Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
Vorarlberg	Vorarlb	**Volksschule Mäder**	School	Renovation				Monitoring and adjustmens done	expanding service package by a Module 5, “Service and Maintenance” - evaluation of the concept	With low time-input big improvments in energy efficiency can be made		
Vorarlberg	Vorarlb	**Gemeindehaus Lorüns**	Administration Building	New				Monitoring and adjustmens done	expanding service package by a Module 5, “Service and Maintenance” - evaluation of the concept			
Dalarna	Dalarn	**Primary School, Aspeboda**	School	New	2600	100 % renewable: Pellets heating	calculated 34 kwh/m2 expected: 40 kWh/m2	Construction completed feb 2014 Evaluation by experts from Vorarlberg MountEE support in evaluation and dissemination of results	It has been evaluated how the modules of the service packages have been used in this project by the project manager	Lack of common models for production of new buildings in the municipality. Especially regarding choice of materials and use of LCC.	The municipalitys building section did not really have controll over what process models were used in the	FTX ventilation with rotary heat exchanger
Dalarna	Dalarn	**Primary School, Älvdalen**	School	Renovation/ New	######	100% renewabel, district heating	70 kWh/m2	Planning process started 2013 Tendering during 2014 Mountee support in planning and establishing criteria	Modules 2+3+4, Implementation of the Sveby-model, database for ecologcal material choise used (Basta).	Small municipalities need support structures that today do not exist		FTX ventilation with rotary heat exchanger
Dalarna	Dalarn	**Preschool i Säter**	School	New	23000	100% renewabel, district heating	69 kWh/m2, in the first calcylation: 58 kWh/m2.	Construciton completetd april 2014 Introduction in SWEBY model done Evaluation fo FTX planned Evaluation meeting planned	Module 5+6 are used. Use of Sveby - model for evaluation. Fewer LCC than anticipated, use of green procurement.	Difficult to introduce new tools in an ongoing construction		FTX with heat exchanger
Dalarna	Dalarn	**Kvarteret Måsen, Orsa**	Apartment building	New	32000	100% renewabel, district heating	Target level: 70 kWh/m2	Planning process started 2013 Construction start delayed, Call for tender in 2014. Support in module 1: Choice of energy standards and choice of material	Module 1+2, introduction into Sveby-model and Basta-data bank.			
Dalarna	Dalarna	Myrbacka skola, Vansbro	School	New	25000	100% renewable, residues form forest	69 kWh/m2	Building start may 2014 Building completed spring 2015 Support in module 2+3 (choice of material and building concept) Support in procurement of LED	Mainly service package 3+4+5 are used. Parts of the Sveby model are followed, and will be used in the evaluation. BASTA is used for choice of material. LCC has been used to some extent.			FTX-evaluation

Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
	Nenet	**Hedlunda preschool**	school	New	41000	100% renewabel, district heating	Max 120 kwh/m2	Planning completet 2013,Expected finalization 2014 Experience exchange on servicepackage modules and mountee pilots	Continous experience exchange with the project leader and architect for the project, on aspects in moduls 2-5, working on user manual, input from MountEE good practice experience etc.			It will be the first certified passivhouse pre-school in Northern Sweden. It is also a model for how calculating
	Nenet	**Sunderbyn hospital**	Hospital	New		100% renewabel, district heating, 16m2 PV	94kWh/m2	Planning process started 2011, MountEE- standards implemented 2012, will be finalized late 2014 Definition of general rules and pricnipled regarding enrgy efficiency and renewabel energy Engaged in defining energy standards	Ccooperation with the responsible project manager on elements from the service package moduls 3, 4 and 5 during planning and construction process.		LED systems will not be used indoor due to too few tests	Implementation of ambitious energy efficiency work in a complex public building project / hospital, replicable to
	Nenet	**Kiruna municipality´s new townhall**	Townhall	New	25000	not defined yet	56k	Architect competition, 2013 Presentation of model that meets MountEE crietria in March 2014. Buildingstart 2014, completed 2016. Engagement in defining energy standards	Cooperated with both the city of Kiruna and experts from Tyréns consulting to establish energy standards meeting MountEE criteria	Arcitect competitions can be a useful concept if clear targets are established in advance		Implementation of an advanced highly efficient building project with great symbolic value in Arctic climate including
	Nenet	**Museum building Vuollerim 6000**	Museum	Renovation	90	Electricity: 50% renewable	40% less heating demand	Potential studies completed January 2014. Negotiations with the County Adminstration Board regarding subsidies for the renovation are ongoing. Implementation planned for 2015-2016.	Analysis of energy demand, interview of staff; monitoring of ventilation and temperature; Feasibility studies based on this analysis Development of heat-pump solution together with the users	Low energy prices make it difficult to motivate energy savings	No construction work can be started before financing is secured	
	Nenet	**Vännäs**	Daycare, shool and library	New	10000	100%	30 kwh/m2, heat demand 15 kwh/m	Planning process started 2013 Construction start 2014, completed 2015 Lessons learnt from Hedlunda project were used Coninously information exchange with the architect	Continous experience exchange with the project leader and architect for the project, on aspects in moduls 2-5, input from MountEE good practice experience etc.			
	PNR	**Project 1: Cabanassse**	Kinder garden	Renovation	1180	100% renewable solar hot water	wood heating and solar heating	Support inthe elaboration of the program. Coaches project management for the achievement of performance targets	Elaboration of the program. Monitoring performance targets know-how transfer and conciousness raising		Due to new mayor it is uncertain if the project will be realized	

Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
PNR-TRPC	PNR	**Project 2: Mantet: town house**	Townhall	new construction in old building	355	Solar hot-water for heating	30% improvemnets Energy efficiency: 50 Kwh / m²/year Environmentals materials	Contracting project management 2014 Start construction work 2015 The definition of the programm is in progress. Work has been done on construction constraints	All the modules used Support in program definition support on on sustainable public procurement; support during the construction; imlementation of a monitoring system	The service package is much more used than anticipated.	Delay start due to elections	
PNR-TRPC	PNR	**Project 3: Porta: town house**	Townhall	Renovation	700	Solar hot-water for heating	30% improvements Energy efficiency: 50 Kwh / m²/year Environmentals materials	Delayed due to new mayor Participating in definition of building program	Combining SP-mountee with S=-County Council . Same HVAC engineer is the same in both teams. The MountEE focus on heritage sustainable renovation		Due to new mayor it is uncertain if the project will be realized	Not sure if the constructin phase will be reached within mountee project
PNR-TRPC	PNR	**Project 4: Olette**	Offices	Renovation	2000	Renewable energy; wood pelets	Energy efficiency: 50 Kwh / m²/year	Begin of construction 2014 Verification of each step in the building process according to servicepackage in progress	Combining MountEE-sp with HQE (high environmental quality) assistance. MountEE verifies each step of the project, and documentation analysis.	Low awareness on sustainable construction make the implementation of the service package more difficult.		The owner wants to realize an examplary project in order to show that's possible to do it.
PNR-TRPC	PNR	**Project 5: La Cabanasse**	Canteen	Renovation		Wood fireing, hot solar water	Energy efficiency: higher than 64 Kwh / m²/year	Project management chosen 2013 Conception in progress The MountEE HVAC engineer is currently doing a critical analysis of the project	Support on project management consultation The project is in standby because of the changes resulting from the municipal elections		Due to new mayor it is uncertain if the project will be realized	This project is in the same building as the school and the retirement home. This project is at the begining.
ARES	PNR	**Project 6: La Cabanassee**	School	Renovation		Wood fireing	Energy efficiency: 64 Kwh / m²/year	Construction work stopped after electgions Mountee support for project management, consultation, know-how transfer and conciousness raising	Support of project management by consultation and know-how transfer. Support to use renewable energy and ecomaterials		Due to new mayor it is uncertain if the project will be realized	This project is in the same building as the school and the retirement home. This project is at the begining.
	PNR	**Project 7: La Cabanasse**	Residence for Seniors	Renovation		Wood fireing, hot solar water	Energy efficiency: 64 Kwh / m²/year				Due to new mayor it is uncertain if the project will be realized	This project is in the same building as the school and the retirement home. This project is at the begining.

Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
RAEE	RAEE	**Le Gresivaudan**	Head office,	new	4700	heatpump	40 kwh/m2	Building completet 2014 Accompanying building management. Optimization of installations 2014	optimizing and follow up of operation management of the building. Feedback on project performance and building performance Users manual	not easy at first time to explain to users the proper functioning of the building, the issues of comfort and heating are delicate and sensitive		new building, 2500m² on 4 floors
RAEE	RAEE	**Loisans**	Head of	new		not determined	less than 15 kWh/m² for heating – natural isulation - focus on air quality - …	Building completet 2014 Support conception team on topics like ari quality, renewable energies, sustainable products	Support of conception team on topics. Help on program writing, Project-check-list development. Kind of 'to do' list for every stage of the project	Need of teaching skills to explain the consequences of some choices.		ongoing negociations with the municipality
RAEE	RAEE	**St Offenge**	Primary school	new	1500	100 % , Solar, wood energy	Passive House Building : need for heating <15 kWh / year / m ², Electricity PV,	Planning program done sept 2012 Companies chosen and start of work june 2014	Monitoring environnmental and energetical objectives assitance in the choise of technical solutions support by an expert on the quality of indoor air Assistance in the search of funding	it is important to offer an assitance to follow the energitical and environnemental indicators at all stages of the project		Positive energy building!
RAEE	RAEE	**Chambery**	Cultural center	renovation		district heating network : 35% fatal energy (from waste incineration), 16% of wood	(BBC renovation=64 kWh/m²/an)	Program dev : late 2013 Building permit end of 2014 Diagnosis exisitant building in february 2014	Life Cycle cost analysis for lightning - Test the service package for a big city - Support to write the programme - the cost of de works was estimated.	renovation of a building with a very specific use is difficult, energy and environmental requirements can not be followed, despite a very ambitious project to start.	Exceeds the initial budget, we will have to make strategic choices and review project performance.	
RAEE	RAEE	**Saint Alban**	School in an art house	renovation, change of use (school-cultur	400	not determined	Low Consumption Building / Thermal Regulation 2012	presentation of diagnosis exisitant building in february 2014 by architect, the project has been delayed a meeting with teams organized in June	We will work with the selected team to clarify the environmental and energy objectives and we will test the enerbuild referential		electoral period slowed down process. architect selected before program makes changes difficult	Not so ambitious project, but Mountee can truly pull this building and make it sustainable.
	RAEE	**StMartin d Uriage**	Town Håall	New+renov	3240	100% woodboiler, fresh water cooling	?	Building delivered in april 2014 Support of users, guidance on energy monitoring	Support on users understanding of the building – guidance on energy monitoring – Project historical review -Dynamic thermal sijulation			

Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
RAEE	RAEE	**Montmelian**	Exhibition room + housing	renovation: part of building	4000	Heating?, Warm water renewable (solar, wood energy)	(BBC renovation=64 kWh/m²/an) +	Development of program jan 2014 Start of work summer 2014	- develop energetic program - assitance in the choise of technical solutions : - Assistance in the search of funding - Analysis for the heating system (wood energy)	it is essential prior to the project to verify the consistency between the budget and the ambition of the project and to valid the funding, to avoid ending up with unrealistic projects	the allocated budget has declined, technical compromises will have to be done	
RAEE	RAEE	**Montbonnot**	Kinder garden + House of arts	new + renovation		100%, wood biolder and solar panels	Goal achieved in energy consumption of 60 kWh / m². Year (4 for regulatory purposes is 30 kwhep / m².	Building completet 2013 Building managment optimization during 2013-2014 Temperature measurements 2013-1014	optimizing and follow up of operation management of the building. Feedback on project performance and building performance Evalutaion of wood boilers	Measurements and adjustments can increase air quality and comfort significantly		Very good, high quality building
	ARES	Cividale Municipality	Administration Building	Renov	1600	planning for renewable for hot sanitary water	Planning for a 1,2 itaca score for heating	Working with defining energy targets implementing itaca protocol presentation to authorities green energy audit	Module 00 + 1 + 2 Green energy audit presentation to local authorities Definition of ecological targets optimization of planning, tendering, monitoring offers	The passing of time to make decisions causes delays		Protocol itaca used
	ARES	Sagrado municipality	Preschool	Renov	1500	solar thermal anc solar photovoltaic	energy class A - condensing boiler + floor heating	Renovation completed 2013 Monitoring energy consumtion support for biological cleaning	**Module 5A**: Monitoring on energy consumption , **Module 5B**: Support for biological cleaning, **Module 5C**: Support for maintenance plan and user manual of the building			
	ARES	Promotur (Regional society)	Hotel	Renov	4500	low therma transmittance of evelope	energy class A - condensing boiler on gas	Renovation completed 2013 Work on control ov energy performance started Work on user manual for adapted behaviour of occupants started	**Module 5A**: Monitoring on energy consumption , Support for maintenance plan and user manual of the building **Module 5C:** Support for maintenance plan and user manual of the building	Pilot necessary to allow for learning processes and to build up trust between building companies, architects and municipalities		
	ARES	Polcenigo municipality	school	Renov	1100	Solar thermal - hot water	Energy Class A	Renovation completed 2013 Work on control ov energy performance started Support for mainaenance plane in progress	**Module 5A**: Monitoring on energy consumption , **Module 5C**: Support for maintenance plan and user manual of the building			

Region	Region	Name	Type of	New/R	Investment k€	Renewable er	Target Level	Activity process	Service-package activities	Lessons learned	Deviations from plan	Other comments
	ARES	Tolmezzo - Regione FVG	Office buildin g	Renov			Energy Class A	No activity, This pilot will be replaced by another	Module 5 A + 5 C		No acticity due to ??	
	ARES	Moggio udinese - Regione FVG	Office	Renov		to be analyzed	Score 1,2 in itaca -protokoll for heating	Work with green energy audit started Work with definition of ecological aims started	Module 00 + 1 Green energy audit presentation to local authorities Definition of ecological targets		We will not do module2, because the region is late in the time schedule	Protocol itaca used

	Implementation concept	Activity report	Evaluation report
Name of pilot	Umbau Volksschule Mäder		
Type of building	School		
Typre of pilot (new/renov)	Renovation and partly new building		
Total cost			
Owner	Gemeinde Mäder, www.maeder.at ; Bgm. Ing. Rainer Siegele (mayor), T: +43 5523 52860; E: gemeinde@maeder.at		
General description Overall description of intentions and actions with the pilot	Energy Evaluation, Sustainable Cleaning, expanding service package by a Module 5, "Service and Maintenance" - evaluation of the concept. The project will be supported as part of the service package with the goal of a high energy efficiency (near passive house) and a high environmental performance.		
Process and planning Description of the planning process and the performance targets	The Client or the Building Operator will jointly decide on the basis of the actual requirements and needs which of the contents of Module 5 "Energy Evaluation" and cleaning are to be applied to the specific project. An individual co-ordinated offer will then be drawn up		
ENERGY			
1. detailed collection of energy consumption data	• Separate collection of the most significant energy consumption data using the KGA [municipal building certification] model • Basis: calculation model with entry of individual usage profiles and building services equipment (PHPP calculation)	Zum Zeitpunkt als die Volksschule Mäder saniert wurde, waren leider die Anforderungen der differenzierten Verbrauchserfassung im Kommunalgebäudeausweis für öffentliche Gebäude in Vorarlberg noch nicht so ausführlich gefordert wie es derzeit vorgegeben wird. **Somit wurden „nur" folgende Zähler installiert**. • Wärmemengenzähler Gesamtwärmeverbrauch bei der Wärmeübergabestation. • Kältezähler – Grundwasser Volksschule. • Stromzähler Tonbrennofen. • Stromzähler Lüftungsanlage. • Stromzähler Photovoltaikanlage (Energielieferant). • Allgemeinstromzähler (Energielieferant). • Trinkwasserzähler (Gemeinde). **Folgende Zähler sollten nachinstalliert werden:** • Wärmemengenzähler Radiatoren • Wärmemengenzähler Fußbodenheizung • Wärmemengenzähler Lüftung • Wärmemengenzähler Warmwasserbereitung • Wasserzähler für Warmwasserbereitung • Stromzähler Serverraum • Ggf. Stromzähler Beleuchtung, wird jedoch nachträglich schwer kostengünstig/ wirtschaftlich möglich sein. • Stromzähler Grundwasserpumpen	Bei der Volksschule Mäder ist keine differenzierte Verbrauchserfassung möglich, da nur ein Hauptzähler bei der Wärmeübergabestation und keine Subzähler für die Heizgruppen Radiatoren und Fußbodenheizung sowie das Heizregister der Lüftungsanlage vorhanden sind. Die Energie, welche notwendig ist um das Warmwasser zu erzeugen, kann somit auch nicht erfasst und optimiert werden. Nicht bewertet werden kann der Energieverbrauch, weil dazu ein Wärmemengenzähler notwendig ist, welcher nachinstalliert werden sollte Des Weiteren fehlt ein Stromzähler zur Erfassung des Energieverbrauchs vom EDV Server. Vor allem in Schulen ist es wichtig, den Stromverbrauch in den Schulferien zu erfassen und daraus Erfahrungen zu sammeln wie der Stromverbrauch während der Zeiten, in denen die EDV Anlage nicht oder wenig benötigt wird, reduziert werden kann. Für die Erfassung des Energieverbrauches der Beleuchtung sind auch Stromzähler notwendig, da in Schulen durch optimierte Lichtsteuerung ein nicht unwesentlicher Anteil Strom eingespart werden kann. Jedoch ist der Energieverbrauch für Benchmark Auswertungen sehr interessant bzw. hilfreich.

