



CENTRE SCIENTIFIQUE ET TECHNIQUE
DE LA CONSTRUCTION

WETENSCHAPPELIJK EN TECHNISCH CENTRUM
VOOR HET BOUWBEDRIJF

International Energy Agency

Air Infiltration and Ventilation Centre



**IEA-ECB Annex 20 : Air flow patterns in buildings
Subtask 2 : Multizone air flows**

**Inhabitant behaviour with
regard to the use of air intakes
Measurement set-up**

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1. PURPOSE

In order to monitor the use of movable air intake grilles by the inhabitants a measurement system is set up in 9 appartments with a natural ventilation system in a building in Namur.

2. PURPOSE

The appartments to be monitored are part of an appartment building in Namur wherein a measurement campaign is going on in the framework of a CEC-DGXVII energy demonstration project. A description of the building is given in annex.

3. MEASUREMENT SYSTEM

Air intake grilles have been installed in the living room windows of the 9 appartments. See fig. 1.

The opening position of the grilles will be measured by a sliding potentiometer as indicated in fig. 2.

THERMISCH SCHOONMAAKBAAR

Type 100/82

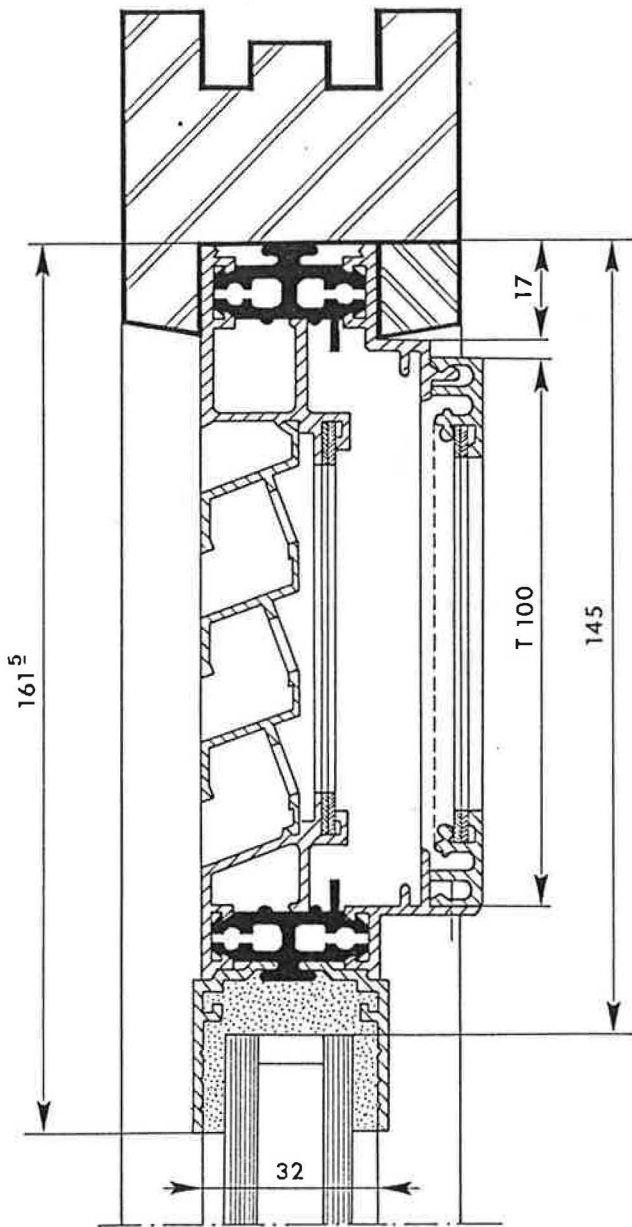
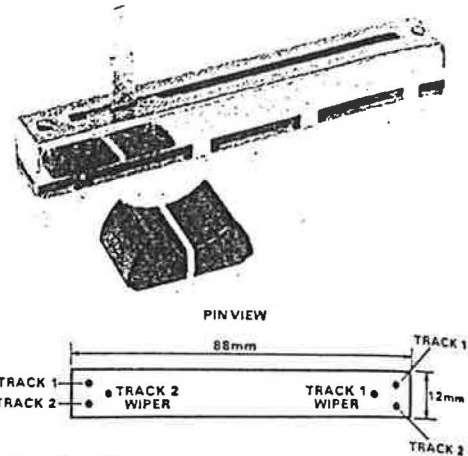


