Designing Wireless for a 650 Year Old Castle



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The castle

first mentioned in historical documents in 1370



Image Source: Georg Matthäus Vischer (1674)

The castle









renovated in the 1980s,
University research
institute moved in

Image Source: Wikipedia, me, Tourismusverband Mühlviertel

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What are we dealing with?

- Walls up to 2m
  - different construction materials
  - unknown internal structure
- offices, smaller lecture rooms







Legacy Wi-Fi



What makes it possible

- There is already a network
- We can mount APs*
- Low requirements

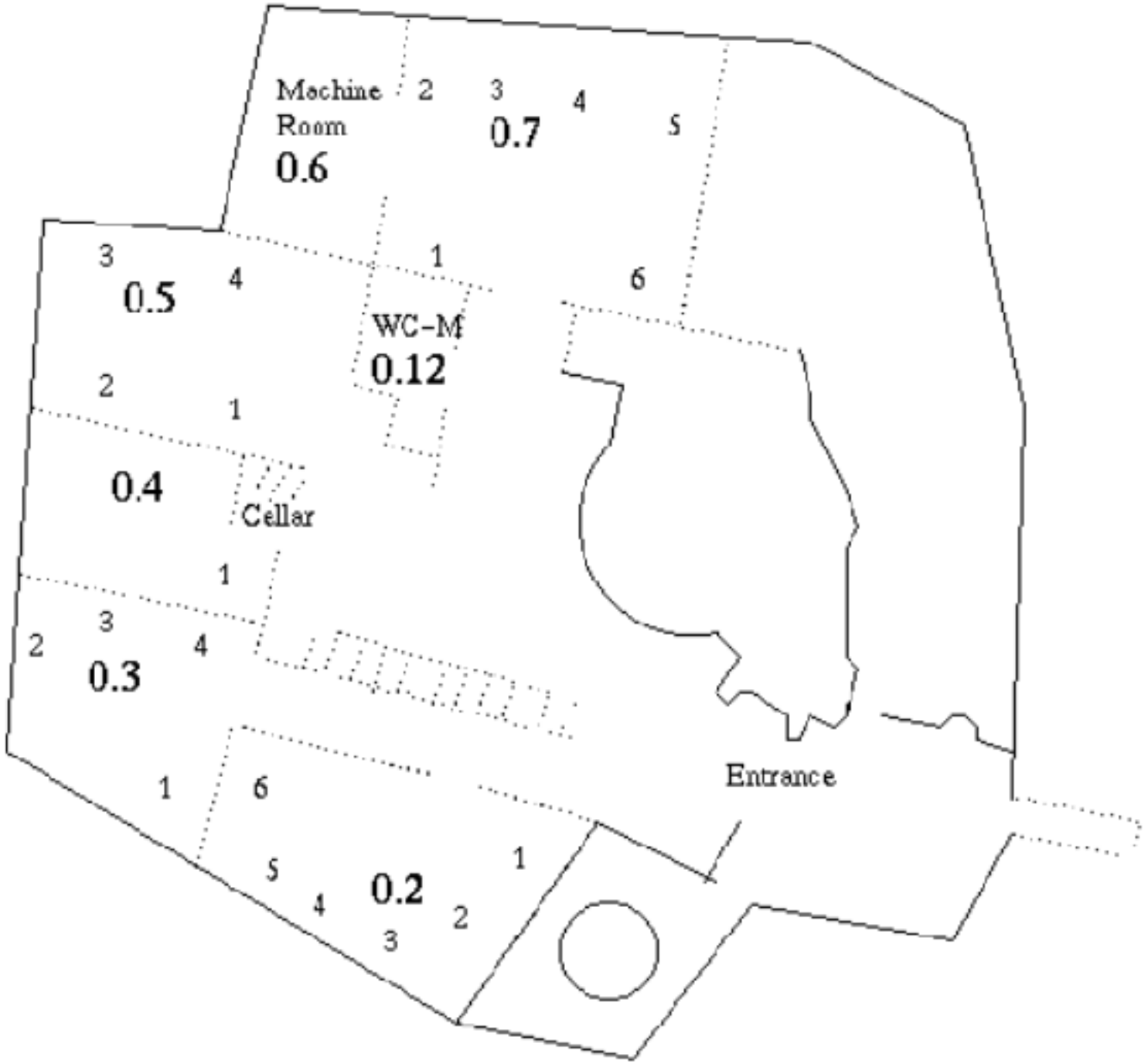
So basically 1 AP per Room that needs Wi-Fi, right?





