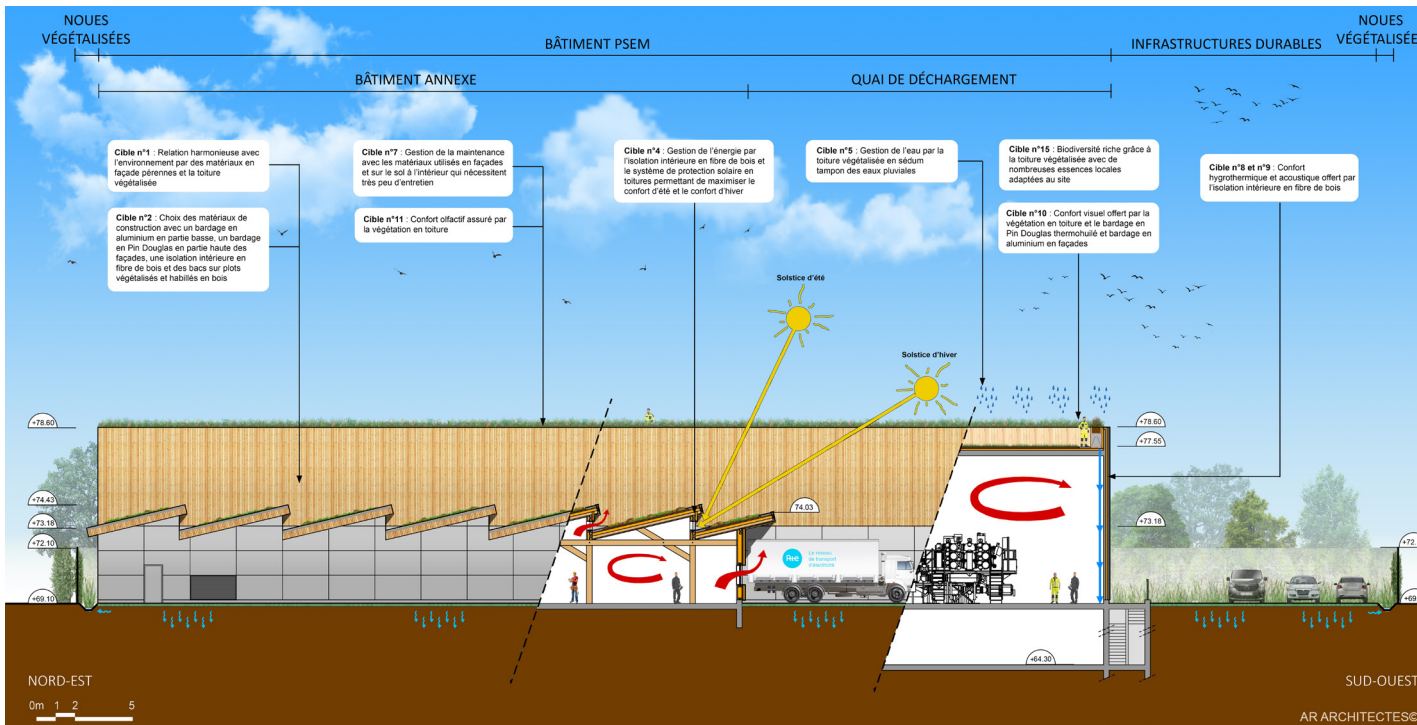
Located **at the crossroads of an industrial urban fabric, a tertiary sector zone and protected natural areas (ZNIEFF type II)**, the site of the future DATA HILLS's electrical substation (ES) in Aulnay-Sous-Bois (95) will be **integrated into a complex and rich environment**, with numerous environmental challenges, including the protection of the biodiversity of the neighbouring natural areas. The result is **The Urban Edge® project: Electrical substation buildings in Aulnay-sous-Bois**. The buildings are **low-carbon and eco-designed**. The ES building has a concrete structure, **metallic cladding and Douglas pine wood cladding**. The technical building has a **timber-framed structure, insulated with wood fibre and clad in metal cladding**. Roofs and infrastructure are planted with **vegetation allowing them to be integrated into the natural surroundings**.



North-west section



South-east section



High Environmental Quality® section

HQE® targets :

target 1 : HARMONIOUS RELATIONSHIP BETWEEN THE BUILDING AND ITS ENVIRONMENT

- Facade treatment using biodegradable, sustainable materials biodegradable such as **aluminium and Douglas pine wood**.
- Architectural integration of the building with its immediate surroundings : **business park** on to the north and the **Sausset departmental park** on the south.

target 2 : CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- **Timber frame structure**.
- External insulation with **wood fibre panels**.
- **Wooden cladding in Douglas pine wood at the top**.
- **Aluminium metal cladding**.

target 4 : ENERGY MANAGEMENT

- **External Thermal Insulation** is used to reduce the energy consumptions.
- Bioclimatic architecture : **Solar protection system** on roofs to maximise summer and winter comfort.

target 5 : WATER MANAGEMENT

- Rainwater from roofs as well as on the roads are collected into **planted channels** then infiltrated into the ground, zero reject.

target 10 : VISUAL COMFORT

- **Planted roofs** on the buildings, **planted roads**, as well as douglas pine wood cladding improve visual comfort for the users and local residents.
- **Biodiversity** restored on the site.

target 7 : MAINTENANCE AND UPKEEP MANAGEMENT

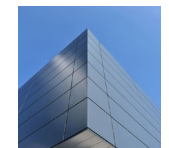
- Construction materials for buildings as well as infrastructure are **low maintenance**.



Green roof



Douglas fir wood cladding



Aluminium metal cladding

eco-Design of a sewage rain water PUMPing station in Vitry-sur-seine - France

INDUSTRIAL site, HQE® APPROACH: sewage treatment rain water station



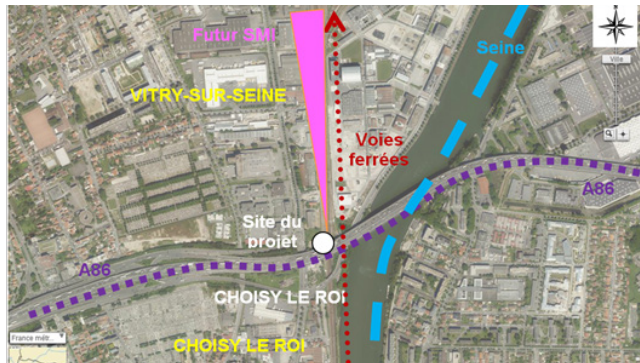
LA MAILLE VERTE

Client	Department of Val de Marne
Location	Vitry-sur-Seine
Project	Architectural and lanscape design of a sewage rain pumping station
Mission	Architectural and landscaping design HQE®
area	220 m ²
cost	15 000 K€ HT
Date	Wining competition 2015 works receipt

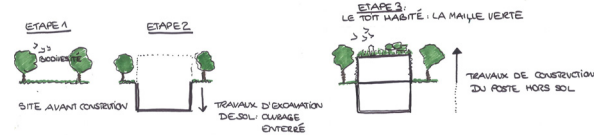


North-West view of the building

The pumping station is integrated into a dense urban context, on the East side are located railways, to the North, futur buildings, to the South, 86th highway and to the West, an industrial area of Vitry-sur-Seine. The concept of the architectural and landscaping design project was to create a green ditch in the urban territory by restoring biodiversity on site.

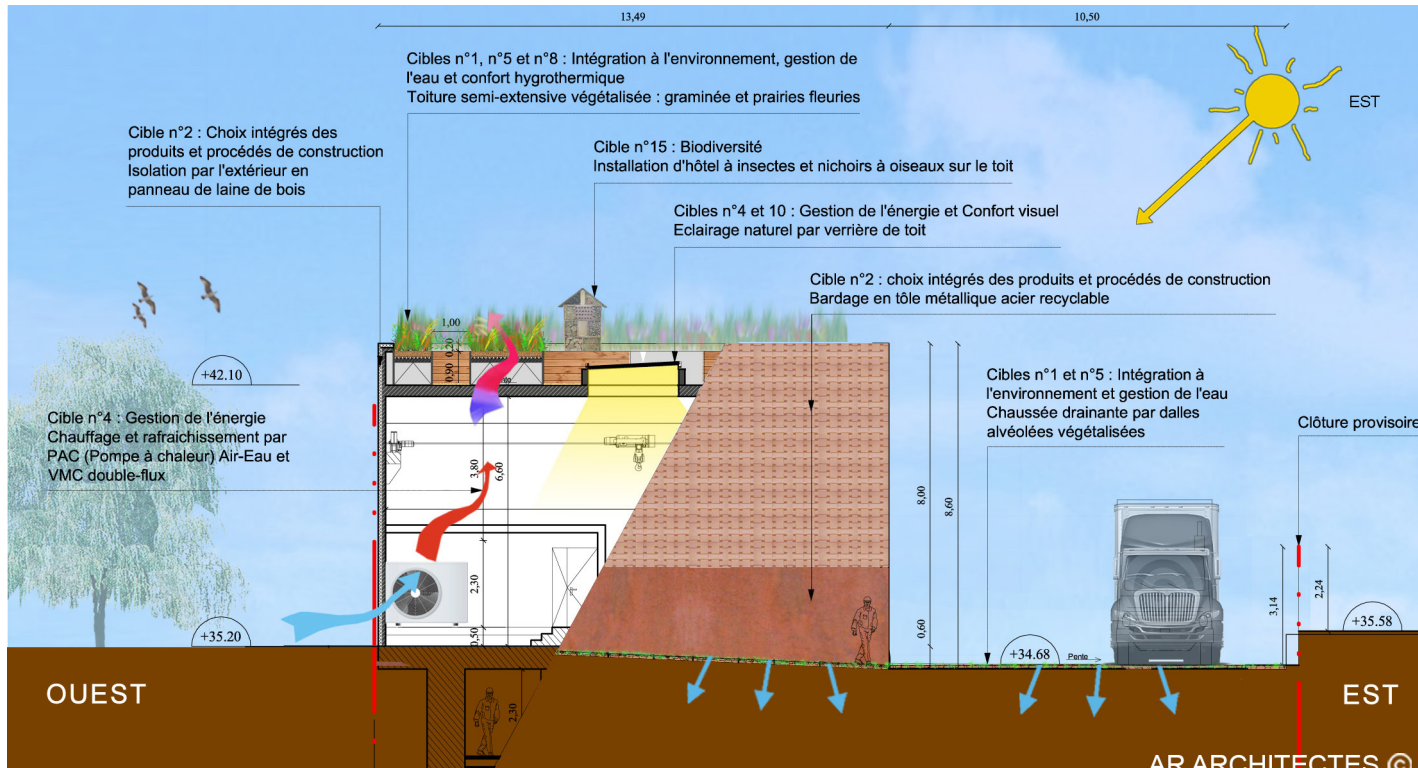


Landscape ground plan

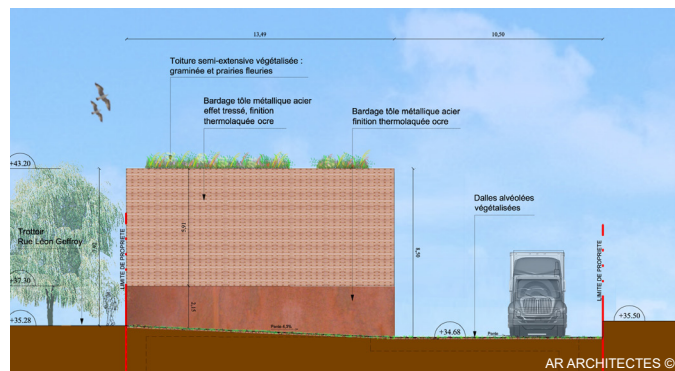


Concept design sketches

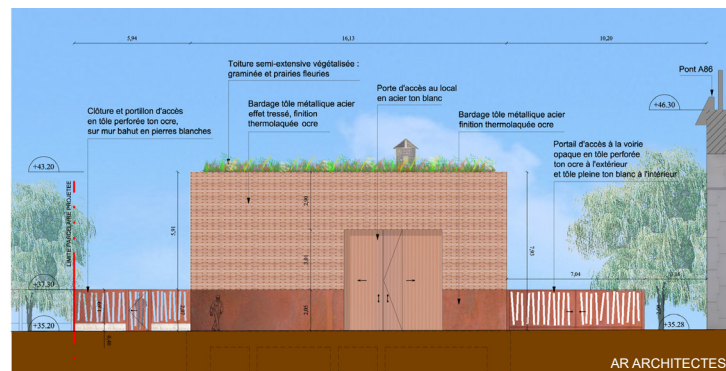




Sustainable section



South section, A86 bridge side



West section, Léon Geffroy road side

HQE® targets

TARGET 1: HARMONIOUS RELATION BETWEEN BUILDING AND ITS ENVIRONMENT

Outdoor spaces quality for users:

- The objective was to provide facades with biodegradable materials, such as steel and recyclable insulation (wood wool).
- Natural areas: green roof and green roads (planted slabs)

TARGET 2: CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- Sustainable materials are used : aluminum cladding, stone cladding, green roof and wood wool (insulation)

TARGET 3: ENERGY MANAGEMENT

- Thermal insulation using wood wool
- Heating pump air-water

TARGET 5: WATER MANAGEMENT

- Water management by green roofs
- Runoff water management on roads with planted slabs

TARGETS 8 AND 9:

- Thermal and acoustic comfort is ensured with a green roof and insulation (wood wool)



eco-Design of a sewage rain water storage Plant in Deuil-La-Barre France

INDUSTRIAL site, HQE® APPROACH: sewage treatment rain water PLant

Client SIARE
Location Deuil-la-Barre
Project Architectural and lanscape design of a sewage rain water storage plant

mission Architectural and landscaping design
HQE®

consultant AR ARCHITECTES, ARTELIA
area 4 931m²
cost 11 055 665 € HT
Date Work in progress



Eco plant integrated in the green pedestrian axis created by the city

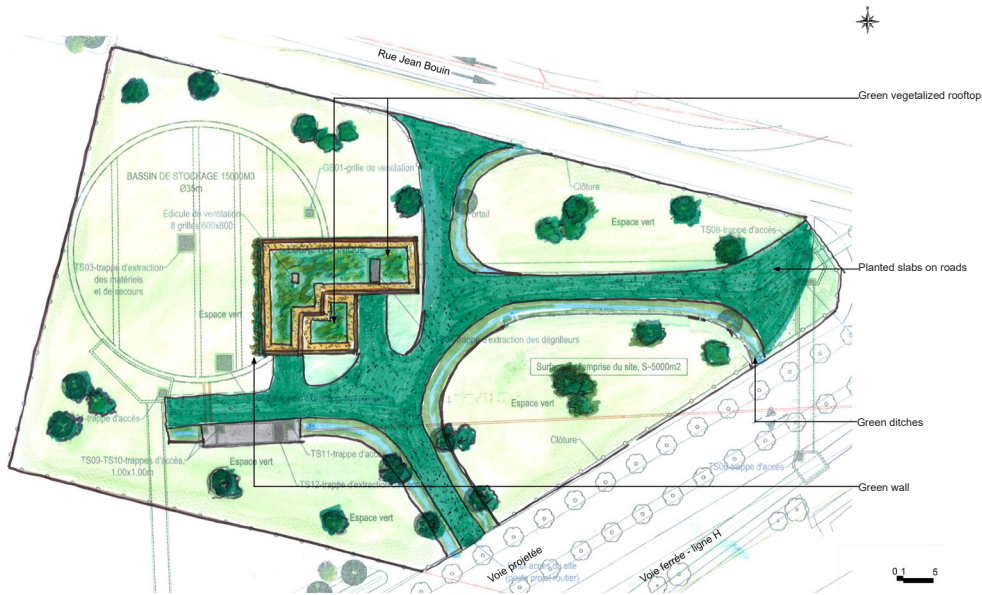


North-West perspective of the ecological plant

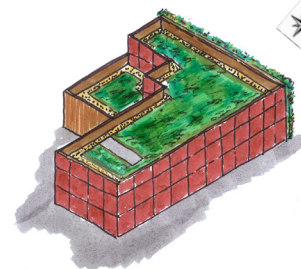
The eco plant is located in front of an industrial site, on the northern side. On the South-East side are located train railways. On the West site will be created a futur green pedestrian axis that will be built by the city of Deuil-la-Barre. The desing concept of the project was to combine two simple cubic volumes: one with ocher metallic facades in relationship with the industrial zone and the other one with wooden facades and green vegetalized wall and roofs to create a harmonious link with the futur green pedestrian axis.

Rooftops of the building will be accessible and planted. Nests for birds and bee hives will be integrated on the roofs. All around the building will be planted flowering meadows and rustic trees that will be able to restore biodiversity on the site.

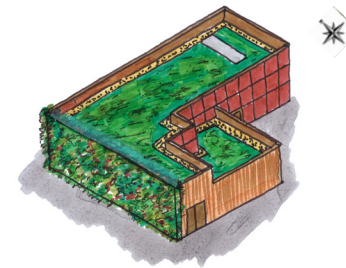




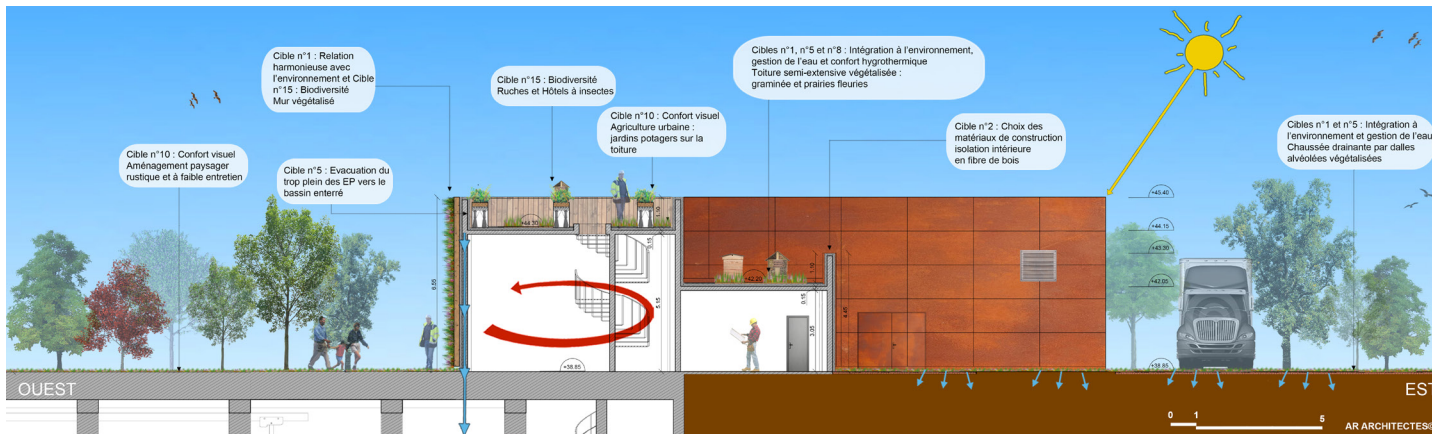
Mass plan and rain water management



Nord-East perspective sketch from Jean Bouvin street



South-West perspective sketch from Grille Ronde street and the green pathway



Section HQE®

HQE® targets

Target 1: Harmonious relation between Building and its environment

- The objective was to provide facades with biodegradable materials, such as steel, wood and recyclable insulation (wood wool).
- Natural areas: green roofs, green roads (planted slabs) and vegetated wall.

Target 2: Choice of integrated products and building materials

- Sustainable materials are used : aluminum cladding, wooden cladding, green roofs, vegetated wall and wood wool (insulation).

Target 3: Energy management

- Thermal insulation using wood wool.
- natural light.

Target 5: Water management

- Water management by green roofs.
- Runoff water management on roads with planted slabs.
- Rainwater on roads and infrastructure is collected through ditches then driven to the storage station.

Targets 8 and 9: Hygrothermal and acoustic comfort

- Thermal and acoustic comfort is ensured with a green roof and insulation (wood wool).

Target 11: Olfactory comfort

- Biofiltration of the air using a vegetated wall, reducing bed smells.

eco-Design OF a sewage rain water storage PLant in ermont, France

INDUSTRIAL site, HQE® APPROACH: sewage treatment rain water PLant

CLIENT	SIARE
LOCATION	Ermont
PROJECT	Architectural and lanscape design of a sewage rain water storage plant
CONSULTANT	AR ARCHITECTES, SETEC HYDRATEC
MISSION	Architectural and landscaping design HQE®
STORAGE VOLUME	6 500 m ³
ELECTRIC POWER	100 kW
AREA	123m ²
COST	5 600 000 €
DATE	works receipt March 2018



Location plan of the project

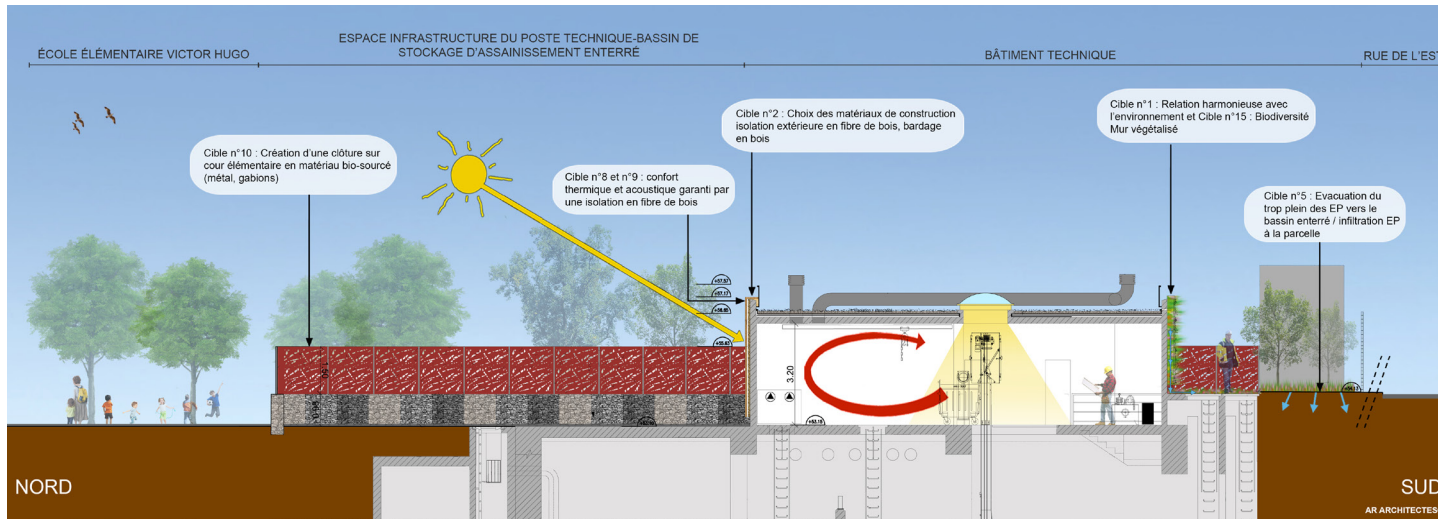


View of the entrance, gabion cladding associated with the metal fence, eco-plant in wood

The eco-plant is located in a very urban site close to housing and in a school courtyard. The objective of the project was to design an eco-friendly plant with low impact on the environment. The construction is a 4,45m high and the volume is a simple rectangle.

Wooden cladding have been used on three facades and on the school facade, gabion cladding associated with the metal fence have been designed to create a continuous dialogue between the scholars and the plant. On the Southern façade, a planted wall have been implemented creating harmonious relationship between the construction and the pedestrians.





