

MARIE TRAINING PROGRAM FOR IMPROVEMENT IN ENERGY EFFICIENCY (EE) OF EXISTING BUILDINGS

F1 | BEST PRACTICES COLLECTION

Best Practice Name:	Comprehensive energy efficiency and environmental rehabilitation
Code:	FR_RE_CO_22

Best Practice Description:

Type:	<input checked="" type="checkbox"/> Action for improvement in the EE	<input type="checkbox"/> Training experience (*)
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Description:	Rehabilitation of an old shed into a dancee school, according to “ <i>Démarche Bâtiments Durables Méditerranéens</i> ” (Mediterranean Sustainable Buildings approach) (www.polebdm.eu) <ul style="list-style-type: none"> • Exterior thermal insulation of existing concrete walls • Creation of a wooden framed extension, insulated with cellulose wadding • Roof insulation with cellulose wadding • Double glazed joinery - argon filled • Isolated entrance hall (airlock) • Air tightness (tested) • External venetian blinds • Natural ventilation • Natural lighting privileged • Installation of a urban heating network powered by a wood pelet boiler • Double flow mechanical ventilation with modulated flow rate • 2 x 30L electric instant water heater for hot water (few people have showers on site) • Photovoltaic solar panels 	
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Location:	Embrun	Country:	FRANCE
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Contact (team):	Sylvie Détot, Architect and environmental quality AMO (assistant to contracting authority) Avenue Claude Delorme Forcalquier 04300 +33 4 92 75 14 45		
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Type of building:	<input checked="" type="checkbox"/> Tertiary	<input type="checkbox"/> Residential	<input type="checkbox"/> Mixed
Property:	<input checked="" type="checkbox"/> Public	<input type="checkbox"/> Private	<input type="checkbox"/> Mixed
Management:	<input checked="" type="checkbox"/> Public	<input type="checkbox"/> Private	<input type="checkbox"/> Mixed
Fields of action:	<input checked="" type="checkbox"/> Construction	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Use
	<input checked="" type="checkbox"/> Energy generation and distribution		<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Replacement or implementation of renewable energies	Wood boiler, photovoltaic solar panels	

Please, evaluate if the following processes take place in the Best Practice that you are describing in this form:

The data collection has been complete and rigorous	Yes	No
Communication and awareness processes have been developed to disseminate this practice	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Training actions have been provided

<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Product and services have been improved

<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Jobs have been created

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Sustainable financial models have been applied

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Agreements or **collaboration models** have been defined between parties

<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Positive impact tested in the following fields (add quantitative data if you have):

<p>ENERGY EFFICIENCY IMPROVEMENT (EE)</p>	<ul style="list-style-type: none"> • Energy performance gain superior to the reference building performance (building previously unheated) by more than 50%. • Monthly monitoring of consumption by the technical services of the municipality, in collaboration with the “assistant to contracting authority“(AMO) for environmental quality, which helped minimizing consumption. • Meter reading for each consumption sources (consumers) gathered in 2 spots for convenient readings. • The heating consumption is significantly lower than expected. • The power consumption of the ventilation, however, is stronger than expected • A user manual and the meetings with the AMO both contributed to these good results
<p>FINANCIAL COVERAGE</p>	<ul style="list-style-type: none"> • Subsidies related to energy efficiency and environmental efforts • Advising from AMO and numerous exchanges to minimize the cost of the project. In the end, the extra cost due to the energy efficiency and environmental quality is € 36,000 (6% of the total cost of the operation) • In return, the cost of annual charges amounted to only € 4,600 (that is to say cost per square meter 2 times lower than the other town buildings average). • This results in a payback time of about 6 to 7 years
<p>EMPLOYABILITY POTENTIAL</p>	<p>One person was recruited by the technical services of the municipality to manage their buildings, including this particular one.</p>
<p>OTHER</p>	<p>Communication:</p> <ul style="list-style-type: none"> • This project has been turned into a documentary film for the association BDM, putting into light and exploiting in particular its approach to cost (: Reflections on 30 years of operation). • The company Saint-Gobain, who made the main etched glass façade, communicates on the project in commercial documents. • The project has been a strong collaboration between contracting authority, project management and AMO
<p>DIFFICULTIES</p>	<ul style="list-style-type: none"> • The need for air renewing requires higher ventilation flow, which result in discomfort due to drafts, because the blowing is concentrated on two air-vents only (a better distribution would have been preferable). To overcome this problem, it was decided to under-ventilate while the building was in use and to hyper-ventilate in early mornings, late

	<p>afternoons and evenings. However, the quality of indoor air is certainly not very good in times of under-ventilation.</p> <ul style="list-style-type: none"> • Control systems were found unreliable • Professionals in charge of the setting and maintenance of technical systems appeared to be under trained. • The complexity and novelty of these systems makes exploitation more difficult. • The complex performance of an efficient building is hard to grasp; companies (maintenance in particular) and managers should receive appropriate training • The heating cable installed in the gutters to melt the snow works even when there is no snow. • Airtightness problems were observed at the interface between the rehabilitated building and the extension part • Educational actions on the subject of airtightness were conducted with the implementation companies, but a little late. • The involvement of implementation companies during the project design would have been preferable • Due to constraints of altitude (800 m), the area being subjected to heavy snowfall in winter, the project took seven months to complete.
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Agents involved in this experience:

	Legislation agencies
	Public promoters
	Private promoters
x	Technical public institutions
	Technicians of the private sphere (professional associations ...)
	Builders
	Industrial
	Facility Managers (property managers, cleaning companies ...)
	Energy supply companies
	Users/owners (homeowners association, schools ...)
	Other:

GAPS	<ul style="list-style-type: none"> • Lack of training of professionals responsible for settings and maintaining technical systems, including efficient buildings with complex performance • Training needs in the form of experience feedback, from the implementation companies to the project management, and similarly, between consultancy offices (design/engineering).
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(*) RR_BB_FF_NN

RR Country: **CY** (Cyprus), **FR** (France), **GR** (Greece), **IT** (Italy), **MT** (Malta), **PO** (Portugal), **SL** (Slovenia), **SP** (Spain)

BB Type of building: **RE** (residential), **TE** (tertiary), **MX** (mixed)

FF Field of action: **CO** (construction), **MA** (maintenance), **US** (use), **EN** (energy generation and distribution), **OT** (other)
(in case of affecting more than one field of action choose the most relevant)

NN Number of the practice: **01, 02, 03...**

(*)IN CASE OF A TRAINING EXPERIENCE:

Course name:	
Duration:	<i>Training hours/ECTS</i>
Web:	
Director/a:	
Who is it aimed:	<i>Profile of trainees</i>
Objectives:	<i>What enables this training?</i>
Program:	
Methodology:	<i>Format (face-to-face, on-line), structure of sessions, visits, case studies, evaluation systems, dynamic sessions, other aspects ...</i>

I agree to bring this experience to the database of the MARIE project, which will create a comprehensive training program for improving the energy efficiency of buildings in the area of the Mediterranean.