InsMed

Innovations in Green Building in the Mediterranean

6ème FORUM MONDIAL DE L'EAU
MARSEILLE, FRANCE '12
LE TEMPS DES SOLUTIONS

InsMed GreenBook

Water management in Green Building in the Mediterranean

Promote green economy and growth

To gain in relevance in order to win market shares:

... get involved, act, communicate ...

A green building should fit into its environment, to limit its impacts and consumptions, to take advantage of natural resources and to develop social links.

It is time to act

THE APPROACH OF GREEN BUILDING: A VALUE INTEGRATED WITH CONSTRUCTION TRADE

Green building is not a fashion approach, nor an expression of ecological extremism. Environmental impacts question the present methods and practices of the economical actors, the behaviour of users and consumers. It is essential that all economical actors get the new know-how that contributes to their competitiveness.

THE CHALLENGE FOR THE CONSTRUCTION SECTOR:

To develop the know how and to participate in new cooperation at local and Mediterranean levels.
Networking is today vital for your future.
To structure a water management segment in Green building is essential, in order to federate, strengthen and get you more innovative and competitive. To get involved to conciliate green growth and economical efficiency while satisfying human needs and environmental protection.

In order to set up this rising sector, the Marseille Provence Chamber of Commerce and Industry has led a Mediterranean Consortium in the programme MED-Innovation, that brings together the Messinian Chamber of Commerce and Industry (Greece), the Polytechnical University of Catalonia (Spain) and the University of Algarve (Portugal).
A Market Place having for central point a platform of collaborative intelligence has been accomplished and offers you multiple connections with all other actors of the sector.

The Consortium realized this GreenBook, **practical guide** bringing water management solutions in green building and a contribution to the development of innovative strategies in this sector.

Marseille Provence Chamber of Commerce and Industry is resolute in facing the future, stating its will to contribute to the challenge of Transformation – Innovation in sustainable development policy of the Mediterranean territory.

The Mediterranean Consortium InsMed

Green building, why not you?

Water resources represent a major challenge in Mediterranean and the sustainable management of water (in the environmental, economic and social senses) should be further integrated in any construction and facilities policy (according to European work group, 42% of the water is wasted on works).
The approach of water management in Green building requests the involvement of the project owners, managers, companies and of course of all users that we are.
So, we speak about technical evolution as well cultural change.
The voluntary dimension of this action is crucial. If the task may appear at first sight to be difficult and laborious, the existing approaches and several achievements show the possibility of obtaining significant results with relatively limited means.

SUMMARY

To guide our choices

FOR WHOM IS THIS BOOK INTENDED?

All professionals actors of the Building sector. It is made for a large spread towards contractors, local authorities, architects, urban planners, consultants, constructors, providers.

WHAT'S THE USE OF THIS BOOK?

To help the projects conception and implementation with concise and educational data sheets on water management in Green building. Methodological keys and technical tools in order to develop new markets and to create a climate of trust that stimulates new partnerships.

In this handbook, you will find many examples and some web sites:

www.insmed.eu & marketplace.insmed.eu
www.polebdm.eu
www.pole-eau.com
www.envirobat-med.net
www.ea-ecoentreprises.com
www.eaurmc.fr
www.developpement-durable.gouv.fr
http://ec.europa.eu/dgs/environment/index_en.htm

GREEN BUILDING, AN INTEGRATED APPROACH

At the economical level:

- Competitiveness of the companies for which the water resource is in the center of their activities
- Evolution of processes and consumption modes
- Green growth related to the development of specialized "eco-companies", the pure players

At the territorial and societal level:

- Fair distribution of the water resource
- Changes in consumption modes of companies, communities and consumers
- Integration of good practices related to water in the choice of investment and urban, suburban and rural development

At the environmental level:

- Preservation of water resource, while limiting its overconsumption and degradation
- Protection of natural environments and biodiversity

A few useful principles:

- ✓ **Integrate the construction to its environment and its climate**
- ✓ **Design an integrated water management**
- ✓ **Bearing in mind the construction with lesser environmental impact**
- ✓ **Lead regularly the works monitoring**
- ✓ **Struggle against the wastage by the technical means and the communication**
- ✓ **Apply preventive maintenance and work toward continuous improvement of existing equipment**

To build sustainable

HOW TO INTEGRATE WATER MANAGEMENT IN THE PROJECT ?

CONSIDER 3 PRINCIPLES

- Needs reduction: monitor/measure the domestic, industrial, agricultural water consumption, create spaces that consume less water…
- Device efficiency: choose less water-consuming equipment…
- Substitution resources of drinking water: for specified uses, reuse collected rain water, treated waste water…

Conception step

- Take into account the impact of the construction in the water cycle, drinking water, rain water, wastewater, surface water and groundwater…
- Consider the regulatory constraints and opportunities (recovery and recycling of water, non-collective sanitation facilities …), take into account the voluntary approaches in eco-management.
- Think on the **overall cost**, which incorporates the operating and maintenance expenses.

Construction step

- With a good management of the works (implementation of programmed settlements, managing waste, avoiding pollution…).
- Build water saving spaces, using innovative materials and techniques for return on investment in the medium term.

Utilization step

- Assist the users; essential synergy between the equipment and the practices of users.