Section HQE®



View from East street on the Victor Hugo schoolyard



View from Est street on the green wall on the South

HQE® targets

target 1: HARMONIOUS RELATION BETWEEN BUILDING AND ITS ENVIRONMENT

- The objective was to provide facades with biodegradable materials, such as steel, wood and recyclable insulation (wood wool).
- Natural areas: vegetated wall.

Target 2: CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- **Sustainable materials** are used : aluminum cladding, wooden cladding, vegetated wall wood wool (insulation) and gabions.

Target 3: ENERGY MANAGEMENT

- Thermal insulation using wood wool.
- natural lighting.

Target 5: WATER MANAGEMENT

- Water management by green roofs.
- Runoff water management on roads with planted slabs.

Targets 8 AND 9: HYGROTHERMAL AND ACOUSTIC COMFORT

- Thermal and acoustic comfort is ensured with a **wooden fibre insulation**.

target 10 : VISUAL COMFORT

- **Rustic gardens** are planted all around the plant, creating harmonious relationship between the infrastructure and its surroundings.



eco-sewage treatment Plant "La Princetière" in Saint-Michel-Chef-Chef Bioclimatic Architecture and Urban Design - France

Industrial site, HQE® approach : water, treatment and phytoepuration

Client	SIVOM Côte de Jade
Location	Saint-Michel-Chef-Chef
Project	Reconstruction of the sewage treatment plant La Princetière
Mission	Design concept and follow up mission, architecture HQE® and landscaping
Design and Build area	AR ARCHITECTES, DFA, EIFFAGE CONSTRUCTION, SAFEGE
Budget	2595m ² , plot 20 635 m ²
Date	9 700 000 € From 2011 till 2014



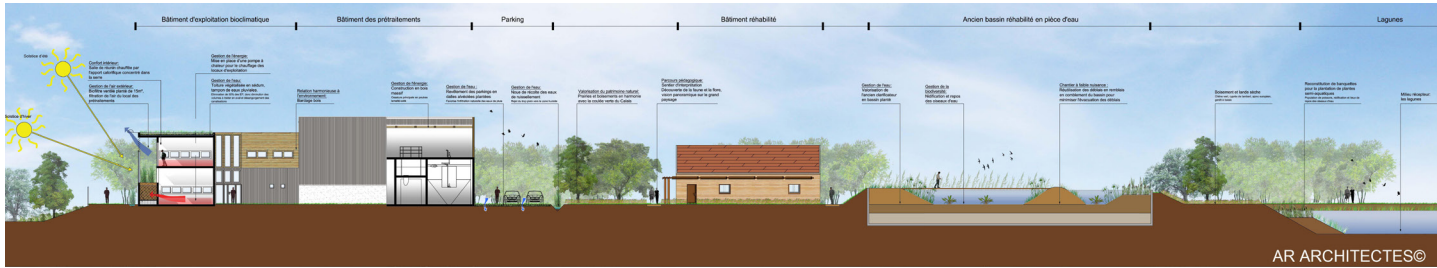
View from the entrance towards the operating bioclimatic building



Perspective view of the plant in its environment

The new buildings are implanted around an **East-west axis**, opening a **perspective** towards gardens. New constructions are grouped together on **half of the site**, releasing the West part of the site **valorized by landscaping**, and taking into account a **possible extension** of the plant in continuity with the **surroundings**. The aeration pond is transformed into an **aquatic garden**. The plant is opened to visitors for educational tours.





Section HQE©



North elevation



Landscape master plan



View of the industrial building for mud

HQE® targets

Target 1: Harmonious relationship between the building with its surroundings

- **Recycling principle:** the renovation of the aeration pond becomes the support of a **promenade** through a **reconstituted biotope** visible from dikes and pontoons. Visitors discover the surroundings of the plant and the existing lagoons.
- Visual impact of the existing civil works is reduced by the use of wooden cladding.

Target 2 : Integrated choices for construction

- **Materials:** laminated wooden frame, larch wood cladding, and **metal cladding** and **gabion**.
- Cladding are used as sustainable and recycled materials.

Target 4: Energy management

- A green house is integrated into the bioclimatic operating building. The greenhouse communicates through inner windows with first and second level. That participates in heating those levels during winter.

Target 5: Water management

- Rainwater is collected on top green roofs.
- Rainwater on roads and infrastructure is collected through infiltration ditches.



eco-CONSTRUCTION OF THE OPERATING BUILDING PR5, ABOVE THE LIFTING STATION OF THE VALLEY OF THÈVE AND YSIEUX IN ORRY-LA-VILLE (60), FRANCE

INDUSTRIAL site, HQE® APPROACH : water, sanitation AND PHYTOPURIFICATION

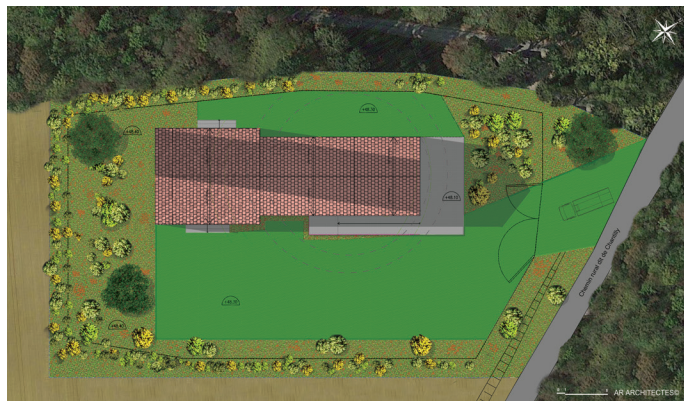
Client	SICTEUB
Site	Orry-la-Ville (60)
Project	Architectural and landscaping design of the PR5 and lifting station building
DESIGN BUILT MISSION	AR ARCHITECTES, NALDEO Architectural and landscaping design
Plot area	750m ²
BUILDING around	100m ²
VOLUME	1 300m ³
COST	9 000 000 EUROS
Date	Delivered in 2019



Photograph of the lifting station entrance

The Lifting Station PR5 project is part of the Coye-La-Forêt wastewater treatment plant carried out by the Syndicat Intercommunal for the Collection and Treatment of Wastewater from the Bassin de Thève and Ysieux (SICTEUB). The project is located in a rural site on the border between urban areas (housing at 100m) and natural areas (undergrowth, agricultural plains, etc...). The building designed by AR ARCHITECTES is inspired by the architecture of an agricultural farmhouse and fits harmoniously into the landscape thanks to its volume and wooden materiality.

The PR5 consists on two entities, the burried part is made of concrete, it contains the storage of the discharge station. The above-ground part contains the electrical room, the ventilation room and the operator room.



Project's master plan

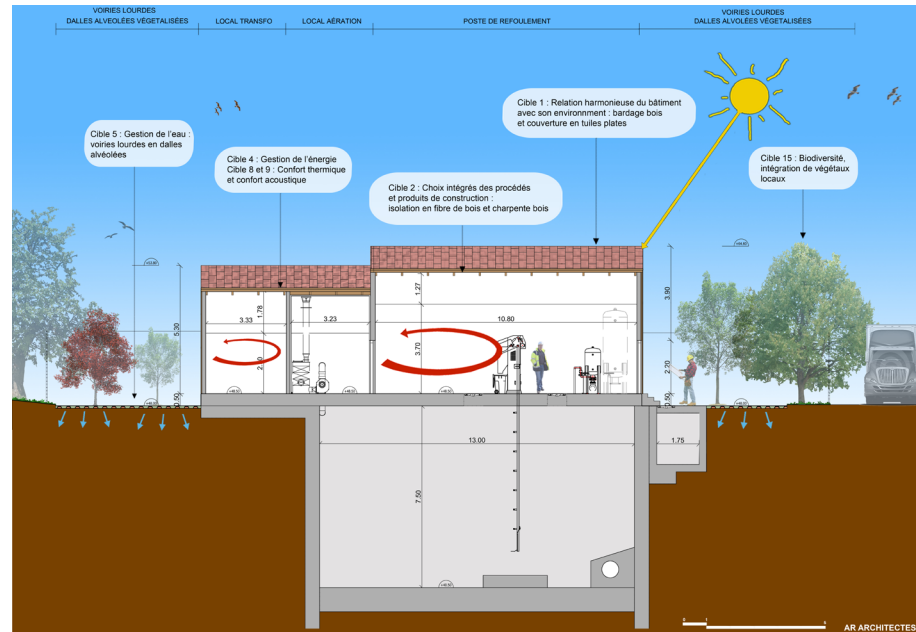




Photograph of the lifting station - South West view



Wood frame structure



Longitudinal section showing the buried concrete storage and the operating building

HQE® targets PROCESSED

TARGET 1: HARMONIOUS RELATION OF THE BUILDINGS WITH THEIR IMMEDIATE ENVIRONMENT

- The building designed is inspired by the rural and agricultural architecture surrounding the site : the outside volume is similar to an agricultural farmhouse.
- Use of **eco-materials** with a low impact on the environment and harmonious integration in the natural landscape.

TARGET 2 : INTEGRATED CHOICES FOR CONSTRUCTION PROCESS

- The **cladding is made of pine wood**.
- The frame is made of large wood.
- Outdoor insulation in **wood fibers**.
- **Terracotta tiles**.

TARGET 4 : ENERGY MANAGEMENT

- Thanks to its **insulation**, the operating building has a **good inertia** and reduces its energy consumption.
- **Natural lightning and ventilation** of the process area thanks to the facade openings.

TARGET 5 : WATER MANAGEMENT

- The rain water treatment is managed by :
- Alveolated slabs allowing rain water to be infiltrated into the earth.

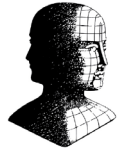
TARGET 8 AND 9 : OPTIMIZED HYGROMETRIC COMFORT AND ACOUSTIC COMFORT

- The hygrometric and acoustic comfort for the operators building is guaranteed by the insulation of **wood fibers**.

CIBLE 15 : BIODIVERSITY.

- The landscaping design is composed by different varieties of **local wildflowers**. This mixture encourages the life cycle, ensures a large presence of insects on the site and promotes the presence of wild pollinators such as bees and butterflies.

eco-Design OF THE PLANTINS Waste Water treatment PLant in BEYnes - France



JANUS 2014

INDUSTRIAL site, HQE® APPROACH: Water, treatment and PHYTOEPuration

Client	City of Beynes
Location	Beynes
Project	Construction HQE® of a bioclimatic building opened to the public
Mission	Design concept and follow up mission, architecture HQE® and landscaping
Consultant	AR ARCHITECTES, NALDEO
Designer	
Contractors	Degrémont France Assainissement, ZUB
Area	465 m ² (16460 m ² site area)
Cost	4 500 000 €
Date	2008 - 2013



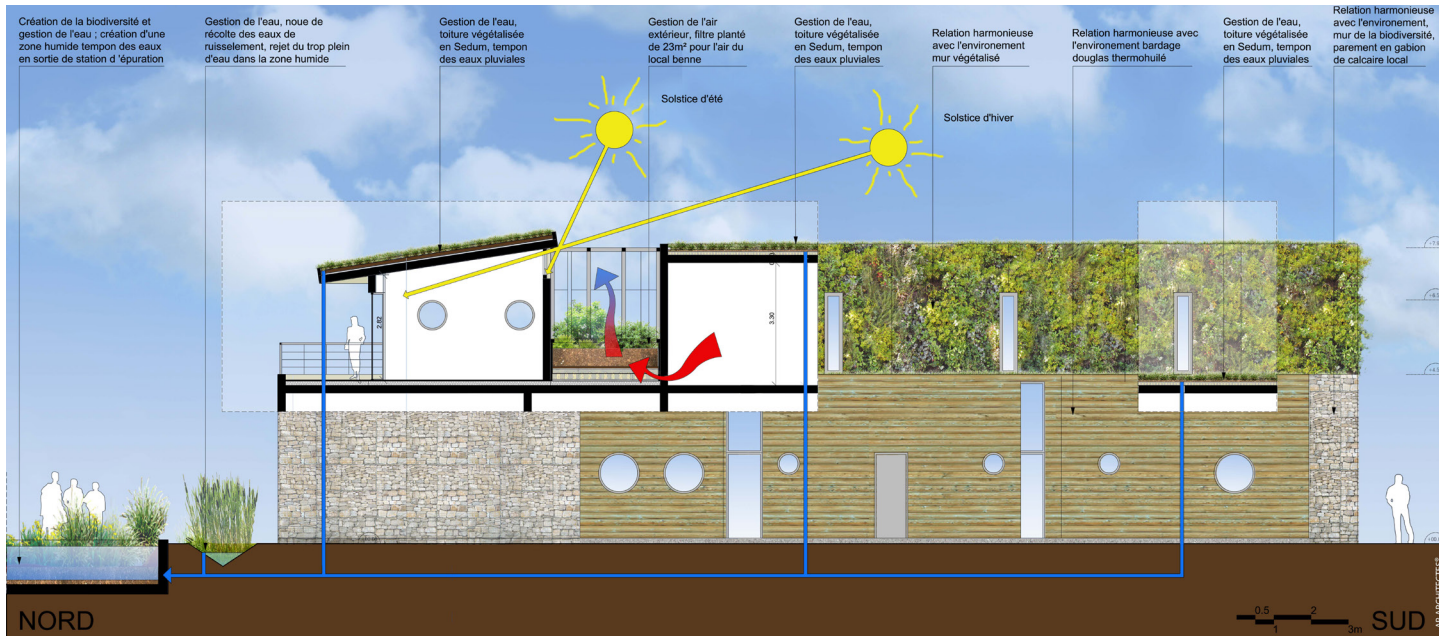
Landscaping perspective



View of the buildings

The plant in Beynes is located in the heart of a remarkable site surrounded by an archaeological area to the South and agricultural fields to the North. The architectural team aims to create a dialogue with the surrounding rural areas while respecting the biological balance in place and giving the development complex, using landscaping and architectural treatment, volumes, heights and coverings to harmonize new constructions with the immediate environment.





Section HQE® - Air treatment (3 500m³/h) by a garden glass house (35m²)



View of the building



View of the building

HQE® targets

Target 1:

- The architectural and landscaping treatment of the building, its volumes, heights and coverings harmonizes the new constructions with the immediate environment. The complex is made of Douglas wood cladding and gabion coverings.

- The bio climate complex, partially opened to public, is a reference for an educational tour of the plant.

Target 4:

- Passive design
- Heating pump
- Thermal solar panels

Target 11:

- Olfactory comfort is ensured by innovative organic bio filter which treats and extracts polluted air

- Mud treatment is done by Reed beds (4 000m²).

Target 8 and 9:

- Thermal and acoustic comfort is ensured with green roofs and insulation is made of eco-friendly materials (hemp and recycled paper foam) .

Target 5:

- The building has a water area. The renovating of an old hydraulic retention pond collects rainwater and streaming water thus creating ecological habitats and ensuring an available water reservoir for fire-fighters.

- Circulation areas are equipped with hollow-core green slabs allowing rainwater to drain and guarantees a clean and stable area even when it rains.

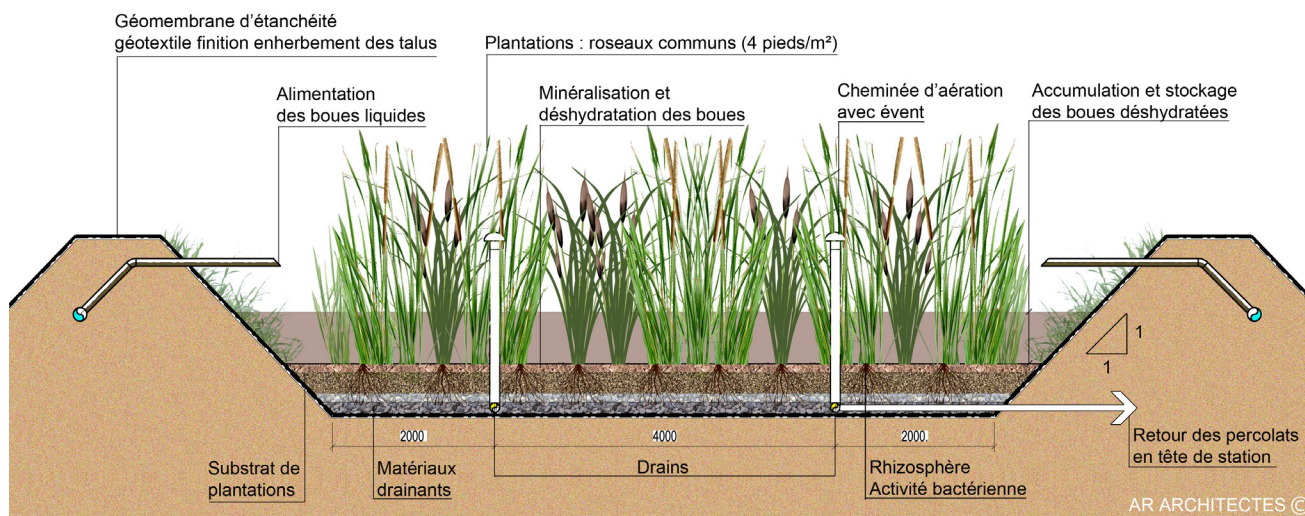




Projet design perspective



Reed beds (4 000 m²) to treat sewage water



Section : reed bed for sludge coming out of the plant - Plants transform sludge into compost

Current situation

4 738 éq/h (40 %) - 284 kg/d (40 %) - rate of flow 2 100 3 500 m³/d

Muds results: (8 months of operation by SAUR in 2013)
Volume 18 994 M³ - Solids 107 T

Financial review:

Economic 85 000 € / year (transport for mud treatment)
Cost of water treated : 1,16€ / m³ instead of 1,70 € / m³

Energy balance:

Consumption: ratio of 0,71 KWh / m³ of purified water (operating 8 months)





eco-Design OF THE SEWAGE TREATMENT PLANT IN ASNIERES-SUR-OISE - FRANCE

INDUSTRIAL SITE, HQE® APPROACH : WATER, treatment AND PHYtoePURATION

Client	SICTEUB
Location	Asnières-sur-Oise
Project Mission	Eco-design HQE® Desing concept and follow up mission, Architecture HQE® and landscaping
Design and BUILD	AR ARCHITECTES, Degrémont Suez, ZUB, PINTO
area	2 400 m², plot 36 000 m²
capacitY	80 000 inhabitants
cost	17 000 000 €
Date	From 2008 till 2011



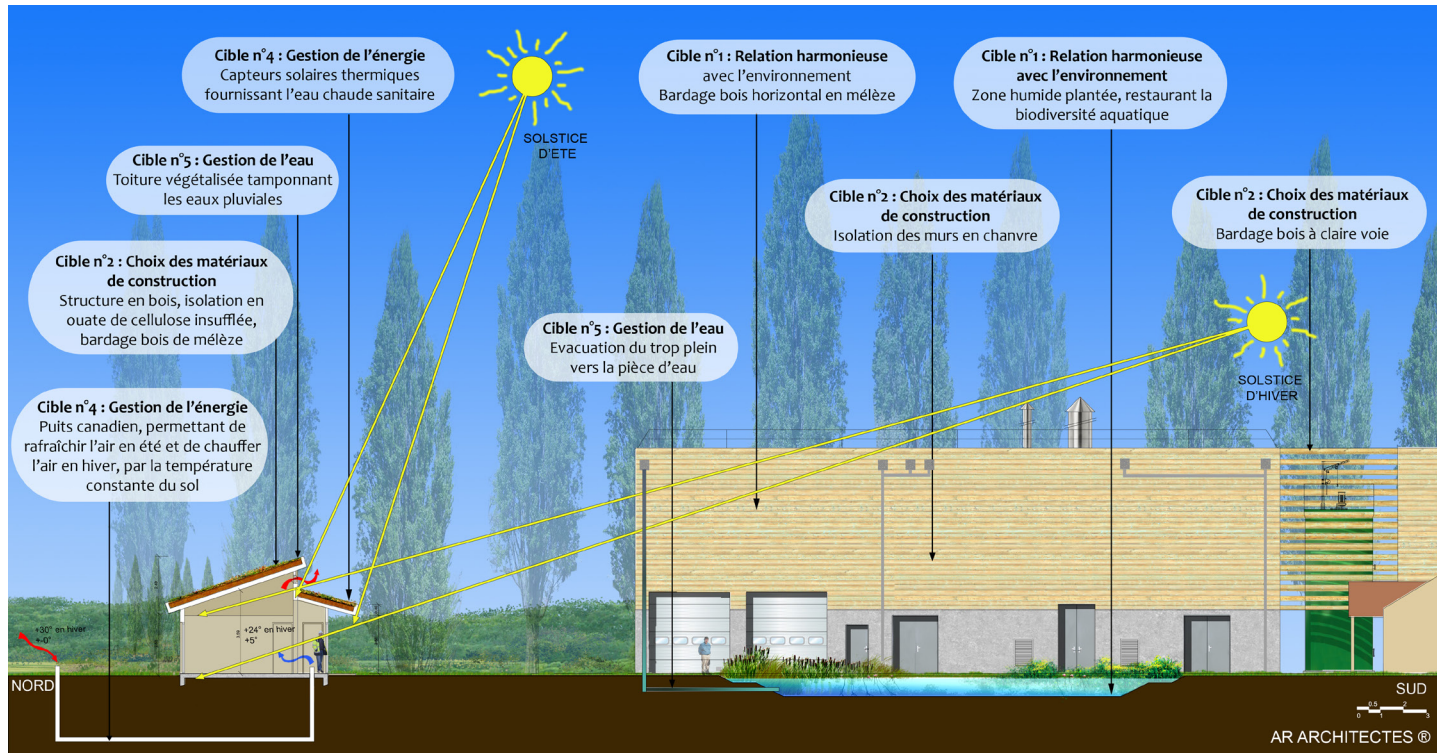
Perspectice view of the plant in its environment



View on the bioclimatical operating building

The objectif of this project was to fit a sustainable industrial architecture in a rich landscape within the Natural Park of Oise Pays in France, located North of Paris.





Section HQE®



View on the operating building



View on the reconstructed landscaping surrounding the building

HQE® targets

Target 1 : Harmonious relation between building and environment.

Target 2 : Integrated choices of products, systems and procedure of construction

- The construction impact on neighbours is reduced. The plant is completely integrated into the landscape.

- The operating building was designed just like the technical building enabling simple and efficient use.

- The structure is done with a wooden frame.

- Floor insulation was done by spreading recycled paper foam between the wooden structure.

Target 4: energy management

- The buildings are designed in bioclimatic way.

- Renewable energies are used for water heating ventilation (canadian well).



eco-Design of a rainwater depollution station “THE VEGETALIZED BLOCK” in CHAMPIGNY-SUR-MARNE, France.