2. Documentation of energy consumption	• Support in collection of consumption and calculation data manually by the building manager or by entering the data e.g. in the http://www.energycontrol.at tool • Calculation of the settings, parameterisations and conditions of the actual location: summer and winter temperatures, air change, user behaviour, etc. • Definition of time intervals for documentation	Der Energieverbräuche der Zähler welche vorhanden sind, werden monatlich mittels Excel Tabellen erfasst.	siehe Tabelle 1
3. Evaluation of energy consumption	• Comparison of calculation data with individualised usage profiles • Parameter adjustment • Weak point analysis and further measurements as necessary	Die Basis für die Energieauswertung wird die Zertifizierte PHPP Berechnung vom Jahr 2012 verwendet. Wie in Tabelle 2 ersichtlich sind die Regelungsparameter für Heizung und Lüftung nicht auf ein Passivhaus abgestimmt. Für die Beheizung der Räume ist eine Heizleistung von 14,5 Watt/m² (lt. PHPP) notwendig. Regelung der geforderten Raumluftqualität von 600 ppm je Unterrichtsraum und dergleichen gar nicht möglich, da mit einer Luftmenge von 600m³/h und maximaler Schüleranzahl eine Raumluftqualität von minimal 1.000 bis 1.200 m³/h möglich. Dadurch ist die Lüftungsanlage meist im Volllastbetrieb und versucht auch leere Unterrichtsräume auf eine Raumluftqualität von 600 ppm zu Be- und Entlüften.	siehe Tabelle 2
4. Implementation of improvement measures	Implementation (to come)	Fehleranalyse - Vergleich aktuell eingestellte MSR Parameter mit Berechnungen, Dimensionierungen usw. Nachjustierung der Parameter, welche von der MSR nicht benutzerspezifisch (Nutzerverhalten) sondern als Default Werte. eingegeben wurden - ggf. zusammen mit der MSR Firma, sowie der Person welche die Haustechnik betreut.	Durch die Gebäude- und benutzerspezifische Anpassung der Regelungsparameter (siehe Tabelle 2) werden sich die Energiekosten sowie der Heizwärmebedarf reduzieren
5. Control of the effects of the improvement measures implemented	control (to come)	Nachmessung/Evaluierung nach der Heizsaison	Benchmark Tabelle z.B. Energiecontrol; Energiecockpit, Excel Tabelle
CLEANING			
1.a. Optimisation of planning from a cleaning perspective • Formulation of principles during the architectural competition			Der Gebäudewart war als beratendes Mitglied beim Architektenwettbewerb involviert und konnte sich grundsätzlich zu Reinigungsthemen äußern und diese bei der Jury entsprechend einbringen.
1. b. Optimisation of planning from a cleaning perspective • Statement in the submitted plans and detailed plans			Die vom Architekt gewählte Materialisierung liess eine effiziente und umweltfreundliche Reinigung zu.
1. c. Optimisation of planning from a cleaning perspective • Indicate various cleaning-relevant aspects in the ecological programme	(e.g. hanging WC partitions, easily cleanable cloakroom, window cleaning possibilities)		Bei der Materialisierung wurde auf eine gute Reinigung Rücksicht genommen. Der Gebäudewart war bei der Formulierung des ökologischen Programms mit involviert.

2. Review of materials list Kommentierung Materiallisten (Oberflächen) aus Reinigungssicht	• Comments on the materials list (surfaces) provided by the architect as regards the following aspects: how often must the surfaces be cleaned, how chemical-intensive must cleaning be and what is the expected service life of the building products.		Die vom Architekt gewählte Materialisierung liess eine effiziente und umweltfreundliche Reinigung zu.
3. Support in bidding process for building cleaning	• Assistance in the development of a building cleaning concept • Set criteria for building cleaning • External assistance for final building cleaning		Hier gab es ein klares Bekenntnis der politischen Entscheidungsträger zu einer nachhaltigen Bauendreinigung. Eine Bauendreinigung ohne Chemie wurde von allen Projektbeteiligten mitgetragen und wurde mit eigenem Personal umgesetzt.
4. Development of a cleaning and care concept for regular maintenance cleaning Konzept für alle Räume, Oberflächen, Nutzungen	• Development of a concept for all rooms, surfaces and usages		Es wurde ein Reinigungskonzept für die Unterhaltsreinigung erstellt, dass im Wesentlichen auf einer Reinigung mit Fasertechnologien (ohne Chemie) aufbaut. Lediglich ein Kalklöser muss verwendet werden.
5. Definition of criteria for cleaning products and fibres verwendete Kriterien	• Based on the criteria of the Austrian Ecolabel or the European Ecolabel		Es werden Faserprodukte aus der ÖBS-Rahmenvereinbarung des Umweltverbandes eingesetzt.
GENERAL CONCLUSIONS			
Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessions learned Description of what can be learned on strategic process and technical aspects			Energie Ausblick Dass Energiemonitoring Energie spart, beweisen die Ergebnisse. Müssen somit in Zukunft nur noch einige zusätzlichen Zähler eingebaut werden, eine fachkundige Person die Parameter auswerten und diese individuell an Gebäude- und Nutzerspezifische Eigenschaften nachjustieren? Im Laufe der Evaluierung musste festgestellt werden, dass noch einiges an zusätzlicher Energieeinsparung möglich ist. In beiden untersuchten Gebäuden sowie aus Erfahrung kann behauptet werden, dass in wenigen neu errichteten bzw.
Next step and follow up Describe what will be done on the project and the planned evaluation process after the mountEE project ended.			
Critics and statements			Statement von Martin Stark: „ Die Umsetzung bei den Pilotprojekten „Umbau Volksschule Mäder“ und „Neubau Gemeindehaus Lorüns“ war sehr einfach, weil der Bürgermeister und alle Projektbeteiligten sehr offen für das Thema waren.. Es war wenig Überzeugungsarbeit erforderlich, umweltfreundliche Reinigung wollte von oberster Stelle umgesetzt werden. Die Bauendreinigung wurde bei beiden Projekten faktisch ohne Reinigungschemie durchgeführt und in der Unterhaltsreiniger wird lediglich ein Kalklöser verwendet. Die restliche Reinigung erfolgt mit Fasertechnologien ohne Chemieeinsatz. Wenn der politische Rückhalt für eine
Conclusions			

Stromeinsparung durch Energieevaluierung und Energiemonitoring (Tabelle1)				
	Stromverbrauch vor Energiemonitoring		Stromverbrauch nach Energiemonitoring	
Betriebszeit Lüftung St	46	Stunden	46	Stunden
Schulwochen	45	KW	45	KW
Stromleistung Zuluft Ve	2,18	kW		
Stromleistung Abluft Ve	2,25	kW		
Stromleistung Zuluft Ventilator nach EM			1,76	kW
Stromleistung Abluft Ventilator nach EM			1,92	kW
Differenz ZUL	0,42	kW	1,76	kW
Differenz ABL	0,33	kW	1,92	kW
Stromverbrauch Zuluft V	4513	kWh/a	3643	kWh/a
Stromverbrauch Abluft V	4658	kWh/a	3970	kWh/a
Stromverbrauch Lüftung	9170	kWh/a	7613	kWh/a
Strompreis/VKW	0,17	€/kWh	0,17	€/kWh
Stromkosten Betrieb Lüf	1559	€/a	1294	€/a
Differenz vor/nach Ener			1557	kWh/a
Einsparung durch Energ			265	€/a
einsparung durch Ene	-17%			

eich PHPP Berechnung vor/nach dem Energiemonitoring (Tabe	
	kWh/a
Energieverbrauch lt. PH	**5 475**
Witterungsbereinigter E	6 939
Witterungsbereinigter E	**5 511**
nicht Witterungsbereinig	**5 425**

	Implementation concept	Activity report	Evaluation report
Name of pilot	Neubau Gemeindehaus Lorüns		
Type of building	Administration		
Typre of pilot (new/renov)	New Building		
Total cost			
Owner	Gemeinde Lorüns, http://www.loruens.at/index.htm; Bgm. Lothar Ladner (mayor), T: +43 5552 62339, E: gemeinde@loruens.at		
General description Overall description of intentions and actions with the pilot	Energy Evaluation, Sustainable Cleaning, expanding service package by a Module 5, “Service and Maintenance” - evaluation of the concept. The project will be supported as part of the service package with the goal of a high energy efficiency (near passive house) and a high environmental performance.		
Process and planning Description of the planning process and the performance targets	The Client or the Building Operator will jointly decide on the basis of the actual requirements and needs which of the contents of Module 5 “Energy Evaluation” and cleaning are to be applied to the specific project. An individual co-ordinated offer will then be drawn up.		
ENERGY			

1. detailed collection of energy consumption data	• Separate collection of the most significant energy consumption data using the KGA [municipal building certification] model • Basis: calculation model with entry of individual usage profiles and building services equipment (PHPP calculation)	Differenzierte Verbrauchserfassung: Wie in der Erläuterung des Kommunalgebäudeausweises für öffentliche Gebäude in Vorarlberg unter B1.5 vorgegeben wird, wurden folgende Zähler für die differenzierte Verbrauchserfassung installiert. • Wärmemengenzähler beim Wärmeerzeuger (Wasser/Wasser Wärmepumpe) • Wärmemengenzähler für den Heizkreis Gemeindehaus. • Stromzähler Zubringerpumpe Gemeindehaus. • Stromzähler Lüftungsanlage. • Stromzähler Wärmepumpe (Energielieferant). • Stromzähler Photovoltaikanlage (Energielieferant). • Allgemeinstromzähler (Energielieferant). • Trinkwasserzähler (Gemeinde). • Ggf. Wasserzähler - Grundwasser (muss nachträglich installiert werden) • Ggf. Stromzähler Grundwasserpumpen (Primär und Sekundär) sowie separate Erfassung der Kondensatorpumpe • Ggf. Stromzähler Grundwasserpumpen (Primär und Sekundär) sowie separate Erfassung der Kondensatorpumpe (muss nachträglich installiert werden). • Ggf. Stromzähler Serverraum (muss nachträglich installiert werden).	• Eine Berechnung der Gesamteffizienz der Wärmepumpe (Jahresarbeitszahl) ist mit den derzeitig installierten Zähler jedoch nicht möglich, da die Stromzähler für den zusätzlichen Energieaufwand der Nebenströme (Primär und Sekundär Grundwasserpumpen) fehlen, welche bei einer falschen Auslegung einen nicht vernachlässigbaren Anteil ausmachen. • Für eine Auswertung der Umweltenergie ist ein Wasserzähler nach der Grundwasserpumpe notwendig. • Es fehlt auch ein Stromzähler für die Erfassung des Energieverbrauches vom Serverraum. • Für die Erfassung des Energieverbrauch für die Beleuchtung ist auch ein Stromzähler notwendig. Es wird zwar bei diesem Gemeindehaus nicht viel optimierungspotential bei der Beleuchtung geben, jedoch ist der Energieverbrauch für Benchmark Auswertungen sehr interessant bzw. hilfreich. • Wasserzähler - Grundwasser • Stromzähler Serverraum • Ggf. Stromzähler Beleuchtung, wird jedoch nachträglich schwer kostengünstig/ wirtschaftlich möglich sein. • Stromzähler Grundwasserpumpen (Primär und Sekundär) sowie separate Erfassung der Kondensatorpumpe. Der Stromverbrauch für diese Pumpen muss separat erfasst werden, da die Grundwasserpumpen auch im Kühlbetrieb bzw. zur Außenluftvorerwärmung der Lüftungsanlage im Betrieb ist. Durch den Betriebsstundenzähler in der DDC kann der der Energieverbrauch dem jeweiligen Anlagenzustand angerechnet werden.
2. Documentation of energy consumption	• Support in collection of consumption and calculation data manually by the building manager or by entering the data e.g. in the http://www.energycontrol.at tool • Calculation of the settings, parameterisations and conditions of the actual location: summer and winter temperatures, air change, user behaviour, etc. • Definition of time intervals for documentation	• Die Energieverbrauche wurde teilweise im Jänner/Februar/Mai/Juni erfasst. Regelmäßig (monatlich) wurden alle Energieverbrauche ab Juli 2013 mittels einer Excel Tabelle erfasst.	siehe Tabelle 1

3. Evaluation of energy consumption	• Comparison of calculation data with individualised usage profiles • Parameter adjustment • Weak point analysis and further measurements as necessary	• Die Basis für die Energieauswertung wird die Zertifizierte PHPP Berechnung vom Jahr 2012 verwendet. • Wie in Tabelle 2 ersichtlich sind die Regelungsparameter für Heizung und Lüftung nicht auf ein Passivhaus abgestimmt. Für die Beheizung der Räume ist eine Heizleistung von 14,5 Watt/m² (lt. PHPP) notwendig. Mit den eingestellten Parameter (45°C Vorlauftemperatur bei -11 Außentemperatur) sind bis zu 45 Watt/m² möglich. • Eine Luftqualitätsmessung bestätigt, dass die Luftmenge deutlich zu hoch einjustiert wurde. Der gemittelte Luftqualitätswert war bei 650 ppm, anstatt der geforderten 1.000 bis 1.200 ppm. Durch die Reduktion der Luftmenge reduziert sich der Stromverbrauch um bis zu 32,9% (siehe Tabelle 3), zusätzlich wird sich durch die Reduktion der Luftmenge im Winter die Raumluftfeuchte erhöhen, was eine Verbesserung des Raumklima bewirkt	siehe Tabelle 2, Tabelle 3 und Tabelle 4
4. Implementation of improvement measures	Implementation (to come)	Fehleranalyse - Vergleich aktuell eingestellte MSR Parameter mit Berechnungen, Dimensionierungen usw. Nachjustierung der Parameter, welche von der MSR nicht benutzerspezifisch (Nutzerverhalten) sondern als Default Werte. eingegeben wurden - ggf. zusammen mit der MSR Firma, sowie der Person welche die Haustechnik betreut.	Durch die Gebäude- und benutzerspezifische Anpassung der Regelungsparameter (siehe Tabelle 2) werden sich die Energiekosten sowie der Heizwärmebedarf reduzieren. Das Komfortbefinden sowie die laufenden Kosten für Filterwechsel usw. werden sich durch die Reduktion der Luftmenge verbessern.
5. Control of the effects of the improvement measures implemented	control (to come)	Nachmessung/Evaluierung nach der Heizsaison	Benchmark Tabelle z.B. Energiecontrol; Energiecockpit, Excel Tabelle
CLEANING			
1.a. Optimisation of planning from a cleaning perspective • Formulation of principles during the architectural competition			es wurden im Architektenwettbewerb keine Grundsätze aus Reinigungssicht formuliert - für künftige Bauvorhaben wäre dies sicher ein Vorteil. Beim Gemeindehaus Lorüns hätte dann eine optimierte Lösung für die Außenfensterreinigung gefunden werden können.
1. b. Optimisation of planning from a cleaning perspective • Statement in the submitted plans and detailed plans			Die vom Architekt gewählte Materialisierung liess eine effiziente und umweltfreundliche Reinigung zu.