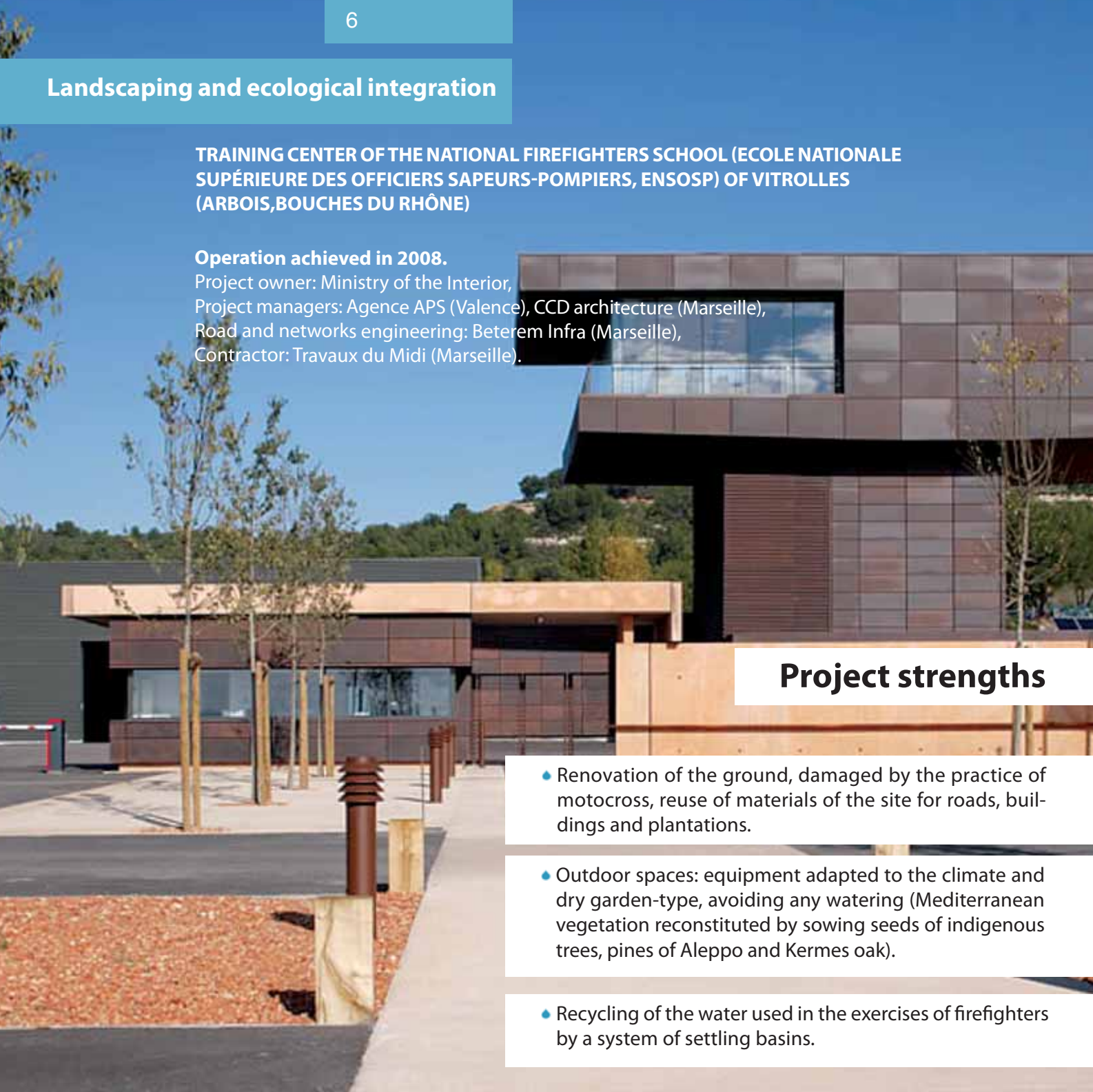
Maintenance step

- Take into account the maintenance from the conception of the work, monitoring the operation of the building and facilities.

Landscaping and ecological integration

TRAINING CENTER OF THE NATIONAL FIREFIGHTERS SCHOOL (ECOLE NATIONALE SUPÉRIEURE DES OFFICIERS SAPEURS-POMPIERS, ENSOSP) OF VITROLLES (ARBOIS,BOUCHES DU RHÔNE)

Operation achieved in 2008.
Project owner: Ministry of the Interior,
Project managers: Agence APS (Valence), CCD architecture (Marseille),
Road and networks engineering: Beterem Infra (Marseille),
Contractor: Travaux du Midi (Marseille).



Project strengths

- Renovation of the ground, damaged by the practice of motocross, reuse of materials of the site for roads, buildings and plantations.
- Outdoor spaces: equipment adapted to the climate and dry garden-type, avoiding any watering (Mediterranean vegetation reconstituted by sowing seeds of indigenous trees, pines of Aleppo and Kermes oak).
- Recycling of the water used in the exercises of firefighters by a system of settling basins.

From the beginning of the project…

Conception step

Check list

PROJECT ORGANIZATION AND MANAGEMENT

- Is the project owner informed about green building approach and can he rely on a competent and motivated project team?
- Are the specifications of the operation developed according to the goals of water eco-management?
- Is there enough consultation and coordination between the designers, the constructor and other stakeholders?
- Are the local authority and the future users and administrators involved in the project?