INDUSTRIAL site, HQE® APPROACH : water and sanitation

Client	VAL DE MARNE County
Location	Champigny-sur-Marne (94), France
Project Mission	Architectural and landscape design of the rainwater depollution station
Consultant	AR ARCHITECTES
Area	Site of 8 100 m ²
Cost	42 300 000 €
Date	Competition 2022



Landscape plan



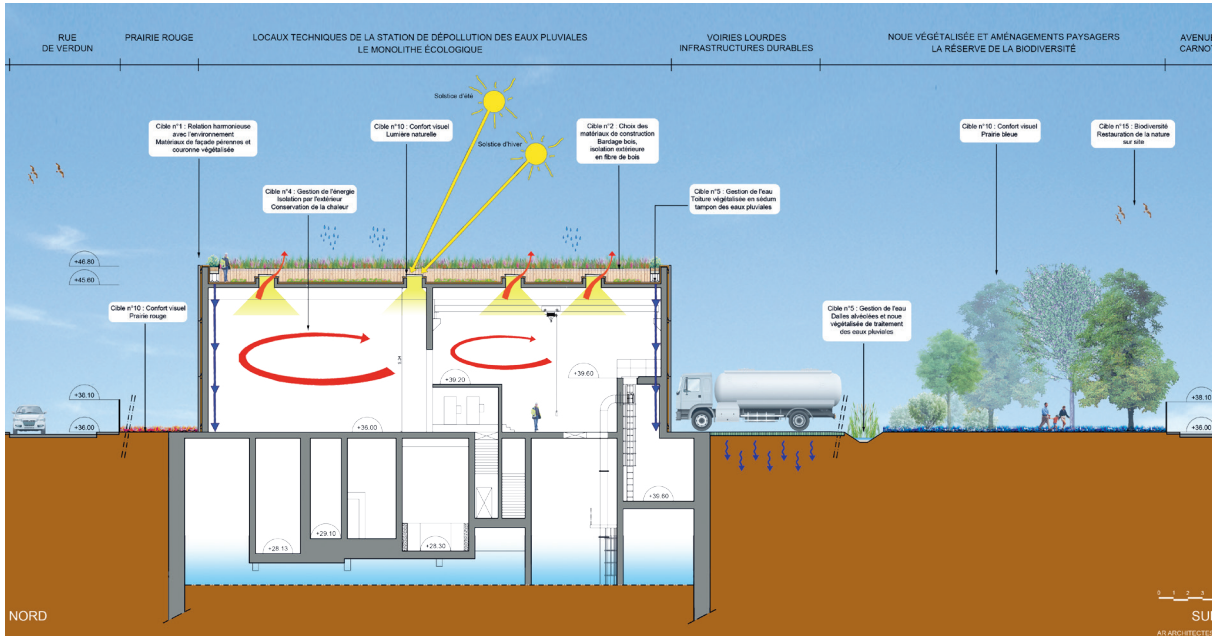
Perspective view of the rainwater depollution station

The rainwater depollution plant will be located in the south of Champigny-sur-Marne and will sit at the interface between a preserved natural environment and a rapidly changing urban landscape.

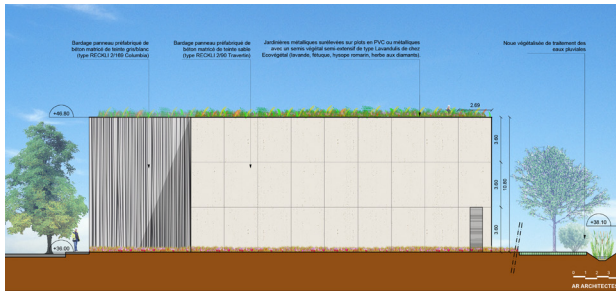
The architectural and landscape design of the future rainwater depollution station meets the goal of integrating the buildings into its environment through architectural arrangements and high quality materials.

To reach this goal, the main axis of the project was to **free the architecture - the ecological monolith** - by integrating it into the natural landscape of Marne and reconstructing the biodiversity on the site in a “**vegetalized block**” therefore making a smooth transition between the center of Champigny and its large landscape.

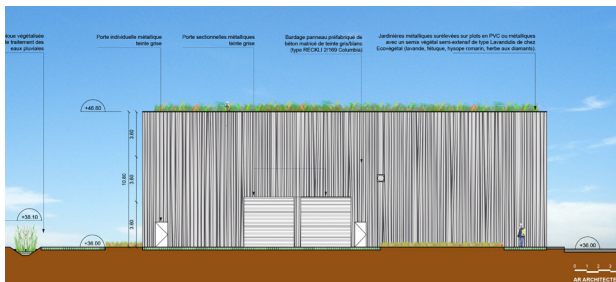




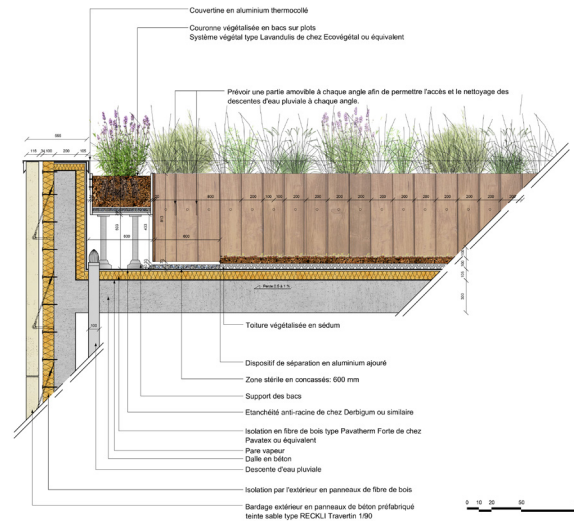
HQE® Section



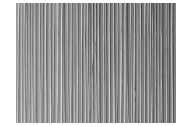
NORTH Elevation view



SOUTH Elevation view



Planted roof detail



Precast concrete panel (ridged matrix)



Precast concrete panel (smooth matrix)



Sedum green cover



Bins on vegetated plots



Tall trees: ash, elm



Red, yellow and blue grassland areas



Permeable hollow core slabs



Semi-aquatic plants: maria irises, bulrushes

HQE® targets

Target 1: Harmonious relationship of the building with its environment

- Views of natural spaces: **green roof, green honeycomb slabs.**
- Limitation of visual constraints caused by the immediate environment.
- Good integration of the building into the landscape.

Target 2: Integrated choices of construction processes and products

- Siding in precast concrete panels allowing good resistance over time and low maintenance.
- Vegetation on the roof.

Target 3: Site with low nuisance

- The main goal of the "green construction site" is to manage the environmental constraints caused by the various activities linked to the construction site.

Target 4: Energy management

- Insulation of the building envelope gives it good inertia and reduces energy consumption.
- Natural light allowed by the skylights on the roof.

Target 5: Water management

- Treatment of rainwater thanks to a green roof.
- Management of runoff water using "evergreen" vegetated slabs allowing the drainage of rainwater into the earth.
- The overflow of water is collected by green ditches.

Target 7: Operating and maintenance

- Precast concrete walls require low maintenance.
- Low maintenance of landscaping.

Target 10: Visual comfort

- The landscaping of the planted block provides flower meadows, a biodiversity reserve and a vegetated valley allowing the infrastructure to be well integrated into its environment.

Target 15: Biodiversity

- The project is part of an approach aimed at maintaining favorable environments for the protected species of the natural surroundings and the banks of the River Marne.

eco-renovation of the waste treatment plant in sarcelles (95) - France

Terre De Sarcelles ©



INDUSTRIAL SITES, ARCHITECTURE AND LANDSCAPING : waste treatment and valuation

Client	SIGIDURS
Site	Sarcelles (95)
Project	Eco-renovation of the waste treatment plant in Sarcelles (95)
Design Built	AR ARCHITECTES, VERDI BG INGENIEURS CONSEILS
Mission	Architectural and landscaping eco-design
Plot area	30 000m ²
Building Ground Clearance	10 050m ²
Cost	9 000 000 euros
Date	Competition 2019



Aerial perspective - North West view

The architectural, landscaping and environmental aspects of the SIGIDURS Energy Recovery Centre renovation project revolve around three key ideas:

- 1. To homogenize** the different buildings and volumes of the Centre in order to show a single architectural unit: create a grey base.
- 2. To highlight the process area** which represents the heart of the plant and the SIGIDURS approach; create a coloured perforated metal envelope reminding the old brick used in the city.
- 3. Intensively plant** the plot and plant with the ambition to create a sustainable green design perfectly integrated into its surroundings.



Master plan



LES CIBLES HQE® TRAITÉES

TARGET 1: HARMONIOUS RELATION OF THE BUILDINGS WITH THEIR IMMEDIATE ENVIRONMENT

- Highlight the process area with green roof, walls and land. Enhance the relation with the surroundings.
- Views on natural areas: **green roofs and walls**.
- Use of **eco-materials** with a low impact on the environment. Harmonious integration of the plant into the near and far landscape.

TARGET 2 : INTEGRATED CHOICES FOR CONSTRUCTION PROCESS

- **Steel structure**, a long-lasting, easy-to-maintain material that can be adapted as required
- Exterior insulation with **wood fibre panels**
- **Recyclable aluminium cladding**.

TARGET 4 : ENERGY MANAGEMENT

- Thanks to its **insulation**, the operating building has a **good inertia** and reduces its energy consumption.
- **Natural lightning and ventilation** of the process area thanks to the facade openings.

TARGET 5 : WATER MANAGEMENT

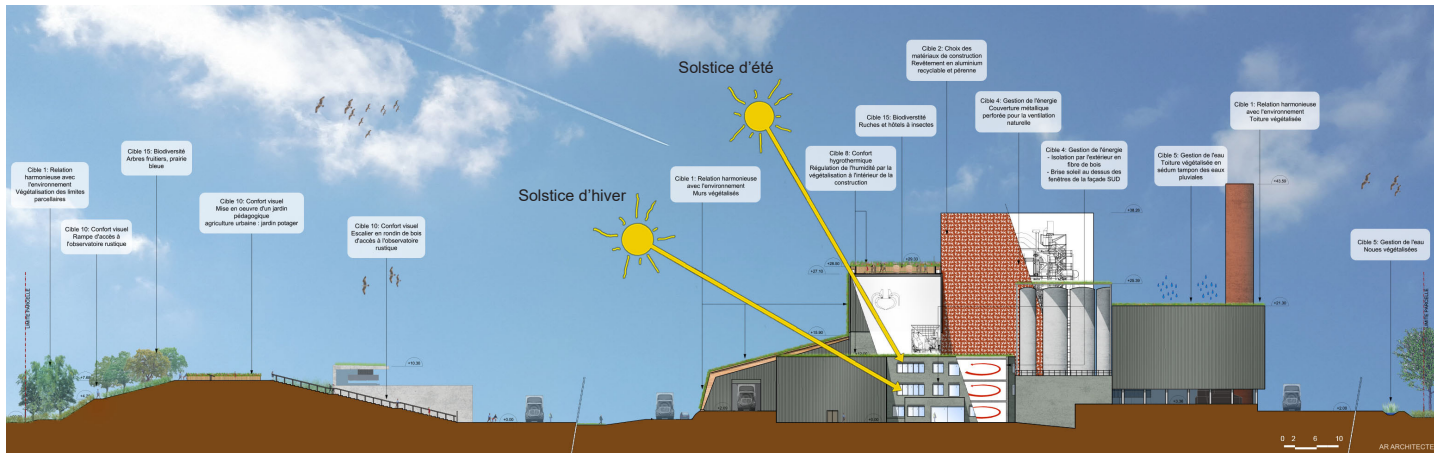
- The green roof and walls manage the rain water.
- The alveolate slabs manage the heavy road runoff water.
- The **water overflow** is collected gravitationally towards **planted ditches**.

TARGET 8 AND 9 : OPTIMIZED HYGROMETRIC COMFORT AND ACOUSTIC COMFORT

- The wood fibre insulation brings hygrometric and acoustic comfort into the building.
- An **acoustic wall made of gabion** guarantees **acoustic comfort** around the site.

TARGET 10 : OPTIMIZED VISUAL COMFORT

- **Green Wall** on the West facade: reduces air pollution, installation of a water network, **plantations adapted** to the weather conditions.
- The plant is designed as a **green park** giving a satisfactory view to the inhabitants.



Section of the Bioclimatic concepts



Aerial perspective - South West view

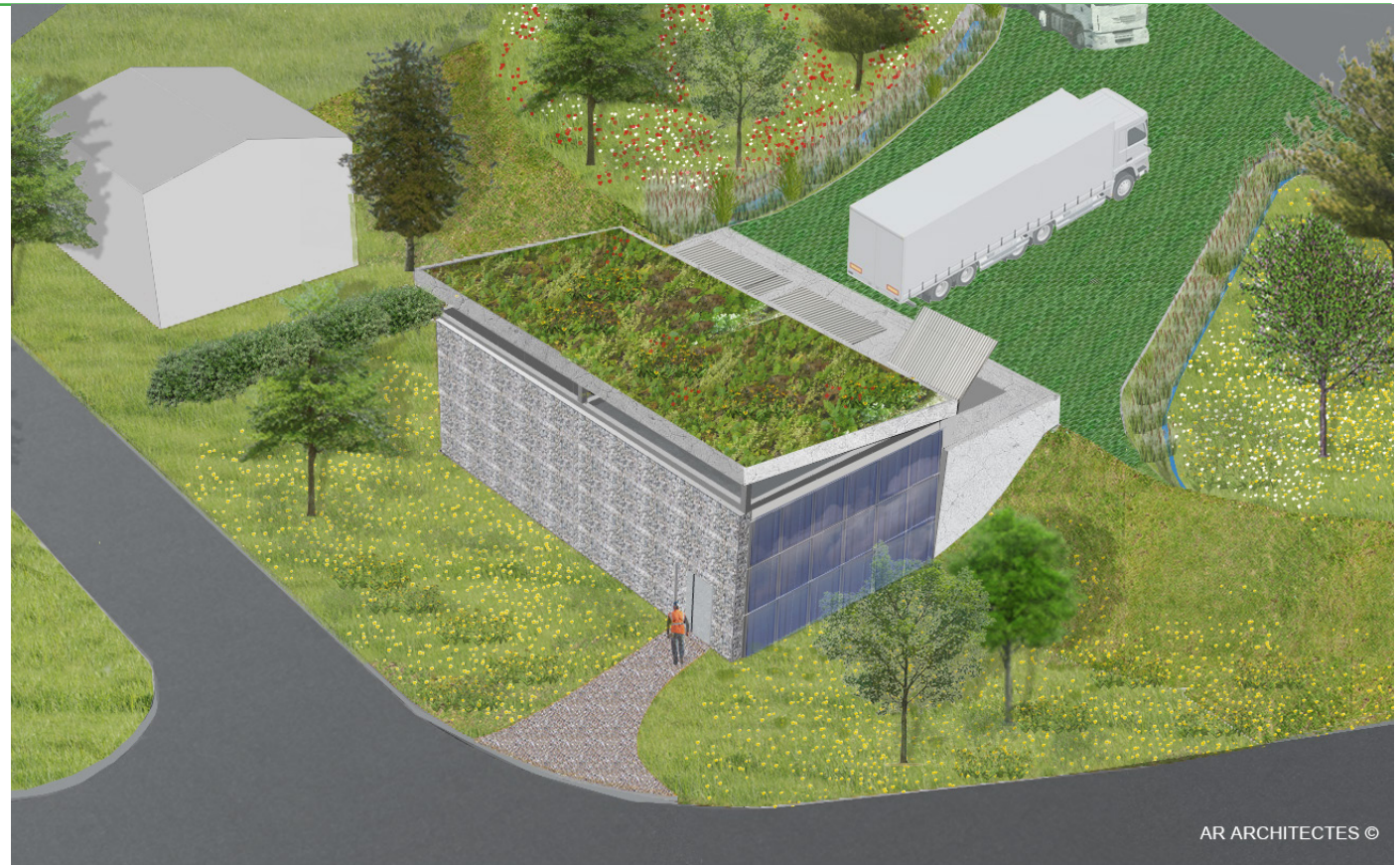
ECO-CONSTRUCTION OF BIOMASS BOILER AND ITS HEATING NETWORK FOR THE AGRICULTURAL SCHOOL IN RETHEL (08), FRANCE

INDUSTRIAL SITE, SUSTAINABLE APPROACH: CONSTRUCTION OF A BIOMASS BOILER

CLIENT SEBL Grand Est, Région Grand Est, AEDIFICEM
LOCALISATION LEGTA de Rethel (08)
PROJET Biomass boiler house and its heating network
MISSION Design and landscape
CONSULTANT AR ARCHITECTES, CETEC, ECO3E
AREA Plot : 257 733 m²
 Building : 180 m² surface
COST 1.400 K €
DATE Competition 2021

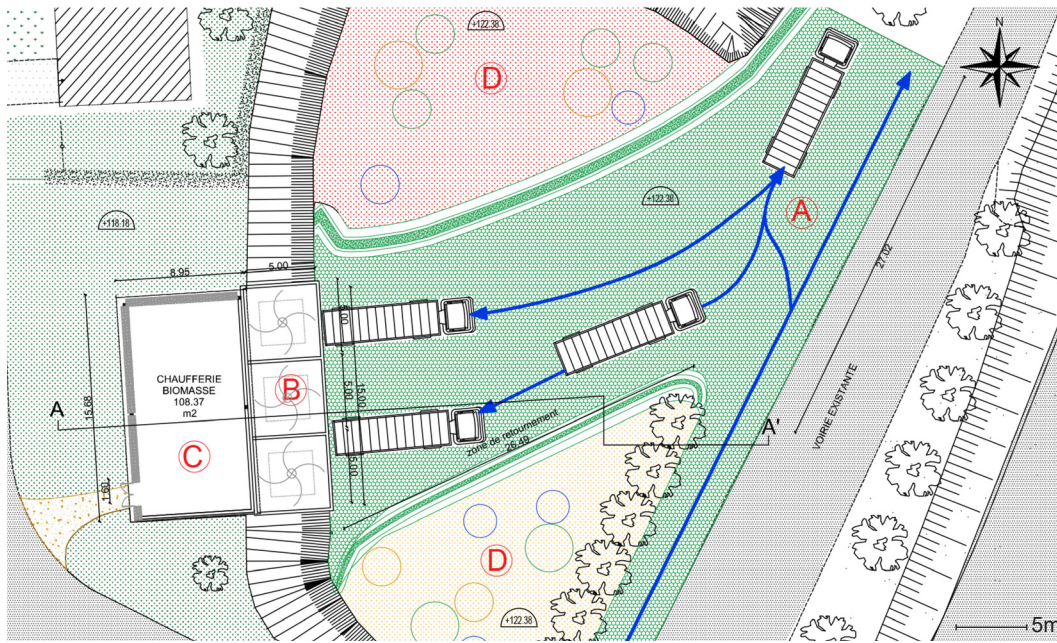


Mass plan of the heating network



Perspective of the project integrated into its environment

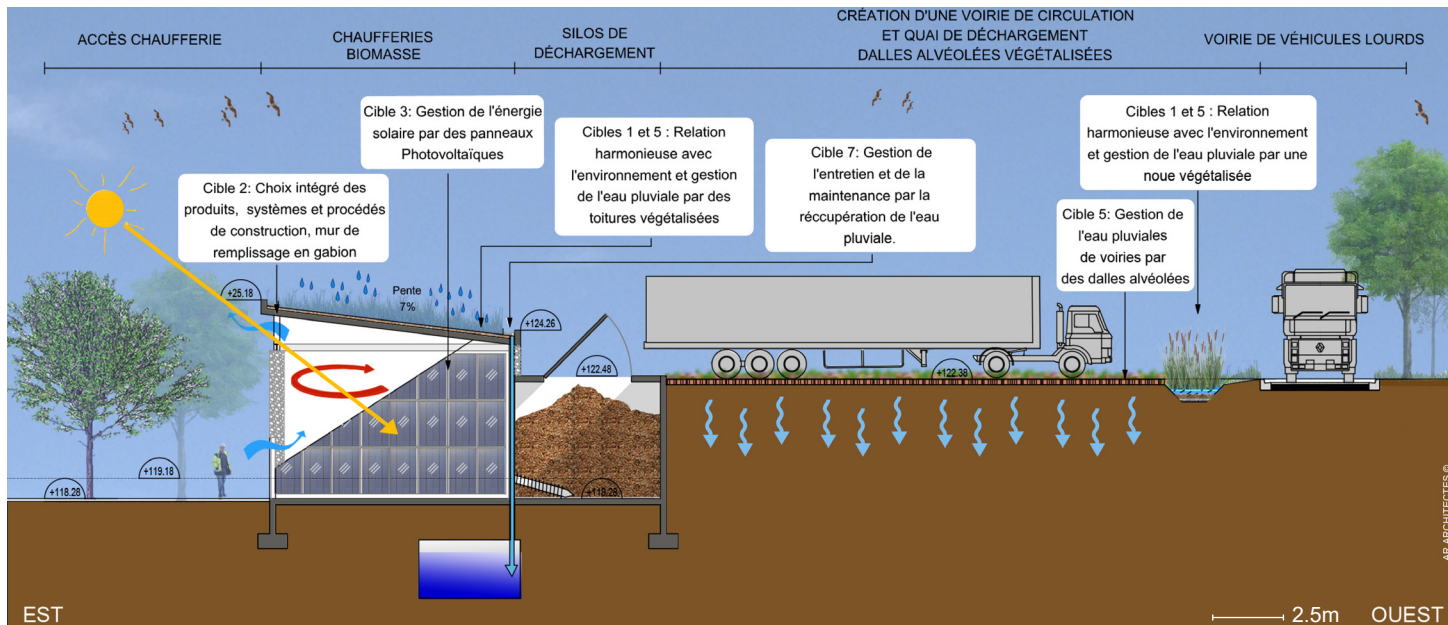
The “Biomass boiler house and its heating network” project is presented as a functional and sustainable solution. The biomass boiler is built around an elevated dock to the west of the plot dedicated to unloading and a lower dock to the east giving access to it. The storage silos inscribed in the natural topography of the site facilitate the unloading of heavy vehicles. The intensive landscaping of the plot allows the project to blend harmoniously into its near and far environment. The lining of the docks is built of permeable honeycomb slabs, it contributes to the green identity of the site and to the zero discharge of rainwater from the plot.



LEGENDE

- (A) UNE INFRASTRUCTURE DURABLE**
 - Sens de circulation des véhicules lourds.
 - Voirie lourde en dalles alvéolées.
 - Voirie lourde existante
 - Noues végétalisées : plantes semi-aquatiques
 - Cheminement piéton en stabilisé
- (B) QUAI DE DÉCHARGEMENT SILOS À BIOMASSE**
- (C) BÂTIMENT BIOCLIMATIQUE : 3 CHAUFFERIES À BIOMASSE**
- (D) ABORDS PAYSAGERS : BIODIVERSITÉ RESTAURÉE**
 - Bosquets d'arbres et d'arbustes.
 - Peuplier, Saule des vanniers, Noisetier
 - Prairie rouge
 - Prairie jaune
 - Prairie verte existante

Site plan: infrastructure and biomass boiler building



section HQE®

HQE® targets

Target 1 : Harmonious relation between building and its environment

- This landscape project restores and protects biodiversity

Target 4: energy control

- Reduce energy requirements with a sound architectural design. The design improves the overall aptitude of the shell to limit heat loss and reduce energy needs in the summer and winter.
- Reduce primary energy consumption and related pollutions (heating, ventilation, lightning...)

Target 5 : water management

- Rainwater management on the plot is treated with several natural process. This process protects biodiversity, recycles water and reduces maintenance operations.
- A part of this rainwater is managed by green roofs that are designed on the top of the buildings.
- Green planted ditches are designed to collect exceptional stormwater.

Target 9 : visual comfort

- Visual comfort is helped by the intensive plantation of the plot as well as the bio-based and bioclimatic design of the architecture.

