

ENGLISH SUMMARY OF CONTENTS

PROFESSION Technical

Clean room casual operation – To divide by two the energy bill

> By Leila Guenad, Vincent Morisset, Jean-Paul Rignac, Saad Sabeg, and Michel Le Bitoux

A clean room which is not used permanently could run on low level mode without losing its design rating. EDF, in collaboration with Enitiaa, based upon this idea, made a study to find out parameters leading to a decrease of the energy consumption. p11

Thermal insulation from inside

An overview of the possible solutions

> By Jacques Daliphard

Today, thermal insulation from inside represents 80% of all new building projects. Therefore it is paramount to address the thermal bridges problem. Heavy structures, concrete or masonry: available solutions and examples of adequate devices are presented. p17

PROFESSION Education

Technical education is the stake of the twenty first century.

> Interview made by Emmanuelle Jeanson

A law was passed at French Parliament in November 2009 with regard to careers guidance and vocational training. About deciphering the changes to come, with Isabelle Cauvin, who is involved as member of several professional bodies. p14

ROUNDTABLE

Renewable energy used in buildings

In order to get a vision of the future or already existing renewable energy applied in buildings, AICVF on 11 December 2009, organized a talk show with the following participants:

Catherine Di Costanzo, Robert Gregori, David Thomas, Thierry Dupuis and Wael Elamine. p22

DOSSIER I

Grenelle environnement and technical innovations

> By Thierry DUPUIS

Grenelle I is the basis established by the public authorities to fight against the climate change, to protect bio-diversity, eco-systems and natural environments and to prevent any hazard related to health and environment. The main principles: improve existing measures, develop new tools and implement mandatory works from 2012. p26

A collective venture

The axes for progress written out by the Grenelle environment council build up high expectations. For the building industry, technical mastery and qualification are of major importance. p27

Natural insulation materials for tomorrow

The improvement of thermal insulation calls for research into the most energy-saving materials. Life-cycle analysis, from manufacturing to disposal, is part of the selection criteria. An overview is given of materials and of construction systems to be anew considered. p30

Installation: the equipment and their implementation

A summary of the main systems using renewable energies, and the capabilities and conditions required for their success. p33

Quality of materials: Which stamps for which guarantees?

In order for the contractors to be insured for the works they realise, various qualifications or certifications are required of the equipment and materials they install. An overview is given of the markings and of the approval procedures presently in force. p34

Qualification, designation, certification: how to look clearer into?

In view of their selection by owners and builders, the contractors may apply to various bodies for the recognition of their technical capabilities. The article takes stock of these types of systems.

DOSSIER II

Heat recovery and free-cooling

> By Franck Benassis and Jack Bossard

The reduction of energy consumption and decrease of the CO₂ emission prompt all the building industry contributors to look for and apply technical solutions related to heating and air-conditioning sector.

Heat recovery and free-cooling are in the same

time right answers and applicable solutions. Tax on CO₂ emission shall boost those solutions due to the fact that this tax is foreseen to become 5 times higher by 2020. p36

Paris district cooling system: free-cooling and plant heat rejection in river Seine water

> By Ahmed ben ALLEL, Benoît SENEJEAN & Pierre POEUF

About the experience of Climespace, operator of the Paris district cooling system, with new cooling plants the condensers of which are cooled through exchangers by river water circulation. p36

Liquid subcooling, a technology still to recognise

> By Jean-Michel DEGOULET

In addition to coolant gas condensation, air heat exchangers may be used for liquid subcooling, a technology already implemented for negative temperatures but which may bring higher operating efficiencies in other cases. The article gives indications about the technology and about the energy savings and economical return which can be obtained. p40

Energy recuperation in air handling units

> By Bernard AVALLET

Energy reclaim and free-cooling are essential to reduce AHUs energy impact. Various energy recuperation systems are considered, together with their impact on other components, recuperation management system and energy efficiency and cost comparison. p42

How to build a Canadian well

> By Muriel BARBAT

The Canadian well technique provides, according to the season, pre-heating or refreshment of the air intake. The system looks simple, but construction precautions are necessary to avoid later dysfunctions. p50

Canadian wells, how it works

> By Mathieu FAUPIN

The article provides guidelines from design to maintenance of a Canadian well, including design parameters and the choice of materials. p52

Heat recuperation for domestic hot water: example of a VRV heat pump powered by gas engine

> by Florence MOULINS

New installation in France: a VRV air conditioning system powered by gas engine, the cooling of which is associated with a water heat exchanger producing hot water at 75°C for whatever usage, domestic hot water in the present case. p57

SOMMAIRE

ÉDITORIAL	3
ACTUALITÉS	6
PROFESSION	11
TECHNIQUE	
Salle propre fonctionnant en intermittence: diviser par deux la facture énergétique.....	11
FORMATION	
« La formation professionnelle est l'enjeu du XXI ^e siècle ».....	14
TECHNIQUE	
Isolation thermique par l'intérieur: panorama des différentes solutions.....	17
TABLE RONDE	
Les énergies renouvelables dans le bâtiment.....	22
DOSSIER I	
GRENELLE DE L'ENVIRONNEMENT	26
Une aventure collective.....	26
Les matériaux bio-sourcés, isolants naturels de demain.....	27
Quels équipements pour quelle mise en œuvre?.....	30
Quels marquages pour quelles garanties?.....	33
Qualifications, appellations, certifications : y voir plus clair.....	34
DOSSIER II RÉCUPÉRATION DE CHALEUR ET FREE-COOLING	36
Free-cooling et refroidissement des centrales par l'eau de la Seine.....	36
Les sous-refroidisseurs de liquide, une technologie intéressante.....	40
Récupération d'énergie dans les centrales de traitement d'air.....	42
Les groupes refroidisseurs de liquide.....	46
Comment mettre en œuvre un puits canadien.....	50
Les puits canadiens, mode d'emploi.....	52
Récupération de chaleur pour ECS.....	57
RÉGLEMENTATION	60
QUESTIONS À...	63
Pauline Mispoulet, P-Dg du Gesec	
PRODUITS / AGENDA	64

DOSSIER I Grenelle de l'environnement et innovations techniques

26



DOSSIER II Récupération de chaleur et free-cooling

36



Note : Les numéros placés à la fin des articles renvoient à une classification gérée par l'AICVF.

**Retrouvez
la Lettre de l'AICVF
à ses adhérents
en page 67**