TECHNICAL AND TECHNOLOGICAL ASPECTS

- Is the project developed in coherence with the urban planning, and even eco-area approaches? Is the construction spread and effect of urban sprawl controlled?
- Have local resources of raw water for uses that don't need drinking water been searched?
- Is the ground permeability preserved or improved?
- Has the local vegetation been preserved and cultivations needing less water been used?
- Are the water networks designed according to good practices and are they accessible for monitoring and maintenance?
- Are water meters installed for the main uses? Have intelligent water meters been considered?
- Have water-saving devices been planned?
- Have solutions to reduce the heat loss of warm water been considered?
- Has any recycling system for grey waters been taken into account?

ECONOMICAL ASPECTS

- Is the global cost of the operation (investment and operating) analysed and put in perspective?
- Was a plan for profitability established and to what end?
- Have you taken into account the positive effects of buildings that have been eco-constructed on the users' expenses?

SOCIAL ASPECTS

- Are the future users involved in the project?
- Have you taken into account the positive effects of buildings that have been eco-constructed on the residents' comfort and work conditions?
- Have you considered collective pools instead of individual pools and natural pools instead of artificial ones?

Vegetalized roof and rainwater management

DEPARTMENTAL HOUSE FOR DISABLED PERSONS IN ALPES DE HAUTE-PROVENCE (DIGNE LES BAINS)

Operation achieved in 2012.
Project owner: Conseil général des Alpes de Haute-Provence,
Designer and project manager: APACK-FLACHAIRE-TEDDE (Marseille),
Water engineering: AD2I (Aix en Provence),
Control office: SOCOTEC,
Contractors: roof and sealing SEA (Gap),
Road and networks: COLAS (Manosque),
Plumbing: Alpes Sanitherm (Gap).

Project strengths

- Water management systems completing energy-optimizing equipment (thermal insulation from the outside, double flow ventilation, cooling by night ventilation) :
  - buried buffer basin for the retention of rainwater from the roof and the external areas, for a slow infiltration into the soil, avoiding streaming and the overloading of the rainwater pipe
  - rooftop-planted terrace on the entire building as a temporary reservoir of water
  - water-saving equipment (mixing taps, WC with double volume flush).

During the construction...

Construction step

Check list

PROJECT ORGANIZATION AND MANAGEMENT

- Is the on-site monitoring till the acceptance and use of the building assured, by providing the project owner with the contractual documents?
- Are the stakeholders in the conception step likely to extend usefully their mission in the construction and the operating of the building?

TECHNICAL AND TECHNOLOGICAL ASPECTS

- Do the features and the sizing of equipment put in place properly match the specifications?
- Are the facilities and equipment checked during the works?
- Have you taken into account the possibilities to limit the consumption of water during the construction and the pollution caused by the water rejected?
- Have you considered the use of alternative resources to drinking water when it is possible?
- Were the devices for water management properly implemented?

ECONOMICAL ASPECTS

- Have you considered the increase in the attractiveness and added value of the construction engendered by the optimization of the design and the good management of the works?
- Have you analysed the added value as a factor in the attractiveness of water saving eco-construction?

ASPECTS SOCIAUX

- Have you taken into account the integration of the works in the site, favouring also the social link?
- Are the work conditions and professional risks properly managed?

Water-saving equipment

SOCIAL COLLECTIVE BUILDINGS IN MARSEILLE
Opération réalisée en 2007.
Operation realized during 2007 with 14 volunteer families in the site of Bricarde (15th district of Marseille),
1st prize 2008 "Agir pour l'énergie" of Regional Council of Provence-Alpes-Côte d'Azur.
Real estate owner: Logirem,
Partners: Association Régionale des Organismes HLM de Provence-Alpes-Côte d'Azur Corse (ARHLM), Association Ecopolenergie, EDF.

Project strengths

- Information workshops for the technical staff of the owner, installation of water-saving equipment (water flow reducers for taps, flush reducer volume).
- Water saving estimated to 16 % in quantity and 18 % in cost (thanks to warm water saving).
- Dynamic partnership with inhabitants and local relays, creation of a trusting relationship with the tenants, directly involved in the monitoring.
- Transposition of the approach on all the 700 apartments of the site.

Check list

TECHNICAL AND TECHNOLOGICAL ASPECTS

- Are the equipment settings and the water quality suitable for the various equipment and uses?
- Are engagements in water eco-management formalised in contractual documents with stakeholders?
- Are the internal staff and users trained in the use and maintenance of the equipment?
- Are the providers competent and involved in the approach?

ECONOMICAL ASPECTS

- Are the consumptions and the water savings regularly measured and analyzed?
- Is the economic compatibility sought between the possible over cost for the project owner and the collective interest (environmental, health, comfort) for the users of the building?

SOCIAL ASPECTS

- Are the users of the building assisted and involved in the good practices of water management?
- Are the potential risks for the users of water eco-management devices controlled?
- Are the users informed about the pollution that their bad practices may generate?

Rainwater management and water savings

VALLABRÈGUES SCHOOL (GARD)

Operation achieved in 2007.
Project owner: Municipality of Vallabrègues,
Designer and project manager: Imago architecture (Nîmes),
Study office: Gaujard technologies (Avignon).

Project strengths

- Construction built on stilts and equipped with a buried retention basin and gutter lead (shallow ditches vegetated favouring the evapotranspiration and the infiltration), enabling to control possible floods (area located on a former bed of the Rhone river).