Target 15 : biodiversity

- All of the landscaping carried out on the site combines the effectiveness of ecological treatment with the conservation of flora and fauna adapted to this environment.

eco-Design OF a Waste DISPOSAL in saint-germain-en-Laye (78), France



INDUSTRIAL site, HQE® APPROACH : waste and recovery

CLIENT	Saint- Germain Boucle de Seine
LOCATION	Saint-Germain-en-Laye (78) and Chambourcy (78), FRANCE
MISSIONS	Architecture and landscaping design concept and follow up mission
CONSULTANT	AR ARCHITECTES, BERIM
PLOT area	5 730 m ²
BUILDING area	220 m ²
COST	1 800 000 €
DATE	Competition 2020



Masterplan

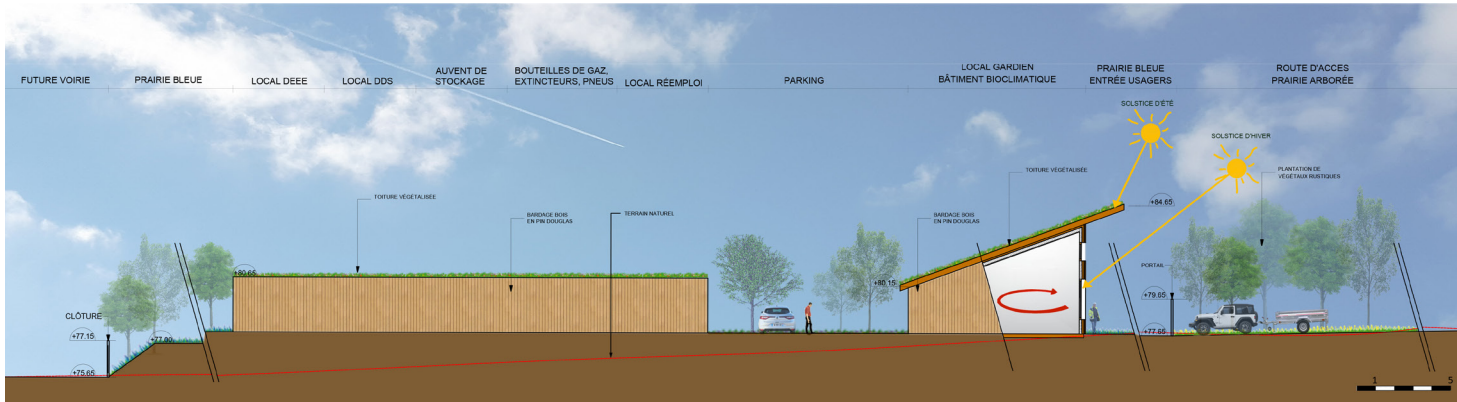


South West view perspective

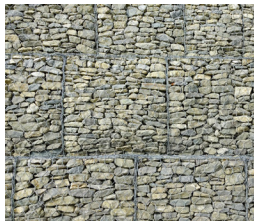
The “Boucle de la biodiversité” project is presented as a functional and sustainable solution. The environmental platform is built around a high dock to the west of the plot and a low dock to the east. In order to limit the earthworks. The project has been based on the natural topography of the site.

The intensive greening of the plot allows the project to integrate harmoniously into its near and far environment. In addition, the coating of the platform with green alveolated slabs allows permeability and zero discharge of rainwater into the earth.





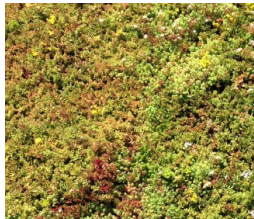
High environmental quality HQE © section - North/South axis



Gabion retaining wall



Alveolate slabs



Green roof



Wooden fiber insulation



Wooden frame structure



Pine wood cladding



View on the North facade and birdhouses

HQE® targets PROCESSED

Target 1 : Harmonious relation Between Building and its environment

- Trees planted along the plot boundaries act as a link between the town entrance to the south and the forest of Saint-Germain-en-Laye to the north of the plot.

target 2 : CHOICE OF integrated PRODUCTS AND BUILDING MATERIALS

- Construction and coating materials were chosen for their durability, adaptability and low maintenance.

target 5 : water management

- Rainwater management on the plot is treated with several natural process. This process protects biodiversity, recycles water and reduces maintenance operations.

- Water is managed by green roofs that are designed on the top of the buildings.

- Green planted ditches are designed to collect exceptional storm water.

target 8 : HYGROTHERMAL COMFORT

- The use of wooden fiber insulation as well as the installation of a green roof allow the guardian's room to enjoy hygrothermal and acoustic comforts.

target 10 : VISUAL COMFORT

- Visual comfort is treated thanks to the intensive plantation of the plot as well as the bio-based and bioclimatic design of the architecture.

target 15 : BIODIVERSITY

- All of the landscaping carried out on the site combines the effectiveness of ecological treatment with the conservation of flora and fauna adapted to this environment.

- Birdhouses are located on the North facade of the waste storage building.



eco-construction OF HARCOURT'S ELECTRICAL SUBSTATION BUILDING IN ISSY-LES-MOULINEAUX (92), FRANCE

INDUSTRIAL site, HQE® APPROACH: ELECTRICAL SUBSTATION

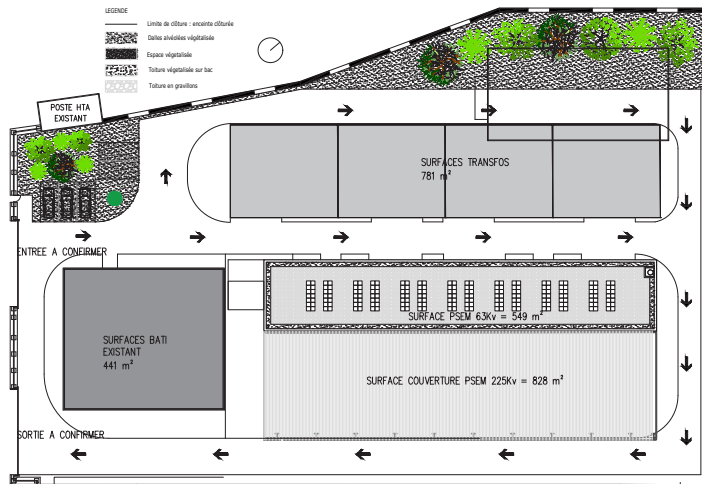
Client	RTE
Location	ISSY-LES-MOULINEAUX (92)
Project	Architecture and landscape design of Harcourt's electrical substation in Issy-les-Moulineaux
consultant	AR ARCHITECTES, OTE
mission	Complete architectural and landscape project management
Electrical capacity	220KV et 63kv
Budget	6 000 000 €
Timeline	Competition



View of the building in the urban and dense site.

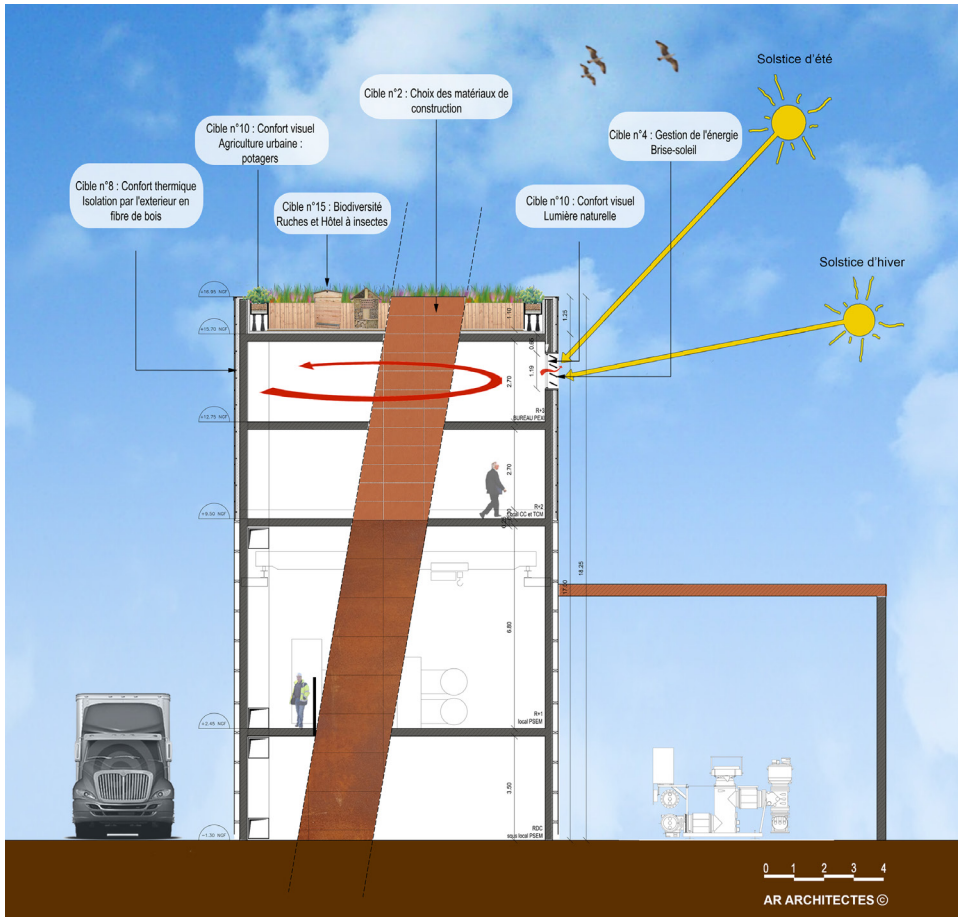
The HARCOURT electrical substation building concept, also renamed “Biodiversity Skin”, was to integrate within the urban environment by combining nature and technicity. The environmental and ecological approach was based on a global design of this eco-construction project (technical building and structure), considered as a living organism located in its environment and reacting with it.

The HARCOURT electrical substation building meets the requirements of RTE's specifications and integrates perfectly into its environment by participating in the restoration of biodiversity in industrial and urban environments, following an High Environmental Quality (HQE®) approach.

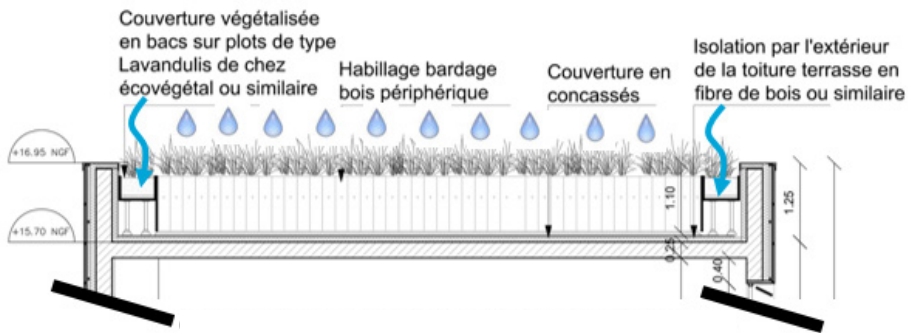


Masterplan





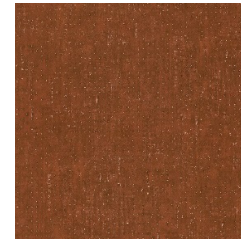
High Environmental Quality® section



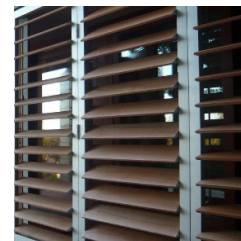
Section of the green roof



Clay cladding



Metal cladding in ochre-tinted aluminium (rusty appearance)



Metallic sunshade



Urban vegetable garden on the accessible roof

HQE® TARGETS:

Target 1: HARMONIOUS RELATION BETWEEN BUILDING AND ITS ENVIRONMENT

- The building was designed after studying the climat according to the the prevailing winds, and the sun trajectory, ...

Target 2: CHOICE OF INTEGRATED PRODUCTS AND BUILDING MATERIALS

- Constructive choices :sustainability, adaptability andeasy maintenance of the materials of construction (concrete structure; metal cladding; clay facade; metallic sunshade)

Target 4: ENERGY MANAGEMENT

- Bicolimatic architecture oriented following an South/ north axis.

Target 5: WATER MANAGEMENT

- Permeable green roofs are designed on the top of the building, they allow rainwater management and treatment.

- Circulation areas are equipped with hollow-core green slabs allowing rainwater to drain and guarantees a clean and stable area even when it rains.

TARGET 15 : PROTECTION OF BIODIVERSITY

- Aromatic plants, urban garden, insect shelters, and beehives are placed on the roof to protect the biodiversity.



eco-environmental and LANDSCAPING DESIGN OF a waste water treatment PLANT in VILLIERS-SAINTE-FRÉDÉRIC (78) - FRANCE

“Living in the Canopy”

INDUSTRIAL site, HQE® APPROACH: water, treatment and PHYTOEPURATION

Client	Inter-communal sanitation syndicate of the region of Neauphle le Château (SIARNC)
Location	Villiers Saint Frédéric (78)
Projet	Desing concept, Architecture HQE® and landscaping
CONCEPTION	AQUALTER, BOUYGUES, TECH-FINA, BERIM, AR ARCHITECTES
PRODUCTION	
area	2 000 m ²
cost	20 000 000 €
Date	Competition 2017



3D Perspective of the project integrated into its environment



Mass plan of the treatment plant, “Living in the Canopy”

The project's design aim was to create a perfect harmony between the existing green site and future industrial building. The operating building objectives was to cross the river “La Mauldre” and to create a very strong link into trees and nature; an if the building wad inhabiting nature “Living in the Canopy”. The operating building was designed in a bioclimatic orientation. It is very well insulated and constructed with a wooden timber frame. The roofs are vegetated and the upper roof has nests for birds and hives for bees. A pedestrian educational pathway was designed for scholars to show awareness on environmental issues and biodiversity restoration in an industrial plant.

eco-renovation of the Technical center in Metz - France



INDUSTRIAL site, HQE® APPROACH : TECHNICAL center

Client	City of Metz
Location	Metz (57)
Project	Tertiary building "A" renovation HQE®
MISSION	Design concept and follow up mission, architecture HQE® and landscaping.
Designer/contractors	AR ARCHITECTES, VERDI Grand Est
area	1 200 m ² area
cost	1 214 K€
SCHEDULE	Competition 2017



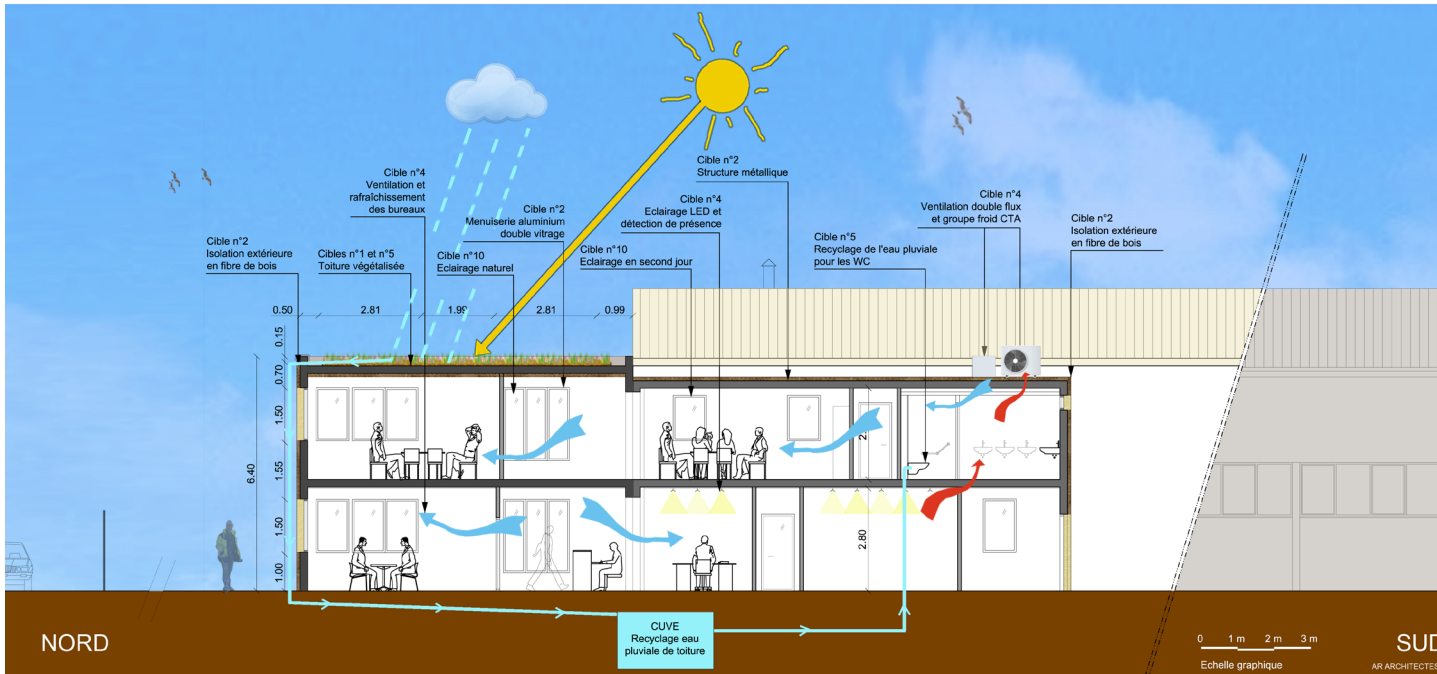
CTPU mass plan



View on the technical center from Dreyfus Dupont street

Metz city's objective was to renovate the Urban Technical Center, located in an industrial area, in the north of the city, and more precisely the renovation of the administrative and staff building "A" for administrative and security staff. AR ARCHITECTES designed an eco-project, functional and coherent with external spaces. The building includes vertical cladding to give more height.





HQE® section integrated to the tertiary building.

HQE® targets:

Target 1 : Harmonious relationship between the building with its surroundings:

- Architectural treatment of the administrative and staff building offers from Dreyfus Dupont street vertical rhythms: sometimes metallic, sometimes painted. These materials variances gives more height to the building, taking into consideration the local environment.
- Entrance and exit managed by a double access.

Target 2 : Choice of integrated products and building materials:

- Choices of materials for their durability, their adaptability and the easy maintenance of the construction.
- Exterior insulation with wood fiber panels.
- Exterior plaster and recyclable metal cladding.
- Prefabricated metallic structure for the administrative and staff building extension.

Target 4 : energy management:

- Natural light in all the workspaces.
- Double glazed aluminum carpentry.
- Mechanical ventilation system dual flow.

Target 5 : olfactory comfort:

- Olfactory comfort is ensured by an interior vegetalized wall in the reception hall.

Target 6 & 7 : Hygrothermal and acoustic comfort:

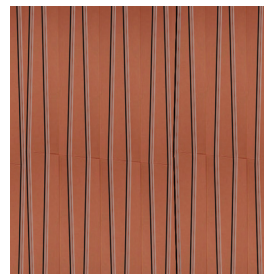
- Thermal and acoustic comfort are guaranteed by the green roof on the top of the building.

Target 8 : water management:

- Rainwater management by green roofs.
- Rainwater coming out of the roof is stored in a tank. Water is pumped for irrigation and cleaning..



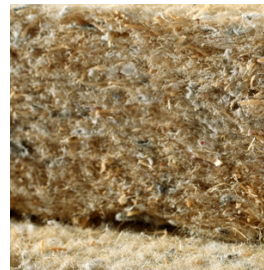
View on the inside hall and the green walls.



Aluminium cladding



Green roof



Wood fiber insulation



Hemp wool insulation

eco-sewage TREATMENT PLANT IN BOIS-LE-ROI, CHARTRETTES - France



A lecture of this project was given in the department of equipments of Fontainebleau in 2010, and for the architecture school : ESA.
The project was also published in "Environment magazine" in 2008 and in "Ecologik" in 2009.

INDUSTRIAL SITE, HQE® APPROACH : WATER, TREATMENT AND PHYTOEPURATION

Client	Cities of Bois-le-Roi Chartrettes Fontaine-le-port
Location	Bois-le-Roi
Project	Eco-design HQE®
MISSION	Design concept and follow up mission, architecture HQE® and landscaping
Design and BUILD	AR ARCHITECTES, Contractors OTV France Nord, CAVAZZA
area	plot 5 476m ²
CAPACITY	10 000 inhabitants
COST	2 100 000 €
DATE	From 2007 till 2008



Reed water pond



© ARKA OUEST - Vannes

Perspective on the bioclimatic operating buildings

Bois le Roi- Chartrettes- Fontaine-le-Port: a waste water treatment plant or an ecological park?

An innovative waste water treatment plant with a capacity of 9 800 Equivalent-inhabitants, treating 1933 m³/d of sewage water in the heart of the Livry Park in Chartrettes. The site is surrounded by forests and the river Seine where water is rejected. Rustic bushes are part of the scenery and are used for pedestrian walkways. Wetland as ecosystems are recreated in this environment.





Architectural and landscaping perspective of the plant in the Bois-Le-Roi forest's environment.



View of the building in wooden cladding with boxes for birds.



View from the green ditch

HQE® targets

LANDSCAPED ARCHITECTURE

The whole idea is even more interesting as this Seine and Marne waste water treatment plant is located in the heart of the protected area within the Livry Park itself. We must respect this environment and value the building to prove that even a waste water treatment plant can be designed in harmony with its environment.

Four important axes have been defined:

- Zero visual pollution objective:

Bois le Roi waste water treatment plant has a perfect visual integration with its environment. A terrace was created above the operating rooms letting the public to view the site and appreciate the landscaping. A green ditch collects water from the plant, then let it back to the river La Seine completely cleaned.

Wetland ecosystems are recreated in their environment.

- Zero olfactory pollution objective:

The polluted air from the plant is treated at a rate of 67 200m³ per day using a biological treatment.

- Zero sound pollution objective :

Sound from the mecanical process are entirely treated by the use of sound insulation materials. The site has a global sound of 30dB.

- Restoring natural resources and creating biodiversity:

Buildings have built-in biodiversity conservation techniques such as rustic swallow nest boxes.



eco-Design OF THE SEWAGE treatment PLantIn Valenciennes - France

INDUSTRIAL site, HQE® APPROACH : Water, treatment and PHYtoePuration

Client	SIAV - Syndicat Intercommunal d'Assainissement de Valenciennes Valenciennes
Location	Valenciennes
Project	Water treatment plant with zero pollution and positive energy
mission	Design concept and follow up mission, architecture HQE® and landscaping
Design and BUILD area	AR ARCHITECTES, DEALZUA, DEGREMONT, BG, AMODIAG, VERDI, AIRELE
BUDget	5 600m ² , plot 80 000m ²
CaPacitY	40 000 000 €
Date	150 000 inhabitants



View on the plantations



Perspective view of the project in the environment.

The site of the future waste water treatment plant is located in city of Valenciennes, in a zone of 23 hectares, in the North of the city. The objective was to create a waste water treatment plant in an urban and natural environment in the entrance of the city of Valenciennes.





