



waag society

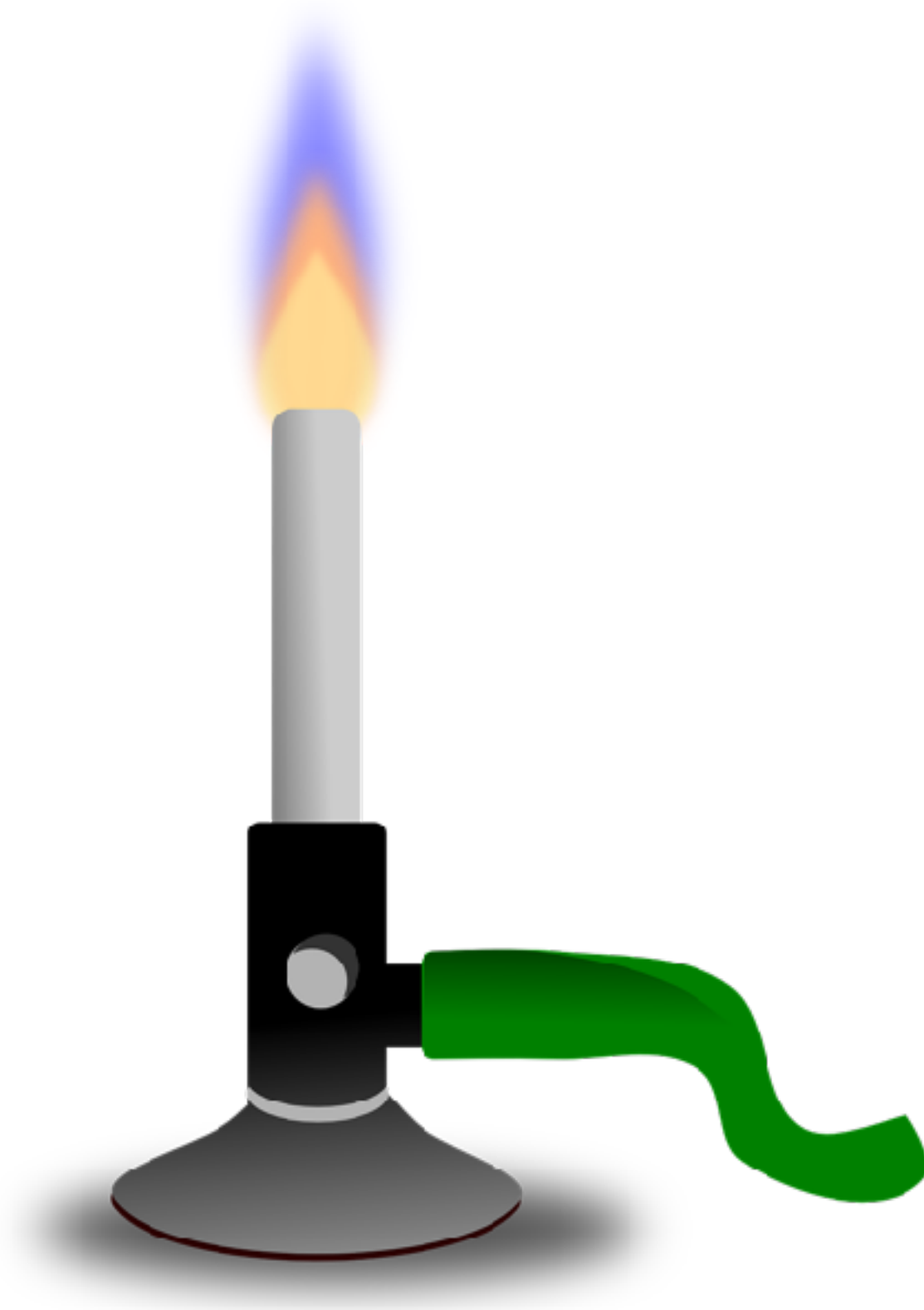
institute for art, science and technology