- Water eco-management equipment completing energy eco-management systems (thermal solar panels, night ventilation…):
  - rainwater collection and storage in 6 m^3 tank, covering the watering needs of the site
  - water-saving equipment (temporized taps, equipped with water flow reducers, mixers taps, flush reducers).

Don't forget the maintenance...

Maintenance step

Check list

TECHNICAL AND TECHNOLOGICAL ASPECTS

- Have the previous phases of design, construction and use promoted a good maintenance?
- Is the equipment accessible for maintenance?
- Do users and employees have the contractual documents and instructions of maintenance?
- Is the preventive maintenance organized according to a timetable of interventions?
- Have you considered devices detecting water leaks?
- Do the providers have a professional certificate or other agreement?
- Do you take advantage of the maintenance to develop technical improvements in water management?

ECONOMICAL ASPECTS

- Have the costs of maintenance been previously analyzed and scheduled?
- Have you considered maintenance contracts that share financial profits according to the water savings obtained?

SOCIAL ASPECTS

- Have you empowered the users as well as the actors involved (project owner, manager, service providers) in the building management and maintenance?
- Are the users of the building informed about the operations of service and their possible involvement in the monitoring?

Water resources management

COSTA NAVARINO (MESSINIAN REGION, GREECE)

Resort achieved in 2010.
Project owner: TEMES, partners:
Local authorities, Messinian Chamber of Commerce and Industry.

Project strengths

- As the first eco-friendly tourist destination in Greece, this resort has adopted solutions of bioclimatic architecture, production of energy from renewable sources (geothermal, photovoltaic solar energy), waste recycling and actions for the preservation of biodiversity.

- The water resource is preserved by several methods:
  - two reservoirs, integrated into the natural landscape of the region, to store during winter the extra streaming water; when added to the recycled water from the Costa Navarino processing unit this water meets all the needs of irrigation
  - water eco-management (repair of leaks, water-saving equipment) and educational programmes for visitors
  - a network of monitoring and sampling stations allows the continuous monitoring of the quality and quantity of the groundwater and surface water.

Natural pools

ALGARVE REGION (PORTUGAL)

Designer - installer: Piscinas Biologicas.

Project strengths

- System for water treatment and design of natural pools based on the biological natural mechanisms and replacing systematically the chemicals (filters by reconstituted soil layers…).
- The oxygen extracted from the photosynthesis of immersed plants reduces the proliferation of algae and develops the aquatic microfauna.
- In Portugal, there are 150 projects of natural pools, as well as 80 projects of domestic wastewater treatment using planted filters.
- These techniques contribute to the integration of the management of wastewater and bathing water in the natural environment of each site and to the preservation of the local resource.

Companies testimonials on InsMed services:

D. Morin
– Phytorem –
France

... The main benefit that we draw from the InsMed support resides in trade fairs such as Batimed, Innovative Building and Hydrogaia, in which we could meet clients or even potential collaborators but also the technical partners identified in advance through the InsMed platform ...

C. De Oliveira
– Bio Iberica –
Portugal

... Thanks to InsMed, our strategy of international deployment is perfectly combined with the opportunity to participate in the Hydrogaia fair in May 2011 and to explore the capabilities of the InsMed platform, on which we hastened to register and to map. This allows us to continue to canvass without moving ...

V. Baroni
– Cuentagotas S.L. –
Espagne

... Participate in trade fairs at a lower cost and benefit from an appointments book with potential partners has led us naturally to register on the platform proposed by InsMed, which today gives us international visibility ...

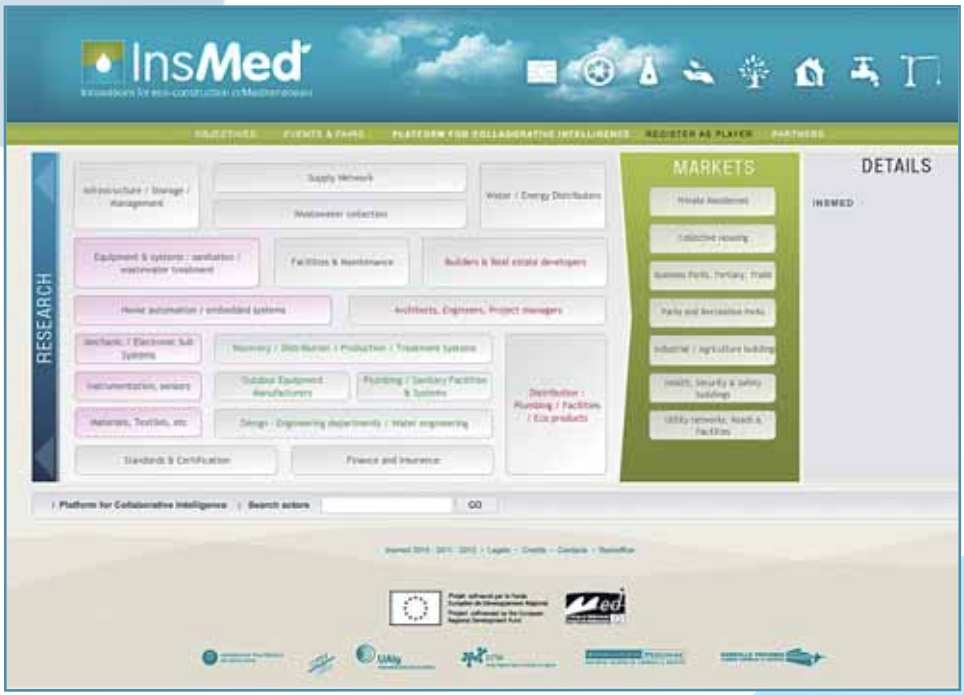
L. Brottier
– Solaire 2G –
France

... Our registration on the platform has enabled us to set ourselves in our ecosystem and to get in touch with all types of actor in the sector, upstream of our jobs and downstream to distribute our products. It has allowed us to optimize our presence on the trade fairs ...

