



# waag society

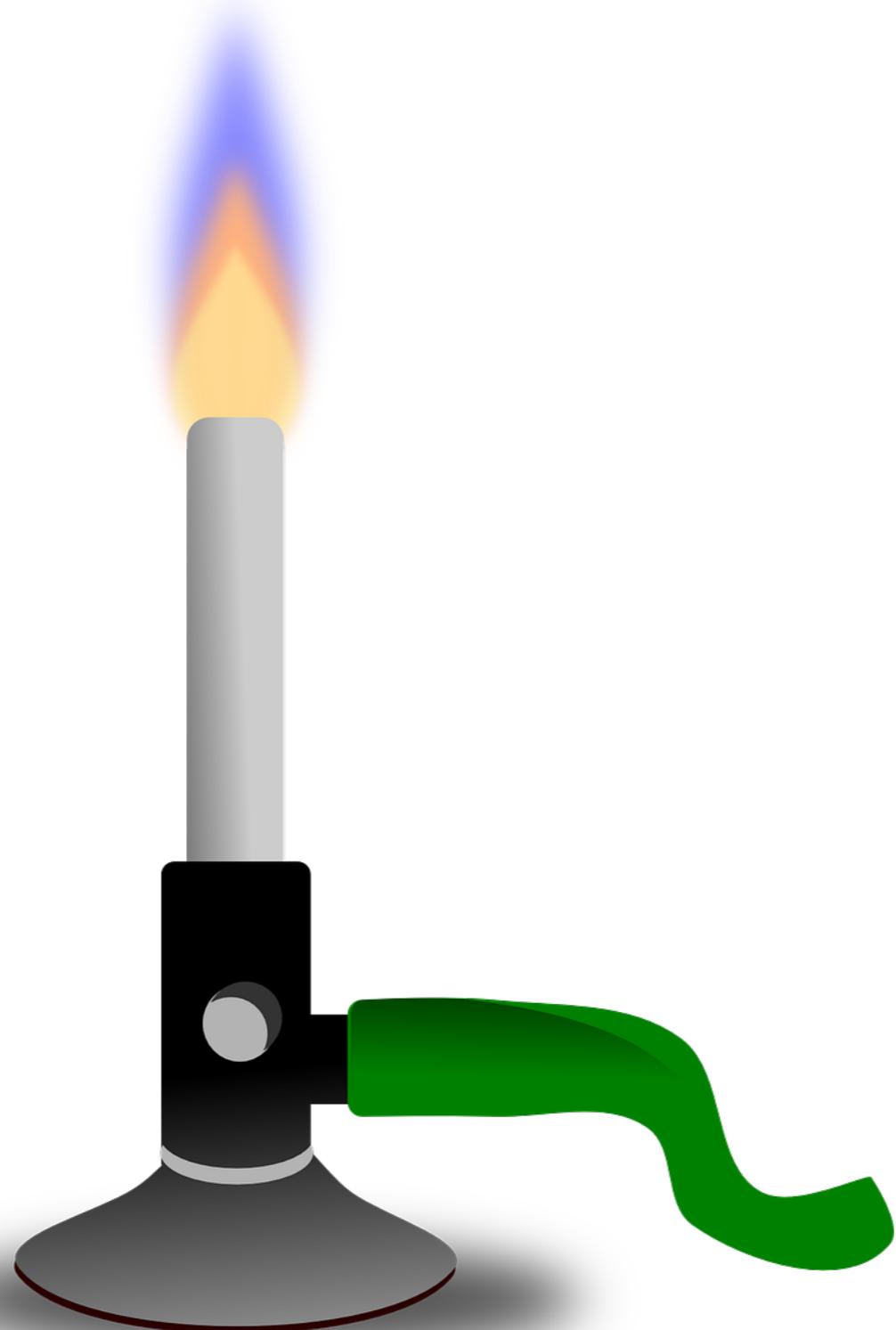
institute for art, science and technology



BioHack Academy  
Sterile Hood Design



# Working sterile





# Sterile hoods



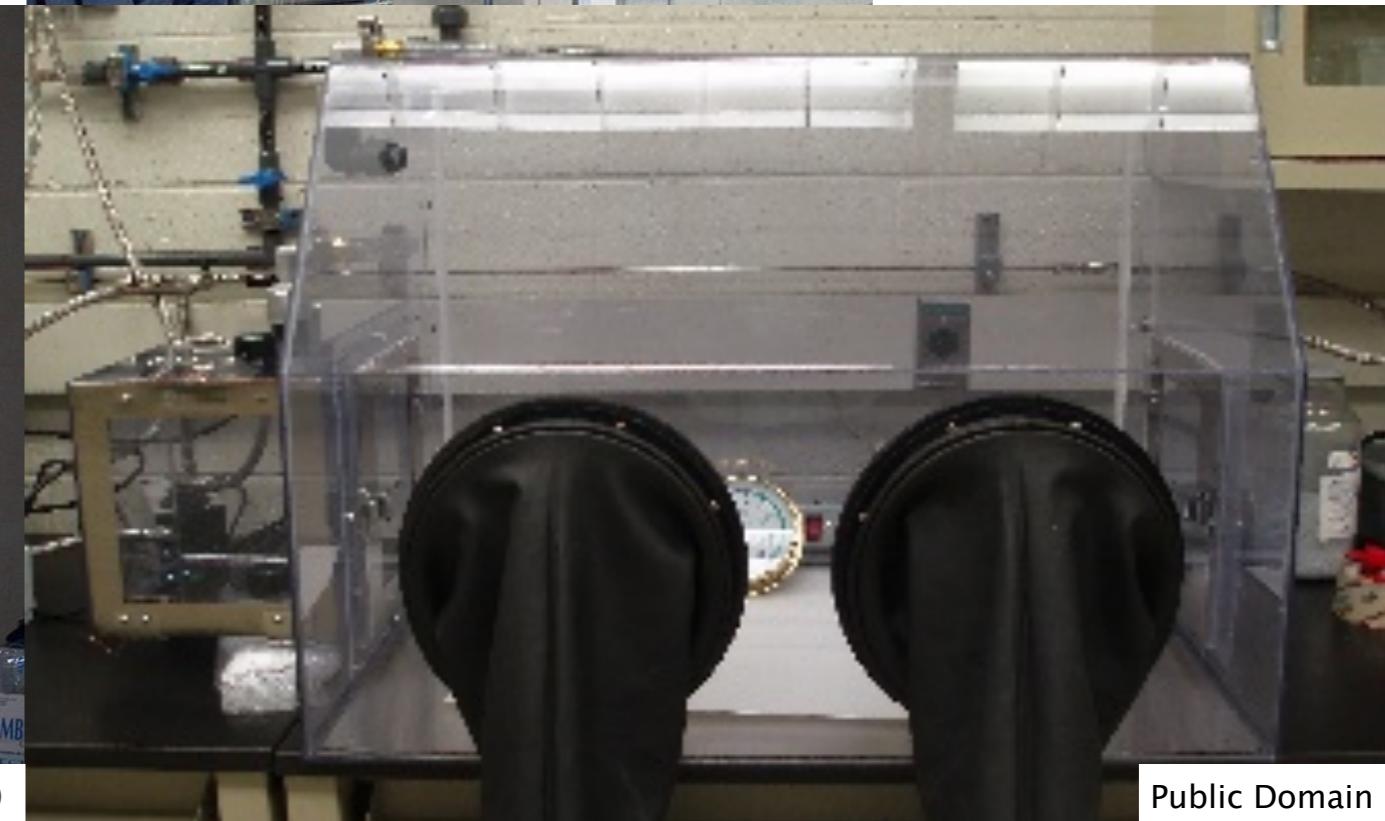
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Rudolph Simon - CC-BY-SA 3.0