BioHack Academy Sterile Hood Design



Working sterile





Sterile hoods



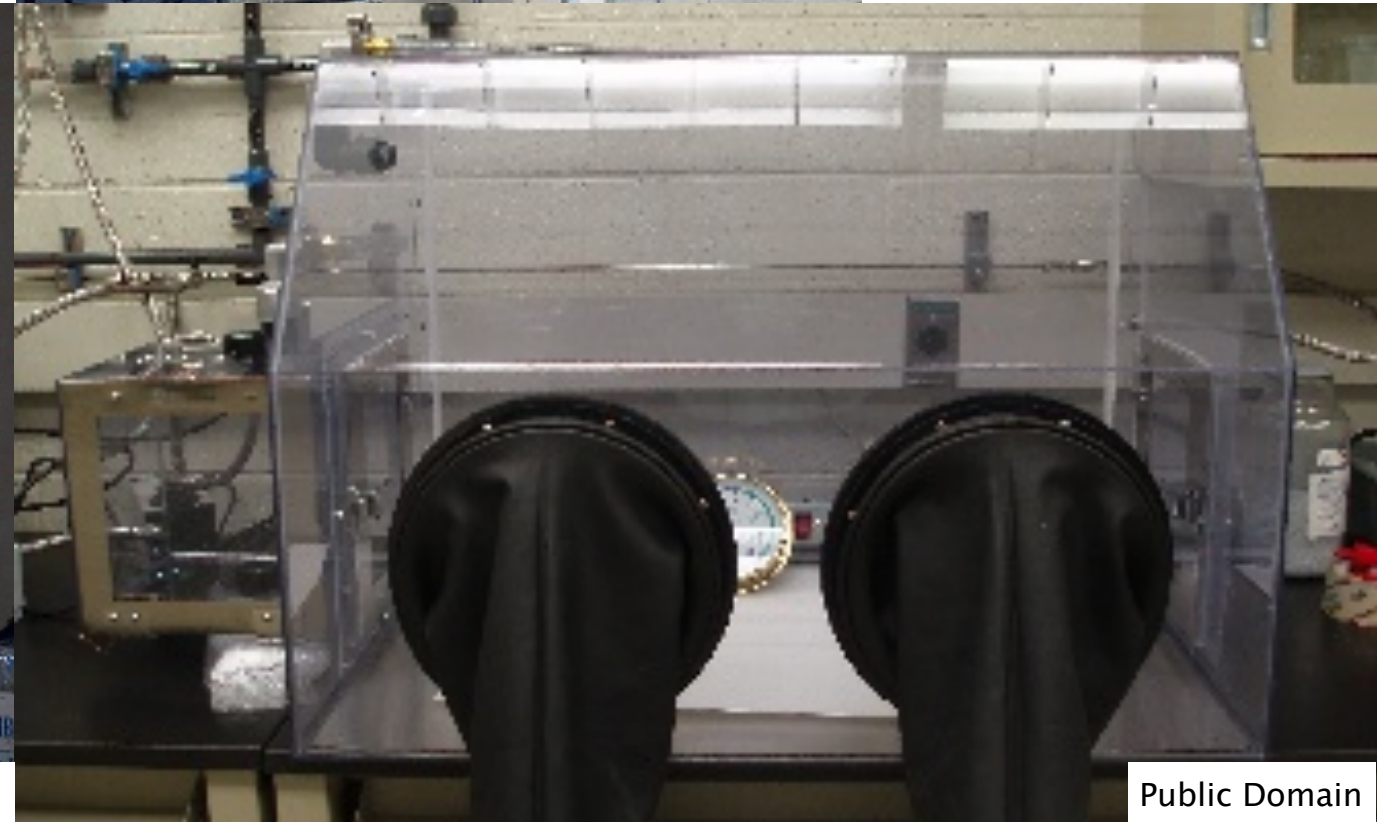
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Rudolph Simon - CC-BY-SA 3.0



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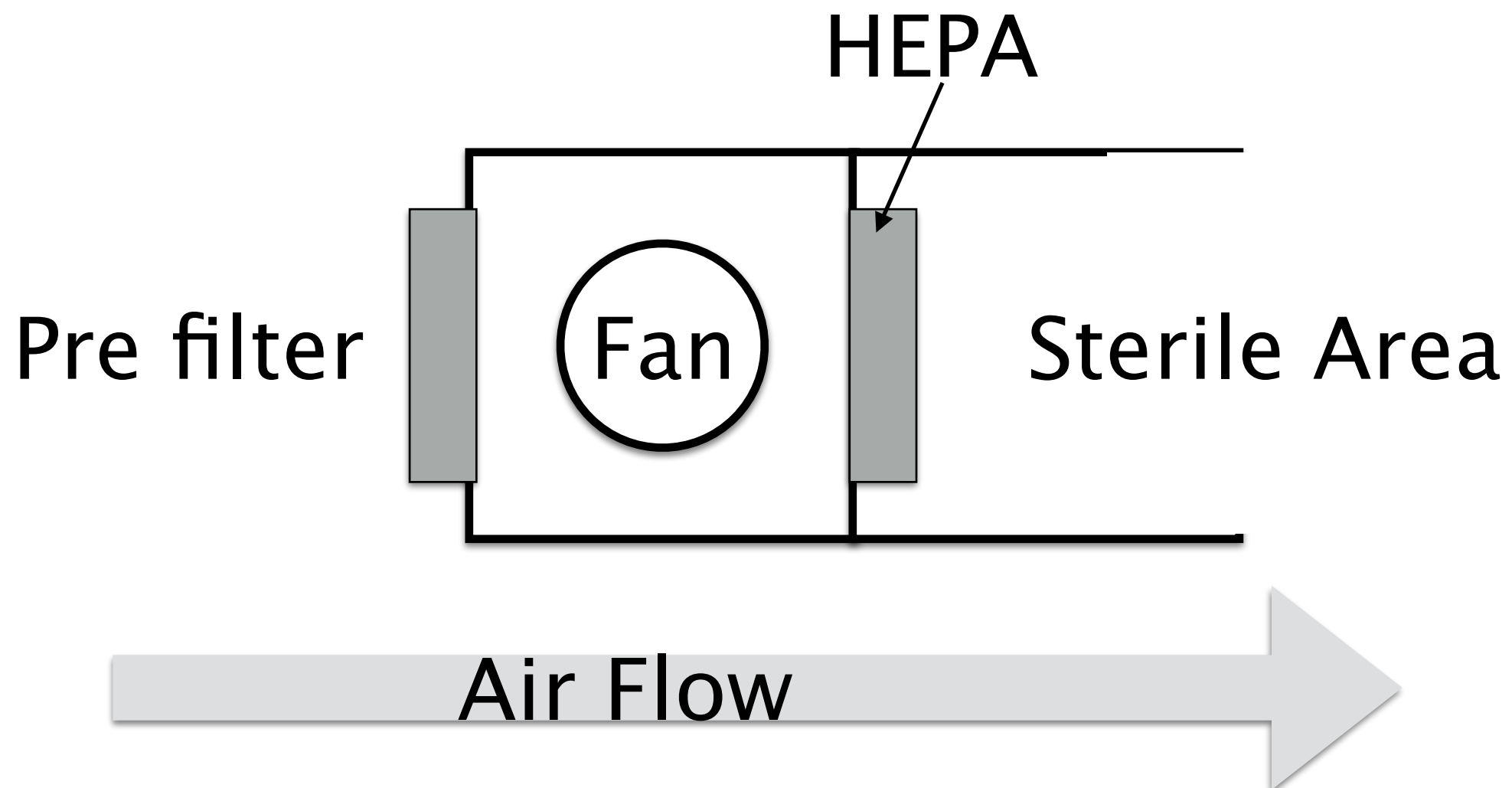