T. David
– Eko Initiatives –
France

... When I discovered the opportunities offered by InsMed in terms of support, I learned a lot by participating in several fairs, and appreciated the opportunity to use the platform in order to better understand the functioning of the sector and to identify the key actors for the development of my young company ...

INSMED collaborative platform: toward a shared vision of Green Building and water management



The platform is:

a tool for connecting the actors in a Collaborative Intelligence:
- supply/demand
- collaborative research
- technological transfer
- Internationalisation

data base on the water management in Green Building:
- the building trade
- the application markets
- the events not to be missed
- targeted information on the set of actors (companies, laboratories, investors).

Click and register here, it is free!

http://marketplace.insmed.eu

Platform realized by Indigen solutions, Synbea

Project strengths

- Restoration of the former farm of the Thomassine domain (8 farmable ha): reception of public, exhibition on the domestication of plants, educational gardens and conservatory orchard of regional species.

- Solutions to optimize the water management associated with an eco-management approach of the energy (solar, thermal, floor refreshing powered by spring water):
  - use of spring water to power a system of basins and a hill dam
  - this water irrigates by gravity and drop by drop the orchard and gardens; automatic watering of gardens and remote control of the network
  - WC feeding by the spring water
  - wastewater treatment by reeds planted filters.

- Use of organic fertilizers and exclusion of all pesticides.

THE BIODIVERSITY HOUSE
(MANOSQUE, ALPES DE HAUTE PROVENCE)

Operation achieved in 2007.
Project owner: Parc Naturel Régional du Luberon,
Architecte : R+4 (Forcalquier),
Designer: Ecowatt (Clamensane, Alpes de Haute Provence),
Maintenance: Jardiver Technic (Manosque)..

Recommendations

ENVIRONMENTAL ASPECTS

For many decades, the north shore of the Mediterranean has experienced a growth of its wealth and its well-being based on an intensive use of its resources.
Today, it is nevertheless faced with a double challenge:

- to prepare a transformation of practices and attitudes in time
- to manage in a sustainable way the raw materials and energy, as well water, air, land and soil.

Thus we can continue to increase our wealth and our well-being, while decreasing the intensity of our use of resources and its impact.
OUR SOLUTION: to get involved in the approach proposed by the GreenBook.

TECHNOLOGICAL ASPECTS

The emergence of more and more innovative technological supply develops the market, that will be accessible to most of the people.
OUR SOLUTION: the Mediterranean economical actors will find in the InsMed Collaborative Platform an efficient and innovative tool.

ECONOMICAL AND SOCIAL ASPECTS

Sustainable building may involve additional costs. The evolution of new know-how and of the market will lead to a better cost effectiveness, and to the control of expenses.
OUR SOLUTION: our Market Place, that helps to develop the know-how of the actors and of the market, in order to optimize the technical costs and to decrease the social cost.

POLITICAL ASPECTS

1. Our contribution to the Euro-Mediterranean Strategy of Water (SWM), sustainable management of water resources. A long-term strategic framework, environmental, economic and social tool.
2. Our commitment in the "Union of Innovation", integrated approach in research and innovation: support for the development of skills, sustainable green growth.
3. Our support to the new European Directive on the Water.

OUR VISION: by 2050, the EU economy will have ensured an economical growth respectful of natural resources and of the limits of our planet, contributing to an overall transformation of the economy.

Your contribution will be decisive.

Le Consortium Méditerranéen InsMed

Some exemplary operations

Natural pool

GUEST HOUSE OF VAR COAST

The natural pool replaced the traditional chlorinated pool in 2011.

Project owner: M. & Mme ANQUETIL House,
Designer-installer: Couleur Nature (La Garde Freinet, Var).

Project strengths

- Two basins system, 60 m^2 each one: a free-shape pool and a planted basin for water regeneration, powered by a pump.
- The bathers appreciate the bathing natural landscape, the green color in comparison to the blue color of common pools with chemical treatment, the pleasure of being able to swim in untreated water, which does not sting the eyes and attacks neither the nose, nor lungs, nor the skin.
- The manager appreciates the absence of rinsing filter, the regeneration which saves a large amount of water and the communication on ecological practices towards the clients.

