



# Acoustics Laboratory in Turku, Finland

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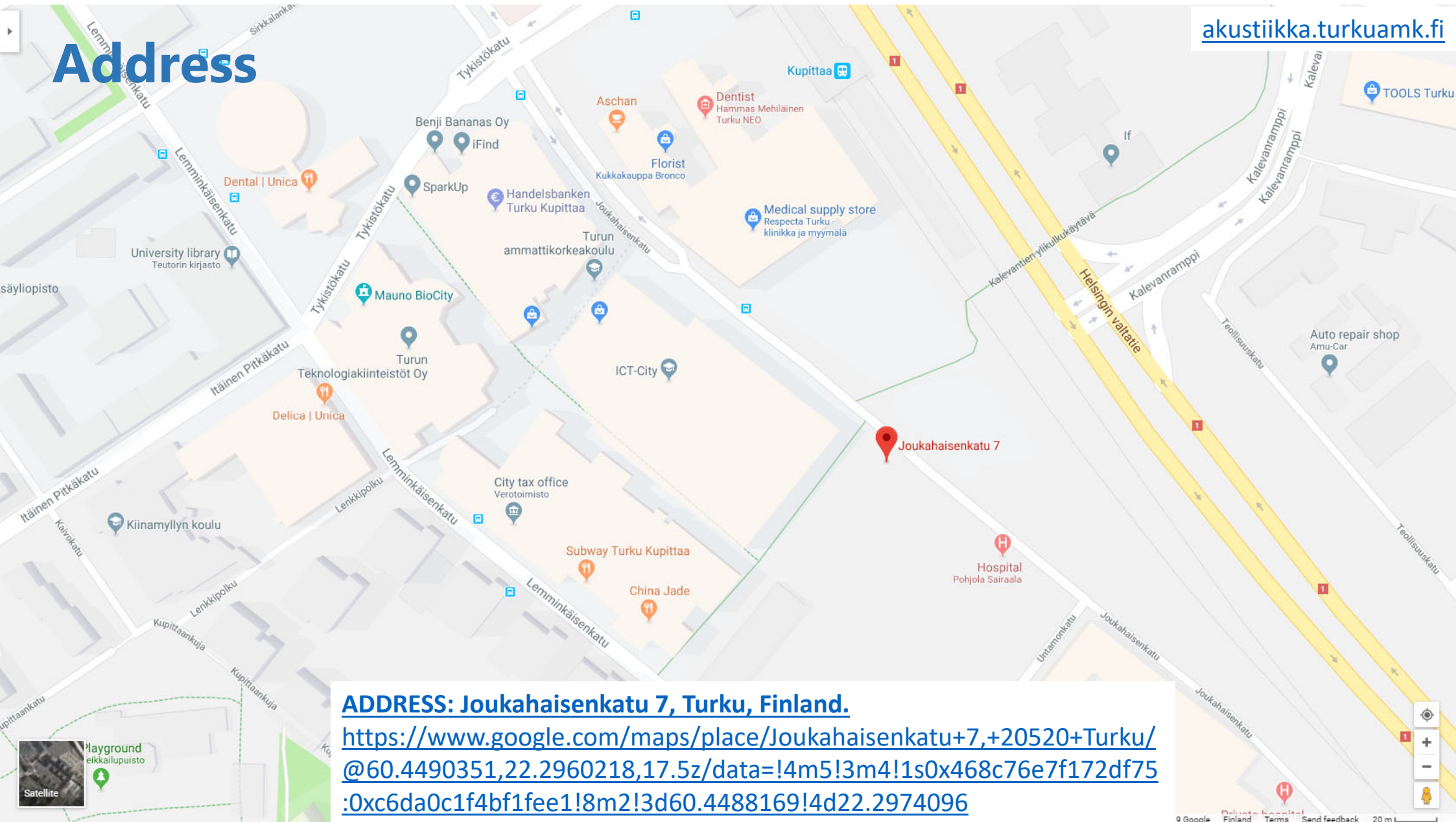
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# Address