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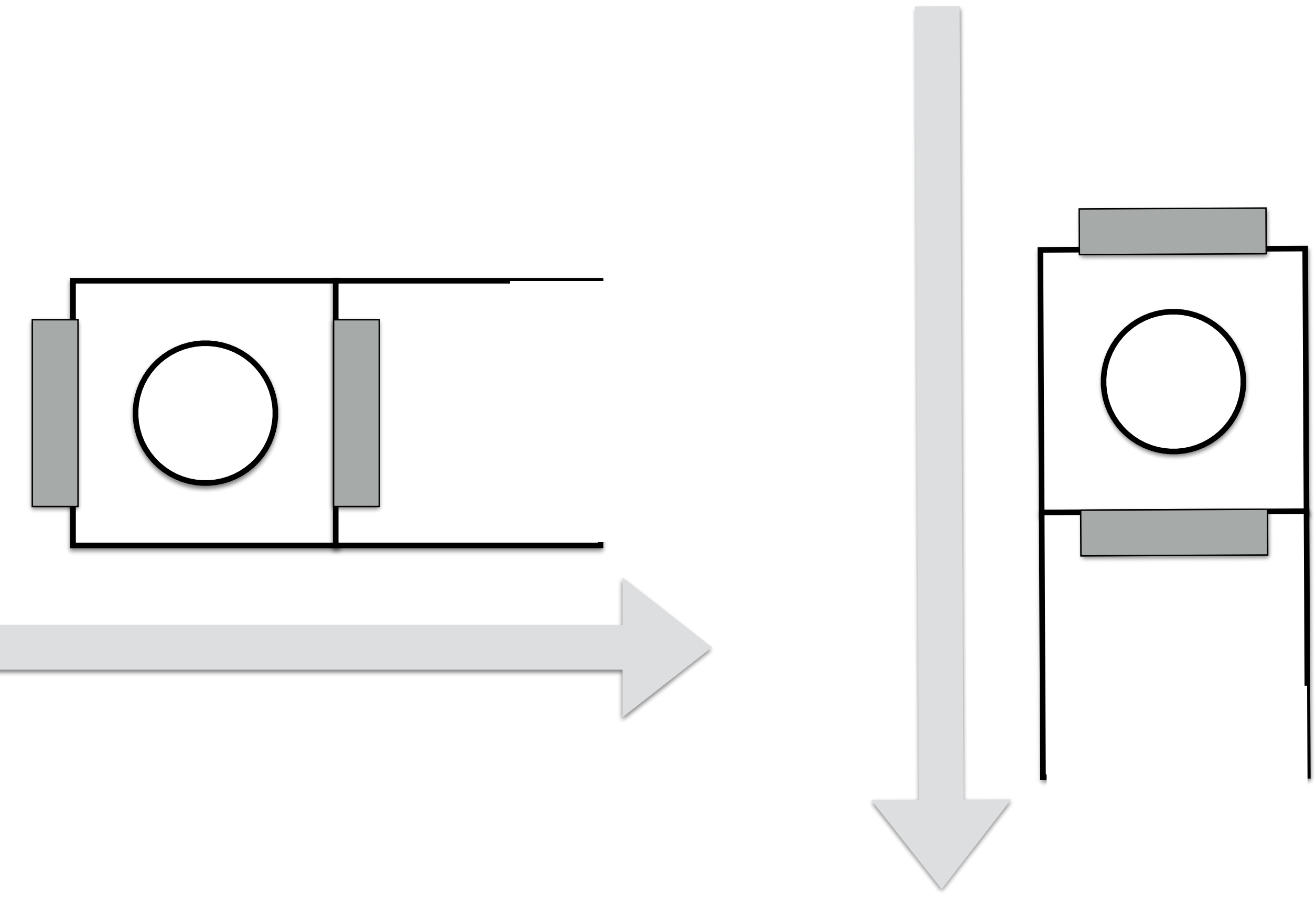
Components