Water-saving eco-house

MARSEILLE
Construction achieved in 2007
www.labedouide.net/index.htm

Project strengths

- With solutions of eco-energy management (reinforced insulation, bio-climatic design, passive and thermal solar energy, wood pellets heating…), the use of natural materials (wood construction, insulated wood fiber and cellulose…), this construction integrates:
  - rainwater collection in high volume tank; it is used for WC flushes and watering
  - the grey water recycling (purification by a system of bacterial filters and a pond with amphibians, fishes and aquatic plants), used for watering ; installation designed and made by the residents through a training course organized by the association Living Water (Morbihan)
  - dry toilets in addition to flush toilets, with composting of waste on site.
- The grey water purification needs monthly rotation of the working filters.
- These equipment minimize the consumption of drinking water to 67 liters/day/person (for the Mediterranean area of the region, the average is 250 liters/day/person).
- The systems put in place give full satisfaction after 5 operating years.
- The decrease of rainfall between 2007 and 2011 does not allow to supply entirely the watering; the owner plans to recycle the pond's water in the rainwater tank in autumn - winter, after filtration…

GRILLON SCHOOL (VAUCLUSE)

Renovation achieved in 2006.
Project owner: Municipality of Grillon,
Project manager: Vincent FAURE (Valréas),
Study offices fluids: AGIBAT,
Wood structure: Gaujard Technologies (Avignon)

Project strengths

- Implementation of water-saving equipment (double flow WC flushes, temporized taps) and rooftop-planted terrace with an approach of eco-friendly quality of materials, thermal comfort and reduction of energy consumption.

Collected rainwater

EXPERIMENTATION IN SOCIAL HOUSES IN ABEILHAN (HÉRAULT)

Operation achieved in 2010 (8 apartments).
Project owner: Hérault habitat,
Partners: Conseil général de l'Hérault
(European cooperation program WAT - Water and Territories),
CEREVE (Centre d'Enseignement et de Recherche sur l'Eau, la Ville et l'Environnement).

Project strengths

- This experience was implemented along with a territorial analysis of the potential for collected rainwater from buildings roofs. It has demonstrated the interest of this system in this area.
- The storage tank is sized according to the demand of WC flushes; the system switches automatically toward the drinking water network when the tank is empty, while the possible excess of rainwater is evacuated by a runoff.
- The needs are virtually covered throughout the year by the rainwater (saving 8 to 9 m^3/year per person, approximately 15% of the average consumption of 150 liters/day or 55 m^3/year per person).
- Setting up of water-saving taps and plantations requiring little watering.

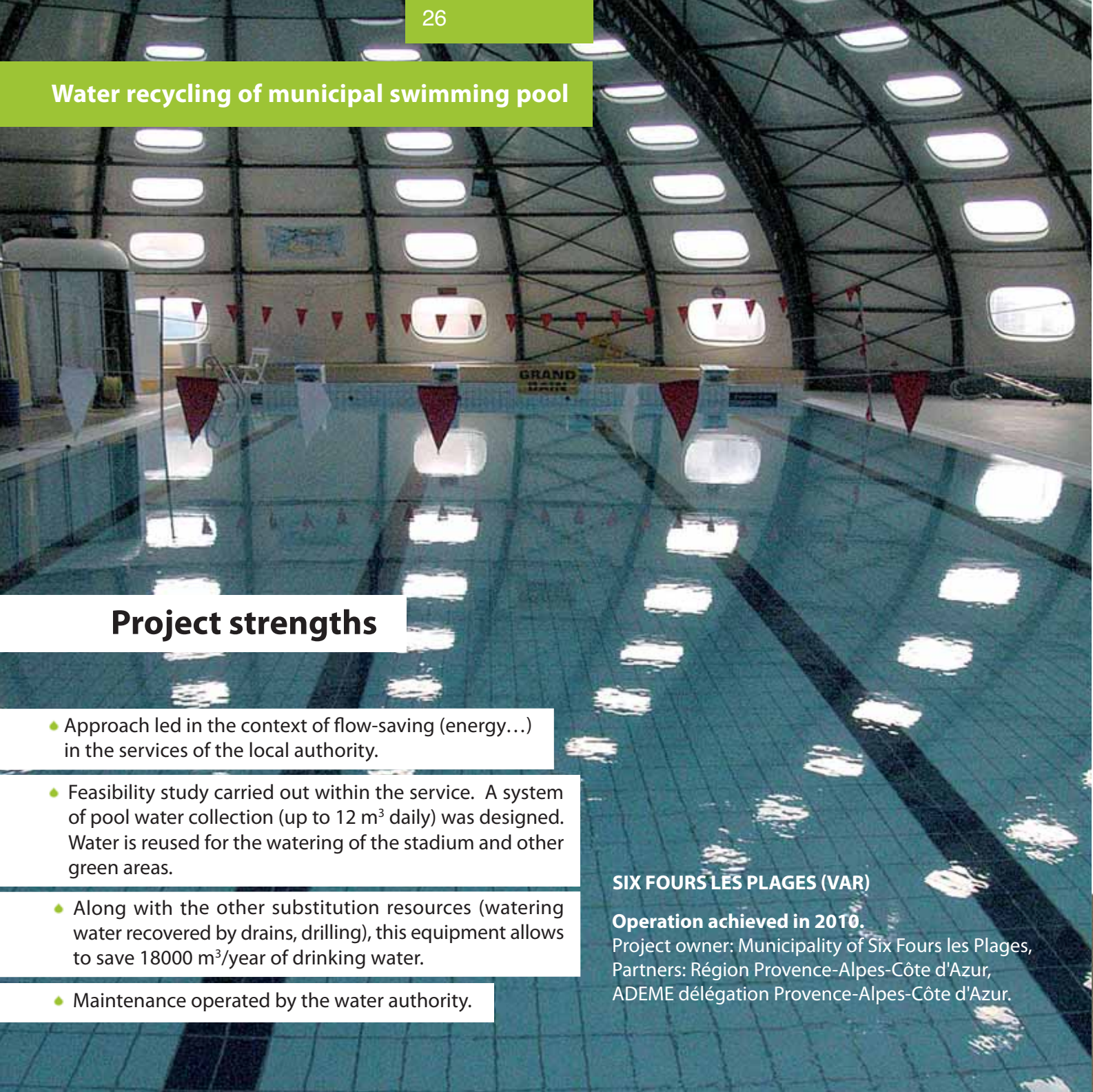
Natural pool

GUEST HOUSE IN ST VALLIER (ALPES MARITIMES)
Operation achieved in 2008.
Project owner: M. & Mme CHEVAL House,
Designer-installer: Couleur Nature (La Garde Freinet, Var).