1. c. Optimisation of planning from a cleaning perspective • Indicate various cleaning-relevant aspects in the ecological programme	(e.g. hanging WC partitions, easily cleanable cloakroom, window cleaning possibilities)		Bei der Materialisierung wurde auf eine gute Reinigung Rücksicht genommen.
2. Review of materials list Kommentierung Materiallisten (Oberflächen) aus Reinigungssicht	• Comments on the materials list (surfaces) provided by the architect as regards the following aspects: how often must the surfaces be cleaned, how chemical-intensive must cleaning be and what is the expected service life of the building products.		Die vom Architekt gewählte Materialisierung liess eine effiziente und umweltfreundliche Reinigung zu.
3. Support in bidding process for building cleaning	• Assistance in the development of a building cleaning concept • Set criteria for building cleaning • External assistance for final building cleaning		Hier gab es ein klares Bekenntnis der politischen Entscheidungsträger zu einer nachhaltigen Bauendreinigung. Eine Bauendreinigung ohne Chemie wurde von allen Projektbeteiligten mitgetragen und die Ausschreibungen entsprechend formuliert.
4. Development of a cleaning and care concept for regular maintenance cleaning Konzept für alle Räume, Oberflächen, Nutzungen	• Development of a concept for all rooms, surfaces and usages		Es wurde ein Reinigungskonzept für die Unterhaltsreinigung erstellt, dass im Wesentlichen auf einer Reinigung mit Fasertechnologien (ohne Chemie) aufbaut. Lediglich ein Kalklöser muss verwendet werden.
5. Definition of criteria for cleaning products and fibres verwendete Kriterien	• Based on the criteria of the Austrian Ecolabel or the European Ecolabel		Es werden Faserprodukte aus der ÖBS-Rahmenvereinbarung des Umweltverbandes eingesetzt.
GENERAL CONCLUSIONS			
Special methods Description of special methods used in renovation			
Deviations Description of problems that occured and plannned actions and performance indicators that were not met			

Lessions learned Description of what can be learned on strategic process and technical aspects			Energie Ausblick Dass Energiemonitoring Energie spart, beweisen die Ergebnisse. Müssen somit in Zukunft nur noch einige zusätzlichen Zähler eingebaut werden, eine fachkundige Person die Parameter auswerten und diese individuell an Gebäude- und Nutzerspezifische Eigenschaften nachjustieren? Im Laufe der Evaluierung musste festgestellt werden, dass noch einiges an zusätzlicher Energieeinsparung möglich ist. In beiden untersuchten Gebäuden sowie aus Erfahrung kann behauptet werden, dass in wenigen neu errichteten bzw. sanierten Gebäude die Regelung der Heizungs- Lüftungs- Kältetechnik mit der Regelung der Elektrogewerke kommuniziert. Beispielweise werden Jalousiesteuerungen nicht in Abhängigkeit der Heizsaison geregelt, sondern nur in Abhängigkeit der außen installierten Umgebungslichtsensoren. Dabei wird nicht die Raumtemperatur abgefragt und versucht die solaren Gewinne im Winter für die Raumheizung zu nutzen. Oft werden Einzelraumregelungen per KNX/EIB geregelt, welche jedoch nicht mit der Regelung der HLK kommuniziert. So gibt es vor allem in den Übergangszeiten im Herbst und Frühling den Zustand, dass in den Räumen die erforderliche Raumtemperatur vorhanden ist, dies der Vorregelung aber nicht gemeldet wird und diese weiter versucht die Räume mit Wärme zu versorgen. Dass Thema Kühlung wird oft in der Planung nicht bzw. zu wenig berücksichtig. Somit gibt es die Probleme, dass Gebäude im Winter wenig Energie benötigen, im Sommer jedoch an der Grenze der Behaglichkeit sind. Serverräume sind in südseitigen Räumen angeordnet, teilweise ohne natürliche Belüftungsmöglichkeiten und neigen somit zu erhöhten Temperaturen sowie ineffiziente Betriebszustände. Thermische Simulationen von kritischen Räumen werden selten gerechnet bzw. beauftragt und somit sind Fixverglasungen im Verhältnis zu den Flügelfenstern zu groß geplant. Dadurch wird die natürliche Kühlung massiv beeinträchtigt bzw. ist eine Querlüftung gar nicht möglich.

Critics and statements			Statement von Martin Stark: „ Die Umsetzung bei den Pilotprojekten „Umbau Volksschule Mäder“ und „Neubau Gemeindehaus Lorüns“ war sehr einfach, weil der Bürgermeister und alle Projektbeteiligten sehr offen für das Thema waren.. Es war wenig Überzeugungsarbeit erforderlich, umweltfreundliche Reinigung wollte von oberster Stelle umgesetzt werden. Die Bauendreinigung wurde bei beiden Projekten faktisch ohne Reinigungschemie durchgeführt und in der Unterhaltsreiniger wird lediglich ein Kalklöser verwendet. Die restliche Reinigung erfolgt mit Fasertechnologien ohne Chemieeinsatz. Wenn der politische Rückhalt für eine nachhaltige Reinigung fehlt und/oder einzelne relevante Akteure die Umsetzung blockieren wollen, wird der Erfolg wesentlich geschmälert.“
Conclusions			

Tabelle 1: Datenblatt Gemeindeamt - Feuerwehrhaus

	Stromaufwand											
	Gemeindeamt		**Feuerwehr**		**Wärmepumpe**		**PH-Anlage**	**Hilfsst. Lü.**	**Hilfstst. WP**	**Wärmezähler**		
Datum	**H T**	**N T**	**H T**	**N T**	**H T**	**N T**	**Einspeisung**			**Gesamt**	**Feuerwehr**	**Ger**
01.01.2013										5.960,00	2.492,00	3.4
01.02.2013					2.291,10	1.056,70				10.236,00	4.479,00	5.7
01.03.2013											0,00	
01.04.2013											0,00	
01.05.2013										14.478,00	6.052,00	8
01.06.2013	3.140,40	1.430,70	4.297,20	2.284,60	3.497,30	1.718,30	3.101,60			14.680,00	6.244,00	8
01.07.2013	3.523,00	1.634,40	4.537,50	2.495,70	3.577,40	1.723,00	4.095,70	25,50	1,40	14.780,00	6.330,00	8
31.07.2013	3.881,20	1.817,80	4.833,10	2.697,90	3.586,00	1.735,40	5.289,10	99,40	1,40	14.784,00	6.334,00	8

Tabelle 2: Regelungsparameter Gemeindehaus Lorüns				
IST-Zustand			Optimierter Zustand:	
Heizung:			**Heizung:**	
Heizkurve:	Grad C		Heizkurve:	Grad C
Außentemperatur	-11		Außentemperatur	-11
VL-Temperatur	45		VL-Temperatur	38
Außentemperatur	15		Außentemperatur	15
VL-Temperatur	30		VL-Temperatur	20
Raumtemperatur - Basis Normalsollwert	20		Raumtemperatur - Basis Normalsollwert	20
Raumtemperatur - Basis Reduziertsollwert	18		Raumtemperatur - Basis Reduziertsollwert	18
Sommer-/Winter Umschaltt. Tag	15		Sommer-/Winter Umschaltt. Tag	12
Sommer-/Winter Umschaltt. Nacht	5		Sommer-/Winter Umschaltt. Nacht	5
Lüftung:			**Lüftung:**	
	m³/h			m³/h
Luftmenge:	440		Luftmenge:	200
Außenluftvorerwärmung Winter	Grad C		Außenluftvorerwärmung Winter	Grad C
	1			1
Außenluftkühlung Sommer	Grad C		Außenluftkühlung Sommer	Grad C
	23			23

Tabelle 3: Energieeinsparung durch Reduzierung der Luftmenge:				
	m³/h			m³/h
Eingestellter Luftwechsel	440		notwendiger Luftwechsel	220
mittlerer Luftaustausch: (Reduktion durch Zeitprogramm):	220		mittlerer Luftaustausch: (Reduktion d	140
gemessener Stromverbrauch/Monat				
	kWh			
gemessener Stromverbrauch/Monat	73,9		gemessener Stromverbrauch/Monat	55,6
berechneter Stromverbrauch/Jahr	886,8		berechneter Stromverbrauch/Jahr	667,2
				%
Energieeinsparung Reduktion eingestellte Luftmenge auf tatsächlich notwendige				**-32,9**

Tabelle4: Vergleich Berechnungsdaten - Gemeindehaus Lorüns

Berechnung:			Optimierter Zustand:	
PHPP			**tatsächlicher Energieverbrauch (WMZ)**	
	kWh/a			kWh/a
Heizwärmebedarf / Jahr bei 20°C Raumtemperatur und mittlerer Luftaustausch: 140m³/h	3.596			
Heizwärmebedarf / Jahr bei 23°C Raumtemperatur und mittlerer Luftaustausch: 140 m³/h	5.250			
Wärmeverlust Fernwärmeleitung vom Technikraum zum Gemeindehaus - 14 Meter u. 45°C VL	240		Wärmeverlust Fernwärmeleitung vom Technikraum zum Gemeindehaus - 14 Meter u. 38°C VL	225
Erhöhter Energieverbrauch, da der einjustierte mittlere Luftwechsel 220m³/h waren, anstatt den berechneten 140 m³/h.	374			
Heizwärmebedarf lt. PHPP bei 23°C Raumtemperatur inkl. Wärmeverlust vom Technikraum zum Gemeindehaus und mittlerer Luftaustausch: 220m³/h	**5.864**		tatsächlicher Heizwärmebedarf Winter 2012/2013 bei 23°C Raumtemperatur inkl. Wärmeverlust vom Technikraum zum Gemeindehaus	**8.450**
				%
Differenz Energieverbrauch Raumwärme:				**30,6**

	Implementation concept	Activity report	Evaluation report
Name of pilot	Primary School Aspeboda		
Type of building	Primary School		
Typre of pilot (new/renov)	New, three stories, 1253 m2		
Total cost	25.000.000 SEK		
Owner	Falun Municipality		
General description Overall description of intentions and actions with the pilot	The municipality of Falun has showen its competence in building issues. This project is top of the line, with low energy consumtion (40kwh/m2), built in wood, heated with renewable energy (pellets) and electricity from own windmill park. MountEE will follow the pilot in the evaluation phase, document the process and results and use it in trainings and education purposes.	The project has been completed with good results. Opened in feb 2014. The project has been evaluated according to Vorarlbergsmodellen where the choice of materials got som criticism.	
Process and planning Description of the planning process and the performance targets	The municipality has a consulting team located at the municipality. Energy level and choice of building material follow the energy strategy with very good margins.LCC-calculations are done on all installations and energybalanses are established in the planning phase, after procurement and during building process. The best standard for sustainable building material (Sunda Hus) is chosen. Performance is evaluated two and five years after completed construction.	Construction completed feb 2014 Evaluation by experts from Vorarlberg MountEE support in evaluation and dissemination of results Energy balance calculations have been carried for a number of investments but not in the degree anticipated. However the LCC contributed greatly to a good economic result making the school cheaper than other schools. BASTA- system was used as a guideline for choce of materials but not strictly followed.	
Service Package Description on how the service package is used on the pilot	The municipality follows the modules in the service package. However it has its own "spinning wheel for the building process" and this is something the MountEE-project will investigate in.	It has been evaluated how the modules of the service packages have been used in this project. The project manager had his own process control and MountEE was evaluating this process comparing it with the steps in the Vorarlberg model. The differences were becoming obvious during the evaluation with expterts of Vorarlberg.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Energy: 40kwh/m2 Tightness: 0,3l/s Windows: U0,7 (0,9 including frame) Ventilation: 80% effectivness LCC-calculations on all building processes LED-light in the whole building	Calculated energy: 34 kwh/m2 Registered Tightness: 0,16l/sm2 LED for outdoor and indoor	
Renewable energy Description on the use of renewabel energy in the pilot	Pellets from the municipality owned pellets factory are used (forest products) Electricity from the municipality owned windmill is used	No electricity from the own wind mills	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Not in use summertime, no cooling device Noise polution: Level B on BBR		

Building materials Description of ecological optimization of construction materials	Sunda Hus concept is used for choice of material PVC-free electric cables	BASTA, a more simple system for choice of material has been used, no PVC in cables but PVC in floor.	
Special methods Description of special methods used in renovation	LCC-calculations	LCC has been used but not systematically.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		The municipalitys building section did not really have controll over what process models were used in the building. The project manager had great liberty in using the tools he was used to.	
Lessions learned Description of what can be learned on strategic process and technical aspects		There is a lack of structures and common models for production of new buildings in the municipality. Especially regarding choice of materials and use of LCC.	
Conclusions		The building department of Falun municipality is interested in developing new structures and models for construction and will participate in the proposed municipal network for building managers.	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Primary School Älvdalen		
Type of building	Primary School Älvdalen		
Typre of pilot (new/renov)	Renovation/New		
Total cost	140 milj SEK, of wich 60 milj new construction		
Owner	Älvdalen municipality		
General description Overall description of intentions and actions with the pilot	Part of the old primary school vill be renovated and a new part will be built. The facility is designed to meet high educational standards with areas for play and kreativity using the construction in the education (green rooms). The building is built mostly by wood holding 60 kwh/m2 and avoiding harzadous material. LCC is used in calculations and Basta or better standards for choosing construction material. All the work-package modules will be used and an expert will help with implementing the Sweby model.	Decision has been taken that the whole school is to be built new. The goal an energy use not exceeding 70 kWh/m 2 and with the help of LCC calculations the level will be lowered further.	
Process and planning Description of the planning process and the performance targets	The planning process starte already in 2008 and time has been used to look att best practice examples. Energy levels are based on the local climate- and energy plan. Focus is laid on sustainability	Planning process started 2013 Tendering during 2014 Mountee support in planning and establishing criteria	
Service Package Description on how the service package is used on the pilot	All the work-package modules will be used and an expert will help with implementing the Sweby model. Quality assesment och follow up will be done by the Sveby modell, LCC is used in calculations and construction material will be chosen by att least Basta -standard.	Modules 2+3+4, Implementation of the Sveby-model, database for ecologcal material choise used (Basta).	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	60-70 kwh/m2 is proposed which is the standard for minienergy buildings in accordance to FEBY. No cooling is needed but in the kitchen. The building will connect to the district heating system. Low energy light.	As planned	
Renewable energy Description on the use of renewabel energy in the pilot	The district heating system is fired by wood residues from the nearby forest and industries. Solar panels will be installed for educational purposes.	As planned	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	No cooling is necessary, solar protection will be set upp at the library. The ventilation system will fullfill the requirements by law.	As planned	
Building materials Description of ecological optimization of construction materials	Wood is used as much as possible even for bearing structures. Quality system BASTA or better is used when choosing building materials	As planned	
Special methods Description of special methods used in renovation	BELOK-method will be used in the renovation process if possible	Belok will not be used since no renovation will take place	

Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessions learned Description of what can be learned on strategic process and technical aspects		Small municipalities that rarely build new buildings are in great need of support.	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Preeschool Säter		
Type of building	Preschool		
Typre of pilot (new/renov)	New building		
Total cost	23.000.000 SEK		
Owner	Säter municipality		
General description Overall description of intentions and actions with the pilot	The municipality intends to built a new preschool. The construction process has progressed so far that it is the latter parts, monitoring and quality assurance that the project is activly involved. Early stages tested in joint discussions with other subprojects. Mountee will supply help with LCC-calculations and evaluation models using the Sveby-criteria. the building is going to fullfill minienergy-houses requirements, 69kwh/m2 and will use environment-criteria for building materials. MountEE will support the evaluation of these criteria	The project has followed the plans and was taken in use in april 2014. LCC has been used less than expected. The project management has participated in MountEE trainings in order to be able to do good evaluations. The building follows the objectives with regard to energy consumption and MountEE are planning an evaluation meeting.	
Process and planning Description of the planning process and the performance targets	The building follows energy criteria set in the municipalities energy - and climate plan. Minienergihouse standard for energy and Basta-standard for building material will be used. the project will help to assure the fullfillment of these criteria in procurement and construction process. FTX-ventilation systems are being installed and the building is connected to the district heating system and and solar energy production of warm water. A special feature is the cooling-tunnel usde to prewarm/precool ventilation air. LCC-calculations have not been used so far but will be introduced by the project	As planned but fewer LCC calculations than expected. Construciton completetd april 2014 Introduction in SWEBY model done Evaluation fo FTX planned Evaluation meeting planned	
Service Package Description on how the service package is used on the pilot	Mainly the later parts of the service-package will be used to evaluate the construction process and performance, useing the Sveby-model. However even LCC-calculations will be performed and the planning process will be discussed together with the other pilots.	Module 5+6 are used. Use of Sveby - model for evaluation. Fewer LCC than anticipated, use of green procuremen	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	The targe is 69 kwh/m2. The building is connected to the district heating system powered by renewable fuels. The building has a solar heating system for warm-water production and is going to install a cooling/warming tunnel for ventilation air. The use of LED-light will be evaluated but so far demands have been made only for outdoor lightning.	As planned	
Renewable energy Description on the use of renewabel energy in the pilot	The building is connected to the district heating system powered by renewable fuels. The building has a solar heating system for warm-water production and is going to install a cooling/warming tunnel for ventilation air.	As planned	