Figure 1 - Air intake grilles

slide tandem
potentiometers

NEW

H. (including slide actuator) 31
H. (body) 11

A range of 60 mm dual carbon track slide operation potentiometers, with rugged metal cases and shaft suitable for either panel or pcb mounting. Supplied complete with an attractively styled low profile black knob.

technical specification

Actuator travel	60 mm
Tolerance	= 20%
Power dissipation:	
Log	0.1 W
linear	0.25 W
Working voltage	200 V d.c. (max.)
Dual tracking error	= 2 dB
Mechanical life	15,000 cycles
Operating temperature range	0°C to 70°C
Mounting details:	
Fixing centres	80 × M3
Penetration depth	5.5 mm
Cut out for actuators	72 × 3 mm
Maximum panel thickness	4 mm

S.S.M. = 1

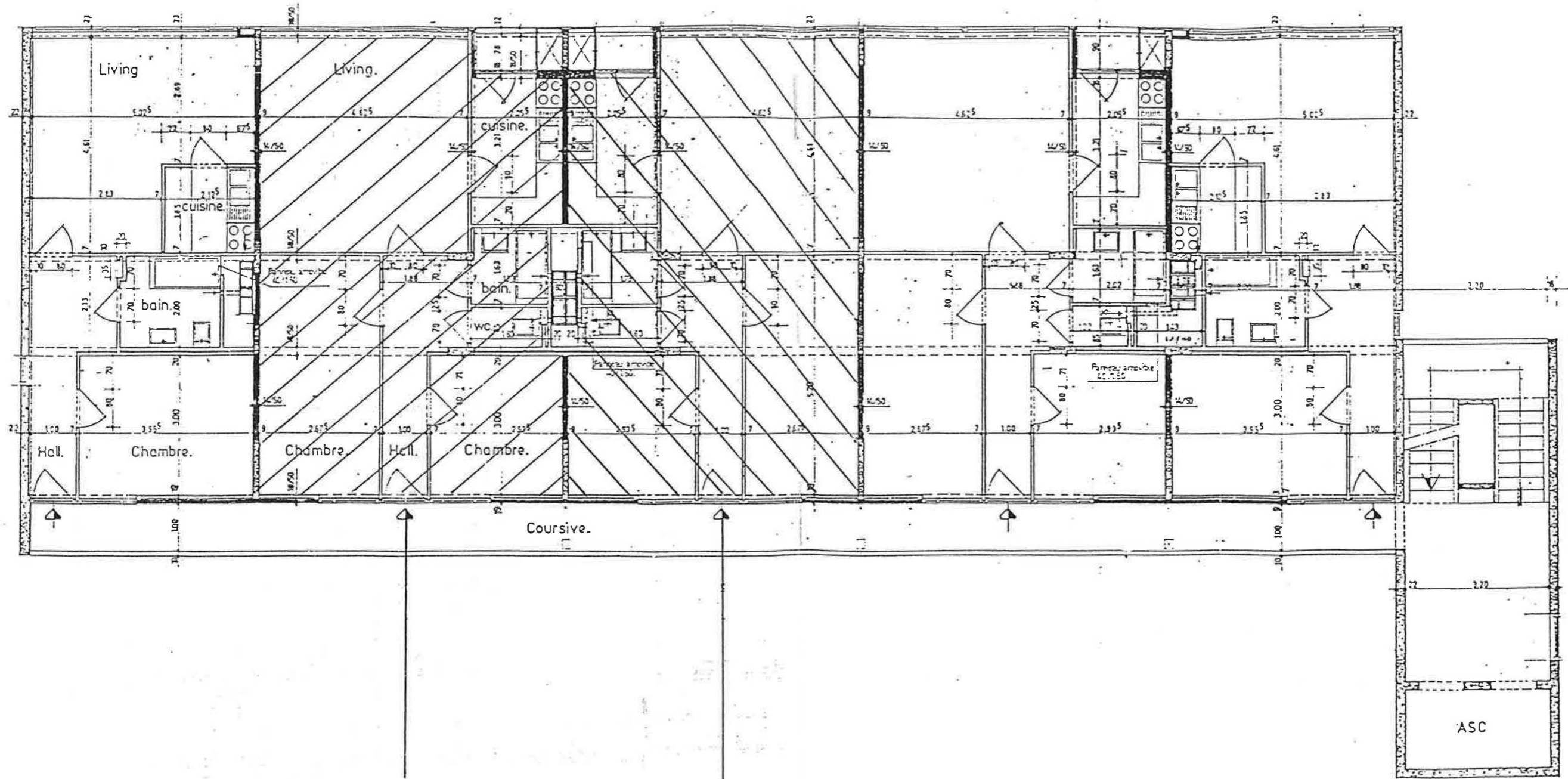
type	stock no.	
Log	10 KΩ	168-746
	22 KΩ	168-752
	47 KΩ	168-768
	100 KΩ	168-774
Linear	10 KΩ	168-780
	22 KΩ	168-796
	47 KΩ	168-803
	100 KΩ	168-819