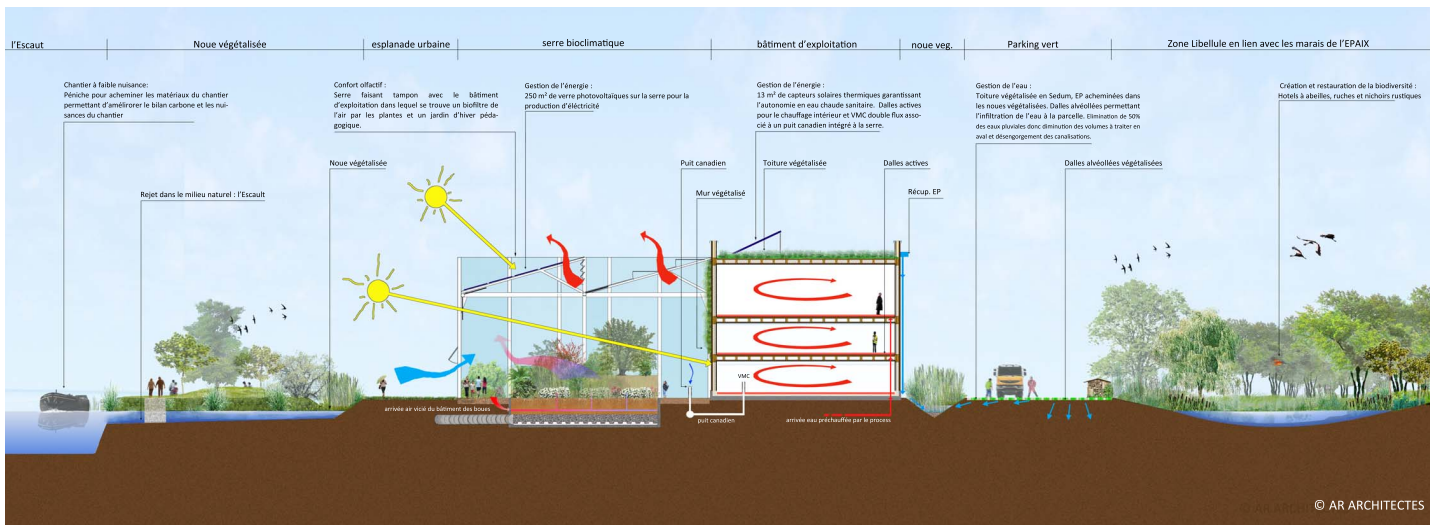
Architectural perspective from main road



Project in its environment



Architectural perspective



Section HQE©

HQE® targets

TARGET 1 : HARMONIOUS RELATION BETWEEN BUILDING AND ENVIRONMENT.

- Good integration in the landscape and the plot of land thanks to a screen raised in the right of the wet zones. The mirror effect of the metallic cladding of the urban facade strengthens the low impact of the construction towards the neighborhood.
- Every construction have been optimized from civil works to operating building. A large glass house was designed close to the operating building. Its participats in heating the building during cold seasons.

TARGET 2 : INTEGRATED CHOICES OF PRODUCTS, SYSTEMS AND PROCEDURE OF CONSTRUCTION

- Laminated wood and natural wood cladding
- Skeleton and metallic cladding
- Low wall in gabions
- Green walls

TARGET 4 : ENERGY MANAGEMENT

- Operating building Minergie A LABEL
- Technical buildings Minergie P LABEL
- Thermal Solar cells : 13m²
- Photovoltaic solar cells : 250m²

TARGET 5 : WATER MANAGEMENT

- Rain water is collected on green roof tops (2 000 m²).
- Rainwater on roads is collected into ditches then driven to the constructed wetland.

TARGET 9 : ACOUSTIC COMFORT

- Insulation in bio-sourced materials: absorbent cotton of cellulose, wooden wool and cork.

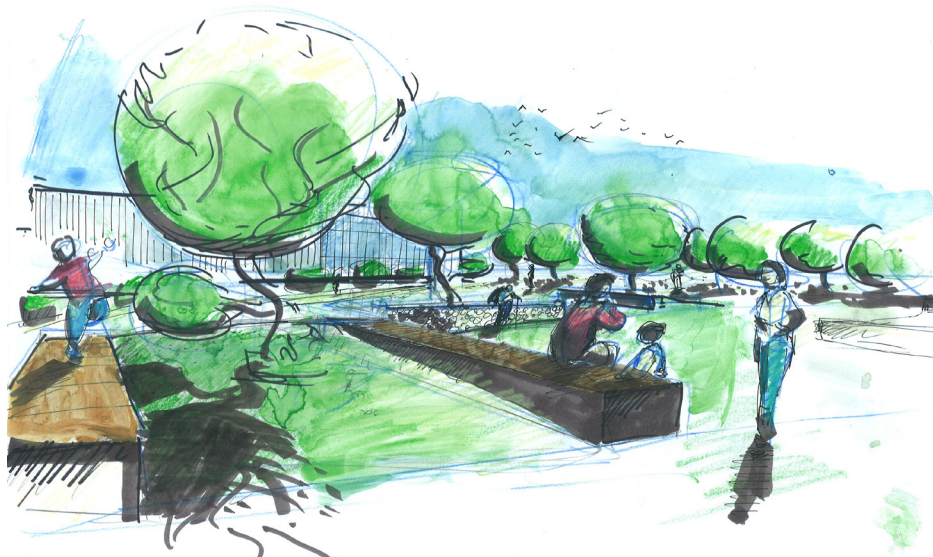




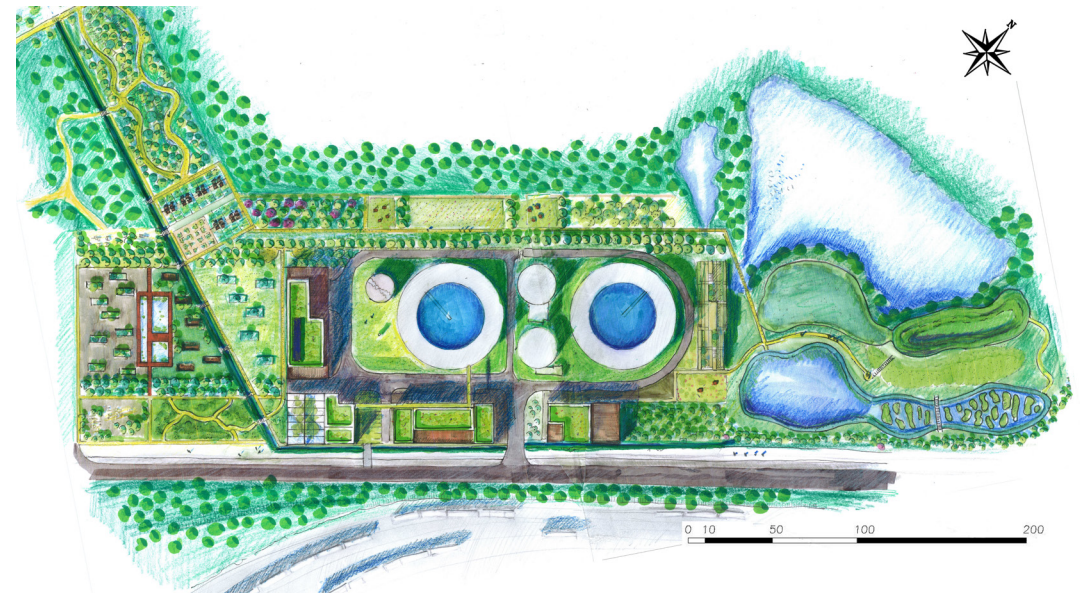
Project in its environment



Architectural perspective



View of the city garden in link with the futur urban district



Mass plan



RECYCL'EAU, ECO-DESIGN OF THE SEWAGE TREATMENT PLANT IN CLAYE-SOUILLY - FRANCE



INDUSTRIAL SITE, HQE® APPROACH : WATER, TREATMENT AND PHYTOEPURATION

CLIENT	City of Claye-Souilly
LOCATION	Claye-Souilly
PROJECT	Eco-design HQE® and landscaping
MISSION	Design concept and follow up mission, architecture HQE® and landscaping
DESIGN AND BUILD AREA	AR ARCHITECTES, Degrémont Suez, Zub, Pinto, génie civil
CAPACITY	3 500 m ²
COST	12 000 inhabitants
DATE	7 800 000 € From 2008 till 2011



View on the operating and technical buildings



View of the project

The objective of this project was to combine sustainable technical architecture with a setting rich in fauna and flora, by reducing impact on the surroundings.





View on the exterior terrace



Sculpture realised by Atelier Pennaneac'h for educational tour inside the plant



View on the recycled civil work into and an aquatic garden



HQE® targets

Target 4: energy management

- Thermal solar sensors are set up on the operating building to make it self sufficient in hot water supply .

- Canadian well provides a supply of fresh air into the building carrying it in an underground air duct. According to the temperature, this air duct cools down or heats the air using the ground's thermal inertia.

The air acts as a heat transfer fluid whereas the duct acts as a thermal exchanger while transferring the air to the building. It is mainly used as an air conditioning system but also in the winter to pre-heat incoming air.

The air circulates in the underground piping (150 to 200mm in diameter) and "exchanges" its calories with those in the Earth. In winter, the air coming into the well is heated progressively due to the Earth's highest temperature. In the summer, the opposite occurs.

●ADVANTAGES:

- Thermal comfort.
- Increase in temperature from 5 to 8°C in the winter, drop in temperature from 5 to 8°C in the summer.
- Natural ventilation system.
- Natural air conditioning system.

Target 5: water management

- This is an essential target of this project. The goal is to store and treat all roof rain water for decades to come.

A sloped roof with sedum plants is planted on a 10 to 15 cm of substrate and will soak up all rainwater before channelling it to an underground storage tank of around 5m3.

eco-Design OF THE HOUSE OF ENVIRONNEMENT IN THE LANDFIELD OF SAINTE-ROSE GUADELOUPE (971)- FRANCE

INDUSTRIAL SITE, HQE APPROACH: waste treatment

Client SITA Espérance
Suez Environnement
Location Sainte-Rose, Guadeloupe
Project Eco-design HQE®
Mission Design concept and follow up mission, Architecture HQE® and landscaping
Designer AR ARCHITECTES
area 225m², plot 250 000m²
cost 30 000 000 €
Date From 2009 till 2011



View on the educational terrace



Perspective of the bioclimatic house of environment

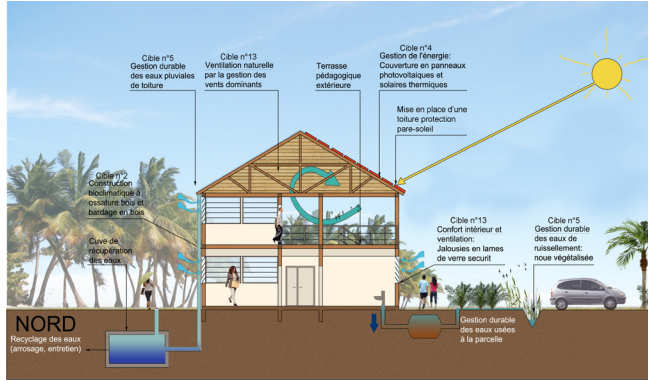
The house of environnement frames are in wood with wood cladding and a galvanized steel roof, with solar panels and solar thermal panels. Landscaping, plant screens, reed beds, and wetlands are local species in harmony with the surrounding environment.

The project includes a private ground floor for administrative purposes and a level opened to the public with an educational room and a large wooden covered terrace overlooking the scenery, on the waste treatment plant and the natural rural area.

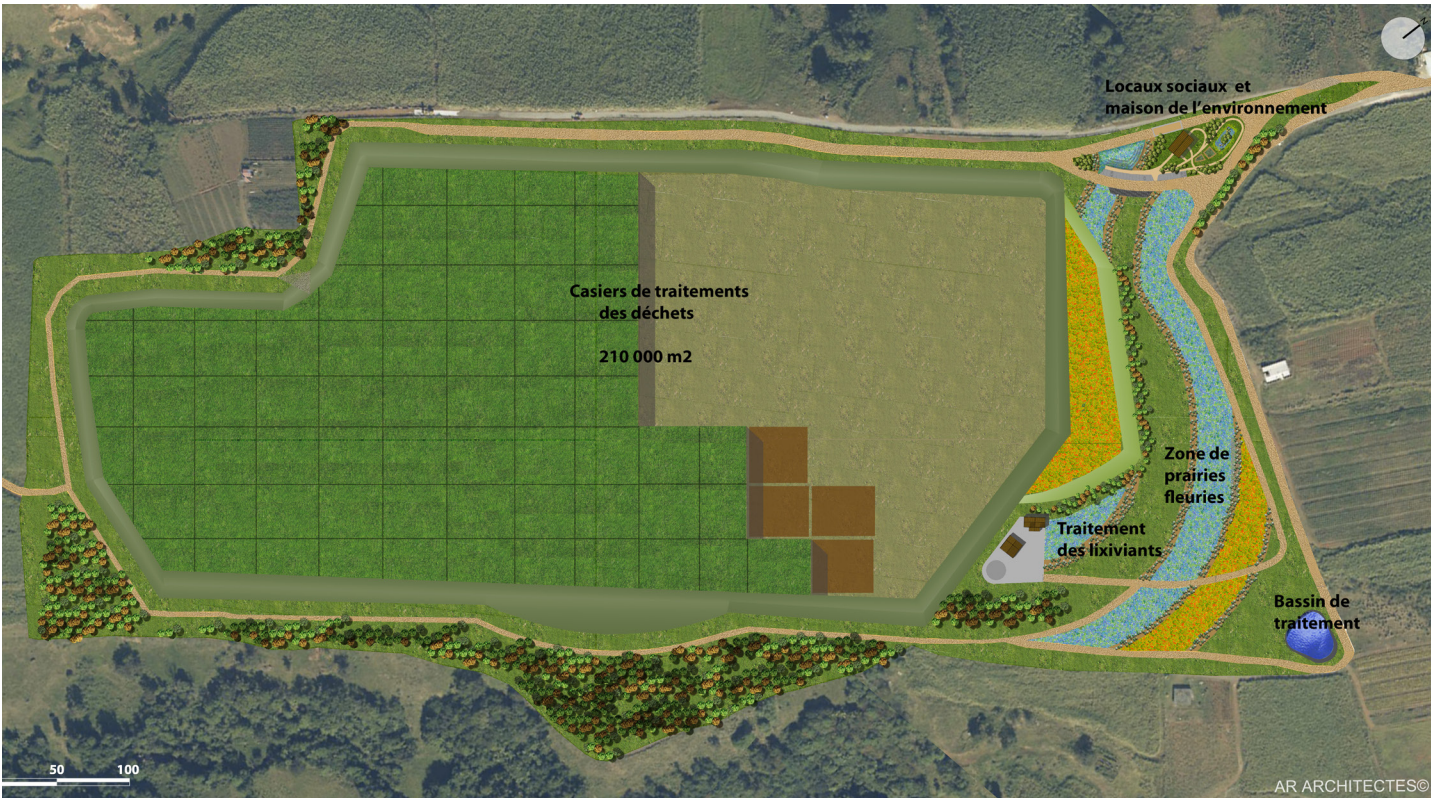




View of the house of environment



Section HQE©



Mass plan - Landfield 250 000 m²

HQE® targets

Target 1 : Harmonious relation Between Building and environment.

Good integration into the scenery via landscaping, plant screens, reed beds, and wetlands: local rustic plant species in harmony with the surrounding environment. The construction of a bioclimatic industrial-type building with modern design is adapted to the geographical situation.

Target 2 : Integrated Choices of Products, Systems and Procedure of Construction

Use of biodegradable materials. Laminated wooden frame, robust and sound materials, renewable and recyclable, quick assembly, light weight structure enabling savings in foundations.

Target 4: Energy management

Bioclimatic and passive principle according to the Sun exposure and possible supplies of heat and cool air. Facing East-West to capture light and heat from the Sun while protecting oneself from overheating: adapting to local climate. Building is on two levels to optimize air circulation: wooden terrace on the upper floor, main areas have double exposure. Windows with shutters to keep out from the heat when the temperatures are very high.

	Classical building	Bioclimatic wooden frame building
Electricity used	171	58,8
Coefficient of conversion	180	180
Kg CO ₂ /m ² /year	30,78	10,60
Area m ²	128	128
Tons of CO ₂ /year	3,9	1,3

Board showing the CO₂ footprint comparison between a classical building and a wooden bioclimatic building.



eco-Design OF a sewage treatment PLant in SAINT-GENIÈS-DES-MOURGUES - France



INDUSTRIAL site, HQE® APPROACH : Water, treatment and PHYtoepuration

CLIENT	Communauté d'agglomération de Montpellier
LOCATION	Saint-Geniès-des-Mourgues
PROJECT MISSION	Design and build Design concept, architecture and landscaping HQE® competition
DESIGN AND BUILD AREA	AR ARCHITECTES, GTM ENVIRONMENT 130 m ² , plot 12 000 m ²
CAPACITY	2 500 000 €
COST	7 200 inhabitants
DATE	Competition 2014



Project perspective



Bioclimatic operating building

The site, is situated near the village of Saint-Géniès-des-Mourgues and joins in a rural frame , at the heart of a wineyard zone.

The objective is to create a plant treating sewage water of the city with a classical and ecological way. Reed beds treat sludge and constructed wetlands are designed for water coming out of the plant. The operating building is in a wooden frame and designed in a bioclimatic way.

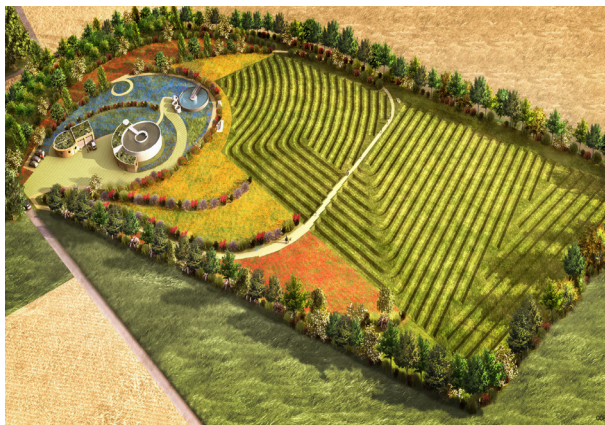


THE GARDENS OF SIART - DESIGN AND BUILD OF THE WATER TREATMENT PLANT IN THOIRY - FRANCE



INDUSTRIAL SITE, HQE® APPROACH : WATER, TREATMENT AND PHYTOEPURATION

Client	Intercommunal Syndicate of purification in Région de Thoiry,
Location	Thoiry
Project mission	Design and built HQE® Design concept and follow up mission, architecture HQE® and landscaping
Design and BUILD area	AR ARCHITECTES, ARTELIA, Ternois, JEROME 525 m ² , plot 24 000 m ²
CAPACITY	5 100 inhabitants
COST	2 000 000 €
DATE	<i>Décember 2011</i>



Aerial view on the site of the plant and its infiltration gardens



View from the operating building, june 2012



The objectif of the project was to create a plant integrated into a countryside environment with a very low impact on it. The building are covered with wooden cladding and gabions. Cleaned water is directed to green infiltration ditches with a zero reject.



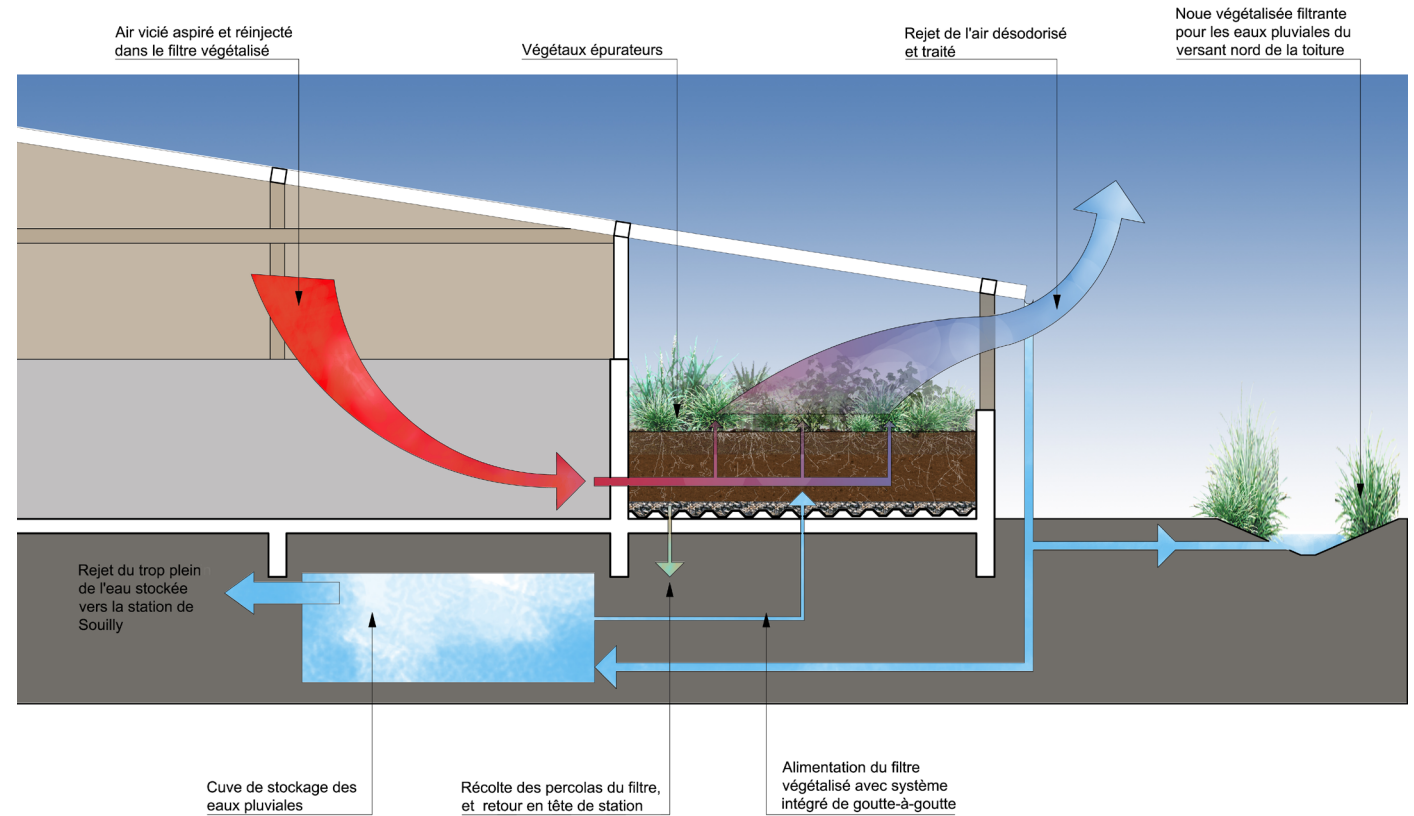
eco-Design OF a SLUDGE STORAGE SHED IN SOUILLY - France

INDUSTRIAL SITE, HQE APPROACH: WASTE TREATMENT STORY

CLIENT	City of Claye-Souilly
LOCATION	Claye-Souilly
PROJECT MISSION	Design and build Design concept and follow up mission, architecture HQE® and landscaping
DESIGN AND BUILT	AR ARCHITECTES, Degrémont
AREA	Suez, ZUB, PINTO
CAPACITY	2 500 m ²
COST	72 000m ³ /h (polluted air)
DATE	1 500 000 €
	May 2011



View on the terminated project



Air treatment integrated into the sludge storage shed is partially made of reinforced concrete with partition walls 2,20m high. Above this height, a galvanised metal structure holds a larch wood cladding and translucent polycarbonate siding materials. On the south side of the works there is a green planted filter with a surface of 135 m² it treats 72 000 m³/h of polluted air coming out from the 2 500 m² storage shed.





View on the structure of the construction



Treatment of 72 000 m³/hour on an area of 135 m² of green planted filter

Polluants	Concentrations (mg/m ³)	Objectifs à atteindre (mg/m ³)
Ammoniac (NH ₃)	6,5	0,7
Amines (R-NH)	N.C	0,1
Hydrogène sulfuré (H ₂ S)	0,05	0,1
Mercaptans (R-SH)	0,013	0,05

N.C. : Non communiqué

Board 1: Pollution treatment

Débit (m ³ /h)	72 000
Profondeur du lit filtrant (m)	1,1
Temps de résidence minimal de l'air dans le filtre (s)	7,425
Volume du lit filtrant (m ³)	148,5
Surface du lit filtrant (m ²)	135
Longueur du biofiltre (m)	30
Largeur du biofiltre (m)	4,5

Board 2: Biofiltre characteristics

The biofiltration is a technology used to treat polluted air with high concentrations in ammoniac type (chap) (NH₃) and hydrogen sulphide (H₂S).