José Eugenio Gómez Rodríguez - CC-BY-SA 2.0

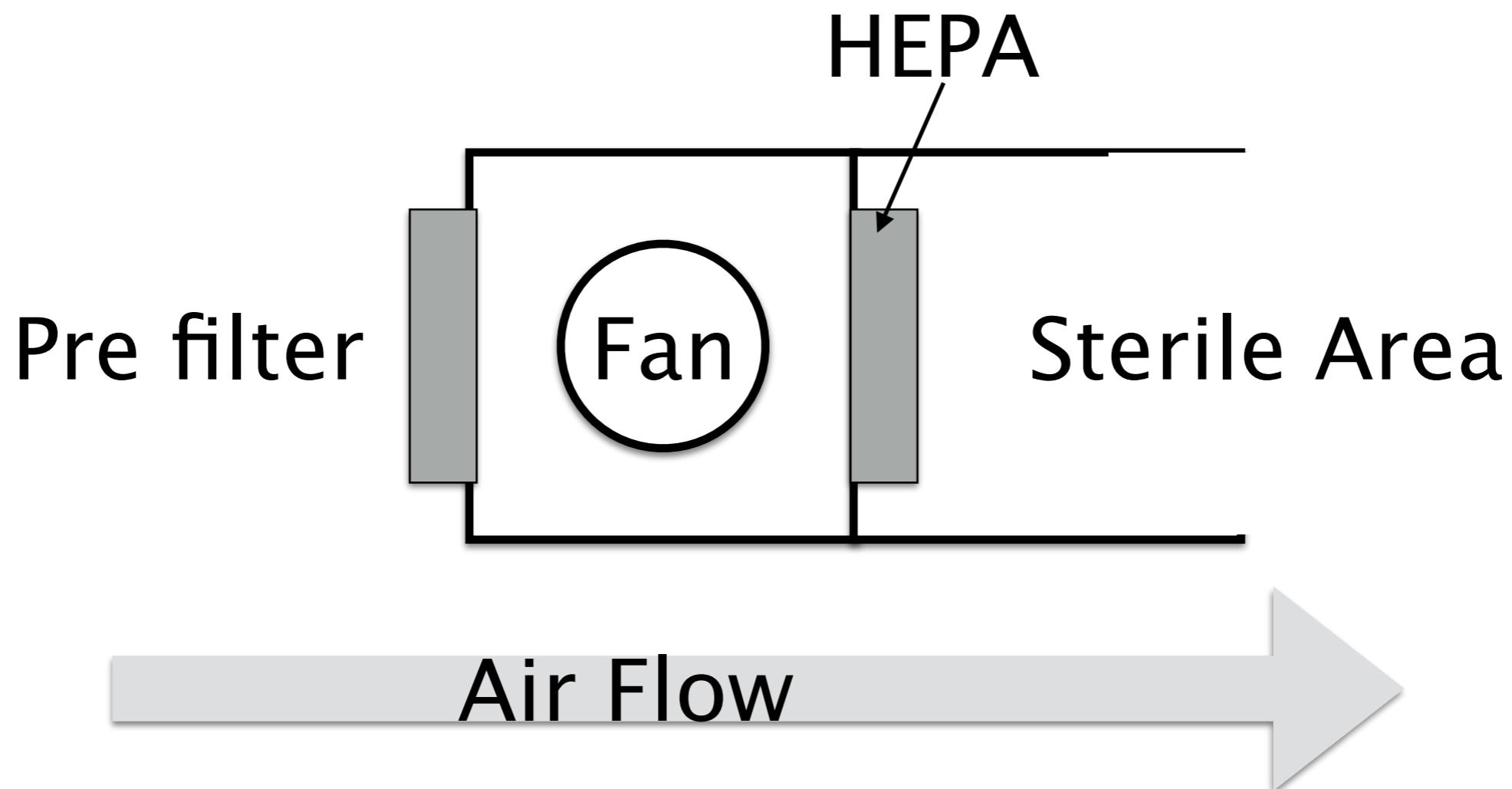


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