Getting this right

First step: get Plans



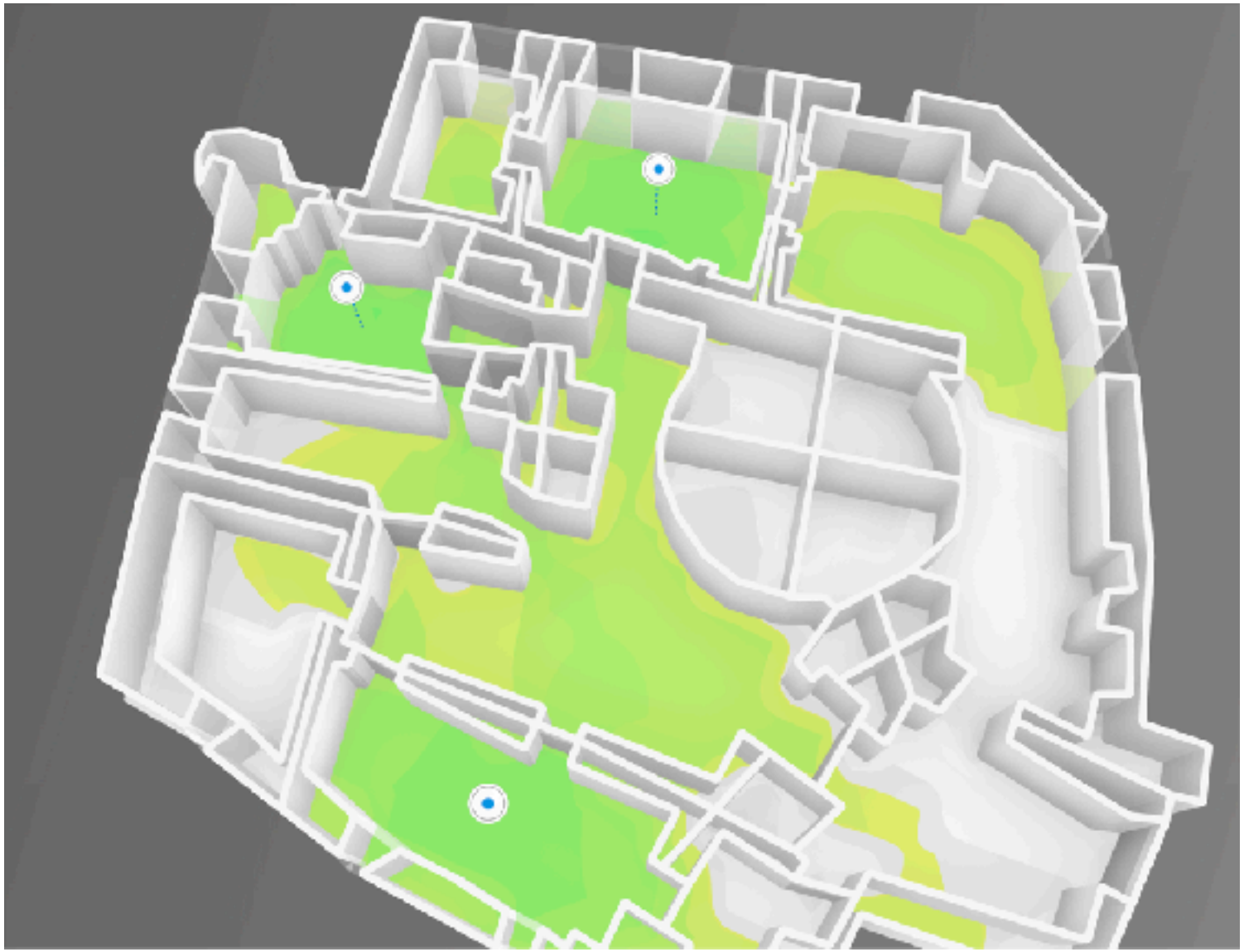
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Getting this right