Project strengths

- A 100 m^2 pool containing a bathing area and an area for water regeneration, composed by layers of filtering gravels and plants.
- Natural stone walls that outline the surface of the basin and retain the planted banks.
- Waterproofing membrane protected by geotextile, regeneration device fed by a pump, skimmers to clean the water surface.

Water recycling of municipal swimming pool



Project strengths

- Approach led in the context of flow-saving (energy…) in the services of the local authority.
- Feasibility study carried out within the service. A system of pool water collection (up to 12 m^3 daily) was designed. Water is reused for the watering of the stadium and other green areas.
- Along with the other substitution resources (watering water recovered by drains, drilling), this equipment allows to save 18000 m^3/year of drinking water.
- Maintenance operated by the water authority.

SIX FOURS LES PLAGES (VAR)

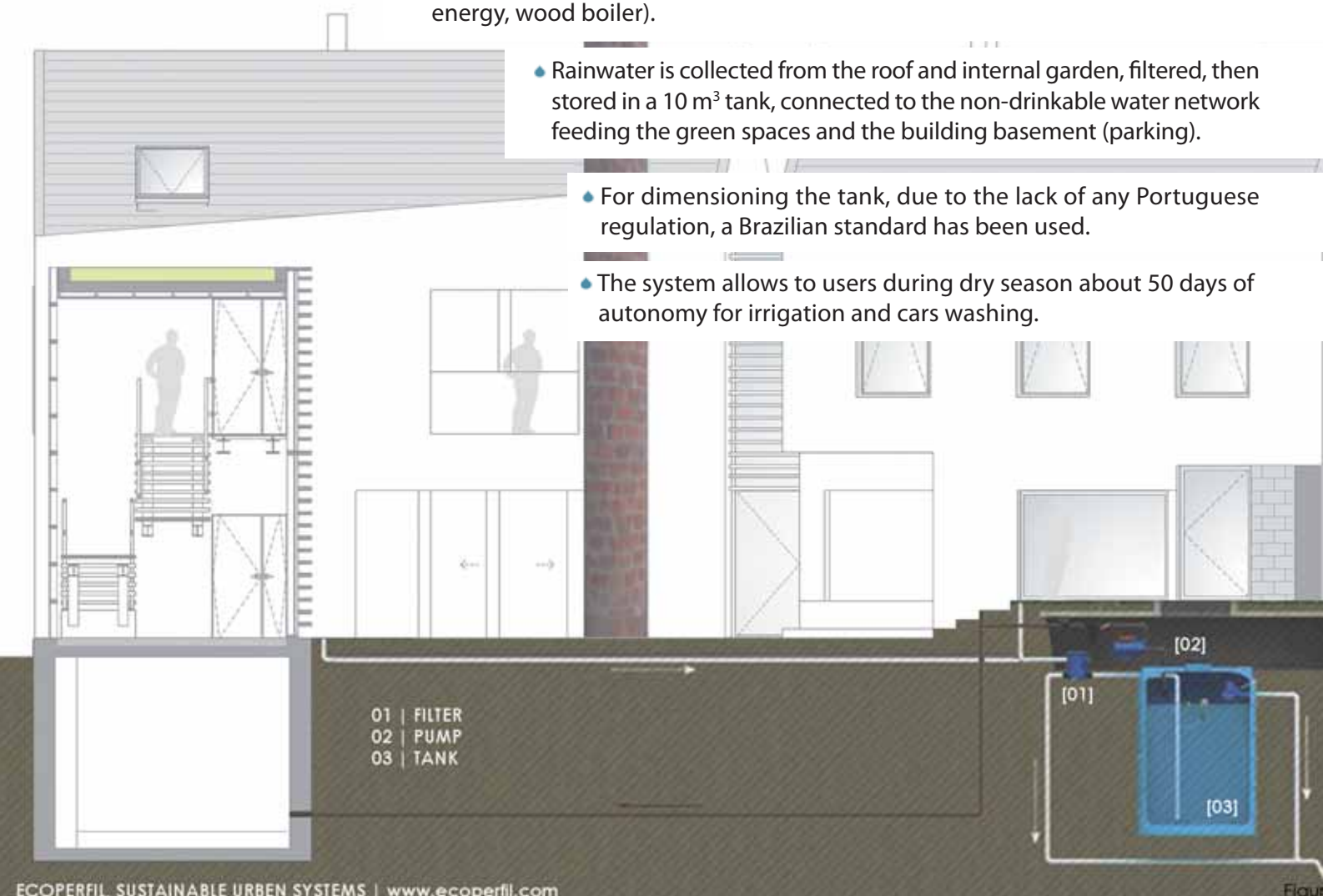
Operation achieved in 2010.
Project owner: Municipality of Six Fours les Plages,
Partners: Région Provence-Alpes-Côte d'Azur,
ADEME délégation Provence-Alpes-Côte d'Azur.