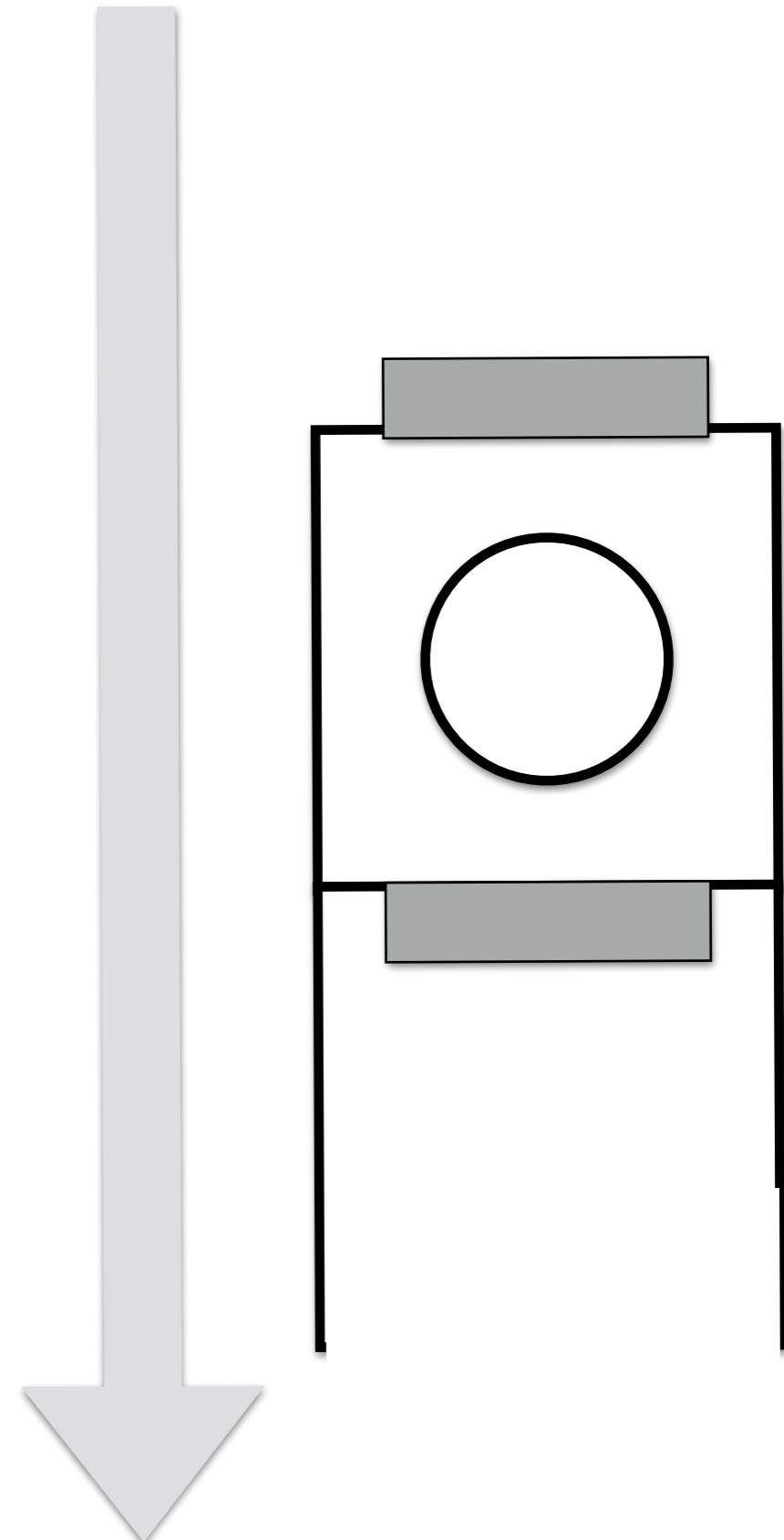
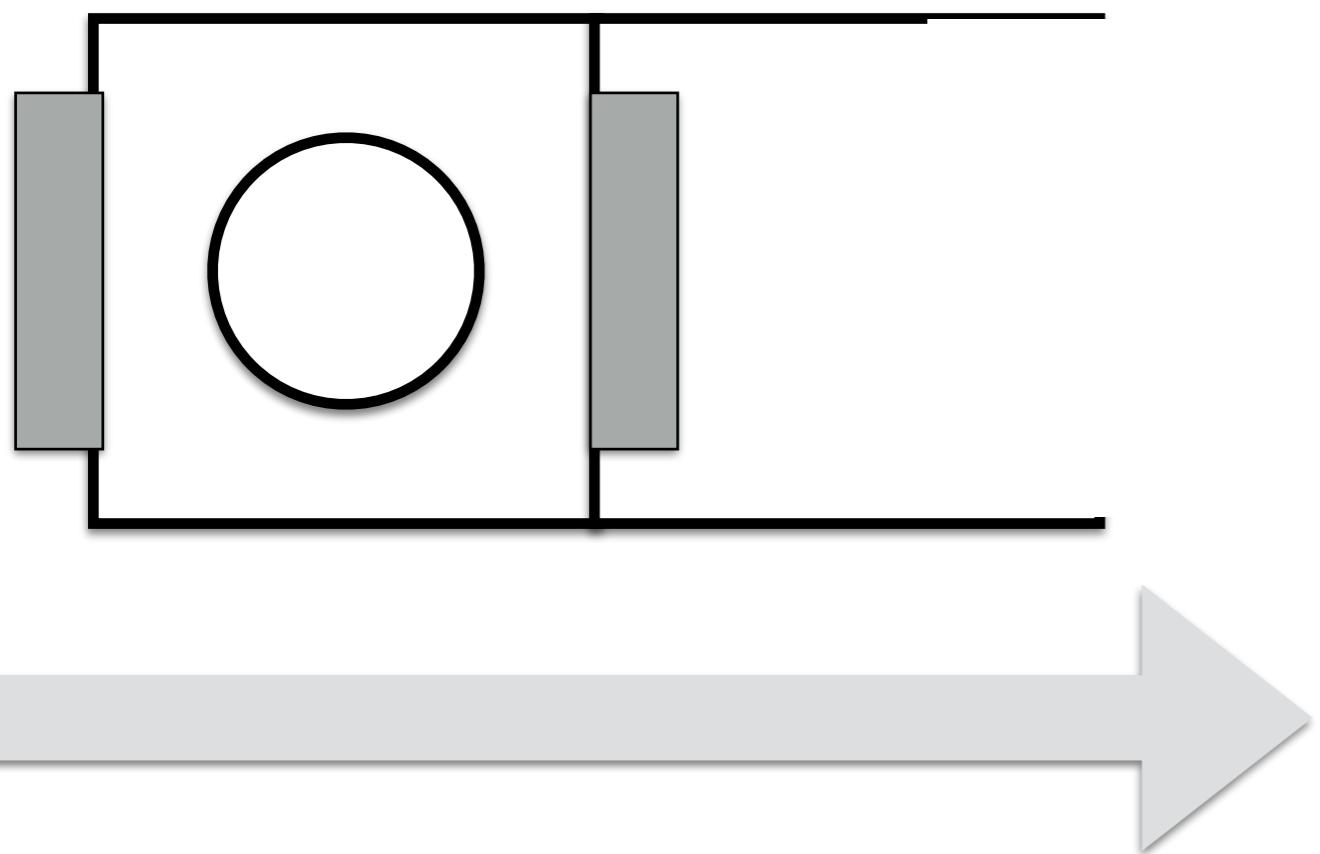
# Components