The biofiltration has many advantages comparing to chemical-physical air filtration. It is economical and ecological.

Treatment by biofiltration takes place in two stages:

- 1st stage : pollutants settles on the recovering substratum.
- 2nd stage: microorganisms biodegrades the pollutants. Plants absorb the products that serve to regulate its microbial growth.

The biofilter integrates a water management system which has two objectives:

- Irrigation and filtration of plants

HQE® targets

Target 5: water management

- The domestic hot water is warmed by the thermal solar panels. Its surface is 2 to 3m²
A tank of storage of 300L allows to produce 100 to 150L of warm water per day, that is 100 % of the consumption of two persons. There's an economy of 300 to 450€ per year.

- The annual water consumption is estimated approximately to 300 L/m² for the irrigation, according to climatic conditions, that are approximately 40m³ per year.

Target 13: air management

- The design of the biofilter for air treatment presents numerous advantages:

- Uses zero chemicals.

- Treatment of polluted air by the plants creates zero impact on the surrounding inhabitants.

- Landscaped integration.

- Low and easy maintenance.

- Economical comparing to other high energy consuming treatments.

eco-Design OF AN INNOVATIVE SYSTEM TO COLLECT WASTE IN A DISTRICT BY A SUCKING OFF PLANT AND SYSTEM IN SAINT-OUEN - FRANCE

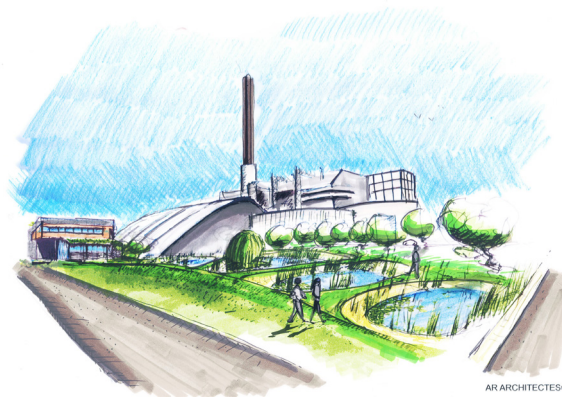


LA FAILLE VERTE

ECO-CENTRALE D'ASPIRATION POUR LA COLLECTE PNEUMATIQUE DES DÉCHETS MÉNAGERS À SAINT-OUEN (93)

INDUSTRIAL SITE, HQE APPROACH: WASTE TREATMENT

Client	SEQUANO AMENAGEMENT
Location	Saint Ouen
Project mission	Design and build Design concept, architecture HQE® and landscaping competition
Design and BUILD area	AR ARCHITECTE, EHTP-SOC
cost	435 m ² 5 120 000 € building + 10 000 000 € infrastructure
Date	Competition 2012



Perspective on the site entrance



Perspective sucking off building

The site represents a juxtaposition of various tissues which makes it peculiar: the existing factory, the view over the river Seine, the future park, the future islands.

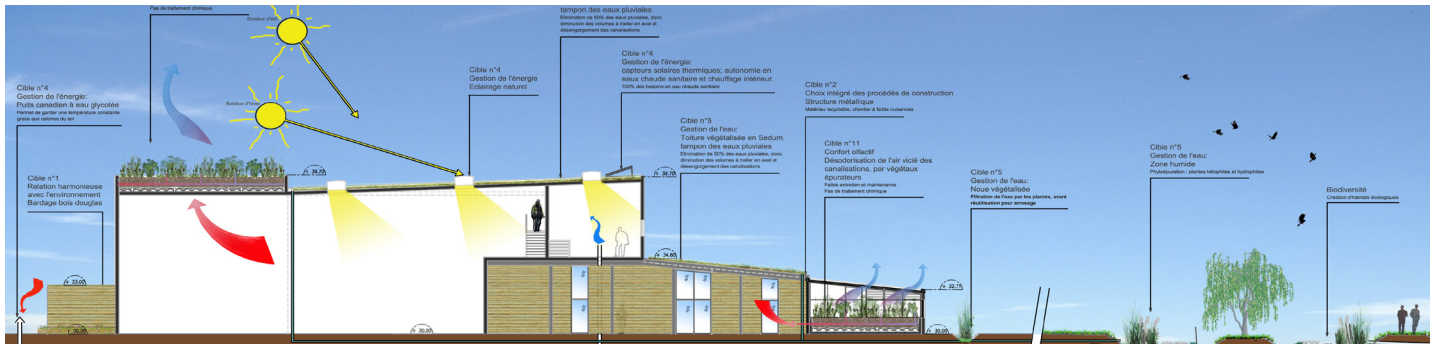
The entire site of the future sucking off plant, has its place within a green setting.

The design combines sustainable and recyclable construction materials: gabions, timber frame, wood cladding, a glasshouse oriented to the east allows natural highlighting, ventilation and offers a direct view to the River La Seine.





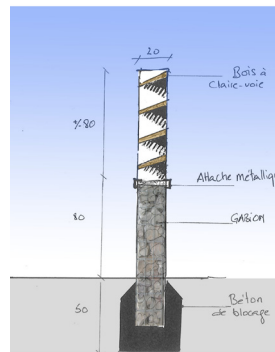
East elevation



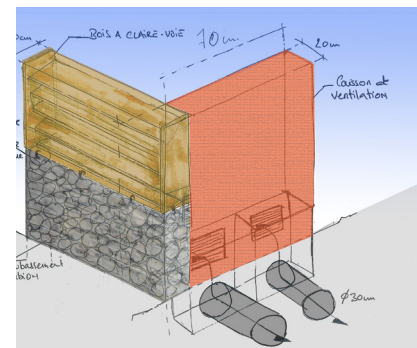
HQE section



View of the waste trash units integrated on sidewalks



Schematic section



HQE targets

Target 4: ENERGY MANAGEMENT

- Design of the construction based on a north and south axis
- Shade created by the vegetation.
- Bio-climatic construction.
- Solar thermal cells inside cooling and heating.
- **Indoor comfort:** implementation of a canadian well.
- **Green roofs :** reduction up to 40% of thermal heating.

Target 5: WATER MANAGEMENT

- Storm water collected on green planted roofs.
- Water runoff treatment by planted ditches.

Target 6 : WASTE MANAGEMENT

Low carbon footprint, innovative waste management by a new system of collecting the waste : sucking off plant and system.

Target 9 : ACOUSTIC COMFORT

- Sound insulation by recycled paper foam.

Target 11 : OLFATORY COMFORT

- Smell pollution is operated through a bio-filtering garden and a greenhouse integrated into the building.



URBAN PLANNING AND LANDSCAPING

Ile de France, France and International

- Parks, HQE® approach
- Eco-districts and rain water treatment by plant
- Infrastructure, HQE® approach



ECO-DESIGN OF A FILTERING SYSTEM THROUGH A GARDEN IN THE ASHAR TENTED RESORT, IN SAUDI ARABIA

LANDSCAPING PLANNING : INFRASTRUCTURE, HQE® APPROACH

CLIENT	RCU, AFALULA
LOCATION	Al-Ula, Saudi Arabia
PROJECT MISSION	Eco-design of filtering ponds in the garden in the hotel
CONSULTANT	Landscaping HQE®, study AW2, EGIS, AR ARCHITECTES
CAPACITY	On average 2,100 l/d per room of wastewater to be treated
DATE	Study in 2020 - Detailed Design



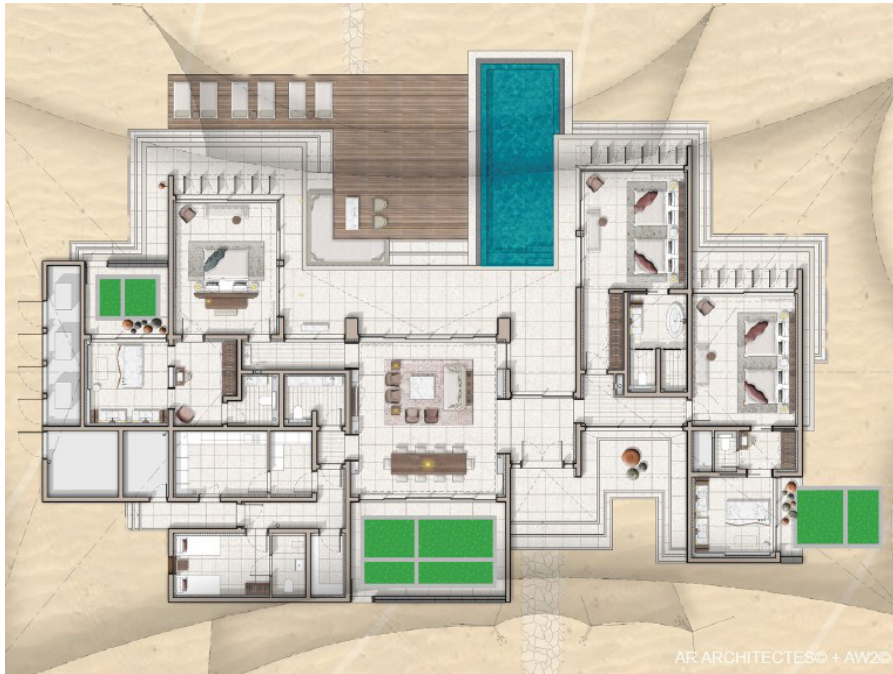
Mass plan of the site



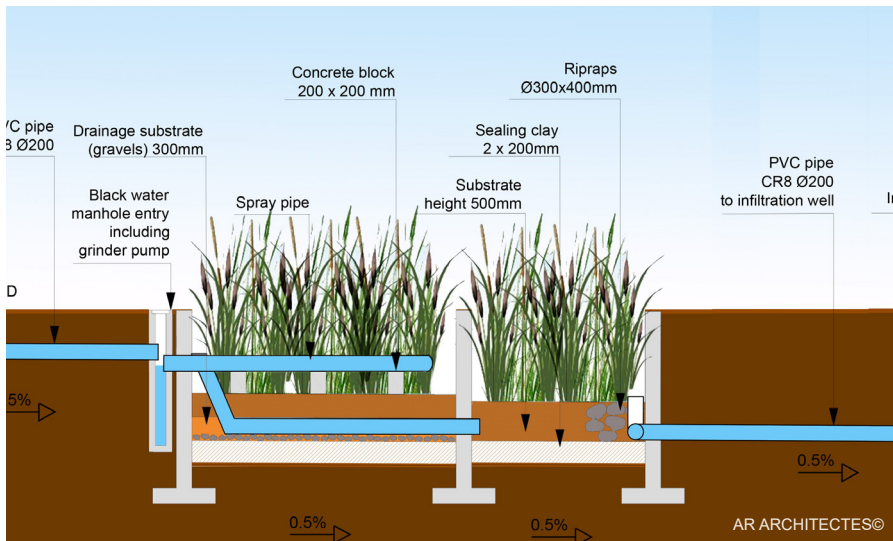
Perspective from the patio of the master bedroom bathroom

The site is in a desert area of the city of Al-Ula in Saudi Arabia. The objective is to minimize the resort's water consumption that often comes from desalination and so has a high impact on the environment. Thus, the filtering gardens in the patios of each tent make it possible to recycle gray and black water in order to reuse it for sanitary uses, maintenance and irrigation of the hotel's landscaping.

The major challenge is to create responsible water management in line with the ecological and economic principles of the Ashar Tented Resort hotel, which aims to be innovative in this area.



Plan of the 3 bedrooms tent integrating the filtering gardens



Section of a grey water phytopurifying system

Various substrates (natural filters) + *Cyperus Papyrus* (natural phytopurifying abilities) + Micro-organisms (living in the substrates and the plant roots)
= Phytopurification



Section of the grey water filtering system by *Cyperus Papyrus*

HQE® TARGETS

TARGET 1: HARMONIOUS RELATIONSHIP WITH THE ENVIRONMENT

- Perfect integration of the filtering ponds in the various tent's patios.
- Limitation of Noise, olfactory and visual pollutions.

TARGET 5: WATER MANAGEMENT

- The used water treatment is done by the various filtering ponds.
- Those ponds avoid an over-consumption of potable water
- Cleaned water is recycled for sanitary use, irrigation and cleaning.
- The surplus of cleaned water recharges the phreatic table

TARGET 7: MAINTENANCE MANAGEMENT

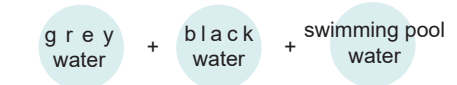
- The maintenance of vegetalised spaces are minimised by choosing the *Cyperus Papyrus*, which requires only 2 cuttings a year.

CIBLE 15: BIODIVERSITY

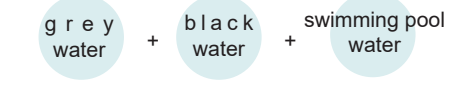
- The filtering ponds that are planted with *Cyperus Papyrus* enable the reintroduction of this plant in the desertic zone of Al-Ula.

FILTERING GARDENS IMPACTS ON THE PROJECT ECONOMY:

Using of the water provided by the city (per year) = **-20%**



Filling of the phreatic table (per year) = **+370%**



Building additional cost = **+ 2.3%**

Estimated cost reduction for the infrastructure = **- 95%**

eco-sewage treatment PLant, PLanted reed Filtration BEDS IN CHAUVRY(95)

URBAN PLANNING AND LANDSCAPING: DEPOLLUTED WATER treatment PLANT, HQE® APPROACH

Client	Syndicat intercommunal d'assainissement de la région d'Enghien-les-Bains SIARE
Location	CHAUVRY (95)
Project	Landscape transformation of an old agricultural area into a sewage treatment plant.
Mission	Design Architect and Landscaper AR ARCHITECTES - AMODIAG (BEY)
Surface area	Site: 11834 m ² Building: 36 m ²
Cost	900 k €
Project PHASE	Technical Design studies in progress



Bioclimatic architecture in timber frame, stone cladding and tiles.



Urban integration of the project into the protected and classified site

The objective of the project is an eco-sewage treatment plant composed by planted reeds filtration beds, with a rustic technical building of 36m² inspired by the local architecture (simple shape, gable roof, natural stone cladding, light colors). The project is composed by two basins excavated ponds and planted ponds with reeds and other local water plants.

The location of the eco-sewage treatment plant is justified by its proximity to houses as well as its closeness to the watercourse that allows the outflow of the depolluted water treatment plant.

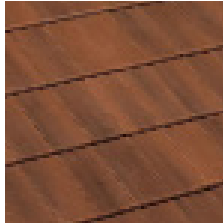
We promote sustainable techniques that minimize their impact on the environnement:

- conservation of existing trees
- small construction of a technical building
- low impact operating coasts: planted reed filtration beds

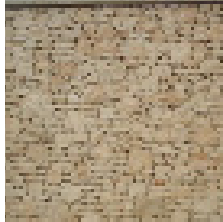




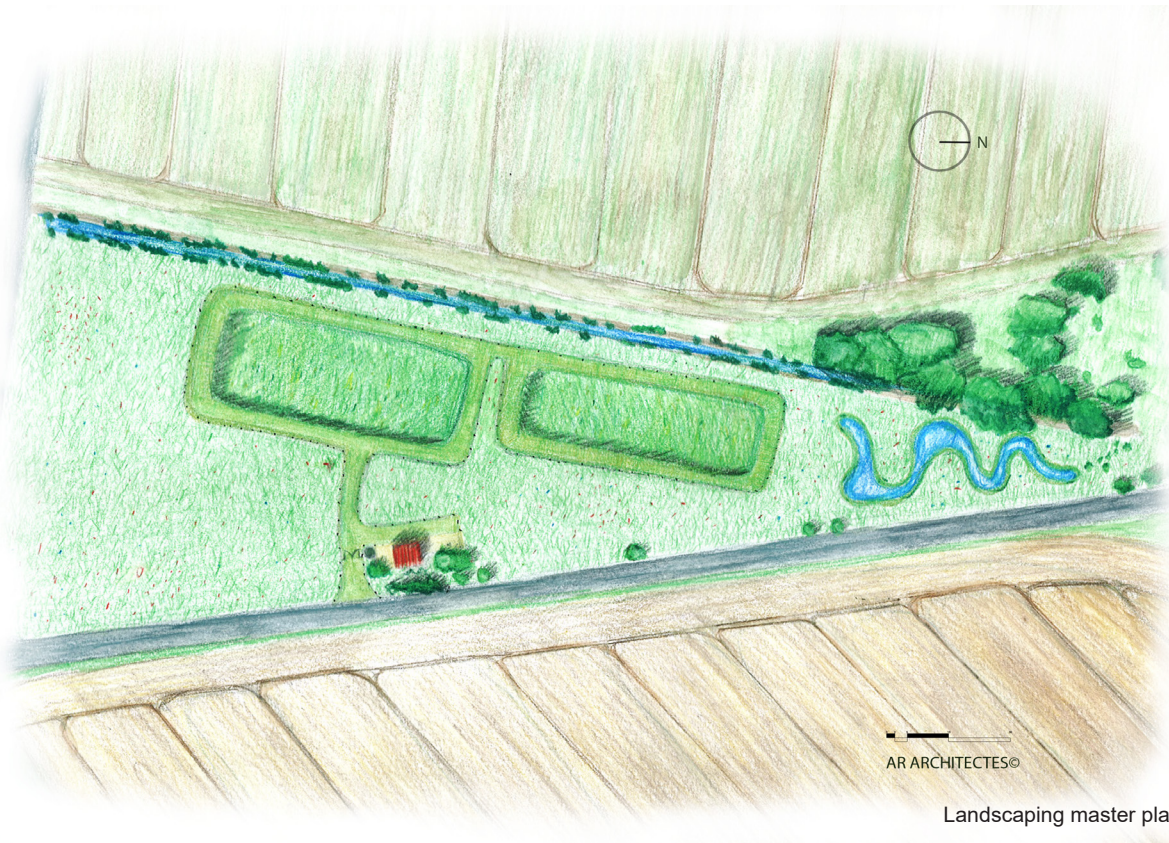
Epicea timber frame



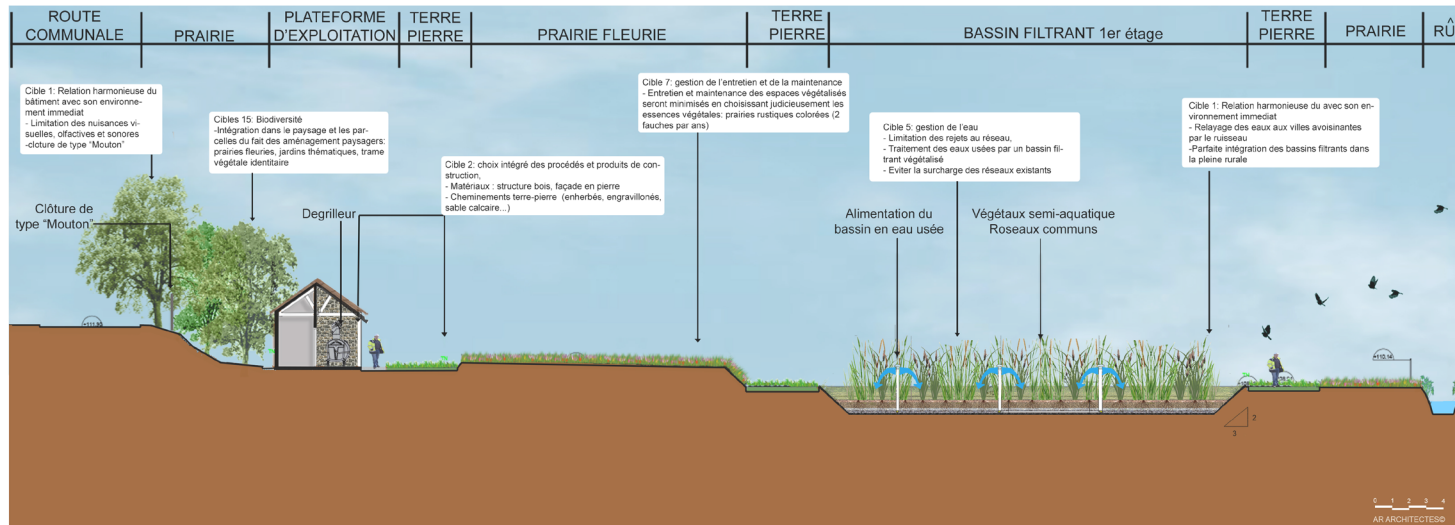
old flat tile



Natural stone
eco-materials



Landscaping master plan



HQE® Section

HQE® targets

Target 1 : HARMONIOUS RELATION OF THE BUILDINGS WITH THEIR IMMEDIATE ENVIRONMENT

- Relaying waters to nearby cities by the creek.
- Perfect integration of the filtering ponds into the rural plain.
- Low visual, olfactory and sound impacts on the environment.

Target 2 : INTEGRATED CHOICES OF PRODUCTS, SYSTEMS AND PROCEDURE OF CONSTRUCTION

- Construction materials: timber frame, natural stone cladding.
- ground-stone road (grassed, engraved, sand limestone).

Target 5 : WATER MANAGEMENT

- Sewage water treatment by filtering ponds.
- Rain water in infiltrated into the earth.
- The sewage treatment will be by two basins planted reeds filtration beds.
- These basins will be used to avoid overloading existing water system.

Target 7: OPERATING MANAGEMENT

- Operating of planted areas are minimized. Colorful rustic meadows require only two mows per year.