Figure 2 - Potentiometer

Annex

Description of the building in Namur

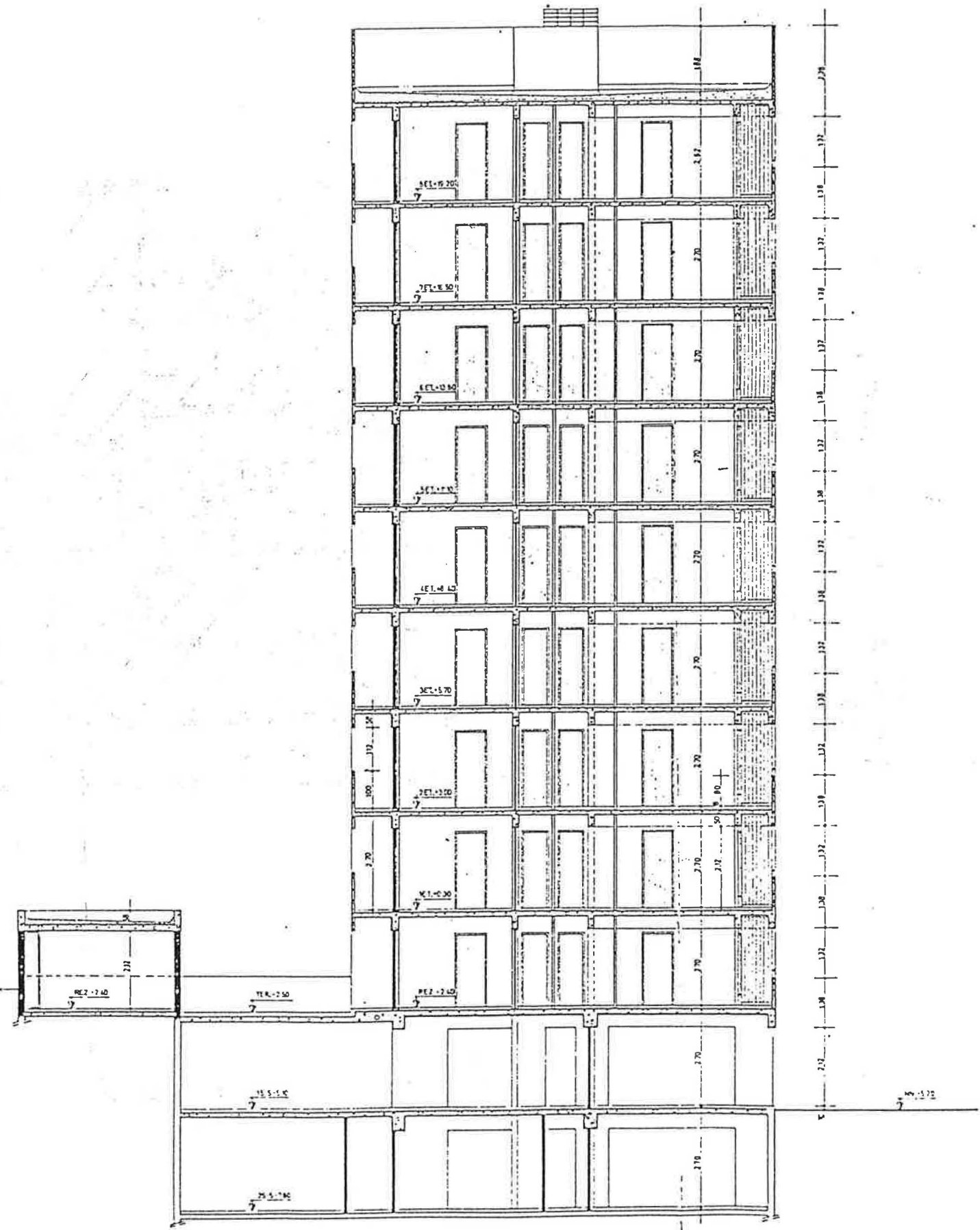