- Pre filter
- Fan
- HEPA Filter
- Minimal air flow of 0.5 m / second



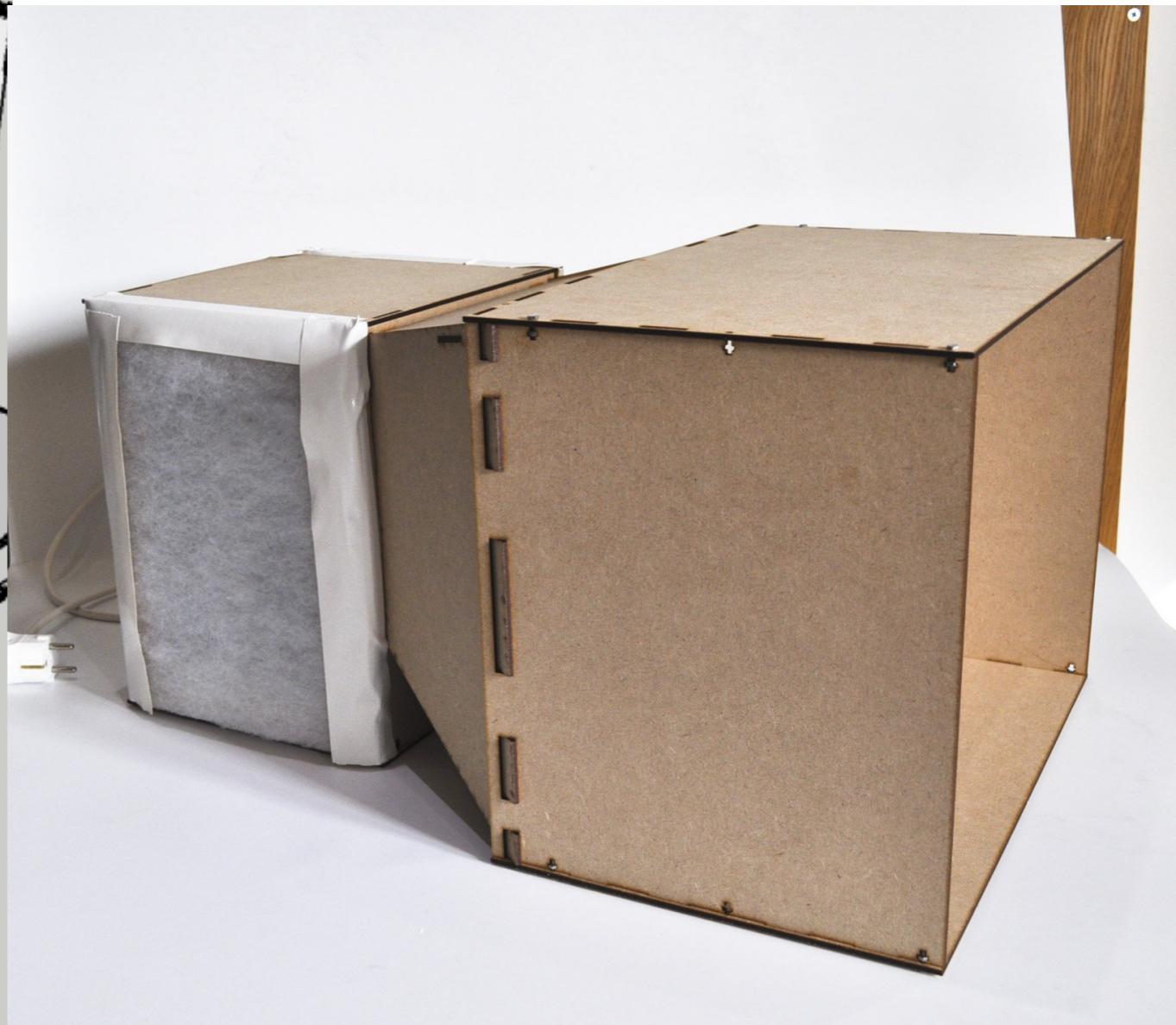
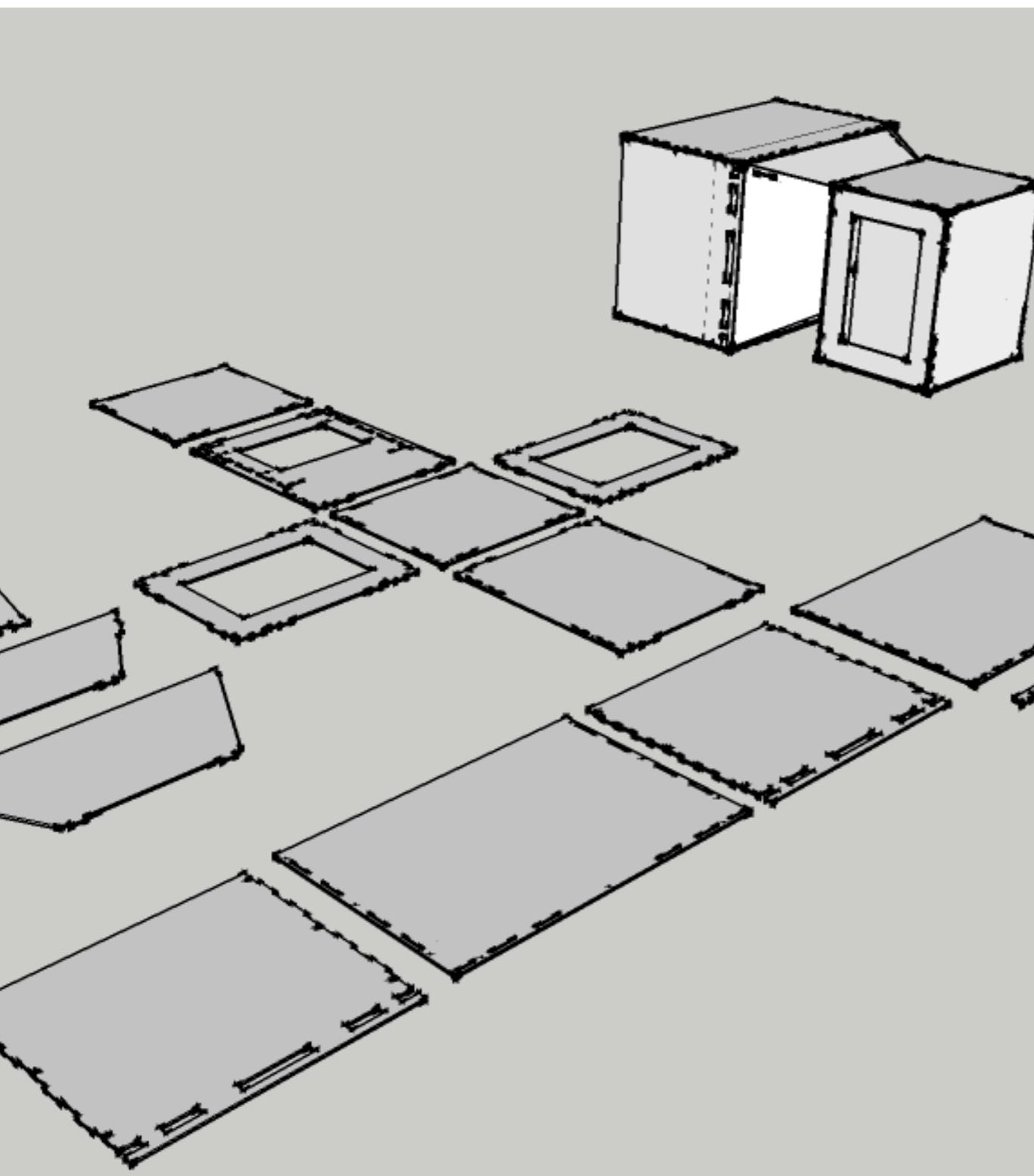