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



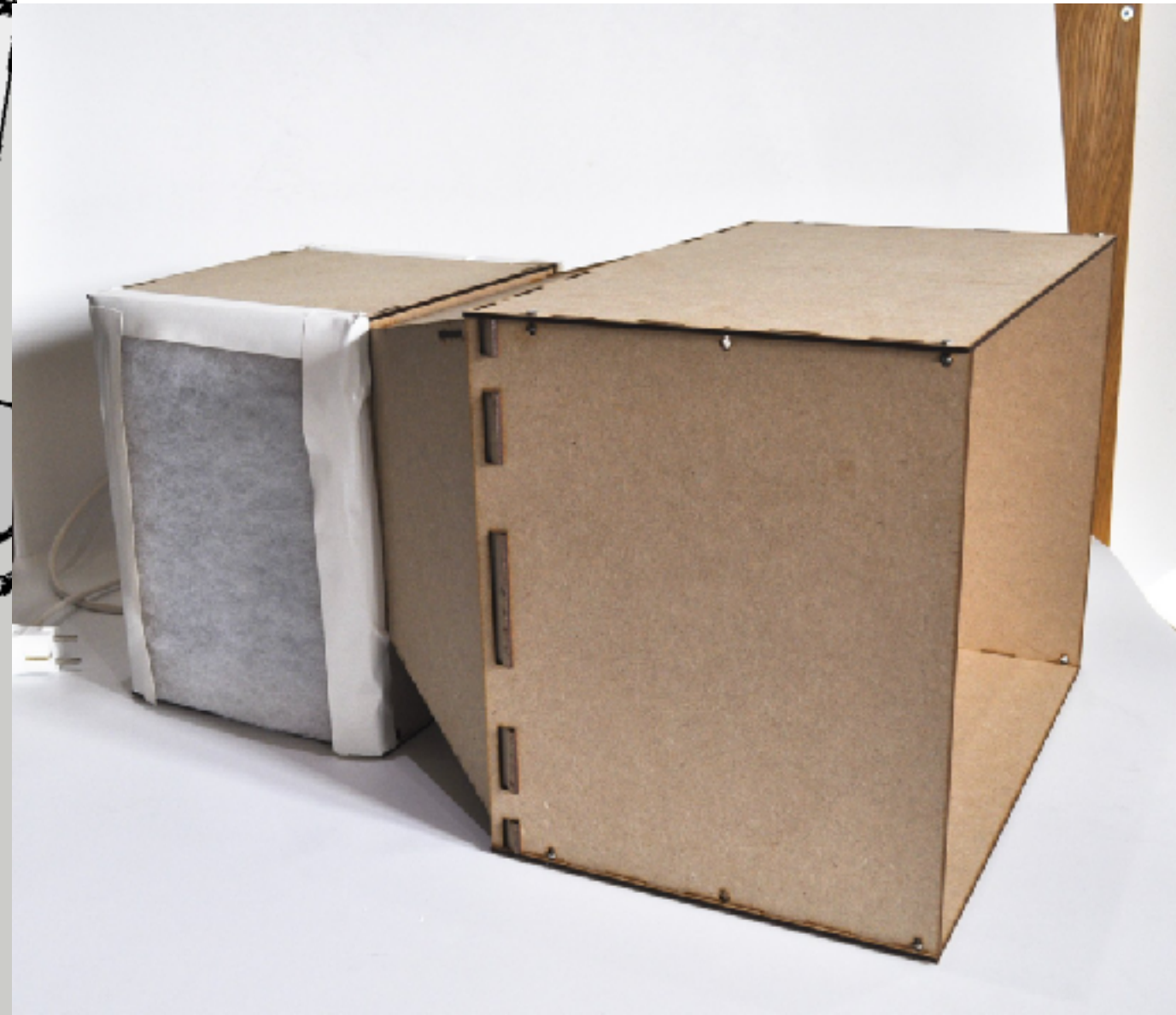
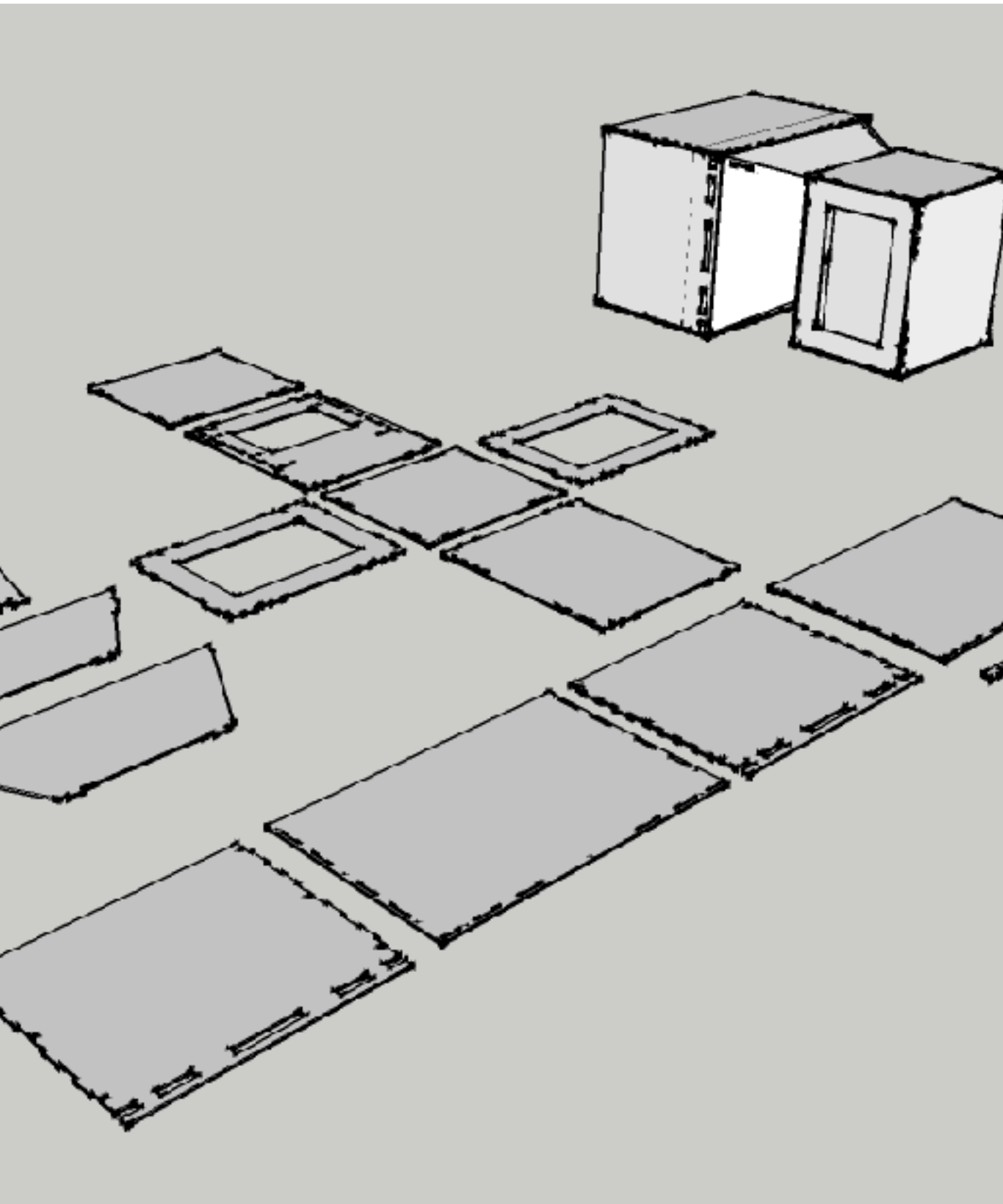