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	A FTX ventilation system will be installed and evaluated. A air-tunnel keeping the ventilation air on 5-8 degrees C will be installed.	As planned, will be looked at closely in the evaluation	
Building materials Description of ecological optimization of construction materials	References to green building data bases have been made in the procurement. The builder has to fullfill these requirements. Measurements will be taken to evaluate how these requirements are being met. The builder has to use the databases BASTA, MILJÖBEDÖMNING or SUNDA HUS in order to be able to meet these requirements.	As planned	
Special methods Description of special methods used in renovation	Sveby-model is used LCC-calculations are introduced Air - tunnels are tested	As planned but fewer LCC calculations than expected.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		Although MountEE project introduces new tools and systems, it has been difficult to implement these in the middle of an ongoing construction process. It is important to come into the process early	
Lessions learned Description of what can be learned on strategic process and technical aspects		Structures are needed that support municipalities in all parts of the building process.	
Conclusions		Fasighetschefen har intresse av att ta en ledande possition i bildandet av ett kommunalt förvaltarnätverk.	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Kvarteret Måsen		
Type of building	Apartment building with 16 apartments		
Typre of pilot (new/renov)	new production in attractive surroundings		
Total cost	32.000.000 SEK		
Owner	Orsa Bostäder, municipal owned building company		
General description Overall description of intentions and actions with the pilot	The project is the start of the municipals work on the "new Orsa" building housing facilities to reasonable prices in attractive surroundings and envronmentally friendly. The building will be constructed according to the local energy- and climate strategy with 60-80 kwh/m2 and in wood. It will be connected to the district heating grid supplying the building with green energy. The planning is done in cooperation with the University of Dalarna . Mountee will concentrate in the start-upp phase of the project giving consultance support to the planning process together with the University and introduce the Sveby-model and LCC calculations.	The project has just started . The intention of MontEE is to support the project from start. However, the influence is not very big because the company decided to follow SABO-standards.. The building is supposed to be ready summer 2015.	
Process and planning Description of the planning process and the performance targets	The building follows not only the energy criteria set in the municipalities energy - and climate plan and uses the BASTA-concept for choice of building material but the owner has defined new targets aiming att what could be reasonable for future projects not only in the municipality but in the region. A ccoperation with the university has been established in theis work and will be used to produce procurement criteria. The new targets will be evaluated and revised during the project. The target is 60-80 kwh/m2, LCC will be used in planning and BASTA-system for building materials.	Follow plans Planning process started som years ago but more intensive in spring 2014 when Mountee came into the picture. Mountee suport in module 1: Energy standards and choice of materials during spring 2014	
Service Package Description on how the service package is used on the pilot	Procurement, production and evaluation will be the main areas the MountEE-project will work with. LCC-calculations will be used in the building phase and Sveby-model will be used to follow the construction, allocate responsibilities, follow up the building process and evaluate the energetic results.	Module 1+2, introduction into Sveby-model and Basta-data bank.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	The targe is 70 kwh/m2. The building is connected to the district heating system powered by renewable fuels. No cooling will be necessary. LED-lightning will be used outdoor, and in public facilities and staircases.	As planned	
Renewable energy Description on the use of renewabel energy in the pilot	The district heating system is powered by residues from the forest.	As planned	

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	BASTA-system is used for selection of building materials, ensureing low emissions. It has been very important in the planning to place the building on an attractive spot with view on the lake, balconies etc.	As planned	
Building materials Description of ecological optimization of construction materials	The BASTA-concept is used for selection of building materials.	As planned	
Special methods Description of special methods used in renovation	Sveby-model LCC-calculations Procurement features	As planned	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Myrbacka school		
Type of building	School		
Typre of pilot (new/renov)	New building		
Total cost	25.000.000 SEK		
Owner	Vansbro municipality		
General description Overall description of intentions and actions with the pilot	The municipality intends to built a new school. It is a little municipality with great need of support. The MountEE project has alreade given consult support to determine energy and material standars and will give support in all parts of the building procedure. The project will help with LCC-calculations and evaluation models using the Sveby-criteria. The building is going to fullfill minienergy-houses requirements, 69kwh/m2 and will use BASTA-system for selection of building materials	According to plans. Building start may 2014 Building completed spring 2015	
Process and planning Description of the planning process and the performance targets	The municipality has made study visits to other best practice objects and adapted energy requirements lower than planned after consultation with MountEE-project. Minienergihouse standard for energy and Basta-standard for building material will be used. The project will help to assure the fullfillment of these criteria in procurement and construction process using LCC-methods and Sveby-model. FTX-ventilation systems are being installed and the building will use renewable energy from forest residues for heating and warm water.	According to plans. Building start may 2014 Building completed spring 2015 Support in module 2+3 (choice of material and building concept) Support in procurement of LED	
Service Package Description on how the service package is used on the pilot	All parts of the service-package will be used. The starting modules mainly by useing consultance, LCC-calculations and grouptrainings. The later parts by useing the Sveby-model. LCC-calculations will be performed and the planning process will be discussed together with the other pilots.	Mainly service package 3+4+5 are used. Parts of the Sveby model are followed, and will be used in the evaluation. BASTA is used for choice of material. LCC has been used to some extent.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	The targe is 69 kwh/m2. The building powered by renewable fuels. Outdoor LED-light will be used . No cooling will be needed.	According to plans. LED will be used indoor	
Renewable energy Description on the use of renewabel energy in the pilot	The building is powered by renewable fuels from the forest. T	According to plans.	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	A FTX ventilation system will be installed and evaluated. Cooling will not be necessary since the school i empty during the warmest month of the year.	Investigations made to use a light tunnel but excluded after study visit. According to plan	

Building materials Description of ecological optimization of construction materials	References to green building data bases have been made in the procurement. The builder has to fullfill att least BASTA requirements. Measurements will be taken to evaluate how these requirements are being met.	According to plans.	
Special methods Description of special methods used in renovation	Sveby-model is used LCC-calculations are used	SVEBY -model will be used for evaluation as planned. LCC was used in fewer occasions than expected	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		At tight timeschedule makes it difficult to introduce new models.	
Lessons learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Norrbotten County Council´s patient hostel at Sunderby hospital	Norrbotten County Council´s patient hostel at Sunderby hospital	
Type of building	Patient Hostel	Patient Hostel	
Typre of pilot (new/renov)	New	New	
Total cost			
Owner	County Council Norrbotten	County Council Norrbotten	
General description Overall description of intentions and actions with the pilot	Target level: 94 kWh/m2 compared to building code of 160 kWh/m2. At least 50% use of renewable energies. Use of environmental-friendly building materials. Use of LCC and Belok methodology.	Norrbottens County council has a strategi to build with good energy performance. The objective for electricity includes both property electricity and domestic electricity, and reads 96 kWh/m2 for 2014. For heat it is 102 kWh/m2. However, the pilot project Patient Hostel will reach 94 kW/m2 compared to the building code of 160 kWh/m2. Intentions for the project: Reduce nights spent in the hospital, as they are more expensive. Thereby, treatment of patients has to be possible in the hotel, and it should enable relatives to live there, too. Actions: A holistic energy efficiency approach incl. renwable energy. Time schedule: Decision to build a new patient hostel at Sunderby hospital was taken 2009. The planning process was started at the end of 2011 and was completed in spring 2013. The decision that the building should become a MountEE pilot building was taken in September 2012. The building is planned to be completed in the second half of 2014.	
Process and planning Description of the planning process and the performance targets	Start with definition of general rules and principles regarding energy efficiency and renewable energy use, in line with MountEE pilot building criteria. MountEE project has provided input based on WP2 results, WP4 criteria and RCC's feedback. Performance targets s. above.	Start with definition of general rules and principles regarding energy efficiency and renewable energy use, in line with MountEE pilot building criteria. MountEE project has provided input based on WP2 results, WP4 criteria and RCC's feedback. Performance targets s. above.	
Service Package Description on how the service package is used on the pilot	Still under discussion, as the final way of adapting the service package in Sweden is not decided yet.	As the decision was taken that the patient hostel will become MountEE pilot project and should fulfill the MountEE pilotproject criteria the planning process had already started. Nenet cooperated with the responsible project manager of Norrbotten County Council and some elements from the service package (moduls 3, 4 and 5) were used during the planning and construction process.	

Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	a) Specific heating and hot water demand Temperatur: +22C Hot water: 2,6 W/m2 Heat gains from person: 1 W/m2 Solar reflection: 20% b) Specific ventilation demand Ventilation (LB01) 3800 l/s, 75% operating time per day, 75% waste heat gains. Ventilation (SFB) 1,5 kw/(m3/s), 100% operating time per day. Ventilation is demand-responsive. Cooling: Use of heat pump (river water) c) Specific lighting demand Highly energy efficient lighting systems, where possible LED, depending on type of use from 6W/m2 (e.g. corridor) to 8W/m2 (offices) to 12W/m2. Use of daylight where possible, use of light colors in the building, motion detectors.	see column B. Building elements to reach results: - Demand controlled ventilation and Rotary heat exchanger - Insulation: 600mm loose wool insulation for the roof, 270 mm mineral wool for the walls, 300 mm cellular plastic for the floor plate - energy efficient windows U=0,9W/m2K - energy efficient lightning, LED outdoor, indoor use of day light where possible, use of light colors, motion detectors and higly efficient lightning technology - Solar shading - Solar panels 16m2, 2 kW	
Renewable energy Description on the use of renewabel energy in the pilot	The County Council is in a process of discussing direct involvement in renewable energy projects, so far district heating based using waste heat and bioenergy is used at the hospital.	District heat is mainly produced with excess process gas from the steel mil SSAB in a CHP plant. About 50% hydropower in electricity mix. Solar panel on the roof, 16m2.	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Thermal comfort in summer is guaranteed by design of the building, shadowing possibility and ventilation. Well insulated walls minimizing temperature differences. Health aspects are taken into account within procurement process and implementation of general rules e.g. regarding allergic people etc.	Thermal comfort in summer is guaranteed by design of the building, shadowing possibility and ventilation. Well insulated walls minimizing temperature differences. Health aspects are taken into account within procurement process and implementation of general rules e.g. regarding allergic people etc.	
Building materials Description of ecological optimization of construction materials	A general policy has been adopted regarding a holistic view on the impacts of buildings; All choice of material and technical appliances are done based on the general demand specifications made.	A general policy has been adopted regarding a holistic view on the impacts of buildings; All choice of material and technical appliances are done based on the general demand specifications made.	
Special methods Description of special methods used in renovation	LCC method.	LCC method	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		LED lighting systems were not enough tested to be used indoor for that purpose.	
Lessons learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Vuollerim6000 museum	Vuollerim6000 museum	
Type of building	Museum	Museum	
Typre of pilot (new/renov)	Renovation	Renovation	
Total cost	not yet available	90.000 Euro	
Owner	Jokkmokk municipality	Jokkmokk municipality	
General description Overall description of intentions and actions with the pilot	At least -30% less heating demand; Heating more than 50% renewable; electricity more than 40% renewable, Developing of a quality and environmental programme. Test of special methods (LCC). Integration of users and staff, e.g. energy training.	Result of the feasibility study: heat pump using the lakewater as heating ressource leads to a saving of 90% from 76 MWh/year to 69 MWh/year for the heating, while at the same time the electricity demand for the pump leads to an increase of 3 MWh/year. As the rooms are very high, ventilation systems will press down the warm heat so that is in the area where people are. Other measures for energy efficiency, e.g. insulation, have been evaluated, but could not proof economy due to technical reasons. LCC calculation have been used to proof profitability for the heat pump solution. Users and staff have been trained on energy efficieny, and have been involved in decision making. Time schedule: Museum was built 1989/90, Swedish Wood Architecture Prize in 1992 for its outstanding use of wood. Museum was taken over by a local non-profit organisation in 2012, decision on renovation of building together with new-designing the exibitions was taken in the beginning of 2013 - at the same time decision that the renovation project should become a MountEE pilot. Potential study including development of 5 different alternatives was completed January 2014. Negotiations with the County Adminstration Board regarding subsidies for the renovation are ongoing. Implementation planned for 2015-2016.	

Process and planning Description of the planning process and the performance targets	An analysis of energy demand were conducted by energy consultant including visit of the building and interview of staff; monitoring of ventilation and temperature; analysis of energy / electricity demand over years/months and costs. Based on this analysis, a first set of measures with a payback-time of 5 years has been developed, incl. Change from electric heating to air to air heat pump; insulation of doors and windows; installation of water saving applications, e.g. aerator, optimization of monitoring for ventilation, temperature and lightning, insulation of roof for 2nd building. According to the preliminary calculation, this would lead to a reduction of energy demand by at least 30%.	An analysis of energy demand were conducted by energy consultant including visit of the building and interview of staff; monitoring of ventilation and temperature; analysis of energy / electricity demand over years/months and costs. Based on this analysis, a first set of measures with a payback-time of 5 years has been developed, but the more concrete feasibility study showed, that the preliminary calculation on a reduction of energy demand by at least 30% were to optimistic. Together with the users, the new heat-pump solution has been developed. However, financing for the investment is not secured yet.	
Service Package Description on how the service package is used on the pilot	Still under discussion, as the final way of adapting the service package in Sweden is not decided yet.	Nenet is cooperating with Schneider Electric as consultant. The 5 different implementation concepts were developed in cooperation with Schneider Electrics and the local organisation that is responsible for themuseum building and during the process some elements of the service package modul 2 were used. As the construction has not started yet due to ongoing discussions with the County Administration Board regarding subsidies for the renovation the other moduls were not in use yet.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Following measures are planned: Change from electric heating to air to air heat pump; insulation of doors and windows; installation of water saving applications, e.g. aerator, optimization of monitoring for ventilation, temperature and lightning, insulation of roof for 2nd building.	s. above	
Renewable energy Description on the use of renewabel energy in the pilot	Both heating and light are based on electricity, and will be, share of RES at least 50%.	Both heating and light are based on electricity, and will be, share of RES at least 50%.	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	a) Thermal comfort in summer Due to the cold climate, no specific cooling needs even summer time. b) Ventilation – non energetic aspects No problems to be expected due to broad experience and market on high-quality heat exchanger.	a) Thermal comfort in summer Due to the cold climate, no specific cooling needs even summer time. b) Ventilation – non energetic aspects No problems to be expected due to broad experience and market on high-quality heat exchanger.	

Building materials Description of ecological optimization of construction materials	Not applicable.	Not applicable.	
Special methods Description of special methods used in renovation	The following tools and activities are planned/under development: LCC method, environmental programme, involvement of staff and users.	The following tools and activities have been used: LCC method, involvement of staff and users.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		it is difficult to secure funding for the investment. This is due to the fact that the building is owned by the municipality of Jokkmokk which lacks ressources for implementing the investment in 2014/2015, while the hirer is a cooperative which just started its activities. The cooperative is planning to access funding for the investement on regional level, but failed in the first attempt. A new proposal is under development.	
Lessions learned Description of what can be learned on strategic process and technical aspects		The low electricity price in Sweden which even went down the last year and seems to continue to do so, makes it difficult to show profit of energy efficiency investments without additional funding. There is no general funding scheme for local authorities nor for any other player on energy efficiency in buildings. The involvement of users and staff has been very worthful, also in terms of choosing ambitious solutions instead of standard. The cooperative involved is focused on sustainable tourism and very interested in an innovative and ambitious solutions, and willing to raise private money.	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Kiruna Town hall	Kiruna Town hall	
Type of building	Town hall	Town hall	
Typre of pilot (new/renov)	New built	New built	
Total cost	Not yet available	25 000 000 - 50 000 000 Euro	
Owner	City of Kiruna	City of Kiruna	
General description Overall description of intentions and actions with the pilot	Based on MountEE criteria for pilot projects, the call for bids for the Town Hall included as targets and criteria in terms of sustainability: Recycling of parts of the old City Hall; Target level: at least -50% reduced energy demand compared to building code; Low CO2 emissions calculated for the whole lifecycle; Matching criteria for Swedish Green Building Council's Miljöbyggnad; Use of environmental-friendly building materials according to Sunda Hus criteria	After a architect competition, in which the MountEE criteria were part of the call for bids (s. column B), the winning proposal were selected. First, it did not meet energy criteria in their full extent, and a re-design has been demanded, which has been successful. Total area: 9702 m2 Energy demand: 56 kWh/m2 (building code 132 kWh/m2) Choose of materials according to Sunda Hus and based on LCA. It includes low-emission products, certificated wood, priority for recycled material and use of renewable and sustainable material. Building envelope: at least meeting Miljöbygnad Silver criteria, good insulation, compact form. building materials have a high thermal capacity to save heat. Energy efficient windows which secure use of daylight to a high extent to reduce electricity demand for lighting while allowing to use passive solar energy wintertimes. Solar shadowing to avoid electric cooling. Ventilation is demand-driven, highly energy-efficient fans, metering of tmeperature, CO2 and PIR (passive infrared sensor) Electric lighting: highly energy efficient, incl. motion detector, daylight-driven. Time schedule: for many years it is clear that major parts of central Kiruna have to be moved due to the enlargement of the mining area. In 2012 the final decision was taken that the Kiruna´s new town hall should be the first building to be raised symbolizing the "New Kiruna". An architect competition was carried out 2012/2013 including the MountEE criteria for pilot projects, the winning concept "Kristallen" was chosen by an expert jury some months later. As all projects did not fully meet the MountEE pilot, project criteria the winning consortium was assigned to improve the concept. An updated version which fulfills all MountEE crietria was presented in March 2014. The building phase will start fall 2014 and the new town hall should be completed in spring 2016.	