# Horizontal vs Vertical airflow



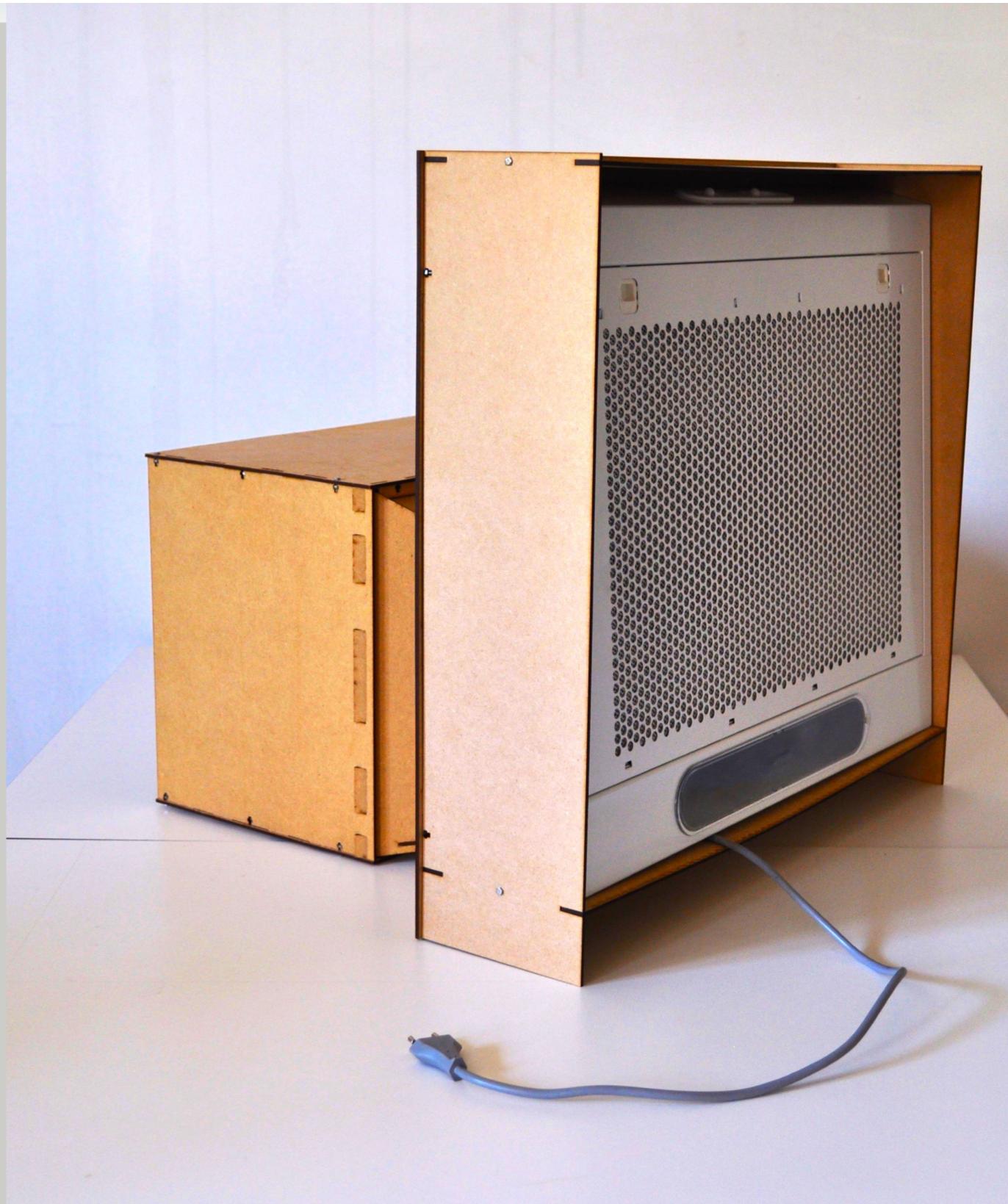
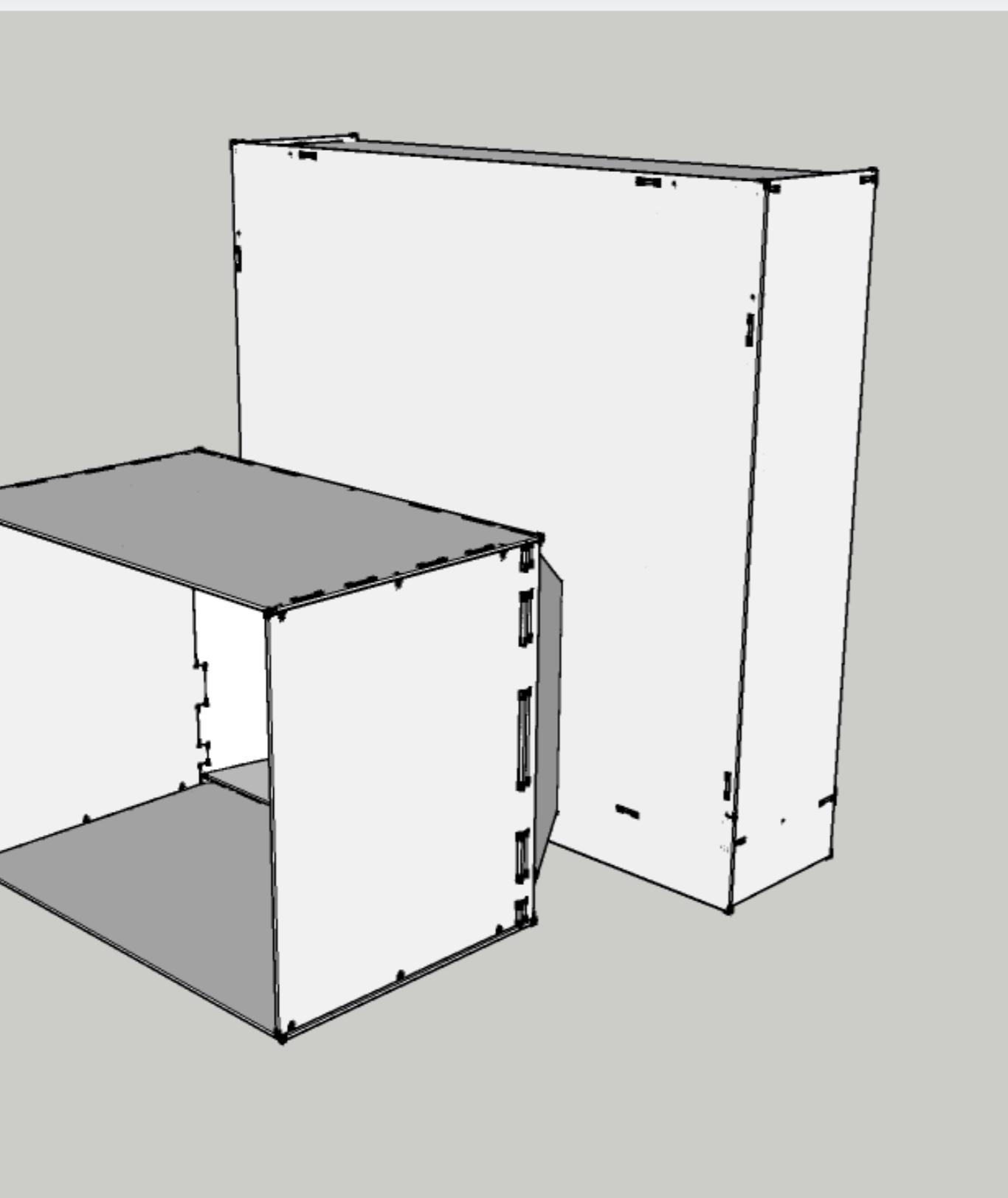