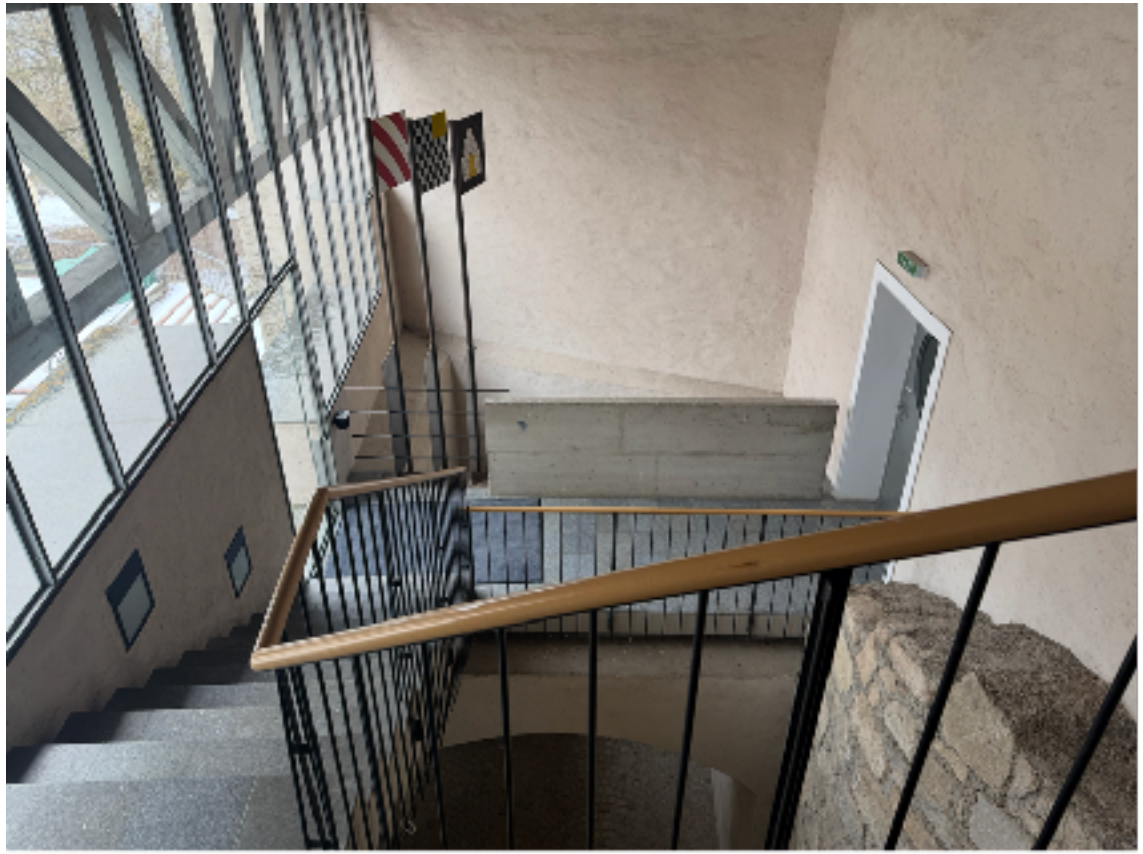
Second step: get accurate Plans



One concrete Wall is not enough



Step 3: Measureing Walls





Quick refresher on wall measuring

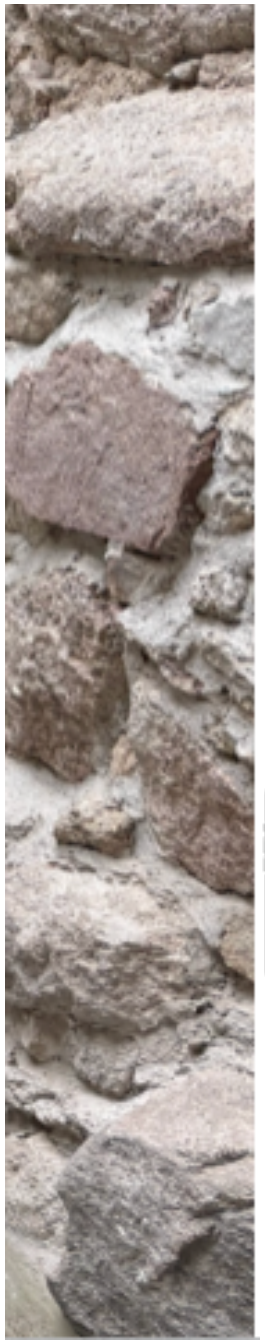


at least 4 meters



measurement 1

-50