Process and planning Description of the planning process and the performance targets	Since 2004, the City of Kiruna is together with LKAB working on making the city transformationdue to mining happen. The Town Hall is one of the first buildings which will be replaced. Responsibility for this project is split between the City and LKAB depending on which phase is happing. The City of Kiruna is responsible for the architecture competition, while LKAB will be the builder. After this, the building will be owned by the City. Performance targets see above. Competition of architects to find right proposal is under way.	Since 2004, the City of Kiruna is together with LKAB working on making the city transformationdue to mining happen. The Town Hall is one of the first buildings which will be replaced. Responsibility for this project is split between the City and LKAB depending on which phase is happing. The City of Kiruna is responsible for the architecture competition, while LKAB will be the builder. After this, the building will be owned by the City. Performance targets see above. Competition of architects to find right proposal has been finished taking into account MountEE criteria. While the first proposal did not meet energy criteria to full extent, a re-design has been demanded in collaboration with MountEE project which succeeded in changing the proposal.	
Service Package Description on how the service package is used on the pilot	Still under discussion, as the final way of adapting the service package in Sweden is not decided yet.	Nenet cooperated with both the city of Kiruna and experts from Tyréns consulting trying to use elements of the service package from the beginning of the planning process, concrete during the architect competition. Start of the construction phade yet to come.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	See above energy criteria for competiton.	See above general description.	
Renewable energy Description on the use of renewabel energy in the pilot	Connection to the municipal district heating is possible, but if this will be the case is not decided yet. Other use of renewable energy depends on which proposal is winning, not decided yet beyond energy targets see above.	District heating will be the basic energy solution, which is produced by waste and biomass. Electricity is about 45% renewable, emission factor 0,023 tCO2/MWh. A feasibility study for using the facade for solar energy is under way (1500 solar hours/year, 2886 m2 facade, 130 kWh/m2). Chances are good as the price for solar facade is lower than for conventional facade solution which is planned up so far. Geothermal Heat pump is another option which will be taken into account.	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Not yet defined.	Use of low-emission products according to Sunda hus criteria Highly-efficient ventilation system, controlled by CO2, temperature and PIR Solar shading Use of daylight as much as possible Sound emissions will be low due to new technology and high standards	
Building materials Description of ecological optimization of construction materials	No decision yet, waiting for winning proposal. But recycling of parts of the old Town Hall should be part of the concept.	See above general description.	
Special methods Description of special methods used in renovation	Not applicable.	Use of LCA calculation for building materials	

Deviations Description of problems that occured and plannned actions and performance indicators that were not met		Architect competition is a useful concept. However, none of the proposal did meet all criteria, and more work had to be done to adapt proposals.	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Ecologic and sustainable kindergarten/preschool Hedlunda	Ecologic and sustainable kindergarten/preschool Hedlunda	
Type of building	Preschool	Preschool	
Typre of pilot (new/renov)	New built	New built	
Total cost	41.000.000 SEK	41.000.000 SEK	
Owner	City of Umeå	City of Umeå	
General description Overall description of intentions and actions with the pilot	The City of Umeå is aiming at developing a lighthouse project which will be the northernmost certfied passive house. It will also be BREEAM-certified, a unique combination so far in Sweden. The use of ecological, nonpoisonous building materials is decisive as well as long-living building and easy to change appliances. It is about ressource-efficiency and the target is to create a building with a negative CO2-banlance in a 50-year-lifecycle. 4 options of building design have been tested with LCC method, resulting in a concept which will meet the following criteria: Specific space heating demand ≤ 15 kWh/(m2,a), Total specific primary energy demand) ≤ 120 kWh/(m²a) Airtightness Pressure test result, n50≤ 0.3 h^{-1} or 0,15 l/(sec, m²) (m² = area of the building envelope). All energy calculations have been done with the Passive House Planning Package (PHPP). The ares is easily accessible by sustainable transport modes (cycling, public transport).	No changes compared to column B, planned finalisation end of August 2014. Time schedule: Umeå has for many years the ambition to become world-leading in the field of Sustainable Building. Hedlunda school includes the vision to become the most northern international certified passive house. The decision to implement the project was taken 2012, the planning process completed 2013. The same year the building phase started. The target is to complete the school building at the end of 2014.	

Process and planning Description of the planning process and the performance targets	All energy calculations have been done with the Passive House Planning Package (PHPP). There is a space allocation plan for the project (which also is used as a tabulation for all building materials). Part of PHPP is to take into account of all internal heat gains, passive solar gains, thermal bridges and more. Part of the planning process was to develop an air tightness concept with detailed drawings and material recommendations. There is also a training of construction workers as the airtight layer may be practiced. In any case will two Blower Door tests together with infrared thermography will be done. Under the whole planning process every two weeks meetings with the project-, building- and the kindergarten management are held. A large display in the entrance area shows the current and the average annual energy consumption. An alarm bell will sounds in the school kitchen when the present power consumption exceeds the calculated power consumption. One part of the BREEAM certification is the creation of a user manual.	Continously experience exchange with the project leader and architect for the project, on e.g user manual, input from MountEE good practice experience etc.	
Service Package Description on how the service package is used on the pilot	Still under discussion, as the final way of adapting the service package in Sweden is not decided yet.	Nenet is cooperating with the responsible architect Thomas Greindl and offering service and support following the structure of the service package. This means in practice that the standard is the same as in the service package regarding moduls 2-5. Certification as Miljöbyggnad Guld and passive house following PHI criteria secures a high level of quality.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	See above energy criteria for competiton. The primary energy demand includes the energy demand for heating, cooling, hot water, ventilation, auxiliary electricity, lighting and all other uses of electricity. The limits set above for the specific useful cooling demand and the primary energy demand apply for schools and buildings with similar utilisation patterns. These values are to be used as a basis but may need to be adjusted according to building use. In individual cases where very high internal heat loads occur, these values may also be exceeded after consultation with the Passive House Institute. Proof of efficient electrical energy use is necessary in such cases.	No changes compared to column B	
Renewable energy Description on the use of renewabel energy in the pilot	District heating with renewable fuel, with use of returning district heat water and from the energy recovery of the food cooling- and freezing units of the restaurant and kitchen	No changes compared to column B	

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Passive House certified central ventilation systems with heat recovery system and an effective heat recovery rate of 85%. Exhausted air from the kitchen will be cleaned with ozone to reduce cooking odours and grease before the heat recovery is possible in a normal ventilation unit. There is no cooling demand because of the temporary exterior sun protection with external venetian blinds.	No changes compared to column B.	
Building materials Description of ecological optimization of construction materials	Limits for emissions to air for all materials: TVOC according to EN 16000-5/6/9 < 300 µg/m3 VOCaccording to EN 16000-5/6/9 < 100 µg/m3 Formaldehyd according to EN 16000-2 < 48 µg/m3 = 0,048 mg/m3 = 0,04 ppm Radon < 50 Bq/m3 CO_2 < 900 ppm Beyond, a list of which materials are not allowed has been developed.	No changes compared to column B.	
Special methods Description of special methods used in renovation	LCC method. User and staff involvement (see above)	No changes compared to column B.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Ecologic and sustainable school Vännäs / Nya Vegaskolan	Ecologic and sustainable school Vännäs / Nya Vegaskolan	
Type of building	Daycare centre, school and town library	Daycare centre, school and town library	
Typre of pilot (new/renov)	New built (linking two parts of an existing school)	New built (linking two parts of an existing school)	
Total cost	90.000.000 SEK (=10 000 000 Euro), project costs, building included all fixed equipment, school yard an external facilities	90.000.000 SEK (=10 000 000 Euro), project costs, building included all fixed equipment, school yard an external facilities	
Owner	Municipality of Vännäs	Municipality of Vännäs	
General description Overall description of intentions and actions with the pilot	The Nya Vegaskolan in Vännäs will be built as passiv house according to the international passivehouse criteria (PHI). It will also be certified according to the sustainable certification system "Miljöbyggnad Guld". This is so far unique for Sweden. The building envelope and insulation is 100% renewable materials, while the inner supporting system is armored concrete due to costs. The building has 4260 m2 on two levels and will be used by 600 pupils and 35 teachers. The heat demand is 87% below building regulations and the total energy demand is 80% below the building code. Certification criteria for total specific primary energy demand is ≤ 120 kWh/(m²a), for heating ≤ 15 kWh/ms,a), Airtightness Pressure test result, n50≤ 0.6 h^{-1}. All energy calculations have been done with the Passive House Planning Package (PHPP). Use of low-emission products is an important part of the project.	according to plans. Time schedule: the decision to build the new Vegsskolan as a model project for sustainable building was taken in 2012. The planning process started 2013, the same year the municipality agreed to follow the MountEE pilotproject criteria. The construction will start fall 2014 and the building is expected to be completed late summer 2015.	

Process and planning Description of the planning process and the performance targets	The project's environmental and quality plan includes the following topics: • Non-toxic indoor climate with low thresholds for formaldehyde, VOCs, TVOCs, CO2, and radon – we need to build for people = strict limits on emissions in indoor air • Highest possible resource and energy efficiency with maximum comfort and quality while also reducing CO2 emissions = international Passive House certification • Renewable energy for residual energy demand = Nearly Zero-Energy Building • Renewable, zero-emission construction materials with low embodied energy levels (LCA) • External quality assurance (not typical in the Swedish construction process) on the construction site plus quality assurance based on Passive House and sustainability certification • Materials and structures with long service lives, low maintenance expenses, easy to update and dismantle (LCC) • Flexible floor plans, flexible and easily accessible building services equipment, non-loadbearing walls inside, accessible ventilation system • Possibility of prefabricating building components for higher construction quality • Good location, well connected to local transportation and commercial and public facilities • Use of existing infrastructure	According to plans, continously information exchange between MountEE and architect.	
Service Package Description on how the service package is used on the pilot	Still under discussion, as the final way of adapting the service package in Sweden is not decided yet.	Nenet is cooperating with the responsible architect Thomas Greindl and offering service and support following the structure of the service package. This means in practice that the standard is the same as in the service package regarding moduls 2-5. Certification as Miljöbyggnad Guld and passive house following PHI criteria secures a high level of quality.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	See above. The primary energy demand includes the energy demand for heating, cooling, hot water, ventilation, auxiliary electricity, lighting and all other uses of electricity. The limits set above for the specific useful cooling demand and the primary energy demand apply for schools and buildings with similar utilisation patterns. These values are to be used as a basis but may need to be adjusted according to building use. In individual cases where very high internal heat loads occur, these values may also be exceeded after consultation with the Passive House Institute. Proof of efficient electrical energy use is necessary in such cases.		
Renewable energy Description on the use of renewabel energy in the pilot	District heating with renewable fuel, with only use of returning district heat water. For ligthning: Certified Green Electricity. Not finally decided: a PV plant or a share in wind power plant.	no changes, PV still under discussion.	

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	High level of comfort because of the use of a exterior temporary sunshade systems and naturally cooling. Part of the sustainability and quality program in the project are these sound pressure levels: LA,eq < 30 dB (A) class rooms LA,eq < 25 dB (A) Rest rooms LA,eq = effective sound pressure Part of the tender documents are requirements for all building materials with limited values for poison / unhealthy emissions for VOC; TVOC; Formaldehyde and Radon Furthermore it is not allowed: to use HFC´s in the production process of XPS insolation under the ground slap. to use insolation panels with brominated flame retardants to use PVC pipes for wastewater and conduits to use refrigerants with ODP > 0 and GWP > 5 in cold storage systems . All chiller, freezer, cooler in the professional kitchen use as an environmentally friendly refrigerant CO2. All materials need an EPD, a sustainable certificate and a report for emissions.	According to plans, continously information exchange between MountEE and architect.	
Building materials Description of ecological optimization of construction materials	see above and: Limits for emissions to air for all materials: TVOC according to EN 16000-5/6/9 < 300 µg/m3 VOCaccording to EN 16000-5/6/9 < 100 µg/m3 Formaldehyd according to EN 16000-2 < 48 µg/m3 = 0,048 mg/m3 = 0,04 ppm Radon < 50 Bq/m3 CO_2 < 900 ppm Beyond, a list of which materials are not allowed has been developed.		
Special methods Description of special methods used in renovation	LCC method.	No changes.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessions learned Description of what can be learned on strategic process and technical aspects		Lessons learnt from Hedlunda project in terms of builing materials, communication in building team etc could be used, which makes the building process more effective and cheaper.	

Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities.	

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION OF BARN TO CREATE A TOWN HOUSE		
Type of building	TOWN HOUSE		
Type of pilot (new/renov)	RENOVATION		
Total cost		355 000€ HT for the construction costs	
Owner	COMMUNE , Mairie - Place de la république, 66360 MANTET, France		
General description Overall description of intentions and actions with the pilot	Préservation of architectural forms with the goal of a efficiency energy and a high environmental materials and local.		
Process and planning Description of the planning process and the performance targets	The project is currently in the planning process. The design of the project by the project management team will be held in spring 2014. Work will start in spring 2015. Performance tests will take place at 3 years after completion. The objective of energy performence is the thermal regulation of the existing + 30% of improvement	The project has been delayed due to the municipal elections. The definition of the programm is in progress. Work has been done on construction constraints (fire risk, snowslide, pedestrian access, heritage character of the building). The consultation for the project management should be launched in the summer, construction work will begin in spring 2015. The ownership would like to reach the Effinergie Label (current thermal regulation + 40% of improvement)	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	The service package is widely-used by the project ownership. Every technical and administrative steps are supported by MountEE (co-redaction of the program, financial estimations, public dialogue, etc.). The service package is much more used by the project that what had been planned. The HVAC engineer recruited for the service package also work on this pilot.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Mixed mode heating with wood boiler with other energy supplement to clarify, solar hot, mecanical ventilation double flow, low consumption lighting, presence detection.	reflexion on wood boiler feasibility : given the isolation of the project (problem in terms of supply), and the weak needs (limited time of activity), the choice of a woodstove (furnished with logs) has been made The orientation of the building doesn't allow the use of solar energy The owner would like to limite the lighting to the bare mininum (the municipality has obtained the label "clear night village")	
Renewable energy Description on the use of renewabel energy in the pilot	solar hot water for heating	wood for heating	