[akustiikka.turkuamk.fi](https://www.akustiikka.turkuamk.fi)



**[ADDRESS: Joukahaisenkatu 7, Turku, Finland.](https://www.google.com/maps/place/Joukahaisenkatu+7,+20520+Turku/@60.4490351,22.2960218,17.5z/data=!4m5!3m4!1s0x468c76e7f172df75:0xc6da0c1f4bf1fee1!8m2!3d60.4488169!4d22.2974096)**

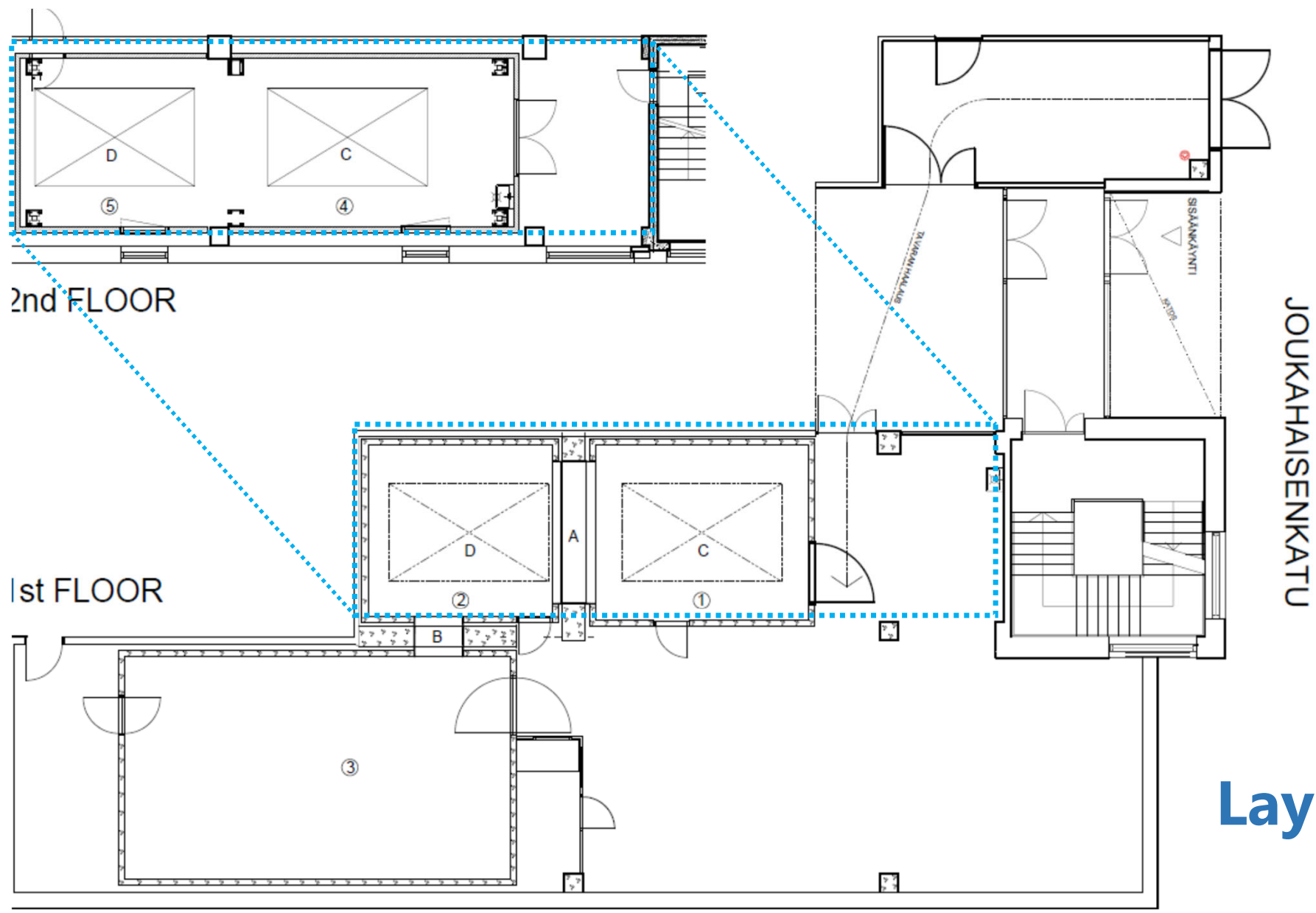
**<https://www.google.com/maps/place/Joukahaisenkatu+7,+20520+Turku/@60.4490351,22.2960218,17.5z/data=!4m5!3m4!1s0x468c76e7f172df75:0xc6da0c1f4bf1fee1!8m2!3d60.4488169!4d22.2974096>**