Horizontal vs Vertical airflow



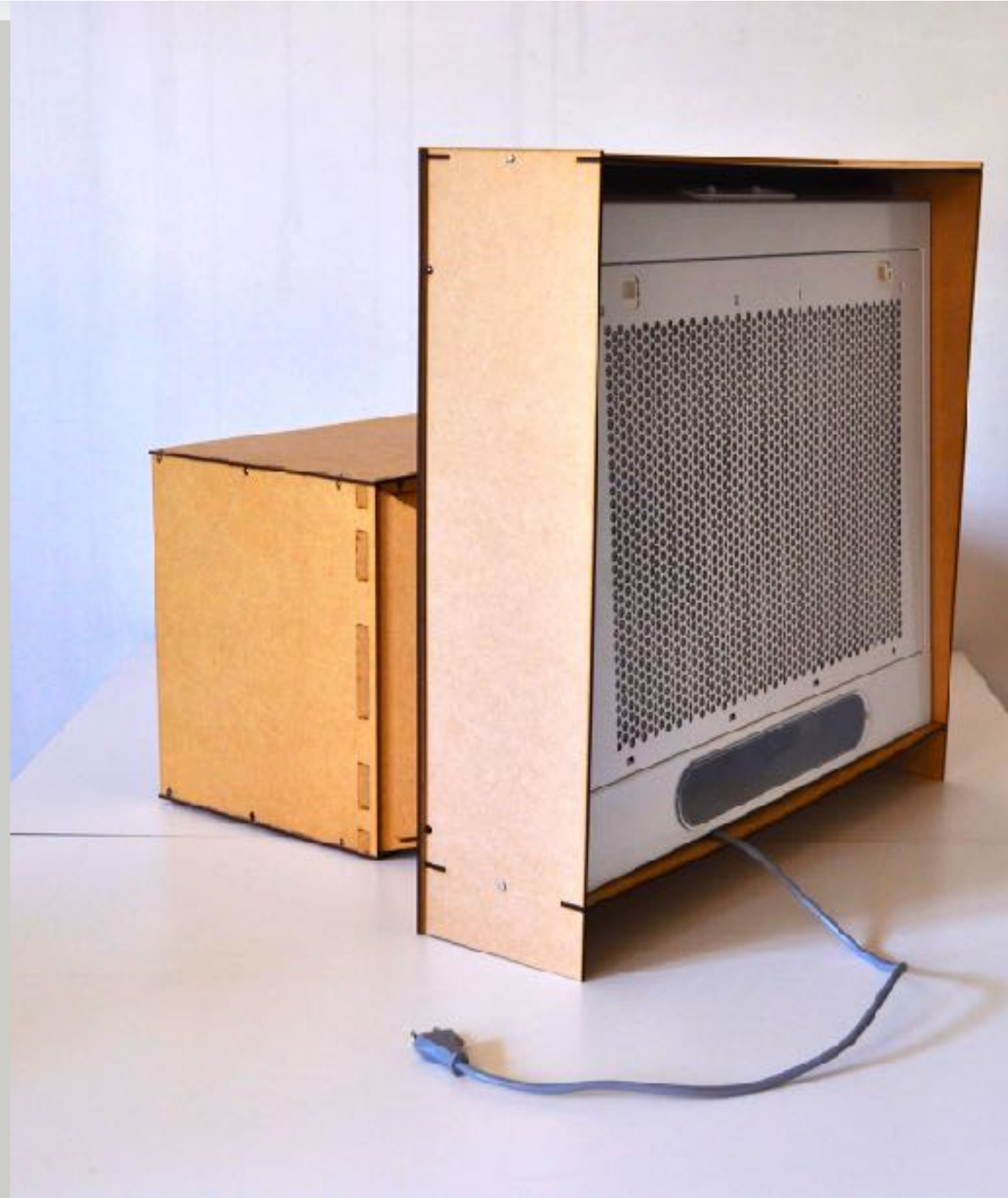
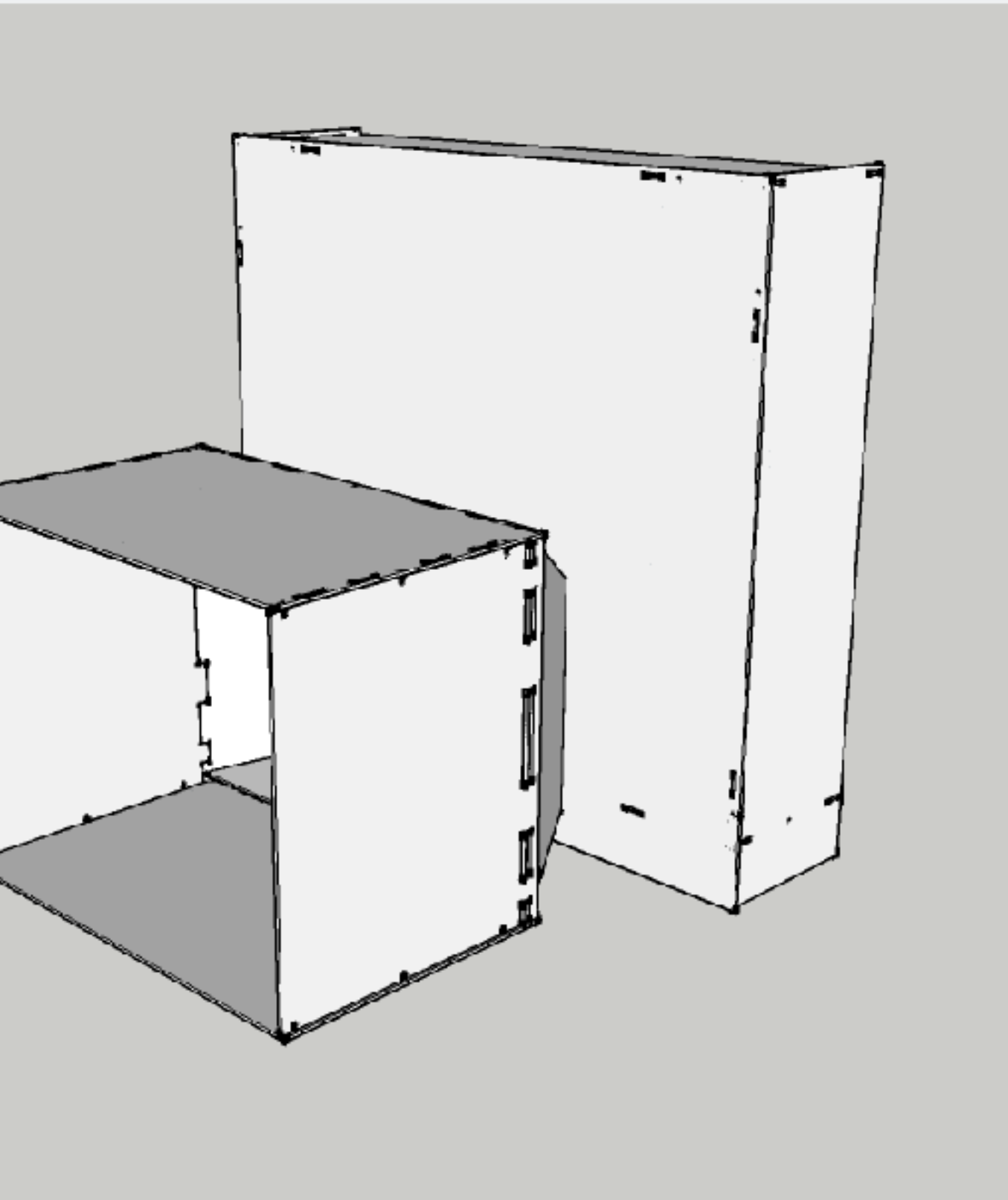