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location at 1500m altitude. Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		
Building materials Description of ecological optimization of construction materials	The use of wood will be advised, and ecological insulation materials. The proximity of production of these materials wil be a factor of choice (local resource).	structural wood an extension of the building may be realized, if that is so, it will be in wood local stones and slates to preserve the heritage character of the building	
Special methods Description of special methods used in renovation	The use of slate for roofing will be favored, and the stone for the parties directly involved in the church.	The facade will be carrefully opened to allow sunlight while preserving the patrimonial aspect	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	The barn is located in a avalanche zone. The consolidation of the walls and roof will be necessary. Structurals constraints may impact materials could be used,	The achivement of ernergy performances targets may be limited by : - the needs to respect the heritage aspect of the building - natural risks (the opening of the roof or façade to allow sunlight may be impossible due to snowslide risk)	
Lessions learned Description of what can be learned on strategic process and technical aspects		The service package is used much more than only on sustainable construction aspect The project could not have been made without MountEE support The service package is more useful when the owner of the pilot is voluntary and motivated	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION OF A KINDERGARTEN in LA CABANASSE		
Type of building	KIINDERGARTEN		
Typre of pilot (new/renov)	RENOVATION		
Total cost		1 180 000 € HT of construction costs	
Owner	SIS (SYNDICAT INTERCOMMUNAL SCOLAIRE CAPCIR HAUT CONFLENT, Carrer de la Quillane 66210 LA LLAGONNE, France		
General description Overall description of intentions and actions with the pilot	Global renovation with high environnmental objectives (energy performance: near passive house and including ecological materials)		
Process and planning Description of the planning process and the performance targets	Current phase: defnition of the program with the owner to define his order for the project management team. The design of the renovation by the project management team will start in spring 2014, Construction will start in spring 2015. Last step: monitoring of the building and its equipments, Objectives in terms of energy efficiency should be reached the low consumption building standard	The project management has been chosen before the beginning of MountEE support (in october 2012) The project is due to the necessity to bring up to standart the nursery (distribution of meals and diapers before january 2015)	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	The service package has been used for the elaboration of the program. MountEE coaches the owner and the project management for the achievement of performance targets and also works on know-how transfer and conciousness raising	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Mixed mode heating with wood heating with solar hot water, mecanical ventilation double flow, low consumption lighting		
Renewable energy Description on the use of renewabel energy in the pilot	solar hot water for water production		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location (1500m altitude). Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		
Building materials Description of ecological optimization of construction materials	The use of wood will be advised, like ecological materials to preserve the health of users. The proximity of production of these materials wil be a factor of choice (local resource).	The certification of pinus uncinata makes possible the use of this local species as structural wood Will to use wood fiber insulation materials	
Special methods Description of special methods used in renovation		The pilot has to respect the reglementation of the AVAP (enhancement area of heritage and architecture) since it is located near Mont-Louis (a Unesco citadel)	

Deviations Description of problems that occured and plannned actions and performance indicators that were not met		Following the municipal elections, the new mayor, who are the owner of the building, is questioning the project. A difficult discussion is in progress between the SIS (project ownership) and the municipality (owner). The municipality is considering to build a new school complex. The demolition and reconstruction of the existing building is also envisaged due to the importance of the renovation required to reach MountEE targets (20% to 30% of additional costs)	
Lessions learned Description of what can be learned on strategic process and technical aspects		The mulitiplicity of the governance (owener/project ownership) lead to delays and there is currently a statu quo about the future of the project	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION OF OLD TRADITIONAL HOUSE WITH BARNS TO CREATE A TOWN HOUSE		
Type of building	TOWN HOUSE	the new municipality thinks about an evolution of the project	
Typre of pilot (new/renov)	RENOVATION		
Total cost		about 700 000 € HT of construction costs	
Owner	COMMUNE , Mairie - RN 20, 66760 PORTA, France		
General description Overall description of intentions and actions with the pilot	Préservation of architectural forms with the goal of a efficiency energy and a high environmental materials and local.		
Process and planning Description of the planning process and the performance targets	The project is currently in the planning process. The design of the project by the project management team will be held in spring 2014. Work will start in spring 2015. Performance tests will take place at 3 years after completion. The objective of energy performence is the thermal regulation of the existing + 30% of improvement	Following the municipal elections, the municipality has a new Mayor, which has resulted in important delays in the project, and its questioning. The new program is not yet defined but the owner is OK to stay a MountEE project.	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	This pilot is also supported by the County Council with their own service package. The MountEE service package has to articulate with it. This is facilitated by the fact that the HVAC engineer is the same in both teams. The MountEE service package focus more on the issue of heritage sustainable renovation	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Mixed mode heating with wood heating with other energy supplement to clarify, mecanical ventilation double flow, low consumption lighting, presence detection.	will depend of the new program of the project	
Renewable energy Description on the use of renewabel energy in the pilot		will depend of the new program of the project	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location at 1500m altitude. Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		

Building materials Description of ecological optimization of construction materials	The use of wood will be advised, and ecological insulation materials. The proximity of production of these materials wil be a factor of choice (local resource).		
Special methods Description of special methods used in renovation	The use of slate for roofing will be favored, as well as the development of ancient stone walls. An exterior insulation for some fronts (without challenge patrimoinial) will be sought for better thermal performance		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		A part of the building has not yet been bought by the Municipality because of difficulties to deal with all the owners (joint ownership) The change of the Municipality questions the realisation of the pilot	
Lessions learned Description of what can be learned on strategic process and technical aspects		As long as the construction phase is not reached, the project is very dependent on political will	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION OF AN OLD BUILDING in OLETTE		
Type of building	Natural regional park offices		
Typre of pilot (new/renov)	RENOVATION		
Total cost		2 000 000 € HT for the construction costs	
Owner	Syndicat Mixte du Parc naturel Régional des Pyrénées Catalanes, 1 Rue Dagobert, 66210 MONT LOUIS, France		
General description Overall description of intentions and actions with the pilot	Global renovation and restructuring with high environnmental objectives (energy performance: RT 2012 as in the thermal regulation for new building and including ecological materials)		
Process and planning Description of the planning process and the performance targets	Current phase: The project began with the design team in 2012, the project design is accomplished, business consulting work is in progress, the construction will start in winter 2013/2014. The last step will be the monitoring of the building and its equipments, Objectives in terms of energy efficiency should be reached the low consumption building standard	Construction has begun in february 2014 Every material used is submitted to a environmental pre-validation	
Service Package Description on how the service package is used on the pilot	The service package will be implemented for the accompaniement of the project manager for the selection of companies for the construction and during the construction step in order to verify process in compliance with order objectives. The last service implemented will be the imlementation of a monitoring system,	The project is piloted by a urban planning society which has the delegation of project ownership. The project is also accompanied by an HQE (high environmental quality) assistance to project ownership . These existing supports limit the scope of action of the service package. MountEE is in charge of verifying each step of the project, and assists the owner (PNR) for documentation analysis.	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Production and heat emission: Heat production: Boiler automatic wood pellet condensing PES type (K) 32, buffer tank 750 liters Ventilation:Part Ventilation Comfort Double Flow Offices, Normal game VMC Sanitary Flux Sanitary Hot Water: Cumulus 150L a 1800W power Electricity: Electric Power loacaux given for 5 W/m², Provided in offices and meeting rooms for office property supplement given to 3W/m²/100lux		

Renewable energy Description on the use of renewabel energy in the pilot	Wood boiler, No need for hot solar water		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	The architect suggest to add shutters for the summertime confort but this option is not yet accepted by the owner. The building is located at 627m altitude Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic at thermal level.		
Building materials Description of ecological optimization of construction materials	The use of wood is present in the project (mixed structure wood, metal, concrete): dressing of wooden ceiling, some walls are wood frame, wood siding is used on interior walls. The insulation of the walls and the roof is made with cellulose wadding The roofing will be made of zinc.	The owner is considering to isolate walls with a mix of cellulose waddind and wood fiber	
Special methods Description of special methods used in renovation	The llauze is used for roofing external dependencies, several stone walls have been preserved for heritage project quality.	To preserve the bat (a protected species) which were present in the building before the project, the schedule of the construction has been adapted. The roof of the room concerned has been put down and covered before the arrival season of bats. Today, bats are back on the site.	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	The building is located near a cliff near a river and a diagnosis is required in building permits authorized. The project is located on a site classified as historical monuments there are two medieval towers on the site. The projet is located near an olt processing factoring fluorite	A "clean construction site charter" had been annexed to the procurement contract for the construction compagnies, but it is slowly being put in place. The crafstmen are not used to this king of waste management, and the project management awareness is not very important. MountEE tries to raise awareness of these actors on this subject.	
Lessions learned Description of what can be learned on strategic process and technical aspects		The multiplicity of stakeholders and the low awareness of some of them on sustainable construction make the intervention of the service package more difficult. This is also due to the fact that the pilot has not been accompanied by MountEE since the beginning of the project.	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION TO CREATE A CANTEEN FOR CHILDREN AND OLD PEOPLE - LA CABANASSE		
Type of building	CANTEEN HOT LINE GROUND FLOOR		
Typre of pilot (new/renov)	RENOVATION		
Total cost		487 000 € HT for construction costs + 800 000 € HT for the boiler	
Owner	Communauté de communes du Capcir Haut Conflent (it's a group of 17 muncipalities) Contact: Col de la Quillane - 66210 LA LLAGONNE Website: http://www.capcir-pyrenees.com/Presentation--5460.phtm?lng=FR_CC		
General description Overall description of intentions and actions with the pilot	Renovation of the existing canteen with ecological materials for the insulation, equipment inside	The boiler fo all the Solaze site will be constructed under the canteen project	
Process and planning Description of the planning process and the performance targets	Current phase: defnition of the program with the owner to define his order for the project management team. The design of the renovation by the project management team will start in winter 2013/2014. Construction will start in spring 2014. Last step: monitoring of the building and its equipments, Objectives in terms of energy efficiency should be reached: low Consumption Building (BBC renovation= 64 kWh/m²/an) + variation according to the altitude	The project management has been chosen in december 2013 (not the same project management that the 2 other projects on Solaze site) Conception in progress The MountEE HVAC engineer is currently doing a critical analysis of the project	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	Support on project management consultation The project is in standby because of the changes resulting from the municipal elections	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	wood boiler and hot solar water, mecanical ventilation double flow, low consumption lighting, presence detection		
Renewable energy Description on the use of renewabel energy in the pilot	Wood boiler, hot solar water		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location (1500m altitude). Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		

Building materials Description of ecological optimization of construction materials	The use of wood will be advised, like ecological materials to preserve the health of users. The proximity of production of these materials wil be a factor of choice (local resource).		
Special methods Description of special methods used in renovation	Exterior Insulation		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	The project is located near a site classified as historical monuments, there Vauban Citadel of Mont-Louis, heritage by Unesco	It will be impossible technically to reach 64 kWh/m²/year. This would imply an insulation of the ground, which would lead to a 10 cm extra heigh compared with the rest of the building, which would lead to functionning problems. The project is in standby because of the changes resulting from the municipal elections	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION TO CREATE A PRIMARY SCHOOL FOR CHILDREN - LA CABANASSE		
Type of building	SCHOOL (3 class) AND INTERGENERATIONAL PLACE Ground floor en Level N-1		
Typre of pilot (new/renov)	RENOVATION		
Total cost		1 050 000 € HT for construction costs	
Owner	Communauté de communes du Capcir Haut Conflent (it's a group of 17 muncipalities) Contact: Maison du Capcir - TM6 - 66210 LA LLAGONNE Website: http://www.capcir-pyrenees.com/Presentation--5460.phtm?lng=FR_CC		
General description Overall description of intentions and actions with the pilot	Renovation of the existing school space of the former holiday center with ecological materials for the insulation, equipment inside. Renewable energies: wood boiler (same boiler as canteen)		
Process and planning Description of the planning process and the performance targets	Current phase: defnition of the program with the owner to define his order for the project management team. The design of the renovation by the project management team will start in spring 2014, Construction will start in spring or summer 2014. Last step: monitoring of the building and its equipments, Objectives in terms of energy efficiency should be reached: low Consumption Building (BBC renovation= 64 kWh/m²/an) + variation according to the altitude	The project management has been chosen in december 2013 with MountEE support. The project became MountEE in october 2013. The work on the program was already well advanced and MountEE couldn't influence it.	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	support for project management consultation, know-how transfer and conciousness raising, support in conception to favor the use of renewable energy and ecomaterials	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	wood boiler and hot solar water, mecanical ventilation double flow, low consumption lighting, presence detection	wood boiler (pellets), solar and photovoltaic pannels	
Renewable energy Description on the use of renewabel energy in the pilot	Wood boiler	see above	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location (1500m altitude). Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		

Building materials Description of ecological optimization of construction materials	The use of wood will be advised, like ecological materials to preserve the health of users. The proximity of production of these materials wil be a factor of choice (local resource).	wood fiber insulation	
Special methods Description of special methods used in renovation		The pilot has to respect the reglementation of the AVAP (enhancement area of heritage and architecture) since it is located near Mont-Louis (a Unesco citadel)	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	The project is located near a site classified as historical monuments, there Vauban Citadel of Mont-Louis, heritage by Unesco	Following the municipal elections, the new mayor, who are the owner of the building, wants to stop the project. He refuses to move the school in this building.	
Lessions learned Description of what can be learned on strategic process and technical aspects		The multiplicity of actors and projects (3 projects in 1 building) make the pilot very complex Despite the beginning of the construction works (removal of asbestos), the project may be given up The fact that the building is not owned by the SIS (it is a long lease for 30 years) threatens the project (the mayor does not want to transfer the school in a building which does not belong to the municipality)	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	RENOVATION TO CREATE A RESIDENCE FOR SENIORS - LA CABANASSE		
Type of building	SENIORS RESIDENCE Ground floorLevel N+ 1, N+ 2 and N+3		
Typre of pilot (new/renov)	RENOVATION		
Total cost		1 900 000 € HT for construction costs	
Owner	Communauté de communes du Capcir Haut Conflent (it's a group of 17 muncipalities) Contact: Maison du Capcir - TM6 - 66210 LA LLAGONNE Website: http://www.capcir-pyrenees.com/Presentation--5460.phtm?lng=FR_CC		
General description Overall description of intentions and actions with the pilot	Restoration of the old center of holidays residence for elderly people with ecological materials for the insulation, equipment inside. Renewable energies: wood boiler (same boiler as canteen)		
Process and planning Description of the planning process and the performance targets	Current phase: defnition of the program with the owner to define his order for the project management team. The design of the renovation by the project management team will start in spring 2014, Construction will start in spring 2014. Last step: monitoring of the building and its equipments, Objectives in terms of energy efficiency should be reached: low Consumption Building (BBC renovation= 64 kWh/m²/an) + variation according to the altitude	The project management has been chosen in december 2013.	
Service Package Description on how the service package is used on the pilot	All the modules of service package will be implemented: 1 step: Program définition (need, constraints, faisability studies, energie performance, environnemental quality), support on on sustainable public procurement; step 2: support on the different conception project steps and during the construction; step 3: imlementation of a monitoring system	The project ownership has wished to work alone on the program. Support for project management consultation, know-how transfer and conciousness raising of the project management, support in conception to favor the use of renewable energy and ecomaterials aide à la consultation MOE, avec intégration des critères MountEE	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	wood boiler and hot solar water, mecanical ventilation double flow, low consumption lighting, presence detection	wood boiler (pellets), solar and photovoltaic pannels	
Renewable energy Description on the use of renewabel energy in the pilot	Wood boiler, hot solar water		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	There is no need on thermal summertime confort considering the geographical location (1500m altitude). Acoustic comfort is achieved trough the realisation of efficient double glazing. The roof insulation and walls will be performing in acoustic et thermal level.		

Building materials Description of ecological optimization of construction materials	The use of wood will be advised, like ecological materials to preserve the health of users. The proximity of production of these materials wil be a factor of choice (local resource).	wood fiber insulation	
Special methods Description of special methods used in renovation	Exterior Insulation	The pilot has to respect the reglementation of the AVAP (enhancement area of heritage and architecture) since it is located near Mont-Louis (a Unesco citadel)	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	The project is located near a site classified as historical monuments, there Vauban Citadel of Mont-Louis, heritage by Unesco	The additional costs for a sustainable construction (+ 9%) make the project ownership question about the relevance to remain a MountEE pilot	
Lessions learned Description of what can be learned on strategic process and technical aspects		The multiplicity of actors and projects (3 projects in 1 building) make the pilot very complex	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Construction de l'école maternelle de St Offenge		
Type of building	Infant School – teritiaire building		
Typre of pilot (new/renov)	Building		
Total cost	1 503 379,00 €		
Owner	Town of saint Offenge		
General description Overall description of intentions and actions with the pilot	Passive House Building : Energy efficiency building materials (wood), renewable energy		
Process and planning Description of the planning process and the performance targets	Program done (September 2012) Selection of project management perfor Construction : ling for building permits: June 2013 Works: End september 2014	Companies were choosen and start of works june 2014	
Service Package Description on how the service package is used on the pilot	"The servive package on this project is defined as follows: - -Assistance in the choice of energy criteria in phase APS AND ODA and optimization of technical solutions -Opportunity Analysis for the heating system of the building - Follow responses from project management to take into account environmental and enrgitical objectives. -Support research funding and in public procurement	The service package proposed : Monitoring environnmental and energitical objectives : - assitance in the choise of technical solutions : installation wood boiler, ecological materials - support by an expert on the quality of indoor air Assistance in the search of funding	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Passive House Building : Energy efficiency building :need for heating <15 kWh / year / m ², Electricity PV, 100 % renewable energy	positive energy building	
Renewable energy Description on the use of renewabel energy in the pilot	Solar, wood energy		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	dynamic thermal simulation was performed to estimate discomfort summer school withthe software Comfie-Pléaides.Le summer comfort is judged on the number of hours in excess of 28 ° C when the building is occupied . Solutions time: occultations of all openings / breezes sun orientablesMatériaux high phase in exterior insulation: fibreboard wood density + search of inertia. Lack of air conditioning.		
Building materials Description of ecological optimization of construction materials	Wood construction + ecological insulation materials	discussion of the construction materials and the implementation of solutions	
Special methods Description of special methods used in renovation			

Deviations Description of problems that occured and plannned actions and performance indicators that were not met	not yet...		
Lessions learned Description of what can be learned on strategic process and technical aspects	Help to define the targets, Optimization of technical solutions and monitor their outfits throughout the project	it is important to offer an assitance to follow the energitical and environnemental indicators at all stages of the project	
Conclusions	Implement effective support for Ambitious Project Mountee can truly pull this building and make it sustainable.		