Plan étage type

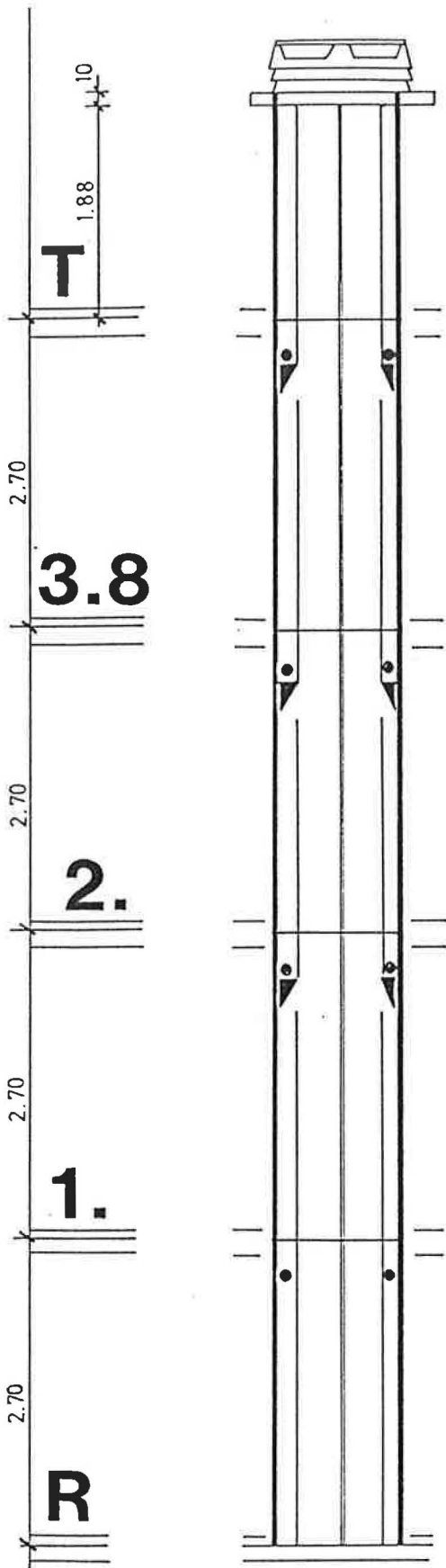


Pile nr' 4
Logement dit de 'REFERENCE'