# BioHack Academy 1 Design



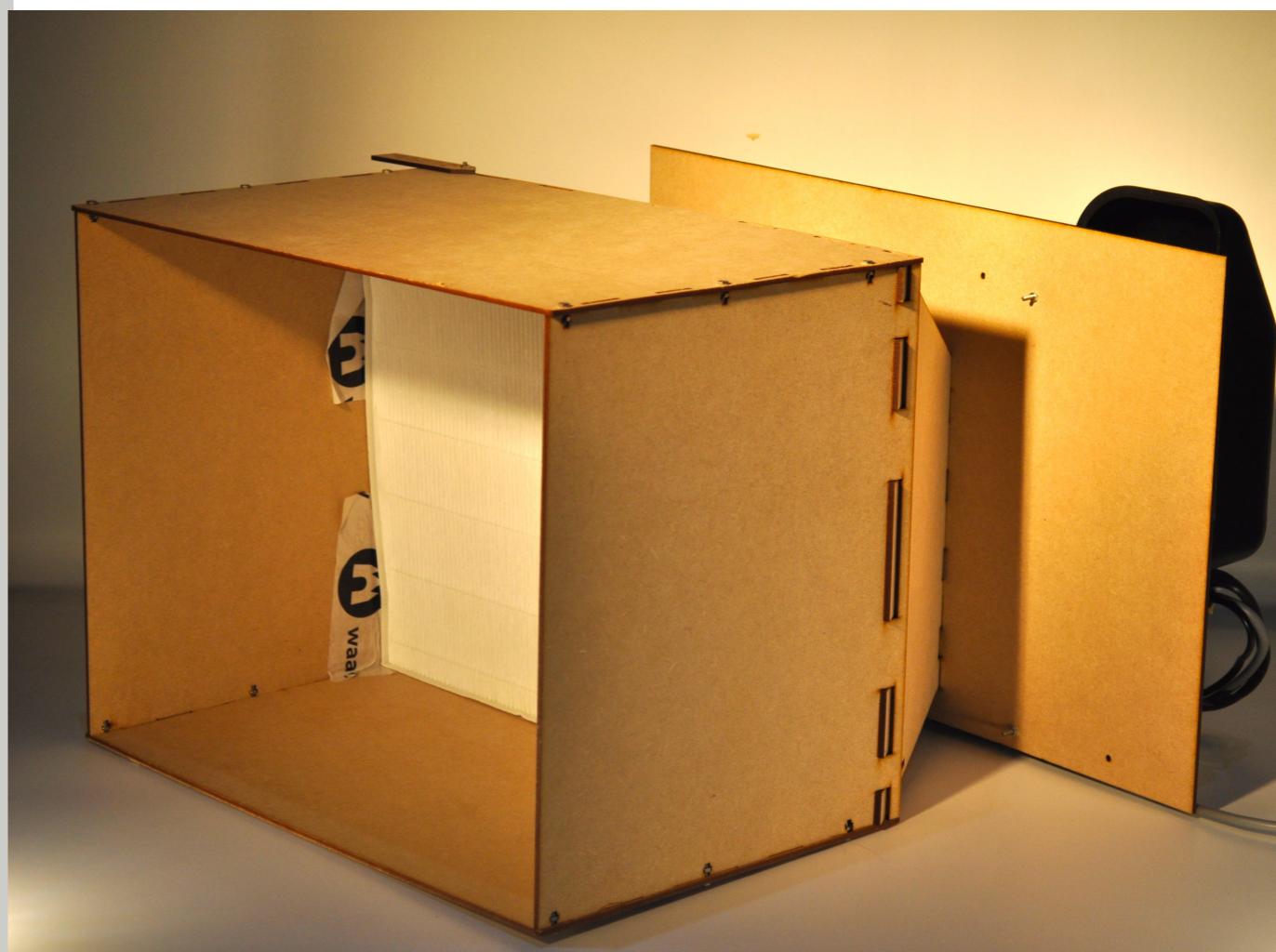
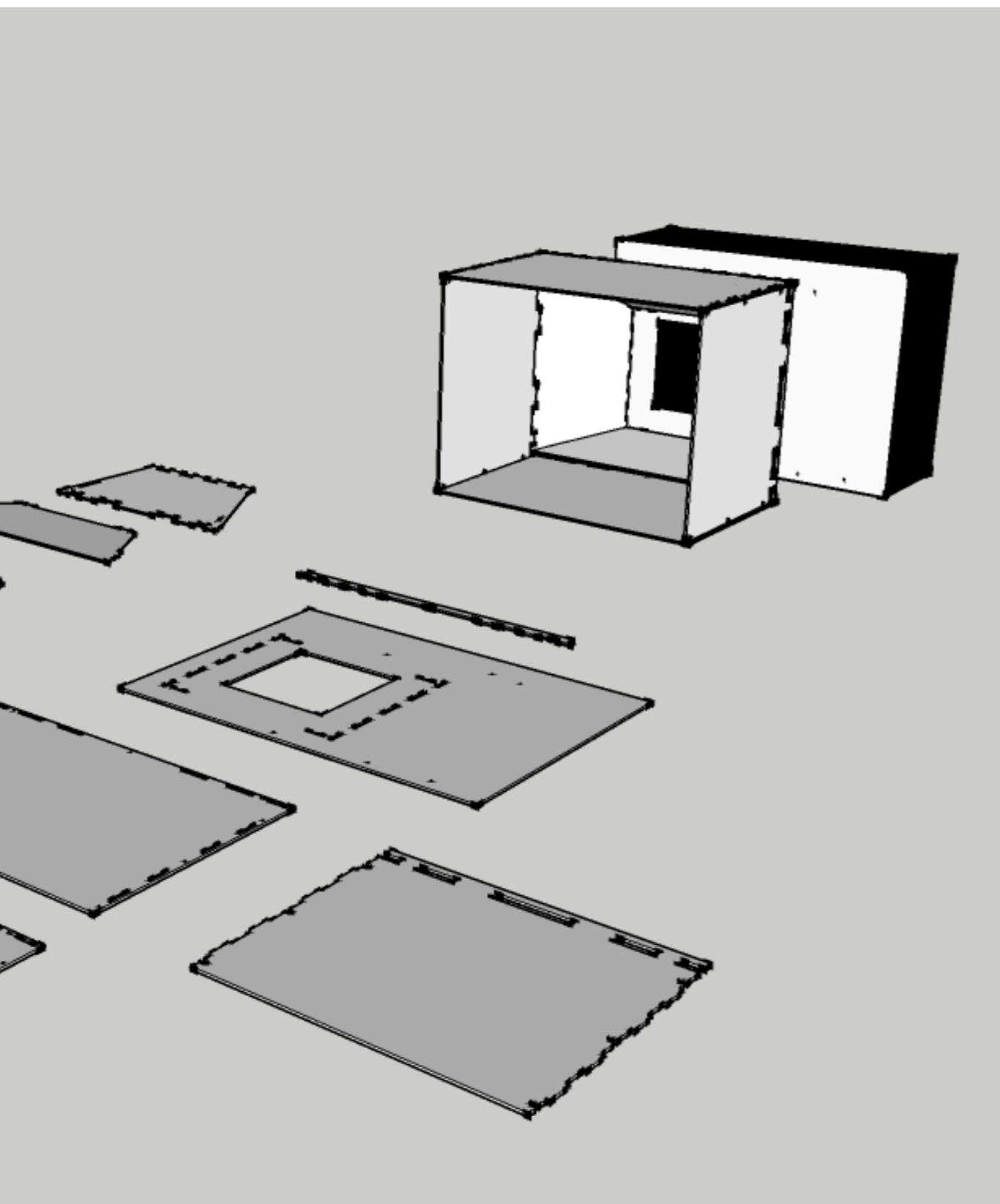


# BioHack Academy 2 Design





# BioHack Academy 3/4 Design





# HEPA filter

- Fellowes office air filter
- 0.3 micron pores
- 99.97% filtering
- H14 class
- EN1822 standard





# Blower

- Calculate the airflow
- Needed:
  - $0.41 \times 0.32 \times 0.5 =$
  - 0.0656
  - cubic meter / second
- 236.16
- cubic meter / hour
- We choose 250 cubic meter / hour