Target 15: BIODIVERSITY

- The landscape of the sewage treatment plant is integrated in the context local and the plots with the flowering meadows, thematic gardens, and locals plants.
- Sewage water treatment plant by reed filtration



eco-Design of a Landscaping, rainwater management in a District, at Montceau Les Mines - France

URBAN PLANNING AND LANDSCAPING: eco-District and rainwater treatment BY PLANTS

Client:	City of Le Creusot Montceau
Location	Montceau les Mines
Project	Eco-design of a rainwater management in a district
Mission	Design concept and follow up mission, landscaping HQE®
Consultant	AR ARCHITECTES
Designer	Atelier d'Ecologie Urbaine
Area	40 000 m ²
Cost	2000 000 €
Date	2011 - 2012



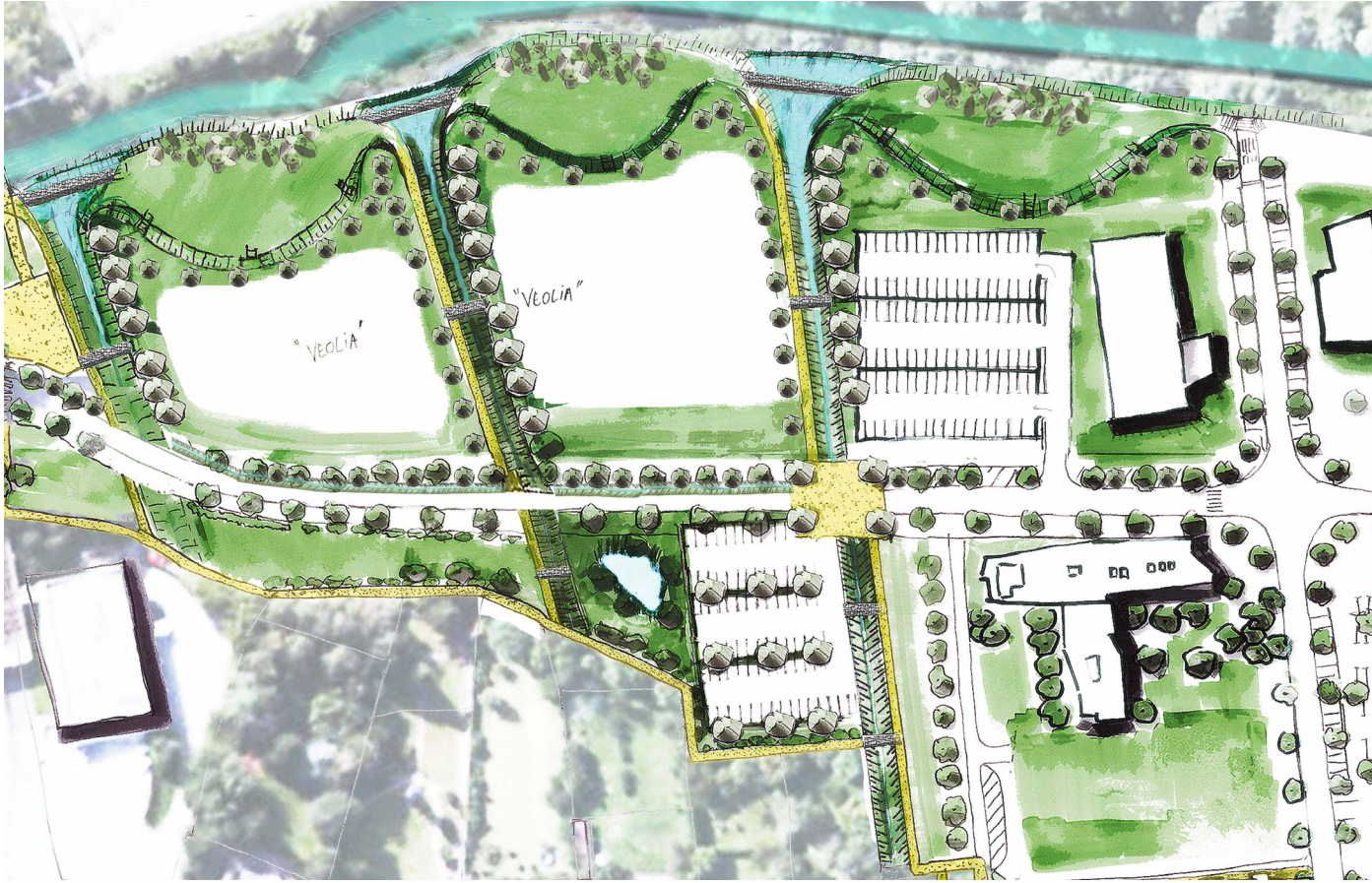
Landscaping mass plan



Designed landscaping pedestrian walkings along the river "La Bourbince"

The place is characterised by a large number of physical and visual limits in the lengthwise of the district "Les équipages". The objective was to collect water flowing to the heart of the district by creating planted ditches directing water to the river "La Bourbince".





Water coming out of the channel is collected through filtering green ditches. These ditches direct water to the river "La Bourbince".



Transformation of an existing road to a green road



Example of a planted ditch.

HQE® targets

Target 1 : HARMONIOUS relation OF THE BUILDINGS WITH THEIR IMMEDIATE environment

AR ARCHITECTES and AEU have developed a project with technical, functional and landscaping osmosis:

- Promoting the area and finishing the land settlement of the district "Les équipages".
- Developing a higher quality for public spaces.
- Linking the Bourbince with the district, and the Bourbince with the city.
- Cleaning a volume of water of 16 000m3
- Preserving and supporting the water flow.
- Keeping the larger spaces of land for futur industrial projects.
- Anticipating future destruction of southwest garage.
- Integrating the landscaping of a walkway along the Bourbince.

Target 5 : water management

- Taking up the current water system
- Organizing the management of storm water.



eco-Design OF THE SEWAGE treatment PLant in aubevoYe - France

URBAN PLANNING AND LANDSCAPING: eco-District AND rainWater treatment BY PLANTS

Client	Association of local authorities Eure-Madrie-Seine
Location	Aubevoye
Project mission	Landscaping design HQE® Design concept and follow up mission, landscaping HQE®
consultant	GROUPE 3 ARCHITECTES
Designer	AR ARCHITECTES - SOGETI
area	plot 4 000 m ²
cost	4 500 000 €
Date	2012-2014



View of the air treatment filter with a surface of 28m²



View of the project in the site

The sewage water-treatment plants architecture in Aubevoye aims to create a dialogue with the surrounding rural areas while respecting the biological balance in place, using harmonious landscaping and architectural treatment, volumes, heights and coverings, were designed to harmonize new constructions with the immediate environment.



ECOLOGICAL PARK "CHEMIN DE L'ILE" in Nanterre - France

URBAN PLANNING AND LANDSCAPING: PARKS, HQE® APPROACH

CLIENT	EP Seine Arch, Conseil Général des Hauts de Seine
LOCATION	Nanterre
PROJECT MISSION	Landscaping design Design concept and follow up mission, landscaping HQE®
CONSULTANT DESIGNERS	Atelier Acanthe, Site et Concept
AREA	plot 14 000 m ²
TREATING CAPACITY	36m ³ /h
COST	8 500 000 €
DATE	2003 till June 2006



View on reconstructed wetland



Perspective of the park in its environment

The Parc beside the banks of river "La Seine" project was designed as a «natural machine» to purify the water. It treats water from "La Seine" river for the local inhabitants via wetlands water then flows into a 1000 linear meter artificial river before being rejected into "La Seine" river cleaned. The project creates an enjoyable atmosphere. The park is auto-sufficient in water consumption.





View of the filtering ponds



Walkways through the ponds



View on the lilly gardens



View on the reconstructed wetlands

HQE® targets

Target 1 : HARMONIOUS RELATION OF THE BUILDINGS WITH THEIR IMMEDIATE ENVIRONMENT

Recompose the existing fractured and the heterogeneous landscape, recreate inter-district connections.

Target 2 : INTEGRATED CHOICES OF PRODUCTS, SYSTEMS AND PROCEDURE OF CONSTRUCTION

Biomass is recycled in the park into compost.

Target 4 : ENERGY MANAGEMENT

- The buildings are designed in bioclimatic way, no concrete is used.
- Wooden frame building

Target 5 : WATER MANAGEMENT

- Use of non-drinkable water: rainwater recuperation network for other uses excluding domestic use
- Creating wetlands to purify rainwater.
- Help to manage rainwater: reduce instant flow when rainwater is over abundant and avoid rainwater streaming.
- Circulation areas are equipped with hollow-core slabs allowing rainwater to drain and guarantee a clean and stable area even when it rains.



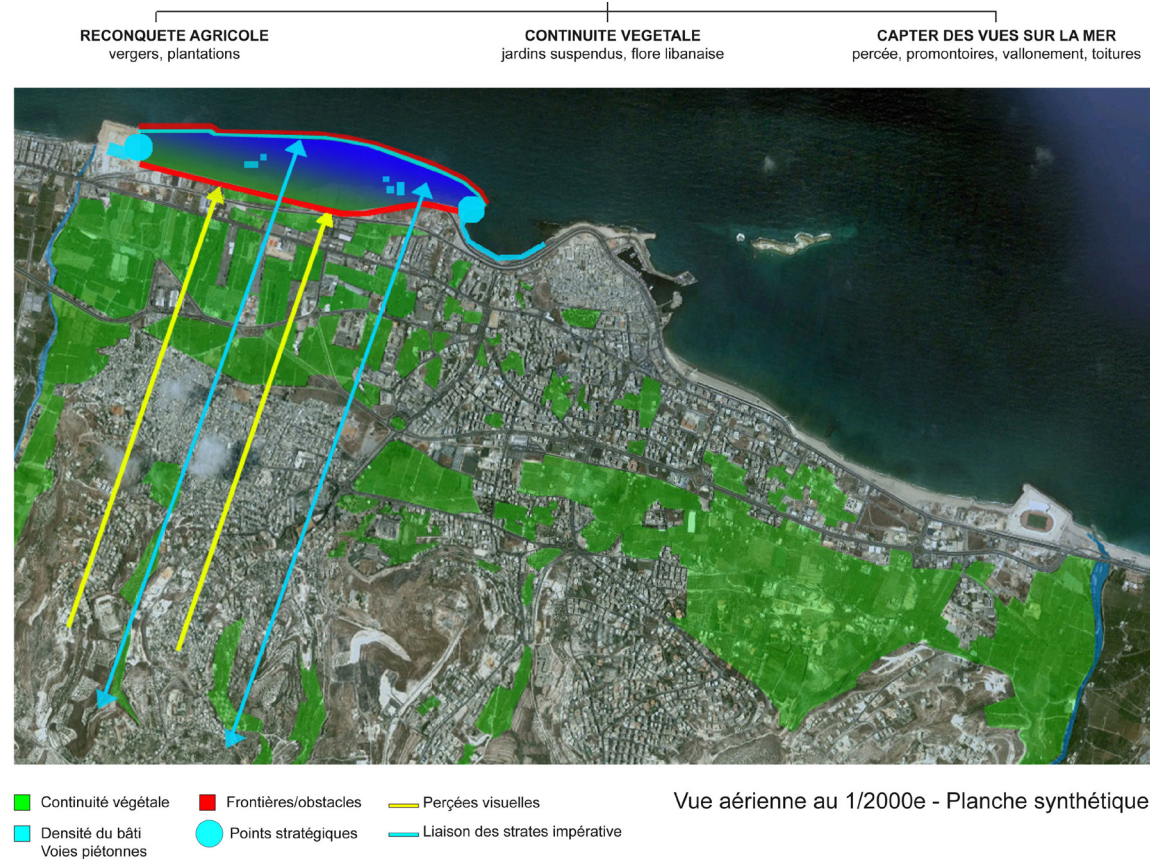
eco-transformation OF A LANDFIELD INTO AN ECOLOGIC PARK IN SAIDA - Lebanon

URBAN PLANNING AND LANDSCAPING: PARKS, HQE® APPROACH

Client	Municipality of SAIDA
Location	Saida, Lebanon
Project	Environmental landscaping
Mission	Urban planning design,
Design and	AR ARCHITECTES
Build	SUEZ environnementa local civil engineer contractor
Area	140 000 m ²
Cost	30 000 000 US Dollars
Date	July 2012



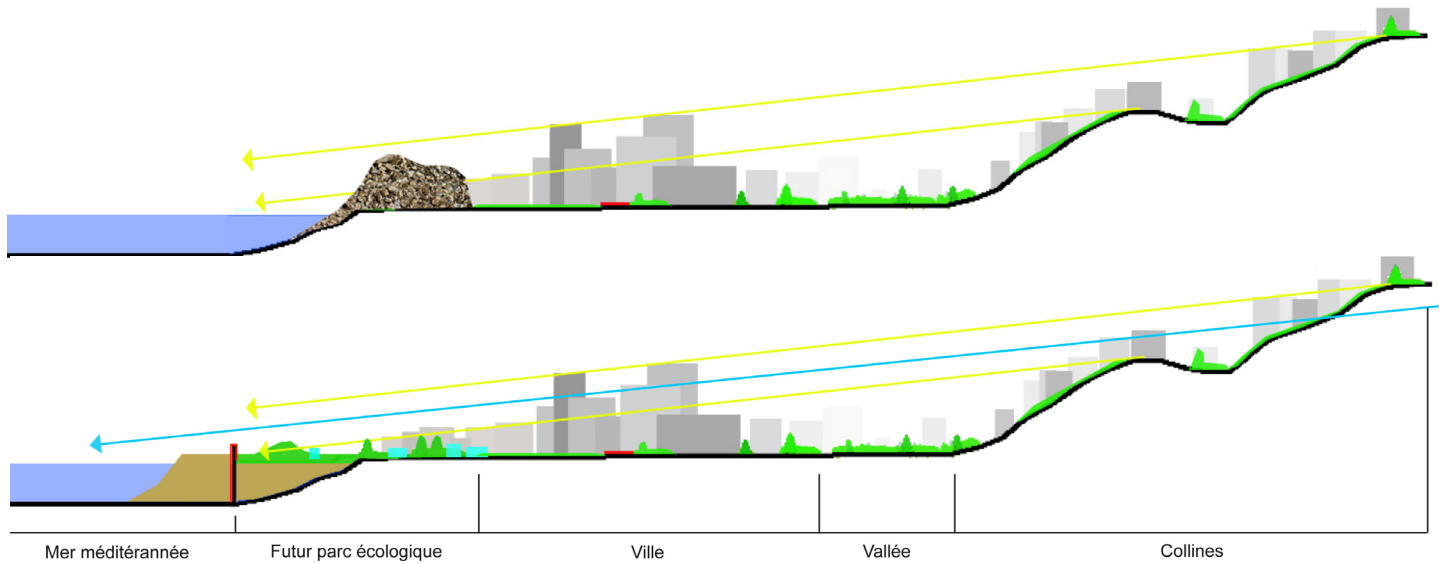
Photography of the landfield in front of the sea



Site analysis and intentions

The project takes place in Saïda, a city of 300 000 inhabitants in the south of Lebanon, local's historical ex-capital of Lebanon, located between the industrial and agricultural zone, on the south of the old city. The aim is to remove a big waste mountain measuring several meters high, 100 meters large, on a linear of 1 Km along the littoral.





Existing section

LITTORAL NORD
Luminosité ■ ■ ■ ■



Photographie du littoral nord



Infini

Liberté



Sable

Goudron

LITTORAL CENTRE
Luminosité ■ ■ ■ ■



Photographie du littoral centre



Historique

Liberté



Sable

Pierre

CENTRE MEDINA
Luminosité ■ ■ ■ ■



Photographie de la médina



Sur-densité

Nuisance sonore



Sable

Pierre

Project targets

The objectives of the project :

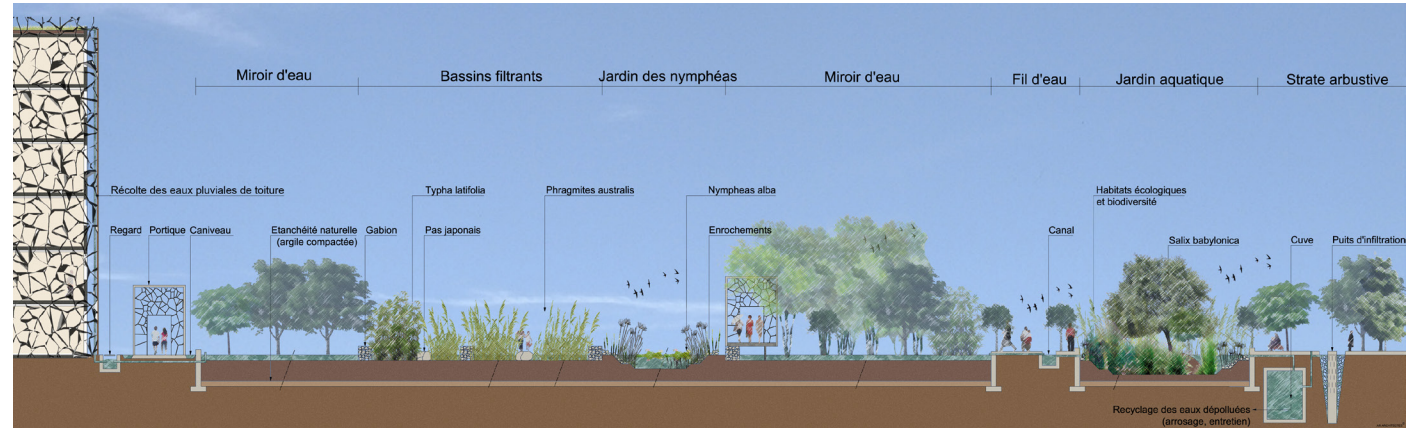
- Bury the waste in front of the sea.
- Create an ecological park in place of the polluted area.
- Open the project to visitors with educational tours.
- Create great links between the sea and the city, green places and the new park.



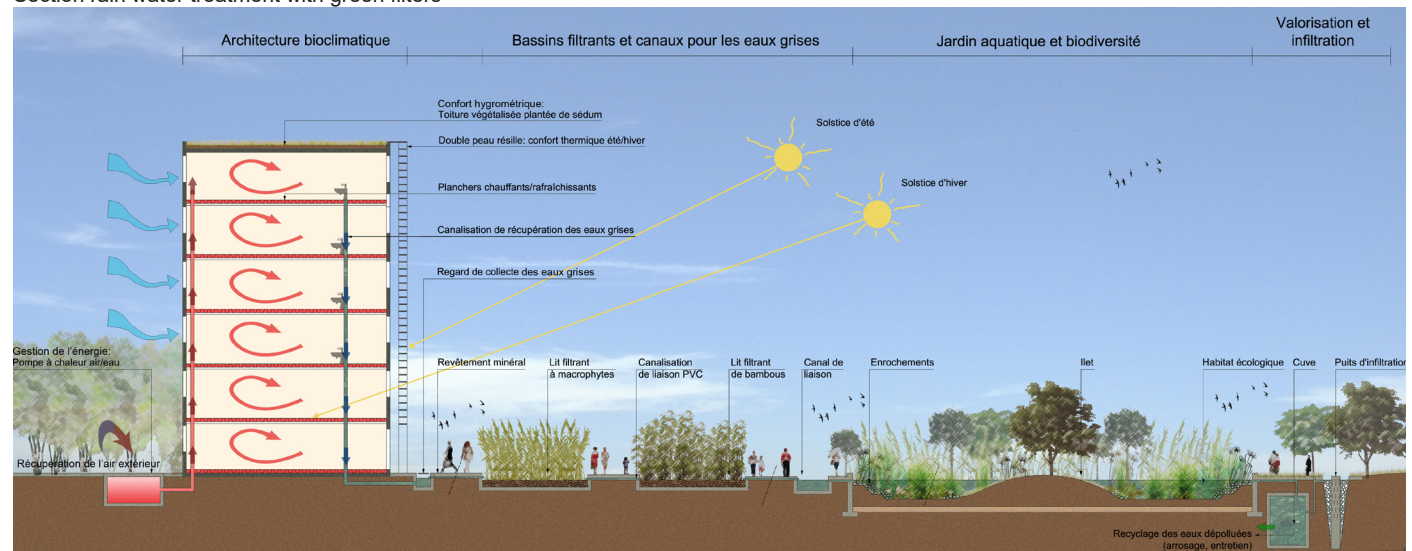
eco-Design OF OFFICES in a HOUSING DISTRICT in DUJIANYAN - CHINA

URBAN PLANNING AND LANDSCAPING: eco-District AND WATER TREATMENT WITH PLANTS

Client City of Dujiangyan
Location Sichuan, China
Project Mission Design an eco-district in Dujiangyan
Consultant Landscaping and HQE® design
Designers Jacques Rougerie, Signes Paysages, Alain Cousseran, Emmanuel Pouille architecte urbaniste, AR ARCHITECTES
Area plot 8 000 m²
Cost 30 000 000 US dollars
Date Winning competition in May 2010



Section rain water treatment with green filters



Section showing the grey water management by constructed wetlands



View of the project

Jacques Rougerie®





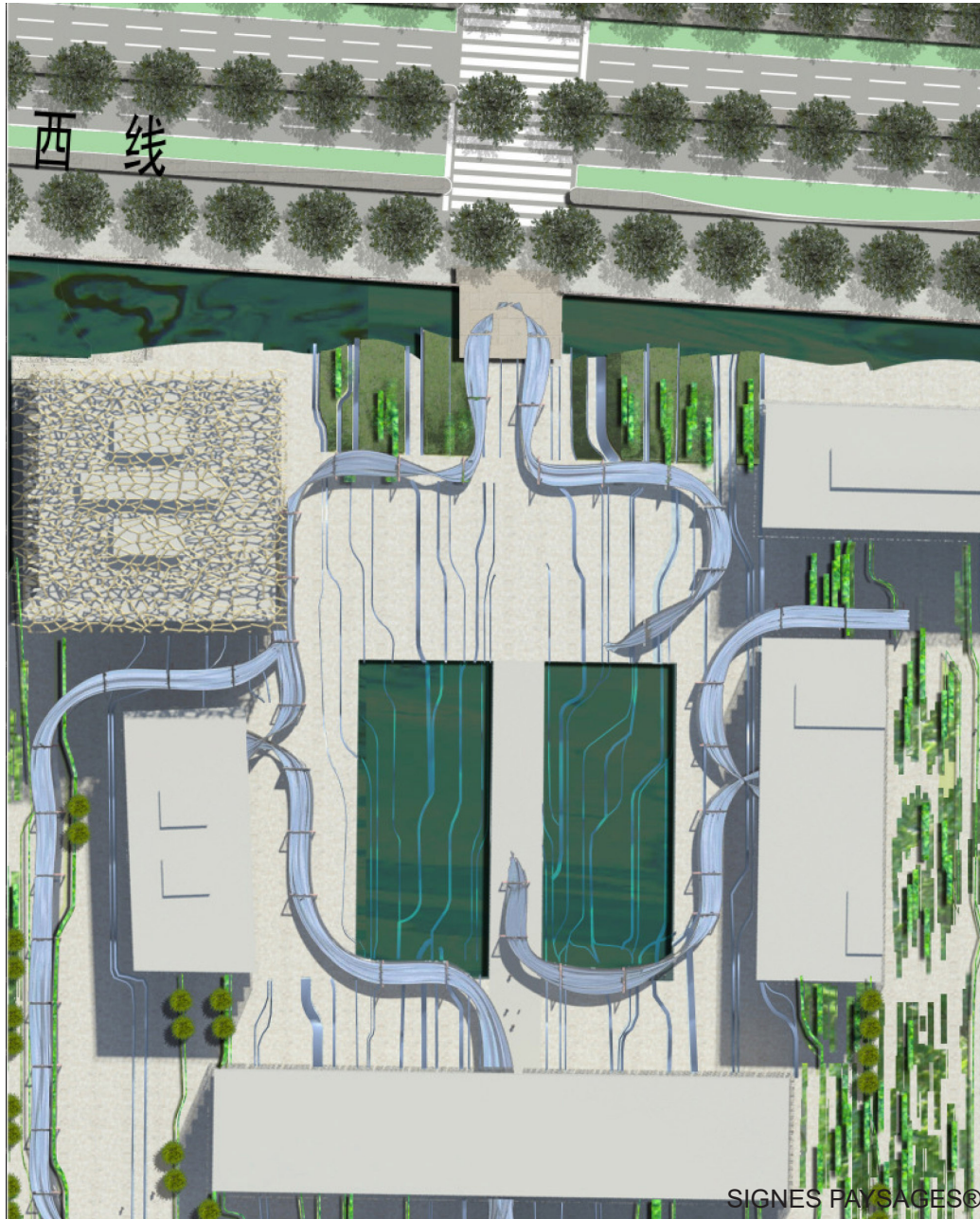
Ice theme



Ditches in the city



Pond and ditches



Mass plan

HQE® targets

Target 1: Harmonious relationship between the building and its environment.

In front of the new administrative pole of the Center of Dujiangyan, registered in the UNESCO world heritage, the urban design of a new administrative and commercial center allows the writing of one Contemporary architecture, real interpretation of a traditional Chinese motivation.

Target 5: Water management

- The organization of the water networks in the district are done in channels that allows the implementation of Environmental techniques. Water management is done by constructed wetlands, in echo with ancestral realizations, creating landscaping channels, ponds in the heart of the designed district.