BioHack Academy 1 Design



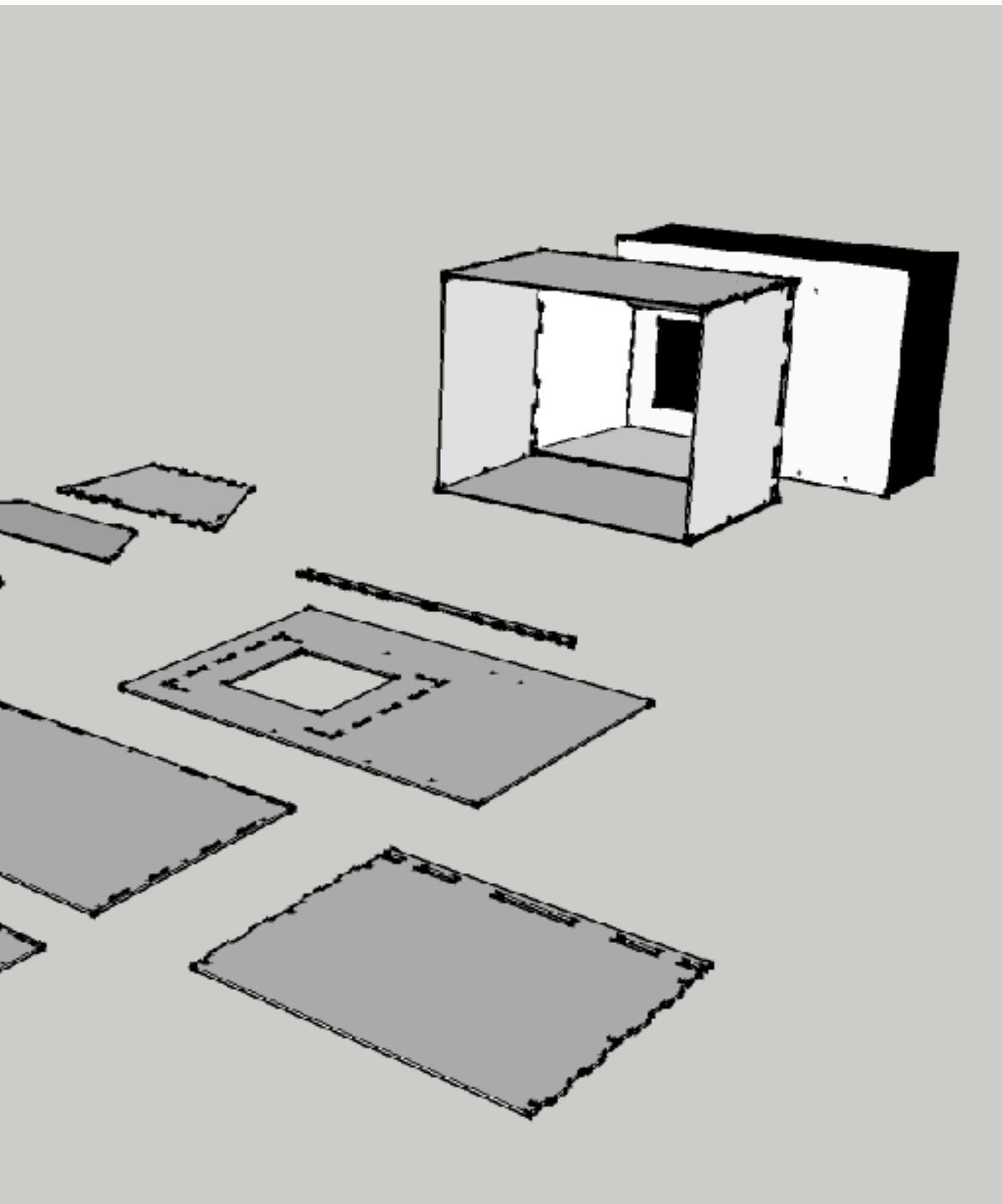


BioHack Academy 2 Design