# Most usual test methods

- **Impact sound insulation**, ISO 10140-3 & ISO 717-2
  - Floors and roofs
  - Reduction of impact sound pressure level  $\Delta L_w$
- **Airborne sound insulation**, ISO 10140-2 & ISO 717-1
  - Walls, doors, windows, and glazings
  - Floors and roofs
  - Ventilation routes and components
- **Sound absorption**, ISO 354 & ISO 11654
  - Acoustic materials
  - Furniture
  - Screens
- **Speech level reduction  $D_{S,A}$** , ISO 23351-1
  - Modular booths and pods (phone booths etc.)
  - Partially enclosed furniture ensembles and workstations
- **Sound power level (emission)**, ISO 3741, ISO 11200
  - Machines and equipments
- **Insertion loss and sound attenuation**, ISO 7235
  - Ventilation silencers and terminal units
- **Flow noise (emission)**, ISO 5135
  - Ventilation terminal units, dampers, fans

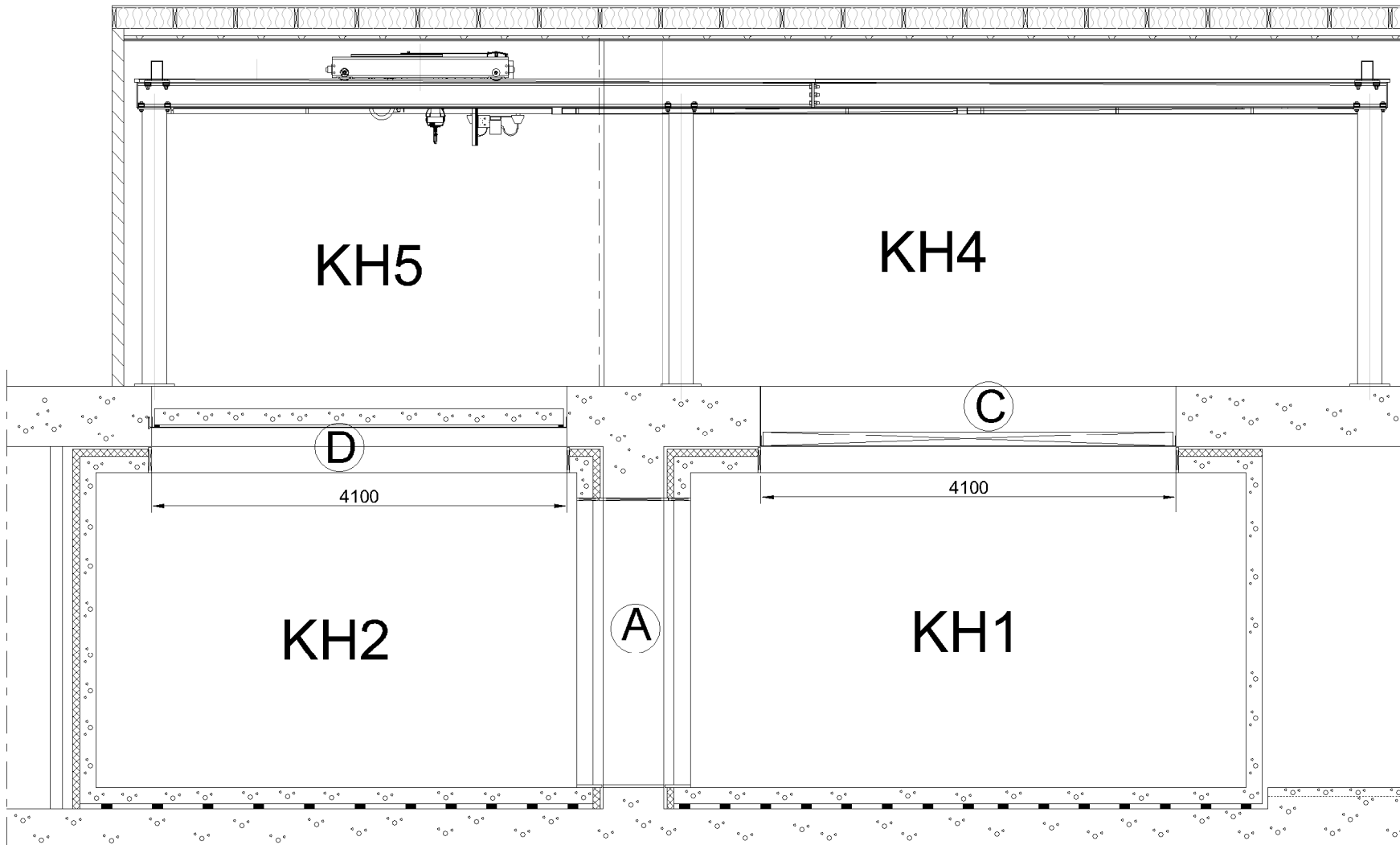
## Other tests:

- Dynamic stiffness, ISO 9052-1
  - Floor insulators
  - Sandwich insulators
  - Resilient steel studs
- Absorption coefficient, ISO 10534-1
  - Small specimens
- Flow resistance ISO 9053-1
  - thermal insulators
  - acoustic materials
- Reduction of impact sound level ISO 16251-1
  - Light floor coverings



Layout

# Section of floor test openings C and B



# Rooms and test openings

TUAS Acoustics Laboratory - Dimensions of rooms and test openings

15.12.2021.

Room	Length [m]	Width [m]	Height [m]	Volume [m <sup>3</sup> ]	Floor area [m <sup>2</sup> ]
1	5.49	4.50	3.07	75.8	24.7
2	4.75	4.42	3.06	64.4	21.0
3	9.90	5.68	3.57	200.7	56.2
4	7.86	4.32	3.40	115.4	34.0
5	4.69	4.32	3.40	68.9	20.3
4+5	12.72	4.34	3.44	190.0	55.2

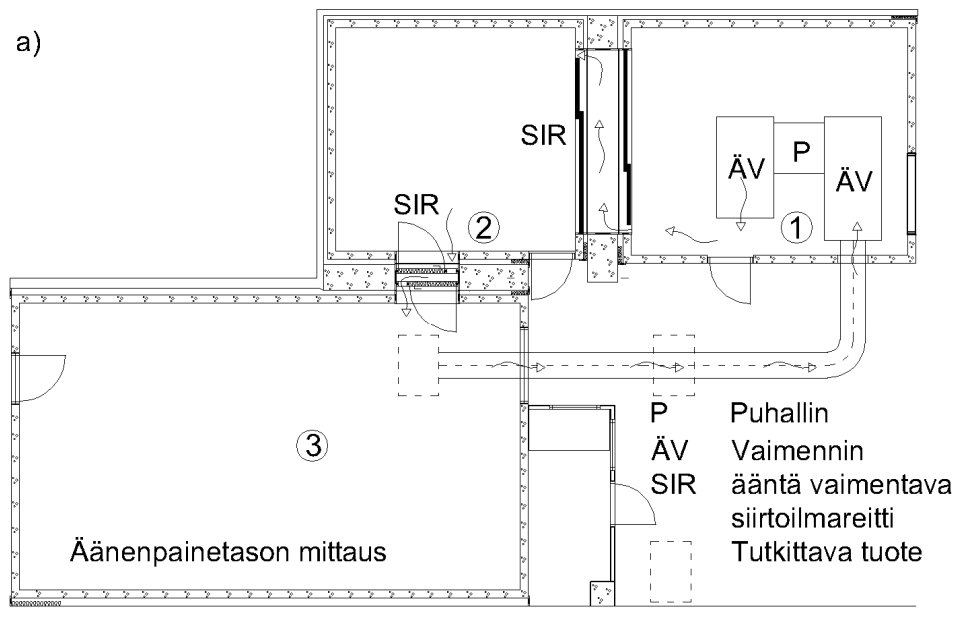