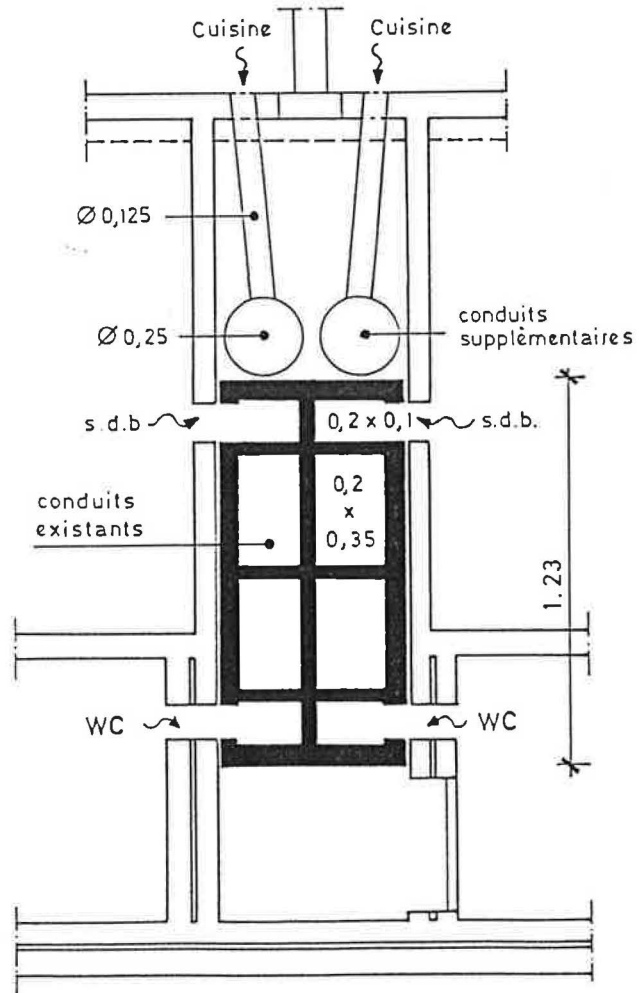
Pile nr' 3
Logement dit 'HYGROREGlable'