20 dB



measurement 2

-70

Quick refresher on wall measuring

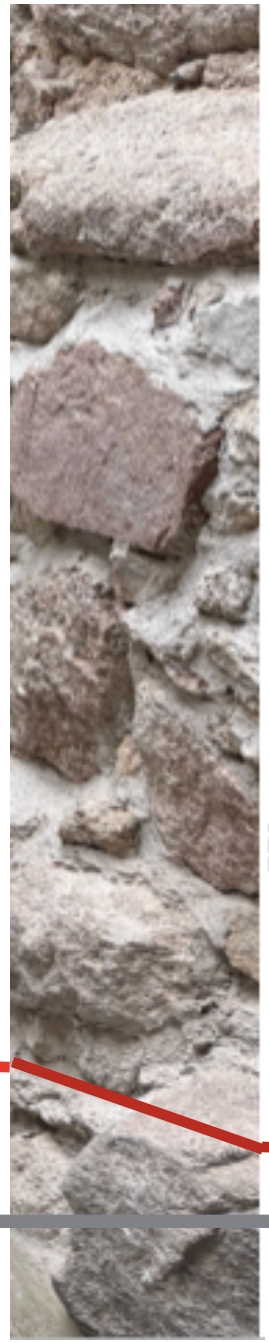


at least 4 meters



measurement 1

-50



20 dB



measurement 2

-70

2 meter wall



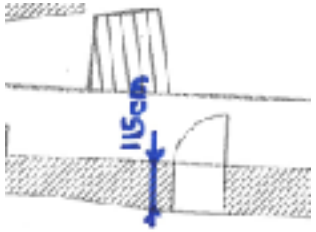
~ 40 dB

2 meter wall