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

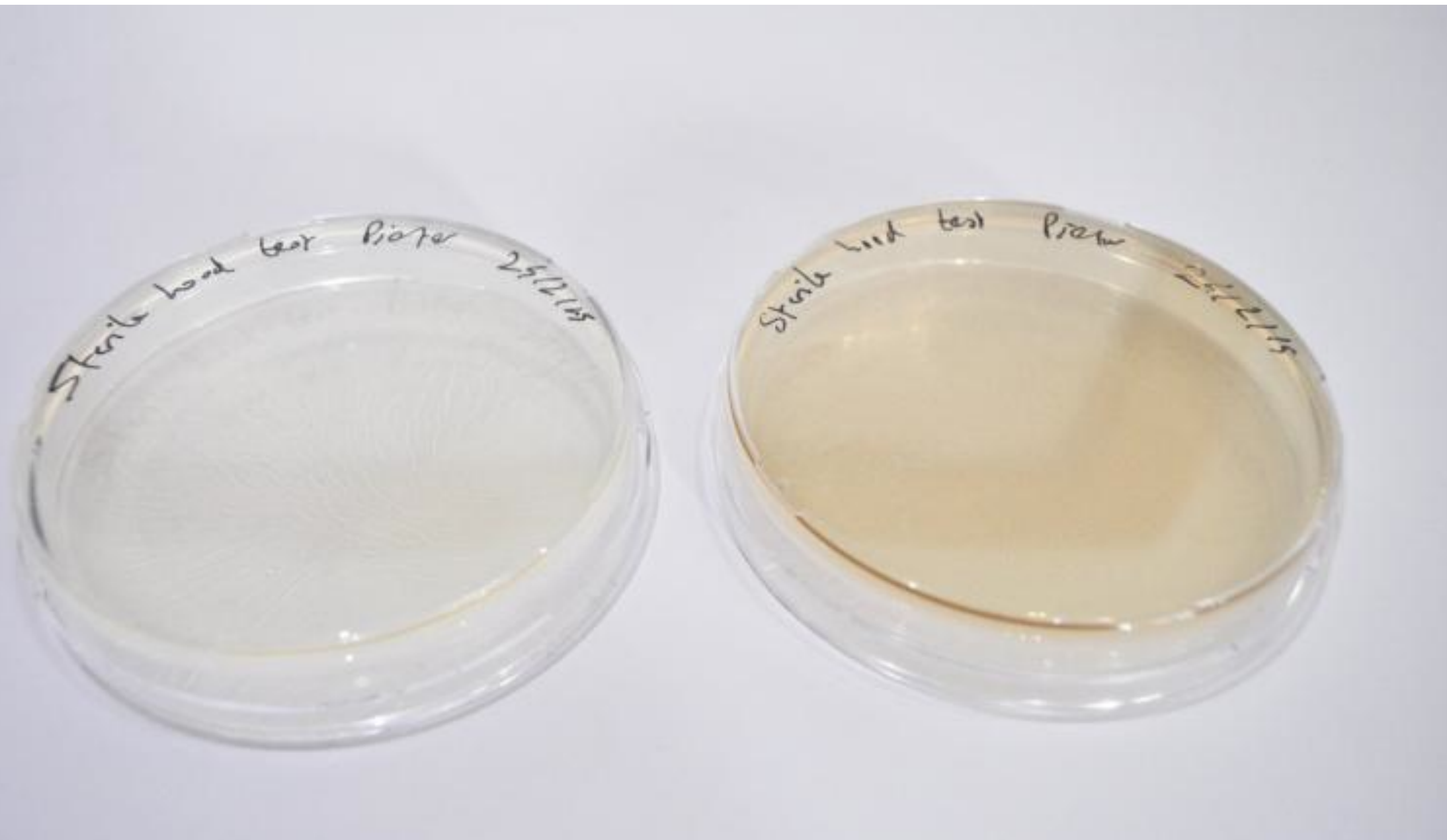
$$1 \text{ CFM} = 1,6990 \text{ m}^3/\text{h}$$