	Implementation concept	Activity report	Evaluation report
Name of pilot	Rénovation La Maladière		
Type of building	teritiaire building		
Typre of pilot (new/renov)	Renovation with use change		
Total cost	4000000		
Owner	Montmélian community		
General description Overall description of intentions and actions with the pilot	Creation of 2 festive rooms + 1 keeper chamber in the former premises of a cooperative room. Current phase of the development : program		
Process and planning Description of the planning process and the performance targets	Development of the program late 2013 Construction : permi build 201 4 Works: 2 semaestre 2014	Development of the program january 2014	
Service Package Description on how the service package is used on the pilot	The Mountee support on this project is defined as follows: - Environmental program proposal integrated into the program - Opportunity Analysis for the heating system of the building and its surroundings - Follow responses from project management to take into account environmental objectives. - Identification of control points of the environmental program at different phases of the project	The service package proposed : - develop environmental and energetic program (based on criteria referential enerbuild - assitance in the choise of technical solutions : installation wood and solar boiler, ventilation - Assistance in the search of funding	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Reduction needs with low consumation renovation goals on building Heating + renewable hot water (solar, wood energy)		
Renewable energy Description on the use of renewabel energy in the pilot	Solar, wood energy	- Opportunity Analysis for the heating system of the building and its surroundings	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Strong internal gains associated with festive activity: targets f laarge air renewal to improve thermal comfort and reduce the risk of nuisance to the neighborhood.		
Building materials Description of ecological optimization of construction materials	Specific requirements at this level will be included in the tender documents : max emission rate products, environmental labels and product finishing		
Special methods Description of special methods used in renovation	Use of Enerbuild referential		

Deviations Description of problems that occured and plannned actions and performance indicators that were not met	not yet...	the allocated budget has declined, technical compromises will have to be done	
Lessions learned Description of what can be learned on strategic process and technical aspects	Setting up a help desk at the beginning of the project / Help for setting goals and monitoring their outfits throughout the project	it is essential prior to the project to verify the consistency between the budget and the ambition of the project and to valid the funding, to avoid ending up with unrealistic projects	
Conclusions	Coaching began in June with high expectations of the community		

	Implementation concept	Activity report	Evaluation report
Name of pilot	Rénovation de l'espace Malraux		
Type of building	Cultural Center – teritiaire building		
Typre of pilot (new/renov)	Renovation with use change		
Total cost	Unknown		
Owner	Town of Chambéry		
General description Overall description of intentions and actions with the pilot	Renovation of a cultural building of national importance with a strong focus on sustainable building		
Process and planning Description of the planning process and the performance targets	Development of the program : late 2013 Building permit end of 2014	presentation of diagnosis exisitant building in february 2014, the cost of de works was estimated. tthe project has slowed during the electoral period.	
Service Package Description on how the service package is used on the pilot	The community benefits from advanced technical skills and it is surrounded by assistants to project management, the Mountee support this project come about very specific topics such as LCC on lighting, with the implementation of the coordinating role within the communities and the co-construction and monitoring of the environmental program. Given the very recent launch of Mountee support on this project, these are guide lines and can change (depending in particular of the diagnosis of the Assitant to Project management).	The service package proposed : -assitance in the choise of technical solutions : System of ventilation and lighting -Assistance in the search of funding : European funds, and certificates of energy savings - assitance to follow the energitical and environnemental indicators at all stages of the project	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Currently undetermined		
Renewable energy Description on the use of renewabel energy in the pilot	This building is connected to the district heating network of the city of Chambery. The energy mix of the heating network is composed of 35% fatal energy (from waste incineration), 16% of wood energy, 50% of gas. CO2 emissions of this network are 173 g CO2/kWh and are expected to reduce the development of wood energy.		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	At this stage, no specific target is requested, however, the city referencial provides on each project's ambitious objectives on air quality, the volatile organic compounds ...		
Building materials Description of ecological optimization of construction materials	At this stage, no specific target is requested, however, the city referential plans to expand the use of healthy materials, environmentally friendly, comfort and health		

Special methods Description of special methods used in renovation	Use of Enerbuild referential		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	not yet...	the cost of the work exceeds the initial budget, we will have to make strategic choices and review project performance	
Lessions learned Description of what can be learned on strategic process and technical aspects	Setting up a service support at the beginning of the project / Help for setting goals and monitoring their outfits throughout the project This support will use Chambery city internal tools and develop additional tools which will be put in common into the service package.	renovation of a building with a very specific use is difficult, the constraints of the existing building and its use are strong,energy and environmental requirements can not be followed, despite a very ambitious project to start.	
Conclusions	Coaching will be defined more precisely with the rendering of diagnostic Building (november 2013)	Assistance will be defined more precisely with with the newly elected	

	Implementation concept	Activity report	Evaluation report
Name of pilot	**Réhabilitation et transformation de l'école de la Salette**		
Type of building	Cultural Center – teritiaire building		
Typre of pilot (new/renov)	Renovation with use change		
Total cost	400 000		
Owner	Town of saint Alban Leysse		
General description Overall description of intentions and actions with the pilot	Rehabilitation and conversion of disused school building in a cultural center		
Process and planning Description of the planning process and the performance targets	Program done (August 2011) Selection of project management perfor Construction : ling for building permits: June 2014 Works: End 2014	presentation of diagnosis exisitant building in february 2014 by architect, the project has been delayed a meeting with teams organized in June	
Service Package Description on how the service package is used on the pilot	We will work with the selected team to clarify the environmental and energy objectives and ensure that they held throughout the project. Specifically, we plan to : - Advise on the sketch and have recommandations on Energy - Work with the main contractor to get the project up (program not detailed on this point) - Develop a vision overall cost to the commwhich unsy - consider the white certificats value in this operation This support will be validated by the Cooperation Committee and the Mountee project group. This support will help to clarify the service offering for a medium-sized community (population 6,000) which has already launched a program. Given the very recent launch of Mountee support on this project, these are suceptibles to change (depending on the diagnosis of project management in particular).	We will work with the selected team to clarify the environmental and energy objectives and we will test the enerbuild referential	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	Currently undetermined		
Renewable energy Description on the use of renewabel energy in the pilot	Currently undetermined		

Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Currently undetermined		
Building materials Description of ecological optimization of construction materials	Currently undetermined		
Special methods Description of special methods used in renovation	Use of Enerbuild referential		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	not yet...		
Lessions learned Description of what can be learned on strategic process and technical aspects	Setting up a service package once program already defined and project management already selected. Help to define the targets and monitor their outfits throughout the project	architect has been selected without the program is elaborated, it is difficult to direct energy and environmental choices.	
Conclusions	Coaching a project not specially ambitious but representative of community projects. Mountee can truly pull this building and make it sustainable.		

	Implementation concept	Activity report	Evaluation report
Name of pilot	**early childhood of Montbonnot and House of arts**		
Type of building	Office Building		
Type of pilot (new/renov)	New project and a renovation with news change		
Total cost			
Owner	Montbonnot community		
General description Overall description of intentions and actions with the pilot	Building construction of a socio-cultural space on the town of Montbonnot Saint Martin		
Process and planning Description of the planning process and the performance targets	Goal achieved in energy consumption of 60 kWh / m². Year (4 for regulatory purposes is 30 kwhep / m². Year for heating and cooling).		

Service Package Description on how the service package is used on the pilot	Operation REXOL (Feedback Experience Delivered Operations) AGEDEN proposed and accepted by the Director General of Services: - Verification of the match between the DCE and the DOE - See what is actually implemented (on some important points, action set, to do with the client and project management) - Opinion on certain equipment or materials and technical data, - And later, user awareness, writing an easy to use guide, etc.. - Proposal for possible improvements through a logbook that we made in-house, - Communication on the project chosen via a plug detailed site on technical and economic aspects as well as on the website MountEE, and with communities through Rhône Alpes Rhône Alpes Energy Environment (RA2E) and our network as well as with all European partners (Sweden, Italy, Rhône Alpes, Catalan Pyrenees, Austria) written materials and in various meetings with partners. - Calculation / evaluation of overall costs, etc.. - Awareness / training of users: examples of advice	We have done a lot of works in 2014 : 1/ For the childhood : Project Feedback (Rexol Returns Experience Mission Operations Delivered in French) Context Rexol is a new operation that our association AGEDEN conducted for the municipalities for two years. We did this action for a dozen projects. What's Rexol and why? Duration: 4 days per project. Targets : "tertiary public" operation preferably delivered (if possible with minimum 6 months operation) and having a technical interest (overall rehabilitation, innovative system ..). Component 1: Record detailed Site Obtain an inventory detailed of technical s solutions which have been implemented with pictures and a possible interview of the owner. Component 2: Financial Engineering Collect the distribution of prices charged by consignment and compare. Identify and comment on any differences if necessary. Study the financial package. Part 3: Return of the construction phase Retrieve and analyze the differents price lists. Collect the felt of the owner in the conduct of site (difficulties, time available, trade with team…) . The conditions for the delivery of equipment (explanations for example). Component 4: Building Use Analyze the operating costs of the building (P1 and P2), compared with the theory and explain. Identify potential adaptations , modifications or replacements of equipment upon receipt and explain the causes. Analyze occupant comfort in summer / winter period with the possibility of laying recorders t ° C if perceived problems or use the thermal camera (without interpretation) for information if doubts exist on the implementation. An example of project. The nursery of Montbonnot. The city of Montbonnot as the Community of Communes Gresivaudan is very sensitive about the environment, energy savings and renewable energy. In 2010, the municipality has launched a very good operation in terms of environmental and energy performance by choosing to build a small child very innovative on the energy aspects. This particular building is equipped with various innovative, efficient and making use of among other local sources of renewable energy. The hot water is produced by the installation of solar panels and green electricity is produced by photovoltaic panels.	

Ser vice package cont		What we did. A campaign of temperature measurements will be carried out during summer 2013 and winter 2013/14. These campaigns focus on measures ambient temperatures, humidity inside the CO2 and external measurements of temperature and humidity for the winter party. In light of all of these measures and these tests, and according to the report by The AGEDEN, it will be investigated the possibility of implementing a hygro-adjustable air humidifier standing on the double CTA stream or another independent system CTA. Test and Measurements During 1 month of measurements and recording of humidity, temperatures and rate of CO2 dispatched in all room. Types of material: 4 temperature probes Voltcraft ® 1 probe humidity and temperature Voltcraft ® (No. 4) Four temperature sensors Testo ® (No. 1.3, 9, 10) 1 probe humidity and temperature Testo ® (6) 1 recorder CO2 / humidity and temperature Kilog Kimo ® 5 meters humidity non recorders hand display and manual readings by the staff. Results and analysis - Analysis of CO2 The values of CO2 concentration also vary proportionally with temperature humidity which is logical because the CO2 is directly dependent on occupancy rates and containment. Recall that CO2 levels too high (> 1700 ppm) may be indicative of inadequate ventilation and it may be necessary to open the windows to air a few minutes. Whatever we see through these measures (a month at a time of 10 mins time steps) that CO2 is often high, which may indicate a ventilation / insufficient ventilation. - Analysis of heating temperatures Temperatures are correct for the needs of a nursery, they are rather homogeneous and generally constant and thermal comfort is pretty good after this month measurement. There is therefore no discomfort at this level . It would be inappropriate to criticize these values in terms of energy economy that we promote as we have no knowledge of ideal temperatures for child. However, doctors often report should not exceed 17° C during the rest to avoid problems with cold. Temperature control at night and weekends seem well done based on intermittent, however, we think, that period of holidays, the reduced is low and it would be useful in terms of optimizing consumption the lower energy below 18 ° C. - Analysis of humidity	
Primary energy demand			

Description on how the pilot works with heating, cooling , auxiliary power, ligthing	150 kW wood boiler will be used for the two bulidings and solar pannels for the childhood	2/ For the Arts's House : we have givean a lot of advices about the wood boiler and its conception and we have made a site meeting to check if all the materials have been built in the right way, we have help the technical service of the community to write the documents of "GTB" (building supervisor) and to define good indicator to follow the consumption and the correct settings to manage regulation	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Strong political commitment to sustainable development. From the outset of the discussion the client strongly believes in sustainable development wanted to use local resources to build his energy performant building.		
Building materials Description of ecological optimization of construction materials	wood insulation, environnmental labels, ecological insulation materials		
Special methods Description of special methods used in renovation	new project		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	to discuss with the client strong success in the design of a solidarity group of companies and strong involvement Great example of sustainable development and efficiency energy building reinforced insulation, high air tightness, efficient lighting, and highly efficient ventilation etc. The project follows the principles of high environmental quality labeling. The target is to go beyond the BBC level (low consumption building) by 50%.	For the nursery: indoor air was very dry and there was a huge comfort problem for the staff and especially for children wich should be resolved quickly and this was at once delicate, complex and thorny, fortunately we were able to find several solutions to short and medium term. In the short term by bying the humidifier systems, in the medium term by launching a study and in the long term by helping to establish a maintenance contract ventilation. For home arts, we have found a lot of problem designs about the silo fuel wood and also about the transfer screw, we have given some solutions and our response has optimized the project.	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	**Administrative building of « Communauté de Communes du Grésivaudan »**		
Type of building	Office Building		
Type of pilot (new/renov)	New		
Total cost	4 700 000 € so approximately 1800/m²		
Owner	Communtity of town of Grésivaudan		
General description Overall description of intentions and actions with the pilot	This building is iconic and exemplary in a lot of aspects, itss a showcase for the public and for Gresivaudan because it is a high-performance building on energy efficiency and environmental plans and because that the headquarters of the Community of Municipalities of Gresivaudan. This is a building office inducing some difficulty to achieve good balance use of buildings and appliances with control electricity demand and energy savings, all technical data described in various technical documents and prove that this is indeed the case.		
Process and planning Description of the planning process and the performance targets	Minergie ® certification with a goal achieved in energy consumption of 40 kWh / m². Year (4 for regulatory purposes is 30 kwhep / m². Year for heating and cooling).		
Service Package Description on how the service package is used on the pilot	Operation REXOL (Feedback Experience Delivered Operations) AGEDEN proposed and accepted by the Director General of Services: - Verification of the match between the DCE and the DOE - See what is actually implemented (on some important points, action set, to do with the client and project management) - Opinion on certain equipment or materials and technical data, - And later, user awareness, writing an easy to use guide, etc.. - Proposal for possible improvements through a logbook that we made in-house, - Communication on the project chosen via a plug detailed site on technical and economic aspects as well as on the website MountEE, and with communities through Rhône Alpes Rhône Alpes Energy Environment (RA2E) and our network as well as with all European partners (Sweden, Italy, Rhône Alpes, Catalan Pyrenees, Austria) written materials and in various meetings with partners. - Calculation / evaluation of overall costs, etc.. - Awareness / training of users: examples of advice	define good indicator to follow and the correct settings to manage regulation we help the client to appropriate the good regulation and good remote monitoring of the building, assess consumption and performance of the heat pump Writing a questionnaire felt comfort for every seasons and optimizations good use of the building (lighting, comfort eta, heating temperature, etc.). Summary specifications of grievances and explanatory meeting building performance Feedback on project performance	

Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	heat pump, CTA, double performant ventilation, leds, etc.		
Renewable energy Description on the use of renewabel energy in the pilot	only heat pump		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Strong political commitment to sustainable development. From the outset of the discussion the client strongly believes in sustainable development wanted to use local resources to build his energy performant building.		