- rainwater is collected from the roofs and is taken to central ponds. The water is filtered in a pond planted of reeds (Typhas Latifolias, Phragmites Australis).

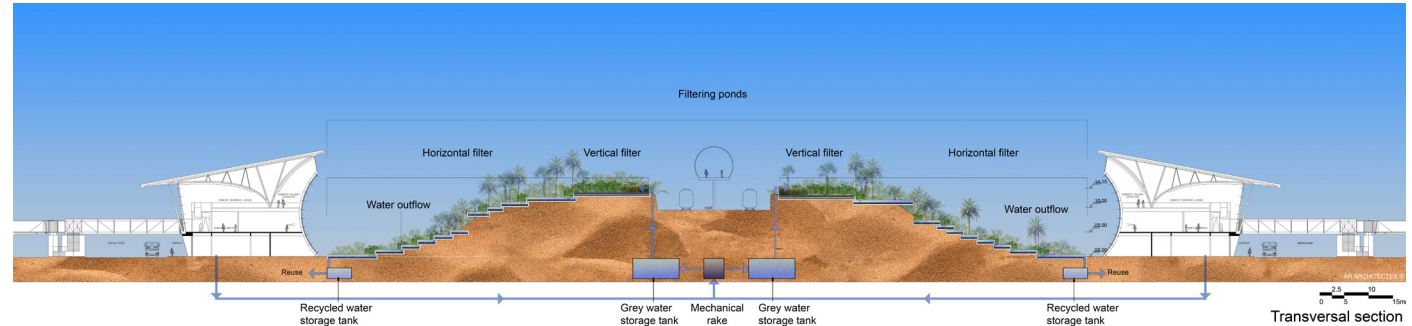
- Clean water is then pumped inside of the buildings for sanitary use.



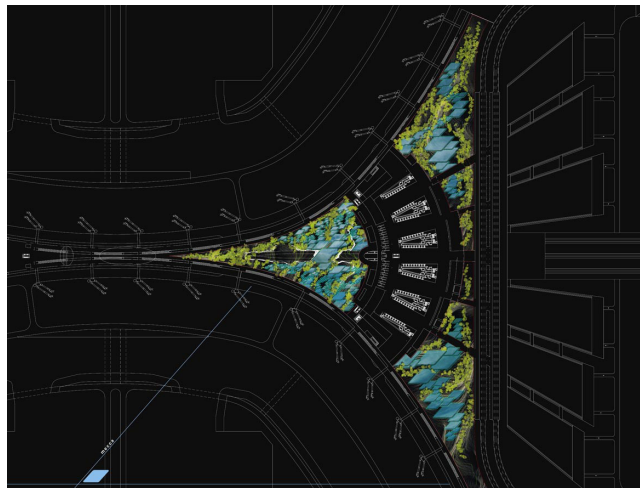
eco-Design OF A FILTERING SYSTEM THROUGH A GARDEN IN THE NEW AIRPORT OF JEDDAH, IN SAUDI ARABIA

URBAN PLANNING AND LANDSCAPING: INFRASTRUCTURE, HQE® APPROACH

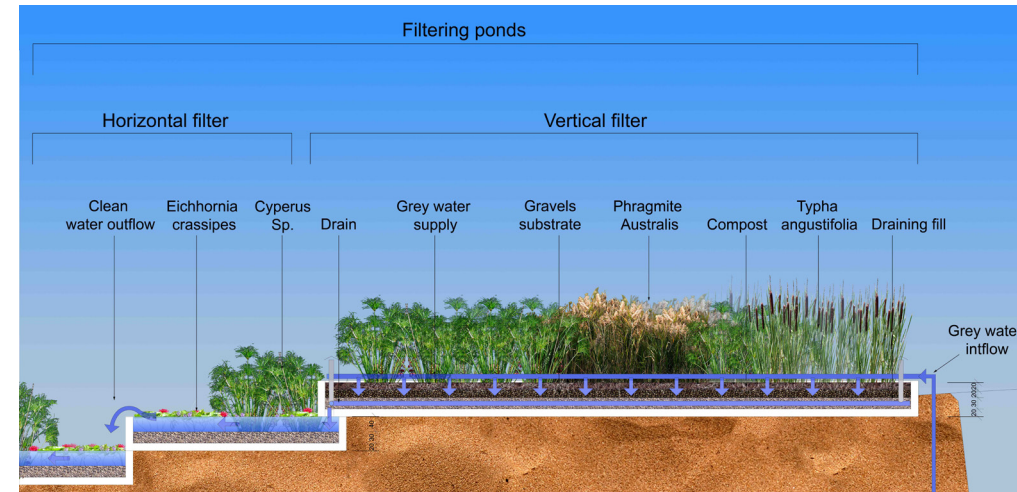
Client Jeddah's Airport
Location Jeddah, Saudi Arabia
Project Eco-design of filtering ponds in the garden of the airport
Mission Landscaping HQE®, study
Consultant ADPI, TNPLUS, Atelier d'Ecologie Urbaine, AR ARCHITECTES
Designers plot 25 000 m²
Area 1000m³/day
Capacity
Date Study in April 2008



Section showing the water treatment plant by a green filtering ponds



Mass plan of the filtering ponds



Section showing the green water filters planted by papyrus

The site is located in a deserts like zone. The aim of the project is to create an artificial garden at the airport site that will recycle the grey water coming out the new terminal. Clean water is then recycled inside of the terminal for sanitary use. The garden is 25 000 m² and treats almost 1 000 m³/d. of grey water by papyrus plant.



eco-Design of water management in the artificial island of SIR BAN YAS IN ABU DHABI, UNITED ARAB EMIRATES

URBAN PLANNING AND LANDSCAPING: eco-District and rainwater treatment BY PLANTS

Client City of Abu Dhabi
TDIC

Location Sir Ban Yas Island, UAE

Project Eco-design of water management in Sir Ban Yas

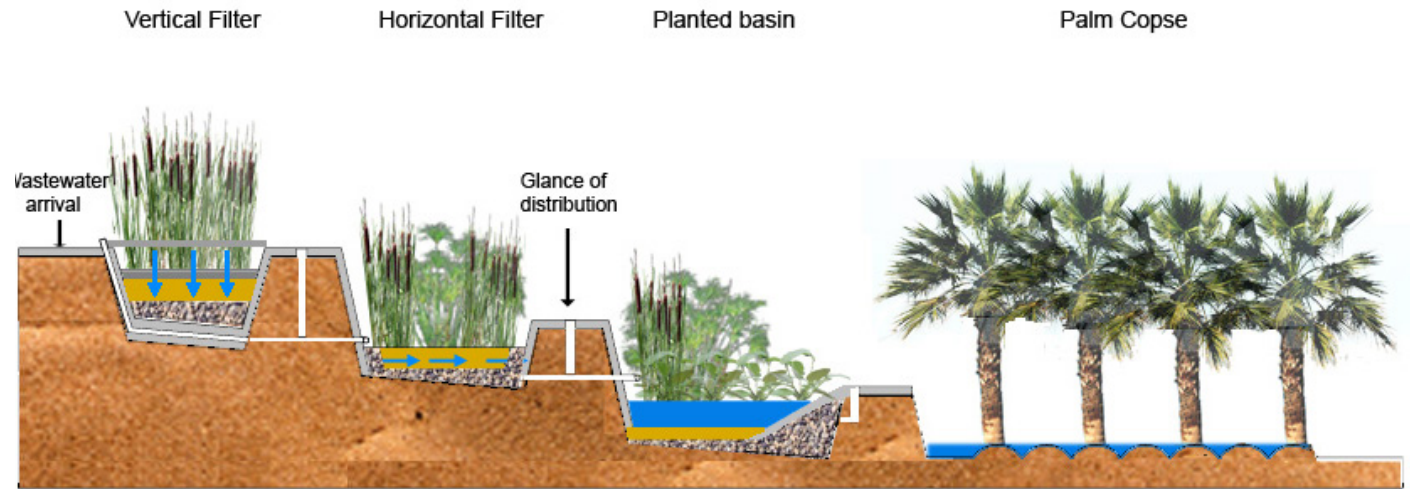
Mission Landscaping HQE® design, study

Consultant AR ARCHITECTES

Designer

Area plot 289 km²

Date Study in Décembre 2009



Section showing the sewage treatment plant by constructed wetlands



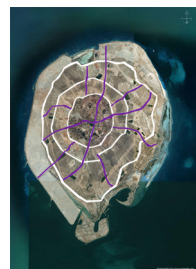
Aerial view of the island, 170 km from Abu Dhabi



Biodiversity



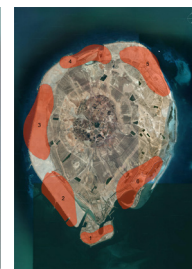
green belt



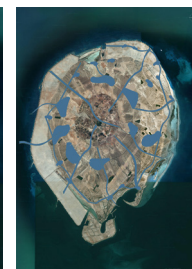
Infrastructure



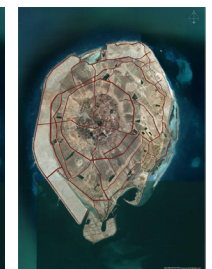
Nucleous



Theme parks



Water reservoirs



Roads

The aim of this project is to create a green landscaping in the Sir Ban Yas Island by designing ecological zones, green areas, and constructed wetlands capable to clean the grey water coming out of the futur constructions and restore the island's biodiversity. New environmental technologies are used, especially the filtering of sewage water by the plants



eco-Design Wetlands in the Sewage Treatment Plant of Marines - France

URBAN PLANNING AND LANDSCAPING: INFRASTRUCTURE AND WATER TREATMENT BY PLANTS

Client	City of Marines
Location	Marines
Project	Construction of wetlands
Mission	Landscaping
Consultant	AR ARCHITECTES
Designer	
Area	1 600 m ²
Capacity	376 m ³ /d (5 000 inhabitants)
Cost	7 800 000 € (plants + wetlands)
Date	End of construction March 2009



Picture on the reconstructed wetlands



View on the entrance of the plant. Two constructed wetlands are designed outside of the road

This plant is designed in accordance with the HQE® standards : Zero visual pollution, Zero smell and sound pollution. During the design phase, all types of pollutions were kept at a low level using technical precautions that ensure comfort for on-site workers and surrounding residents. 3765m³/d of clean water are rejected by the plant and pass through 2 wetlands (1600m²), before returning to the river. Biodiversity have been restored on site.





communication an education

France and International



GRAPHIC DESIGN OF AN EDUCATIONAL TOUR INSIDE THE SEWAGE TREATMENT PLANT IN BEYNES - FRANCE



COMMUNE DE BEYNES

ÉCO-CONSTRUCTION DE LA STATION D'ÉPURATION DES PLANTINS À BEYNES

Capacité de Traitement des eaux : 11 670 eqh
 Groupement d'entreprises :
 DÉGÉOMÉTRIE FRANCE ASSAINISSEMENT / ZUB / WATELECT TP
 montant des travaux : 4 784 307 euros HT

FINANCEMENT :
 Conseil Général des Yvelines
 Agence de l'Eau Seine Normandie
 Commune de Beynes



La station des Plantins de Beynes se situe au cœur d'un site remarquable, bordé par une zone de fouilles archéologiques au Sud, et des terrains agricoles au Nord.

Le parti architectural vise à créer un dialogue avec l'espace rural environnant, en respectant l'équilibre biologique en place, et en intégrant par son traitement architectural et paysager le bâtiment d'exploitation : volumes, hauteurs et revêtements permettent d'harmoniser les nouvelles constructions avec l'environnement immédiat.

La motivation du maître d'ouvrage est de vouloir une station d'épuration innovante et exemplaire dans la démarche de haute qualité environnementale. Les avantages de cette station d'épuration sont bénéfiques non seulement à l'environnement mais aussi à ses habitants et à la préservation du paysage où elle s'intègre.



DÉMARCHE HOE®

VOIE D'ENSEMBLE

1- bâtiment technique et local surpresseurs 2- bâtiment d'exploitation : locaux administratifs et salle de réunion 3- bassin de secours (existant) 4- bassin cyclor 1 5- bassin cyclor 2	6- bassin tampon eau stable, planté 7- îlots plantés de roseaux 8- bûche à bûches 9- bûche eau traitée 10- caniveau de rejet 11- poste toutes eaux STEP	12- case de clôture ferrée 13- bevedette 14- zone de fouilles archéologiques 15- emplacement bus 16- place de stationnement 17- dalle du transformateur
--	--	--

INTERVENANTS :

Maître d'ouvrage COMMUNE DE BEYNES 11, rue de la République 78100 BEYNES	Maître d'œuvre ATREVA ENVIRONNEMENT 11, rue de la République 78100 BEYNES	Architecte AR-ARCHITECTES 11, rue de la République 78100 BEYNES
Entreprise mandataire INGENIERIE TRAVAIL DÉVELOPPEMENT 11, rue de la République 78100 BEYNES	Co-traitant 1 génie civil MEYER TP SAS 11, rue de la République 78100 BEYNES	Co-traitant 2 génie civil MEYER TP SAS 11, rue de la République 78100 BEYNES
Exploitant COMMUNE DE BEYNES 11, rue de la République 78100 BEYNES	Contrôleur technique QUALICOSEPT 11, rue de la République 78100 BEYNES	Coordinateur Sécurité et Protection de la Santé ICV 89 11, rue de la République 78100 BEYNES




Layout / logo / typography design

An educational tour is designed inside of the plant. Many boards were designed with the artist Gilles Pennaneach.



DESIGN OF A WOODEN EDUCATIONAL BOOTH FOR THE TRADE SHOW "POLLUTec MOROCCO" 2011 IN CASABLANCA - MOROCCO

Client: ADEME / ADEREE
Location: Casablanca, Morocco
Project: Eco-design of a wooden educational booth
Mission: Architecture HQE® Design
Design and Build area: AR ARCHITECTES
area: 9 m²
cost: 43 000 €
date: 2011



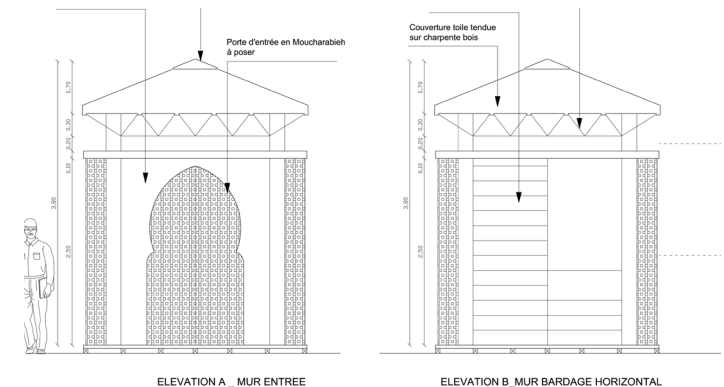
Perspective view



Photo of the entrance



Constructed walls with natural thermal insulation

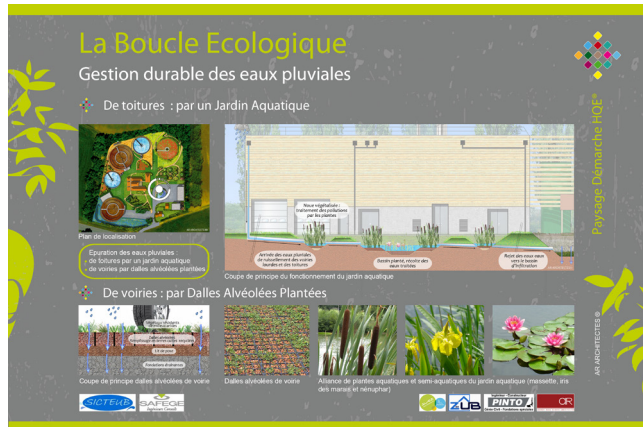


Facades of the booth

In partnership with ADEME, ADEREE et FFEM, AR ARCHITECTES designed an innovative structure with sustainable construction materials, techniques, and technologies to develop through a scale 1 model and within the context of the National Plan of the energy efficiency in Morocco, an educational booth for the general public in particular, and to be used as a technical assistance and training platform for futur trade shows.



GRAPHIC DESIGN OF AN EDUCATIONAL TOUR INSIDE THE SEWAGE TREATMENT PLANT in asnières-sur-oise - France



In the heart of a conserved area, the sewage treatment plant designed by AR ARCHITECTES, needed a design of an educational tour through panels and boards as educational tour for visitors.



La Boucle Ecologique

Eco-construction bioclimatique



Architecture Demarche HQE®



Charpente en bois

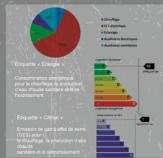


Toiture végétalisée (sédum)



Plan de localisation

Bâtiment d'exploitation bioclimatique, conçu suivant la démarche Haute Qualité Environnementale®, dont les cibles prioritaires traitées sont explicitées dans la coupe HQE®.



Consommations énergétiques du projet en kWhEP/m²/an



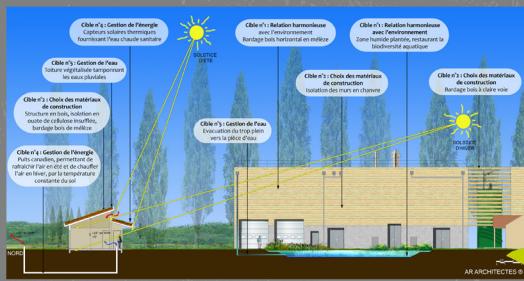
Isolation thermique Chanvre



Isolation thermique Ouate de cellulose



Bâtiment technique : béton/ossature bois/chanvre



Coupe des principes de Haute Qualité Environnementale HQE®



Intégration paysagère du bâtiment d'exploitation



Entrée du puits canadien



Bardage extérieur en mélèze



Panneaux solaires thermiques (ECS)



AR ARCHITECTES®



Wooden stand alone with typographic design



Layout / logo / typography design





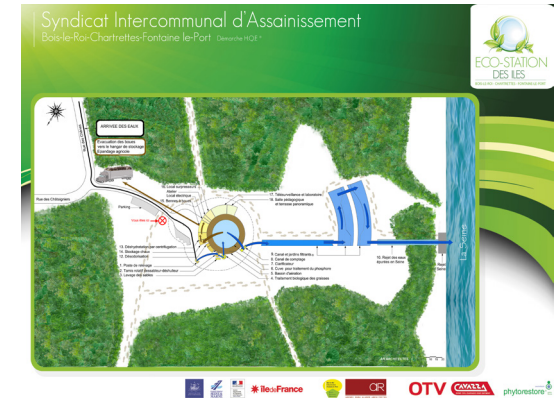
CREATION OF PEDAGOGICAL PATHS ECO-TREATMENT PLANT OF THE ISLANDS : BOIS LE ROI/ CHARTRETTES/FONTAINE-LE-PORT - FRANCE

AR ARCHITECTES includes in each of its projects, an educational dimension by creating a tour of the site to highlight all the elements of the site

AR ARCHITECTES designed the complete graphic charter for this project: logo, visual background, typology.



B5 format brochure



A0 format panel



Design of the station's logo



18 didactic panels in A3 format



The panels presented of the project, are on plasticized paper support: Eco station of the islands, on behalf of the Intercommunal Syndicate of Sanitation of Bois-le Roi / Fontaine-le-Port/ Chartrettes.

Website: http://www.ar-architectes.com/demarche_pedagogique.php



research and Development



SUSTAINABLE MANAGEMENT OF RAINWATER (2016)



Mémoire de recherche
GESTION DURABLE DES EAUX PLUVIALES



Aout 2016

Lauriane DEBORD
Elève ingénieur en Ingénierie des Espaces Végétalisés en Ville (IE2V)



ECO-FRIENDLY MATERIALS IN FRANCE AND AROUND THE WORLD (2013)



LES ECO-MATERIAUX
En France et dans le monde



EVOLUTION OF THE COLLECTIVE PHYTOEPURATION IN FRANCE (2012)

TECHNOLOGY SURVEY ON RAINWATER TREATMENT SYSTEMS (2009)



**EVOLUTION DE LA PHYTO-EPURATION COLLECTIVE
EN FRANCE**



Lits plantés de roseaux à Beynes (78)



*Veille technologique
sur les systèmes de récupération
et de traitement des eaux*





eco-Design of a Cleaning sea water POLLUTION BUILDING

TADI industrial Design Competition

in 'Bassin D'arcachon' - France

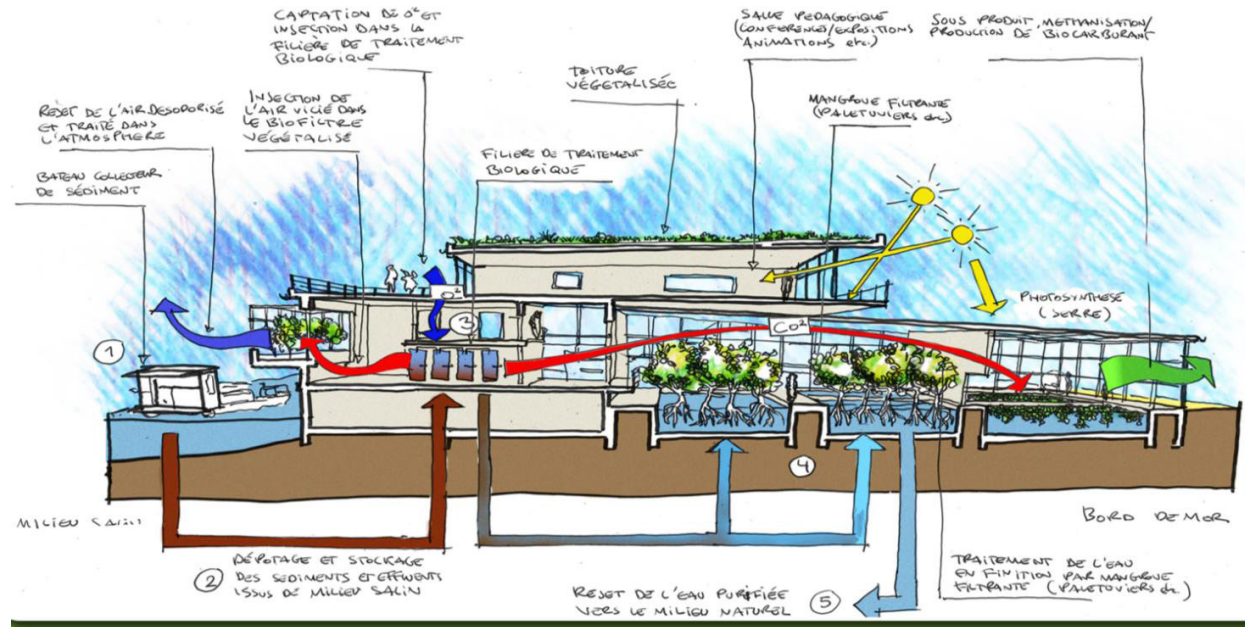


Client State of Aquitaine
Location Bassin d'Arcachon
Project Sea water pollutions treatment

Mission Architecture HQE® competition
Consultant AR ARCHITECTES, EPURETEC
Designers
Area 700 m²
Cost 2 000 000 €
Date 2009



View of the building



Section showing principles of energy management and water treatment see

Principals of energy and water treatment:

How to design an intelligent and ecological building that treats grey water hydrocarbures coming from marinas using plants? The Blue'pur centre is a sustainable industrial construction, a center that treats polluted liquid effluents and sediments using biodegradation, microbial et de phyto-restoration technologies thus ensuring zero CO2 pollution into the atmosphere.

Due to its architectural approach and its purifying process, this project is part of the sustainable development objective.