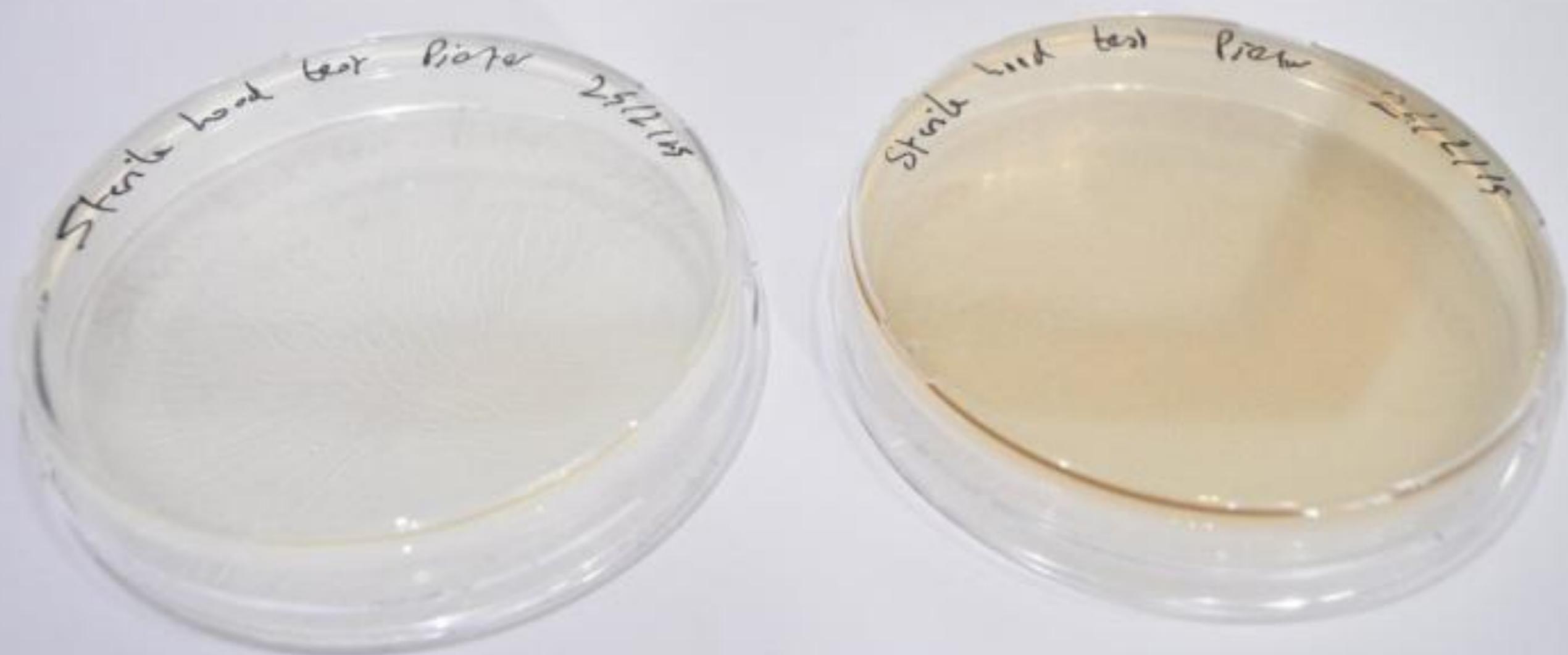


IKEA

1 CFM = 1,6990 m<sup>3</sup>/h

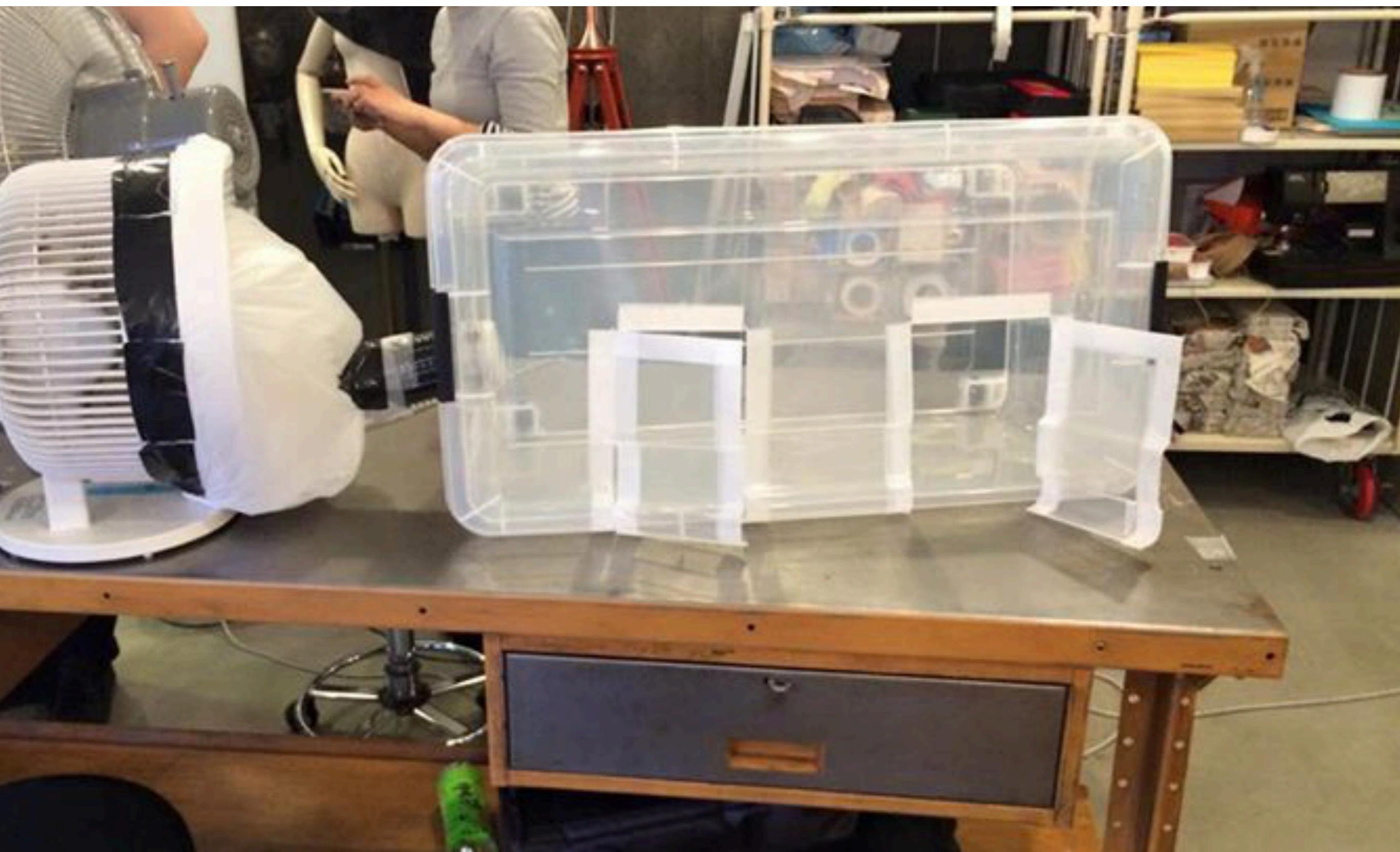


# Test results





# DIY sterile hood





# This week's practicals

- Lab tour
- Sketchup modeling
- Inkscape vector modeling
- Lasercut introduction

## Assignment

- Define “Biohacking” together
- Design your own tube rack



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