~ 40 dB

115 cm wall



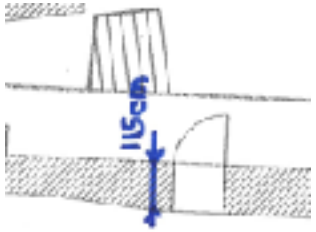
~ 22 dB

2 meter wall



~ 40 dB

115 cm wall



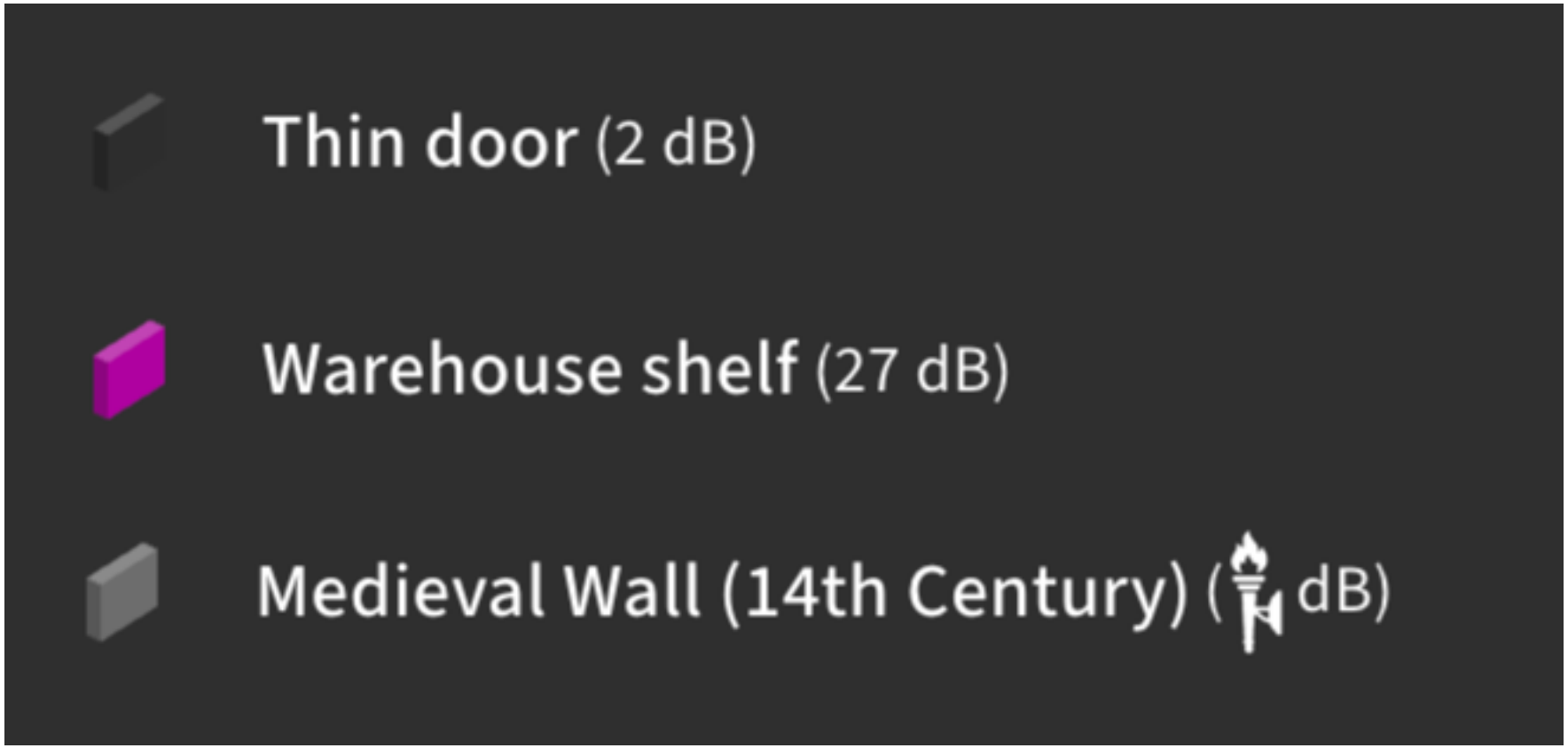
~ 22 dB

80 cm wall

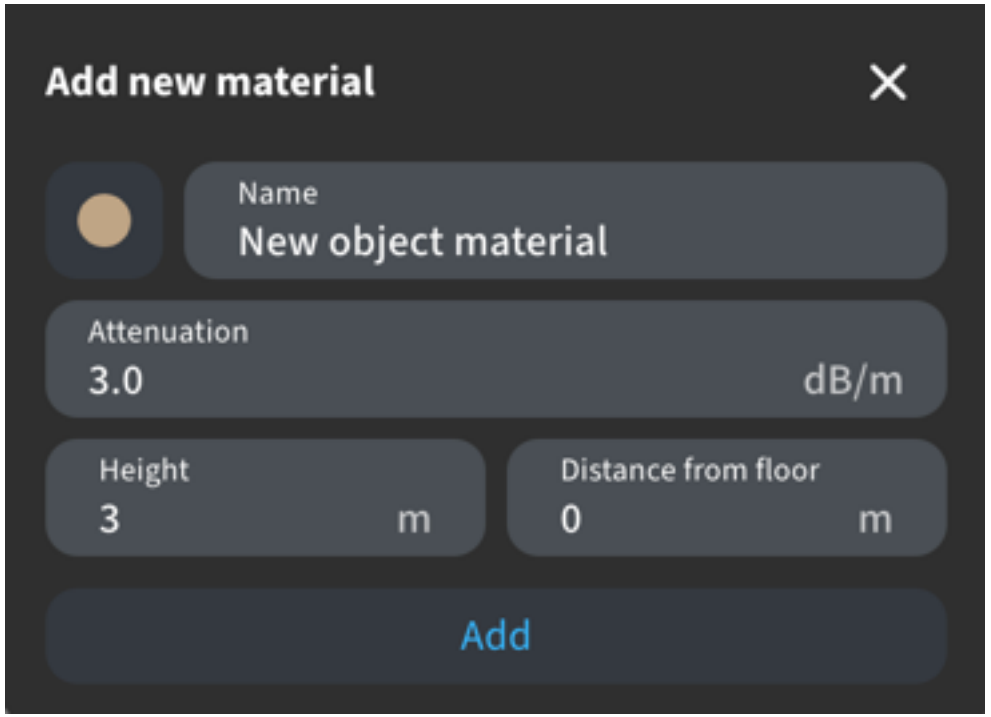


~ 18 dB

How to get this easily into Ekahau?



