4.2　Guidelines and plans
for setting-up a makerspace

Equipment Management
Plan and Safety
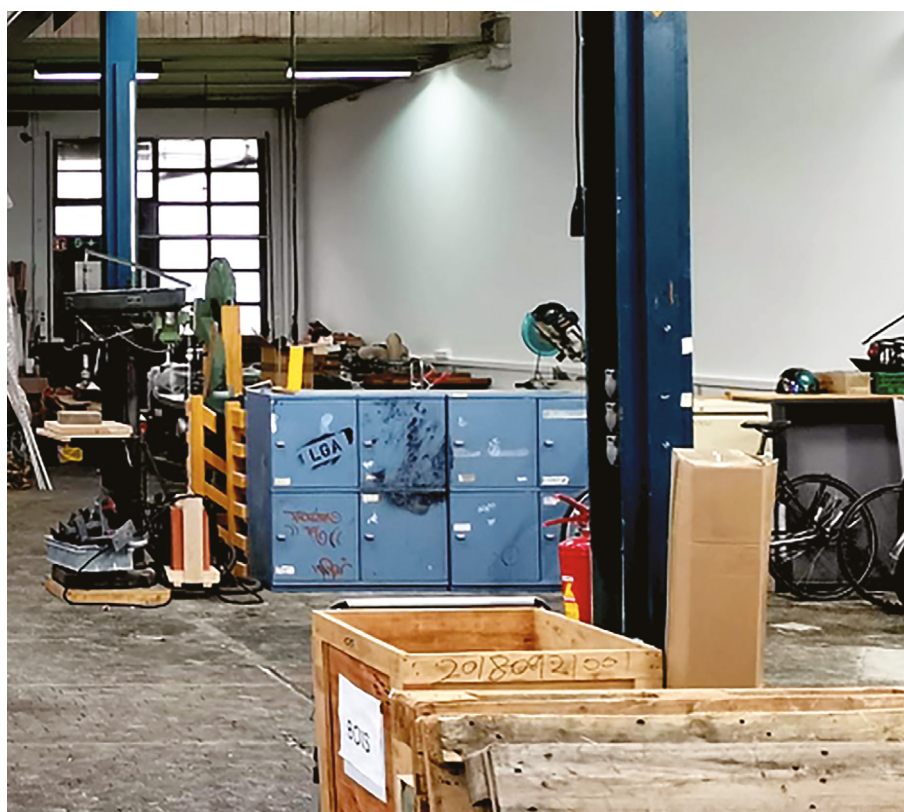
1.   Workspace[1]

The workspace needs to be organized and spacious enough to provide enough room to move around working makers freely and without danger. We have fire extinguishers, safety paths and signs, adequate lighting, and ventilation. The Fab Lab set up was verified and approved by local authorities for safety at work.

TOOL / EQUIPMENT	QUANTITY
Workbench	6
Worktables	6
Stools	10
Chairs	20
Board	1
Shelves	10

SAFETY EQUIPMENT	QUANTITY
Safety glasses	15
First aid kit	2
Fire extinguisher	2
Work gloves	15
Disposable gloves	100
Disposable respirators	10
Earmuffs	3
Foam ear plugs	10
Portable ventilation	4
Aprons and blouses	10
Safety shoes	5

1.   Full list of equipment:
        https://docs.google.com/spreadsheets/d/1z17m_nNLFLdgokMqLjgo-vQtMEWht4ICGcaIyfDD04I/edit?usp=sharing

2. General[1]

All power tools are used after training. Children and beginners can only use them with supervision. Glasses, masks or gloves are worn.

TOOL / EQUIPMENT	QUANTITY
Drill	2
Rotary tool	1
Screwdrivers	10
Wrenches	20
Pliers	20
Knifes	5
Saws	5
Scissors	30
Tape measures	5
Clamps	20
Staple gun	1
Hot glue guns	10
Brushes	30
Heat gun	1

3. Woodworking[1]

All power tools are used after training. Children and beginners are not allowed to use the circular saw. Glasses, masks or gloves are worn.

TOOL / EQUIPMENT	QUANTITY
Circular saw	1
Jig saw	1
Router	1
Sanding machine	1

4. Electronics[1]

The tip of a soldering iron is hot enough to cause burns and should be handled attentively.

Children can use soldering irons under supervision and in small groups. Ventilation is always ensured. Electronics at this level are low-power and safe.

TOOL / EQUIPMENT	QUANTITY
Soldering irons	15
Helping hands	10
Multimeters	3
Oscilloscope	1
Power supply	1
Wire stripper	10
Pliers	5
Solder vacuum	5
Solderless breadboard	15
USB cables	20

5. Textile[1]

Steam irons do get hot enough to cause burns and are used by children with supervision.

TOOL / EQUIPMENT	QUANTITY
Vinyl cutter	1
Sewing machine	1
Digital sewing machine	1
Embroidery scissors	2
Steam iron	1
Knitting machine	1

6.   Laser cutting[1]

The primary risk when using a laser cutter is fire within the cutter itself. The laser cutter is never run unattended and the choice of material to cut must be approved by Fab Lab managers. A proper ventilation system is in place.

If the lid of the laser cutter is opened during operation the laser is turned off immediately. Only trained people can use the laser cutter.

TOOL / EQUIPMENT	QUANTITY
Laser cutter	1
Laser cutter for metals	1

7.   CNC cutting[1]

Hearing protection and safety glasses must be worn for everyone in the closed area to protect from flying debris. Only trained people can use the CNC.

TOOL / EQUIPMENT	QUANTITY
CNC Shopbot	1
CNC desktop	2

8.   BioLab[1]

Disposable gloves and safety glasses must be worn during operations. When dealing with bacteria, waste should be disposed of at a specific collect point. Cleaning hands is mandatory.

TOOL / EQUIPMENT	QUANTITY
Stove	1
Sink	1
Pans	5
Incubator	1
Glasses	50

9.   3D printing[1]

The print extruder does heat to several hundred degrees and should not be touched. PLA is the most used material as it is non toxic. When using the resin 3D printer, goggles, mask and disposable gloves are mandatory to wear.

TOOL / EQUIPMENT	QUANTITY
Filament 3D printers	4
Resin 3D printer	1
UV chamber	1
Food 3D printer	1

10. Computers[1]

TOOL / EQUIPMENT	QUANTITY
Laptops	5
Printer	1
Digital camera	1
Beamer	1

11. Moulding[1]

TOOL / EQUIPMENT	QUANTITY
Vacuum chamber	1
Thermomoulding machine	1