Building materials Description of ecological optimization of construction materials	Structural work - Formwork oil to 80% plant Wooden frame - Contemporary frame - Wood original Belledone Chartreuse Gresivaudan - Treatment of wood certified CTB P + Cladding - Contemporary frame - Wood original Belledone Chartreuse Gresivaudan - Treatment of wood certified CTB P + - Blade wooden decking larch PEFC certified external joinery - Wood original Belledone Chartreuse Gresivaudan - Treatment of wood certified CTB P + thin soils - Glues soil EMICODE - Linoleum Chauffage.ventilation / plumbing - Air tightness - PAC - Pipe insulation - 500 L insulated tank - Class II insulation for distribution of hot water - CTA exchanger with efficiency> 76.8% Eurovent - Etc. Own site: constantly cleaning the site and disposal of waste are due by the	wood has been collected only in Isere	
Special methods Description of special methods used in renovation	new project		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	to discuss with the client strong success in the design of a solidarity group of companies and strong		

Lessions learned Description of what can be learned on strategic process and technical aspects	involvement Great example of sustainable development and efficiency energy building reinforced insulation, high air tightness, efficient lighting, and highly efficient ventilation etc. The project follows the principles of high environmental quality labeling. The target is to go beyond the BBC level (low consumption building) by 50%.	not easy at first time to explain to users the proper functioning of the building, the issues of comfort and heating are delicate and sensitive	
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Head office of Oisans gathered municipalities		
Type of building	Offices, reception desk		
Type of pilot (new/renov)	new		
Total cost	2000€/m²		
Owner	Oisans gathered municipalities		
General description Overall description of intentions and actions with the pilot	The service package aims to help the project ownership to reach high performance goals.	Advise for program redaction. Three project managers have to propose solutions to reach the goals.	
Process and planning Description of the planning process and the performance targets		support for conception team on specific topics (air quality, renewable energies, sustainable products)	
Service Package Description on how the service package is used on the pilot	Help on the program writing : integration of further project team missions – animation – financing suggestions (white certificates, call for proposal...etc)	Project-check-list development. Kind of 'to do' list for every stage of the project	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	-	High environnemental quality building : - less than 15 kWh/m² for heating – natural isulation - focus on air quality - …	
Renewable energy Description on the use of renewabel energy in the pilot	according to opportunities	positiv energy project - according to opportunities	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	ambitious	Candidates have to guarantee thermal confort in summertime. The project owner asked for renewal air rate lager than resquested by the reglementation.	
Building materials Description of ecological optimization of construction materials	undefined	Priority is given for low carbon materials	
Special methods Description of special methods used in renovation	undefined	Undefined – maybe biomass cogen	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met	-	Municipalities elections occured.	
Lessons learned Description of what can be learned on strategic process and technical aspects	Importance of project governance	Some choices have been late questioned.	

Conclusions		Need of teaching skills to explain the consequences of some choices.	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Saint-Martin d'Uriage's town hall		
Type of building	Offices, meeting room New building : 860 m² – Extension : 367 m² Ground floor + 2 floors Wood pellet boiler – central heating Electric water heating Heat recovery ventilation		
Type of pilot (new/renov)	New + renov		
Total cost	3240000		
Owner	municipality		
General description Overall description of intentions and actions with the pilot	support for – inspection during execution works (especially wood boiler) – building monitoring implementation - thermal comfort review – white certifates recovery	thermal camera inspection revealed lacks of isulation. Some problems have been discovered with the wood boiler inspection check-list.	
Process and planning Description of the planning process and the performance targets	2013 : execution works /air tightness test	The building have been delivered in april 2014.	
Service Package Description on how the service package is used on the pilot	Project manager support on work acceptance (boiler room) – Support on users understanding of the building – guidance on energy monitoring	Support on users understanding of the building – guidance on energy monitoring – Project historical review	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing		86 Mwh/an either 17 tonnes of wood pellets. Centralised management of the system. free cooling with fresh water	
Renewable energy Description on the use of renewabel energy in the pilot	56 kW wood boiler - free cooling with fresh water	56 kW wood boiler - free cooling with fresh water	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions		Dynamic thermal simulation has been realised.	
Building materials Description of ecological optimization of construction materials	wood framework for extension	The whole framework is made of wood that have been collected in municipal forest	
Special methods Description of special methods used in renovation	Use of wood from the municipality forest	We will work with the building users to teach them the building needs in order to reach energetical goals.	

Deviations Description of problems that occured and plannned actions and performance indicators that were not met			
Lessons learned Description of what can be learned on strategic process and technical aspects	Difficulty to enter a constituted project team		
Conclusions			

	Implementation concept	Activity report	Evaluation report
Name of pilot	Sporting center in Cividale	Sporting center in Cividale	
Type of building	building for associations - sporting center	building for associations - sporting center	
Typre of pilot (new/renov)	renovation	renovation	
Total cost	€ 1 600 000,00	€ 1 600 000,00	
Owner	Cividale municipality	Cividale municipality	
General description Overall description of intentions and actions with the pilot	It is a great building in Cividale, now partly unused and unfinished , that the City intends to purchase.The type of intervention is a general renovation and change of intended use (from sports to space for sports and cultural associations).	Now the building is owned by the municipality. The municipality intends to use some spaces for sports anda other speces for associations (sport ancu cultural)	
Process and planning Description of the planning process and the performance targets	The municipality intends to build a building with a high energy efficiency and be sure that at the end of the renovation it will reach the performance of the project.	see column B	
Service Package Description on how the service package is used on the pilot	Module 00: Green energy audit on existing buildings: energy and environmental audit protocol based on Protocollo ITACA - Module 0: Presentation of modules and results with the communal authorities - Module 1: Preliminary planning: definition of ecological aims in a program, supervision in competition - Module 2: Optimization of planning, tendering procedure:monitoring of offers	**Module 00**: Green energy audit on existing buildings: energy and environmental audit protocol based on Protocollo ITACA - **Module 0:** Presentation of modules and results with the communal authorities - **Module 1:** Preliminary planning: definition of ecological aims in a program, supervision in competition	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	The renovation project will reach a score of 1.2 with the Protocol ITACA "Energy for heating" criteria	We will put in the planning tendering the score of 1.2 with the Protocol ITACA "Energy for heating" criteria	
Renewable energy Description on the use of renewabel energy in the pilot	the renovation project will analyze whether renewable energy sources will be needed in the building	Ww will put inthe planning tendering the use of renewable energy sources fot hot sanitary water	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Reduction of the average thermal transmittance of the envelope elements and increase the thermal inertia of the same elements - possible use of solar shading	Ww will put in the planning tendering the reduction of the average thermal transmittance of the envelope elements andthe increase the thermal inertia of the same elements	
Building materials Description of ecological optimization of construction materials	The renovation project will reach a medium score of Protocol ITACA "Materials from renewable sources" "Local materials for finishes" "Environmentally certified materials" criteria	We don't know yet if there is a sensibility also for construction materials	
Special methods Description of special methods used in renovation	Protocol ITACA	Protocol ITACA	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		The passing of time to make decisions....	
Lessions learned Description of what can be learned on strategic process and technical aspects		We are now working to define the energy target to reach with the planning	

Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities especially for energy efficiency	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Kindergarten in Sagrado	Kindergarten in Sagrado	
Type of building	school	school	
Typre of pilot (new/renov)	existing building	existing building	
Total cost	about 1.500.000,00 €	about 1.500.000,00 €	
Owner	Sagrado Municipality	Sagrado Municipality	
General description Overall description of intentions and actions with the pilot	The nursery of Sagrado is a new building, just realized in energy class A. Sagrado municipality wanta to check the effective energy consumption of the building and finds ways to improve the energy efficiency of the building. A lot of attention in the realization has been put to building materials: both the building and the furniture are made of wood, so the Municipality would like to develop a plan for cleaning the building using environmentally friendly products.	see column B	
Process and planning Description of the planning process and the performance targets	The school was built through a integrated contract. The building is a energy class A	see column B	
Service Package Description on how the service package is used on the pilot	Module 5A: Monitoring on energy consumption , Support for maintenance plan and user manual of the building Module 5B: Support for biological cleaning	**Module 5A**: Monitoring on energy consumption , **Module 5B**: Support for biological cleaning, **Module 5C**: Support for maintenance plan and user manual of the building	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	energy class A -condensing boiler combined with radiant floor	see column B	
Renewable energy Description on the use of renewabel energy in the pilot	solar thermal and solar photovoltaic	see column B	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	low thermal transmittance of the envelope elements	see column B	
Building materials Description of ecological optimization of construction materials	wooden structures, coat of wood fiber, wood furniture	see column B	
Special methods Description of special methods used in renovation	CasaClima A	see column B	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		We will do also the Module 5C…. We have some problems with a crow that is eating all the silicone around the window panes	
Lessions learned Description of what can be learned on strategic process and technical aspects			

Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities especially for energy efficiency	

	Implementation concept	Activity report	Evaluation report
Name of pilot	1301 INN	1301 INN	
Type of building	hotel	hotel	
Typre of pilot (new/renov)	existing building	existing building	
Total cost	about 4.500.000,00 €	about 4.500.000,00 €	
Owner	Promotur (regional society)	Promotur (regional society)	
General description Overall description of intentions and actions with the pilot	The project involved the partial demolition of the original building, maintaining only the ground floor: the rest of the building is spread over three floors wood prefabricated, above a platform of reinforced concrete	see column B	
Process and planning Description of the planning process and the performance targets	Energy class A	see column B	
Service Package Description on how the service package is used on the pilot	Module 5A: Monitoring on energy consumption , Support for maintenance plan and user manual of the building Module 5C: Support for maintenance plan and user manual of the building	**Module 5A**: Monitoring on energy consumption , Support for maintenance plan and user manual of the building **Module 5C:** Support for maintenance plan and user manual of the building	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	condensing boiler on gas (GPL)	see column B	
Renewable energy Description on the use of renewabel energy in the pilot	low thermal transmittance of the envelope elements	see column B	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	low thermal transmittance of the envelope elements	see column B	
Building materials Description of ecological optimization of construction materials	The construction system is prevalent in wood paneling which improves thermal and acoustic requirements. Internal and external natural materials such as wood fiber and wool minerals and plasterboard	see column B	
Special methods Description of special methods used in renovation			
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		The owner wants to know if the energy performance planned is the real performance and if we can improve this performance by teaching some behavior to occupants	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities especially for energy efficiency	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Polcenigo school	Polcenigo school	
Type of building	school	school	
Typre of pilot (new/renov)	existing building	existing building	
Total cost	about 1.100.000,00 €	about 1.100.000,00 €	
Owner	Polcenigo municipality	Polcenigo municipality	
General description Overall description of intentions and actions with the pilot	The municipality of Polcenigo wanted to build a new wing of the school that had the characteristics of earthquake resistance, energy conservation, rainwater harvesting ... The building was to approach the type "to nearly zero energy building."	see column B	
Process and planning Description of the planning process and the performance targets	The school was built with an integrated contract: the town council has approved the preliminary project and made the race for the execution of the work, including the definitive and and executive project. This allowed them to reduce significantly the time required for execution, and to choose the best project.	see column B	
Service Package Description on how the service package is used on the pilot	Module 5A: Monitoring on energy consumption ,Module 5C: Support for maintenance plan and user manual of the building	**Module 5A**: Monitoring on energy consumption , **Module 5C**: Support for maintenance plan and user manual of the building	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	A main attention has been paid to the design for the purpose of reducing energy consumption. In this regard, the project provides a prefabricated wooden structure consists of vertical and horizontal perimeter with natural materials, such as rigid panels (OSB, DWD) consisting mainly derived from the processing of wood and insulating bio-soluble mineral wool, with high density . Energy Class A In perimeter walls it is also provided an insulation "overcoat" that allows the reduction of thermal bridges and the exploitation of the thermal inertia of the wall. In order to avoid waste in terms of energy the design has also tried to limit the heat losses in winter through the exterior: the use of two glass plates separated by a cavity filled with Argon gas and with low emissivity coating allows rag-reach very high values of thermal insulation	see column B	
Renewable energy Description on the use of renewabel energy in the pilot	There is a solar thermal plant for the production of hot water with a net absorber surface of 8 square meters positioned on the pitch of the roof facing south.		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	prefabricated wooden structure - insulation "overcoat" that allows the reduction of thermal bridges and the exploitation of the thermal inertia of the wall - windows: use of two glass plates separated by a cavity filled with Argon gas and with low emissivity coating allows rag-reach very high values of thermal insulation.		

Building materials Description of ecological optimization of construction materials	Natural materials, such as rigid panels (OSB, DWD) consisting mainly derived from the processing of wood and insulation by bio-soluble mineral wool, with high density .	see column B	
Special methods Description of special methods used in renovation			
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		They have some problems wih hot temperature inside in spring and autumn	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities especially for energy efficiency	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Moggio Udinese sede forestale	Moggio Udinese sede forestale	
Type of building	headquarters of forest department	headquarters of forest department	
Typre of pilot (new/renov)	renovation	renovation	
Total cost			
Owner	Regione Friuli Venezia Giulia	Regione Friuli Venezia Giulia	
General description Overall description of intentions and actions with the pilot	The region intends to renovate the building. The renovated building will have a energy efficiency performance. The region would like to be sure that at the end of the renovation it will reach the performance of the project	see column B	
Process and planning Description of the planning process and the performance targets	The renovation project will reach a minimum score of 1.2 with the Protocol ITACA "Energy for heating" criteria	see column B	
Service Package Description on how the service package is used on the pilot	Module 00: Green energy audit on existing buildings: energy and environmental audit protocol based on Protocollo ITACA - - Module 1: Preliminary planning: definition of ecological aims in a program, supervision in competition - Module 2: Optimization of planning, tendering procedure:monitoring of offers - Module 3: Realization: Information for craftsmen, Product declaration, Product control	**Module 00:** Green energy audit on existing buildings: energy and environmental audit protocol based on Protocollo ITACA - - **Module 1:** Preliminary planning: definition of ecological aims in a program, supervision in competition	
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	The renovation project will reach a minimum score of 1.2 with the Protocol ITACA "Energy for heating" criteria	see column B	
Renewable energy Description on the use of renewabel energy in the pilot	the renovation project will analyze whether renewable energy sources will be needed in the building	see column B	
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	Reduction of the average thermal transmittance of the envelope elements and increase the thermal inertia of the same elements - possible use of solar shading	see column B	
Building materials Description of ecological optimization of construction materials	The renovation project will reach a medium score of Protocol ITACA "Materials from renewable sources" "Local materials for finishes" "Environmentally certified materials" criteria	probably we cannot reach these points	
Special methods Description of special methods used in renovation	Protocol ITACA	Protocol ITACA	
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		We will not do module2, because the region is late in the time schedule	
Lessions learned Description of what can be learned on strategic process and technical aspects			

Conclusions		Pilot projects are absolutely necessary to allow for learning processes in the building sector and to build up trust between building companies, architects and municipalities especially for energy efficiency	

	Implementation concept	Activity report	Evaluation report
Name of pilot	Cavasso retirement home		
Type of building	retirement home		
Typre of pilot (new/renov)	new building		
Total cost			
Owner	Sanitary Unit		
General description Overall description of intentions and actions with the pilot	There is an existing building but the the need is a new building for the retirement home		
Process and planning Description of the planning process and the performance targets	They will do a planning(only executive) and constructing tender		
Service Package Description on how the service package is used on the pilot	**Module 1**: Preliminary planning: definition of ecological aims in a program, supervision in competition - **Module 2**: Optimization of planning, tendering procedure:monitoring of offers		
Primary energy demand Description on how the pilot works with heating, cooling , auxiliary power, ligthing	We are now working to define the energy target to reach with the planning		
Renewable energy Description on the use of renewabel energy in the pilot	We are now working to define the energy target to reach with the planning		
Health and Comfort Description of measures to guarantee thermal comfort summertime and reduction of sound emissions	We are now working to define the energy target to reach with the planning		
Building materials Description of ecological optimization of construction materials	We are now working to define the energy target to reach with the planning		
Special methods Description of special methods used in renovation	Protocol ITACA		
Deviations Description of problems that occured and plannned actions and performance indicators that were not met		It is a new pilot project	
Lessions learned Description of what can be learned on strategic process and technical aspects			
Conclusions			