Coupe verticale



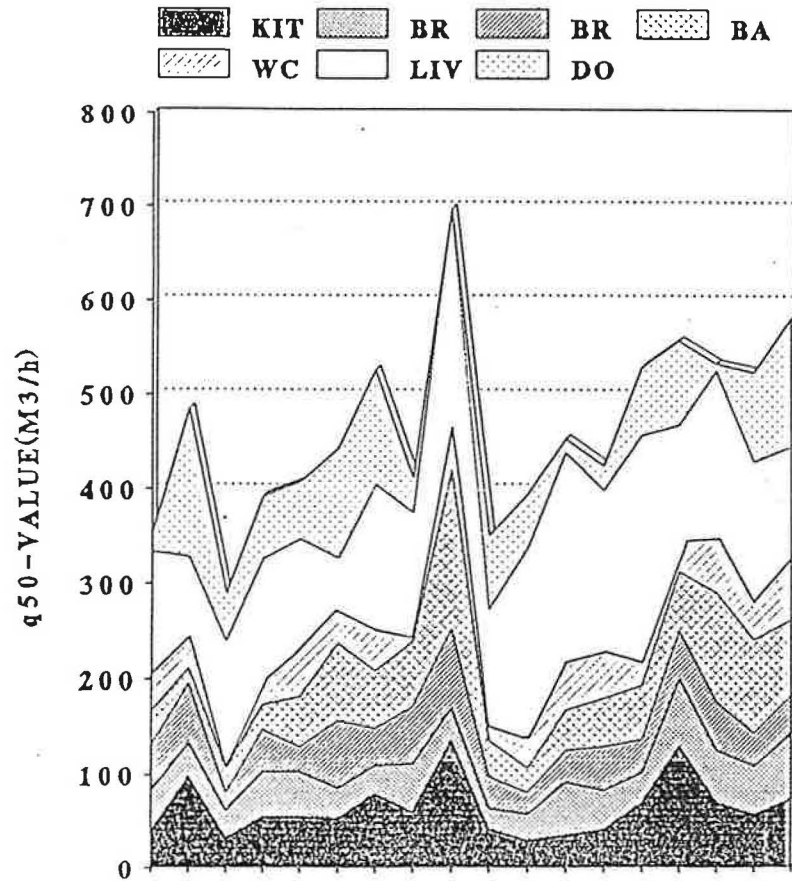


Plan de détail des conduits de ventilation

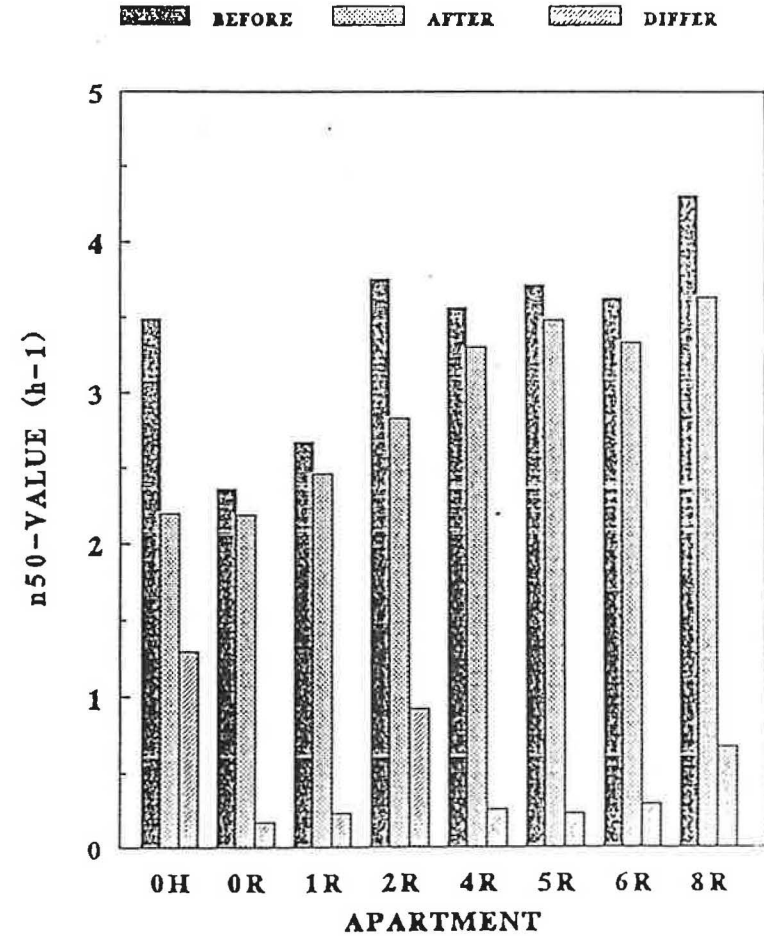


PRESSURIZATION RESULTS