Test opening	Height [m]	Width [m]	Depth [m]	Area [m <sup>2</sup> ]
A	2.774	3.611	0.720	10.02
B	2.100	1.215	0.640	2.55
C	4.100	2.505	0.580	10.27
D	4.100	2.507	0.580	10.28

## Purposes of the test openings

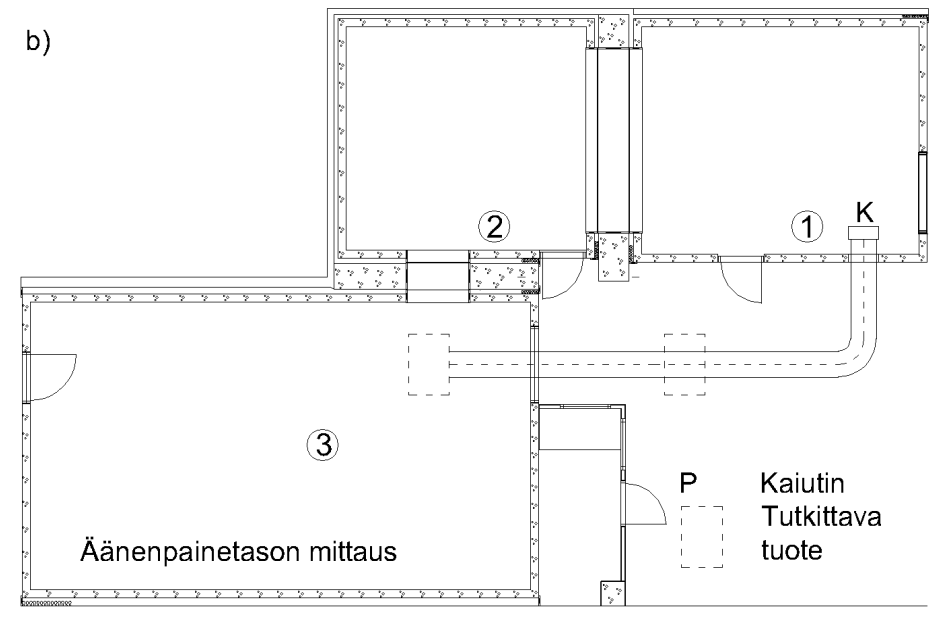
- A Airborne sound insulation of walls and glazings. Load limit 2000 kg/m.
- B Airborne sound insulation of doors, windows, wall prototypes, and small elements. Load limit 2000 kg/m.
- C Impact sound insulation and airborne sound insulation of lightweight floors and roofs. Load limit 825 kg/m<sup>2</sup>.
- D Reduction of impact sound pressure level due to floor coverings on a 160 mm concrete slab. Load limit 825 kg/m<sup>2</sup>.

# Ventilation components

## Flow noise emission



## Insertion loss (attenuation)



# "In house" load-bearing floor slabs