NEW BUILDING IN LISBON (PORTUGAL)

Operation achieved in 2012.
Designer: Ecoperfil Sistemas Urbanos Sustentáveis.

Project strengths

- This equipment is associated with solutions of eco-energy management (thermal insulation from the outside and shading, thermal and photovoltaic solar energy, wood boiler).
- Rainwater is collected from the roof and internal garden, filtered, then stored in a 10 m^3 tank, connected to the non-drinkable water network feeding the green spaces and the building basement (parking).
- For dimensioning the tank, due to the lack of any Portuguese regulation, a Brazilian standard has been used.
- The system allows to users during dry season about 50 days of autonomy for irrigation and cars washing.



Rainwater recovering and grey water recycling

HOUSE IN HYÈRES (VAR)

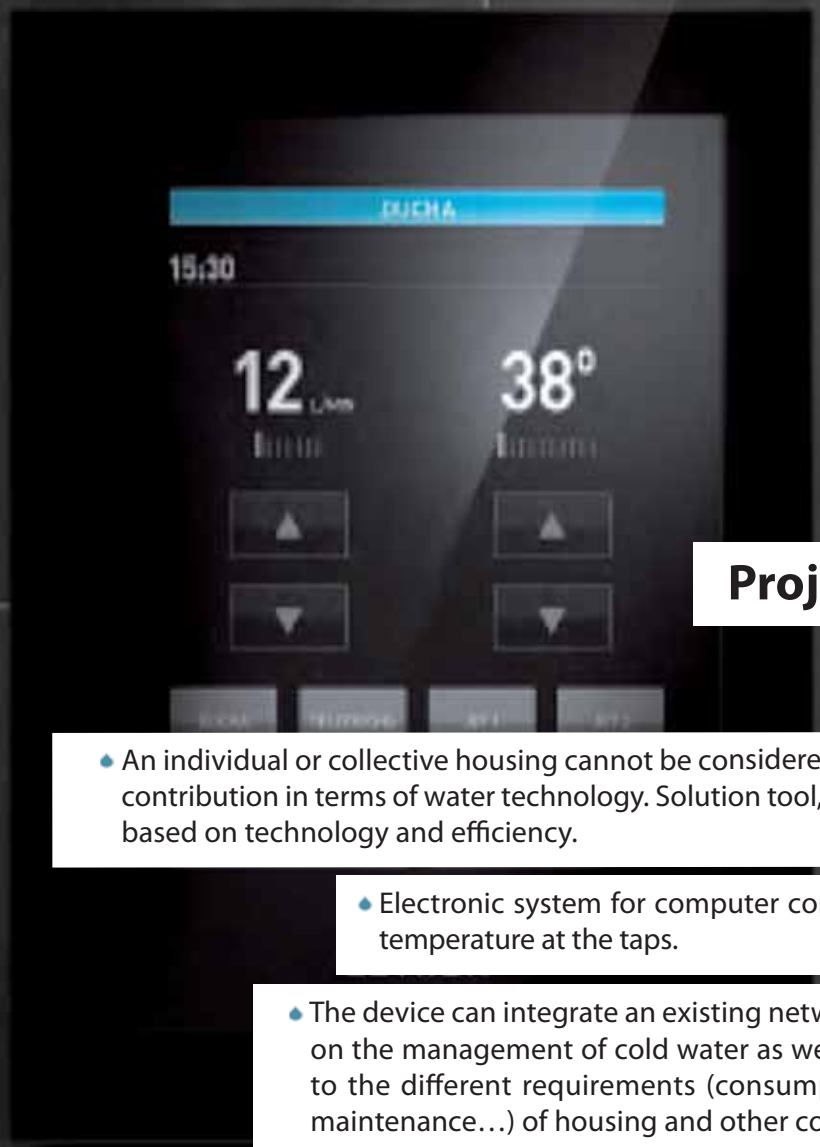
Operation achieved in 2008.
Design-installation-maintenance : O2pluie (Hyères).

Project strengths

- Collected rainwater from the roof and recycling of household wastewater (grey water) from the sink, wash-basins and bath.
- Treatment of grey water by oxygenation, ultra-filtration and UV (device of the German manufacturer Pontos).
- Use of rainwater for external uses (garden…) and of recycled water for WC and washing machine.
- Saving 60-70 % in drinking water and 50 % reduction in domestic wastewater.

Technologies for intelligent water management

Provider:
ZEYRON Technologies (Catalonia)



Project strengths

- An individual or collective housing cannot be considered without an intelligent contribution in terms of water technology. Solution tool, customer-oriented and based on technology and efficiency.
- Electronic system for computer control of water flow and temperature at the taps.
- The device can integrate an existing network, by having an effet on the management of cold water as well hot water, according to the different requirements (consumption, comfort, health, maintenance…) of housing and other concerned sectors.
- The system allows at the same time the detection of water leak and the information of the user.

InsMed

Innovations in Green Building in the Mediterranean

The Mediterranean Consortium is supported by 4 countries partners:
Marseille Provence Chamber of Commerce and Industry in the programme MED-INNOVATION brings together the Messinian Chamber of Commerce and Industry (Greece), the Polytechnical Technical University of Catalonia (Spain) and the University of Algarve (Portugal).

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CHAMBRE COMMERCE ET INDUSTRIE

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MESSINIAN CHAMBER OF COMMERCE & INDUSTRY

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