NAMUR

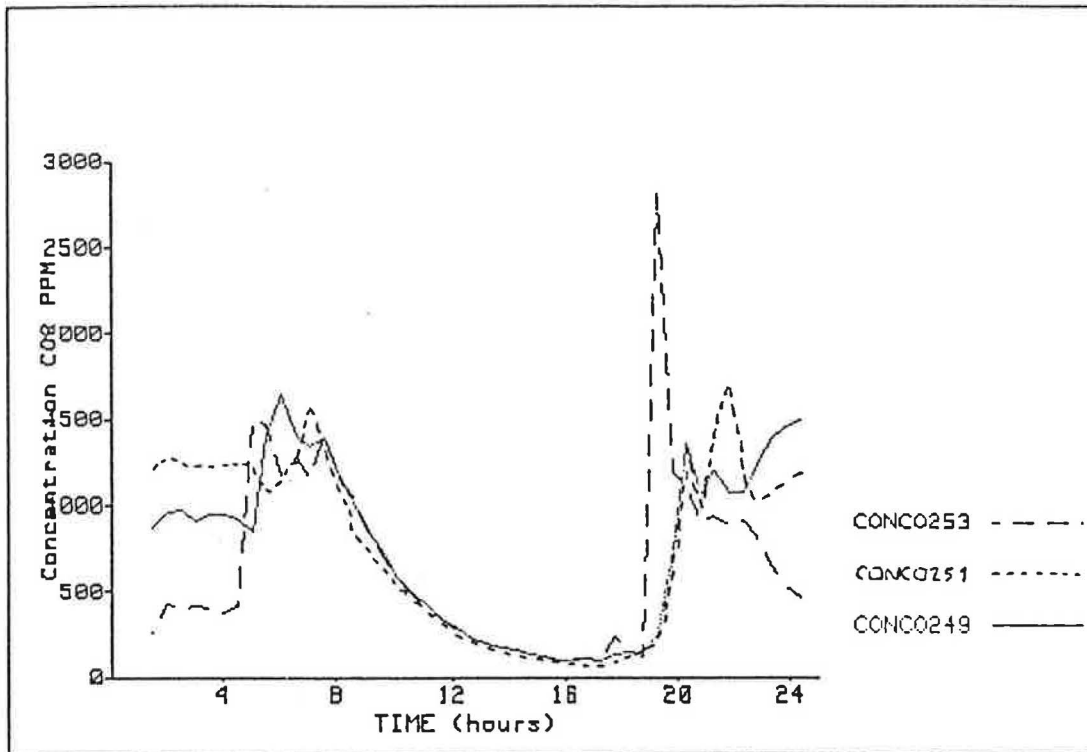


verdeling van de luchtlekken in de 18 appartementen
 KIT=keuken, BR=slaapkamer, BA=badkamer, DO=inkomdeur

