



# European Radon Solutions Database

Prepared by :  
ERRICCA 2 *European Radon Research and Industry Collaboration Concerted Action*  
European Commission Contract N°: FIRI-CT-2001-20142

## Existing Buildings

### Case Study

Sheet N°

FR/CS/01

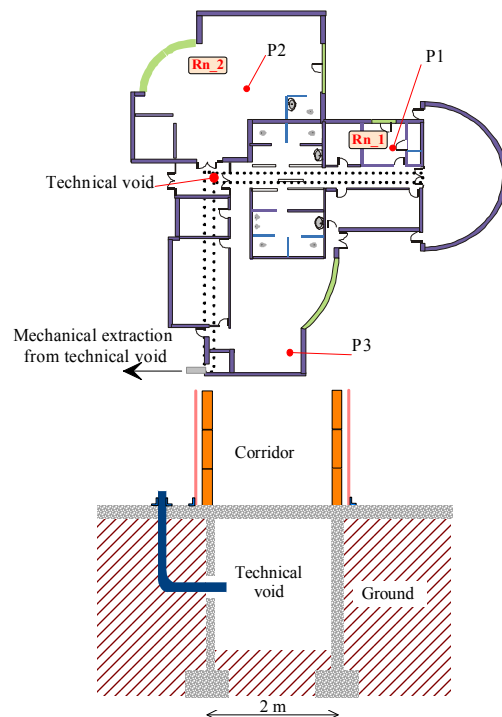
### Type

Soil Depressurisation System from a void

### Country

FRANCE

## Illustration



## Description

One level recent building dated 1995 of around 600 m<sup>2</sup>.

The basement is mainly a ground floor with a technical void present in center parts under the concrete floor.

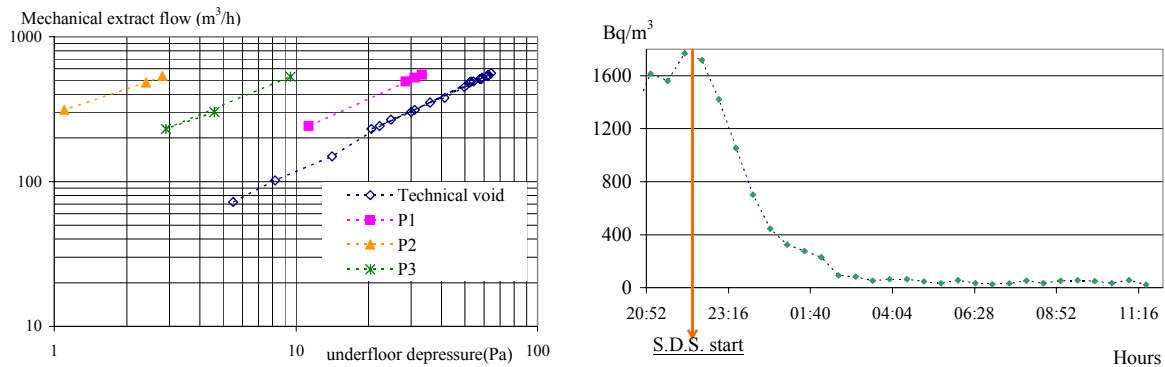
- An exhaust mechanical ventilation has been installed in the building
- Sealing works were conducted between ground and living environment (pipes, cables ...). In the mean time, air leakages between the ground under-floor and the adjacent technical void, were voluntarily accentuated in order to facilitate under-floor depressure field generated by fan from the void.
- A Soil Depressurisation System has been installed. The extract point to create depressure field on basement has been connected to technical void.

## Selection

The air renewal of the building was considered too poor (no system): interest to install a ventilation system for radon problem and for a better Indoor air quality in general.  
The accessible technical void seemed to be appropriate to depressurise basement.

## Pre-installation Diagnosis

Mechanical extraction from the void has been undertaken with a variable velocity fan in order to test the basement ability to be depressurised and to dimension the necessary extraction rate. Pressure difference measurements have been done at P1,P2 and P3. Under pressure was considered satisfactory with a 300 m<sup>3</sup>/h extract flow (0,5 m<sup>3</sup>/h/m<sup>2</sup>). Once this rate has been known, radon concentration has been measured once the system began to run.



## Radon reduction achieved

- Measurements before remediation (two months measurements – heating season): different points between 920 Bq/m<sup>3</sup> and 1990 Bq/m<sup>3</sup>.
- Measurements after remediation (two months measurements– heating season): two points at 21 Bq/m<sup>3</sup> and 37 Bq/m<sup>3</sup>.
- Approximate remediation cost: 15 000 €.

## Further Information

Centre Scientifique et Technique du Bâtiment (CSTB)  
Département Développement Durable (DDD)

*Bernard Collignan*

84, avenue Jean Jaures BP 02  
77 447 Marne La Vallee Cedex 2

FRANCE

<http://www.cstb.fr/>

Tel. : 01 64 68 85 97 (France) Fax : 01 64 68 83 50 (France)

+ 33 164 68 85 97 (others) + 33 164 68 83 50 (others)

<mailto:collignan@cstb.fr>

Building case study references :

Centre polyvalent de l'enfance « Ti Glas »

29410 Saint Thégonnec

[lucien.rohou@club-internet.fr](mailto:lucien.rohou@club-internet.fr)

Date Prepared : november 2004