How to get this easily into Ekahau?

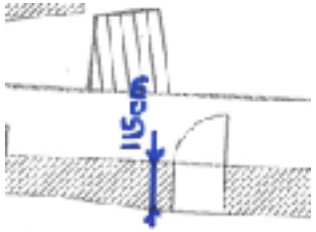


2 meter wall



~ 40 dB

115 cm wall



~ 22 dB

80 cm wall



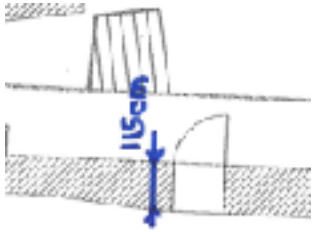
~ 18 dB

2 meter wall



~ 40 dB

115 cm wall



~ 22 dB

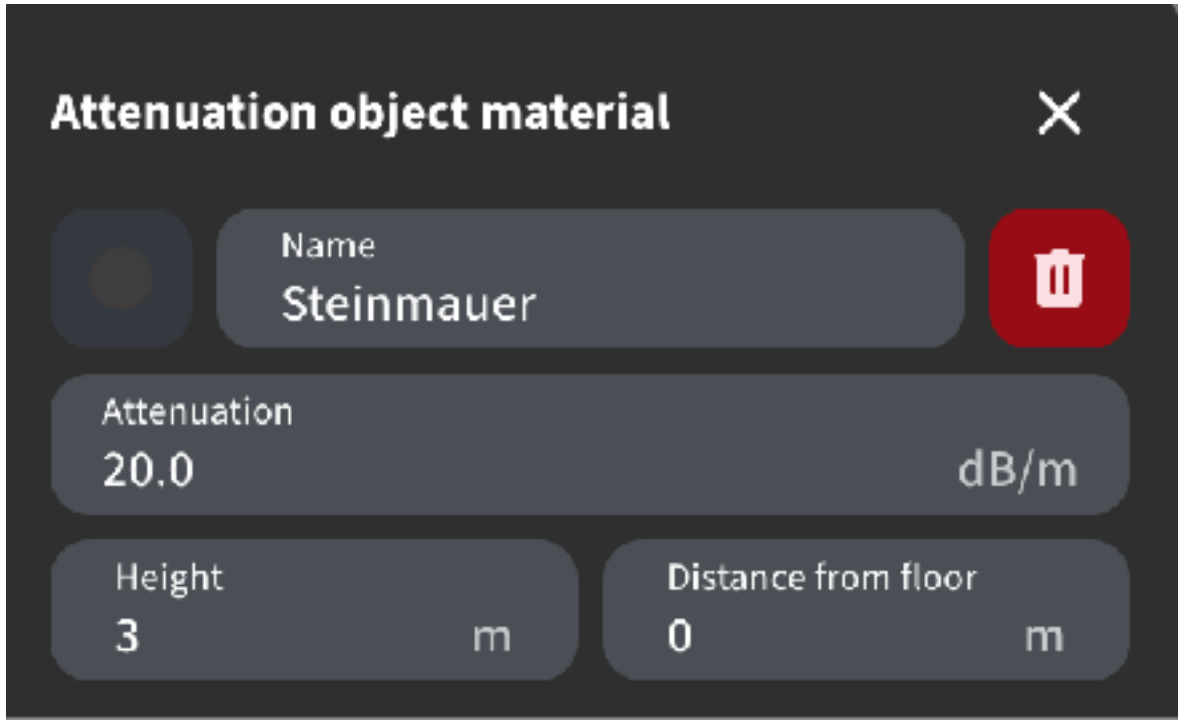
≈ 20 dB / m

80 cm wall



~ 18 dB

How to get this easily into Ekahau?



Demo

Thank you!



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