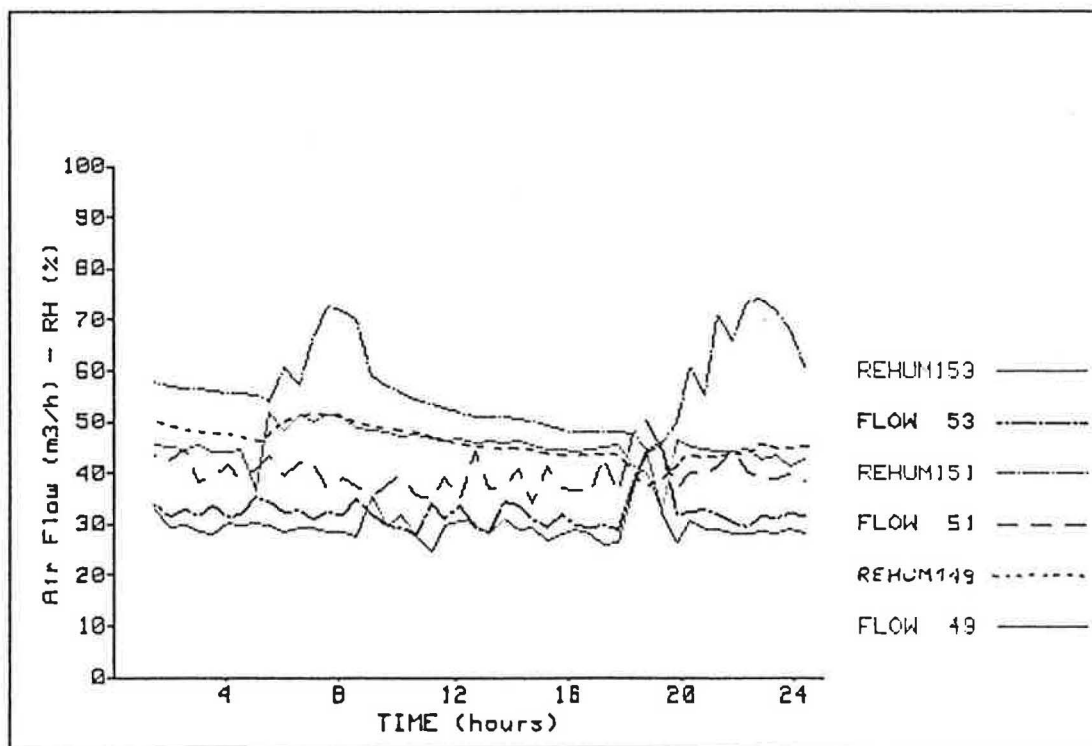


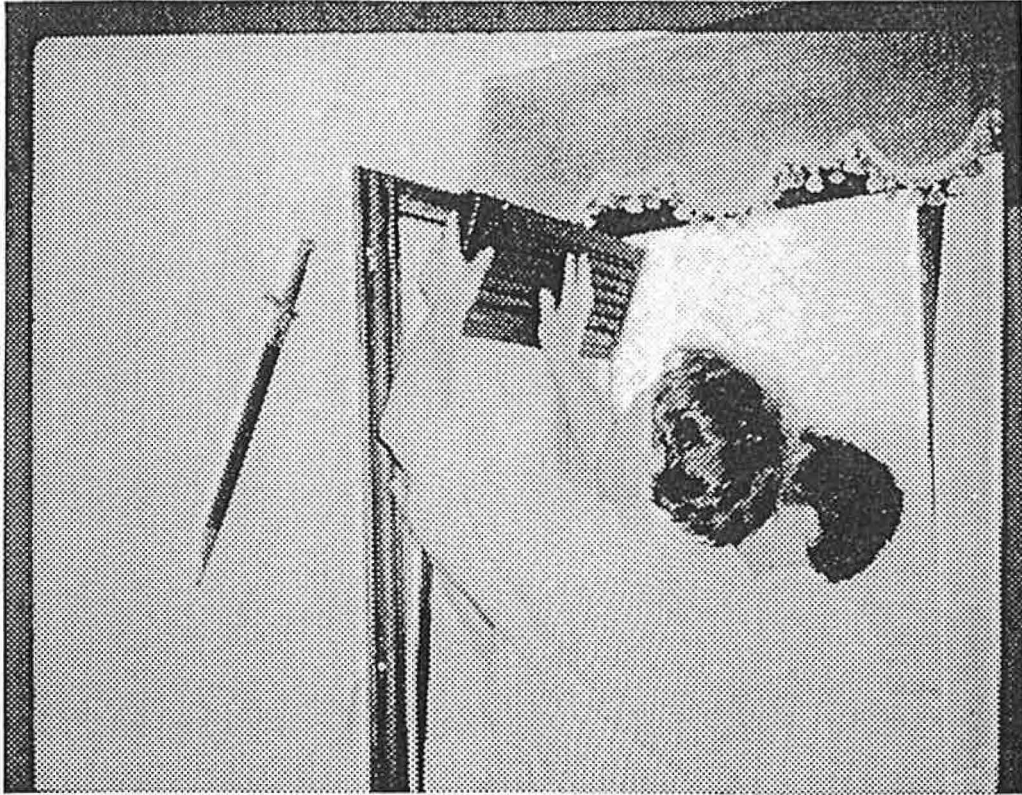
gemeten luchtdichtheid voor en na verbetering
 van de luchtdichtheid van de inkomdeur

VOORBEELD VARIATIE CO₂-NIVO'S IN KEUKEN, BADKAMER EN WC



VOORBEELD VARIATIE RELATIEVE VOCHTIGHEID EN DEBIETEN IN VENTILATIEKANALEN





INSTALLATIE VAN VENTILATIEROOSTER IN WOONKAMER
VAN DE EEN REFERENTIEAPPARTEMENT



INSTALLATIE VAN HET MEETSISTEEM OP DE GEVEL