IKEA

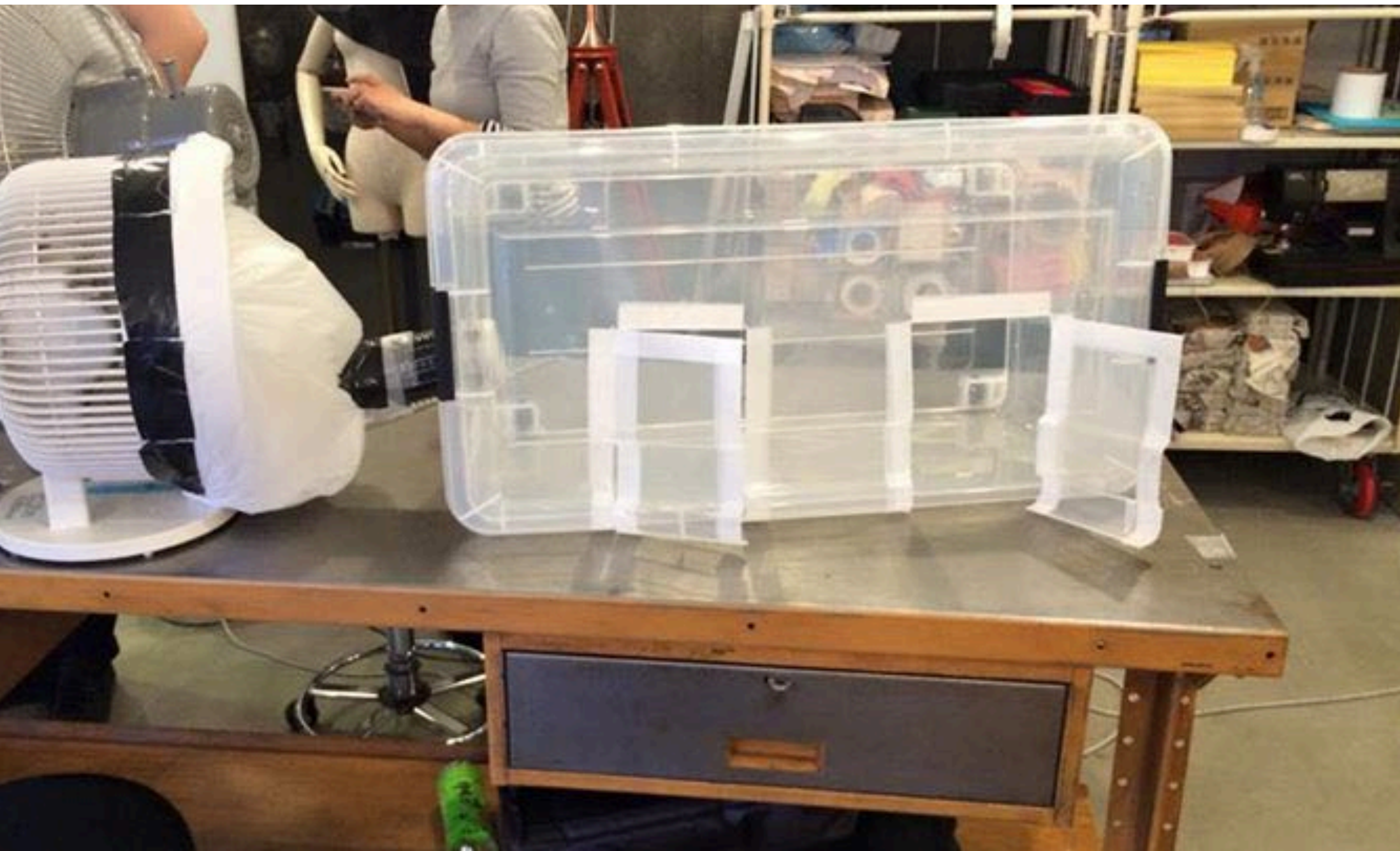


Test results





DIY sterile hood





This week's practicals

- Lab tour
- FreeCAD 3D modeling workshop
- Sketchup modeling
- Lasercut introduction

Assignment

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



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