



FABLAB  
ŁÓDŹ



**W**e believe that it is possible to release every person's full creative potential by creating the appropriate environment. Really useful experience is best gained by carrying our real work in the real world. And then we share our experience of doing that work, along with the tools which we make ourselves.

The FabLab Team in Łódź

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## 1 ABOUT US:

### Why a FabLab?

The FabLab in Łódź was born because we needed it – we needed it to meet the needs of all those who required a workshop space full of machines and tools, a space where it is possible to make almost anything. This is where the following people meet up: experts who share their knowledge; crafts-people; students; artists; and anyone who would like to design and create something, whether this is unusual jewellery, parts of a petrol engine or an innovative robot. We are one of the several hundred FabLabs (fabrication-laboratories) across the world and we are on the Fab Foundation's official list<sup>1</sup>. Thanks to our continuing efforts, this unique place in the City of Łódź continues to enthuse creators, both young and old, both those who are experienced and beginners. The Łódź FabLab community has already completed many projects in a wide range of areas, including: robotics, electronics, mechanics, design, bee-keeping, blacksmithery and artistic glass-working.

<sup>1</sup> <https://www.fablabs.io/fablablodz>

### The maker movement:

Makers create their own unique subculture which includes groups like inventors, designers, constructors and amateur hobbyists. Most of us share a fascination for technology and how to create things using modern methods such as: CNC cutters, 3D printing, electronics and robotics. But we also make use of traditional tools for shaping wood and metal, as well as traditional craftsmanship methods. We prototype new ideas for objects (and then create them); we repair old objects and improve existing ones. We promote the idea that science and technical knowledge are valuable, and we also take part in R&D work. All this stems from our unique combination of abilities and passion.

In Poland, the maker movement is a development of the legacy left by Adam Słodowy and the Polish culture of "Yes, we can do it". We are open and egalitarian, and we are convinced that inside every person is creativity which is just waiting to be brought out in a place like our FabLab. We design and make or own tools, are part of the global community, learn and teach others. We are changing passive consumers into active constructors. And, thanks to open source materials and the size of the internet community, we feel we could tackle any area by working together.

## 2 OUR WORKSHOP SPACE:

### OUR TOOLS:



#### CNC MILLING MACHINE (KNOWN AS "BOŻENA")

This was the first machine designed and built by the FabLab team in Łódź. It is designed for cutting wood, wood-derived materials and lightweight plastics. It is used by makers and students to create furniture, to add unique details to other objects and for prototyping. Constructors: Krzysztof Piech, Kamil Szczesio.



#### CNC MILLING MACHINE (KNOWN AS "ZDZICHU")

Designed for cutting aluminium and other lightweight metals for projects that require great precision, for example, for parts of engines or robotic mechanisms. The steering control mechanism was designed from scratch. The ability to cut metal in this way greatly increases the range of prototyping which can be carried out in FabLab. Constructors: Michał Ciacka, Łukasz Ciacka.

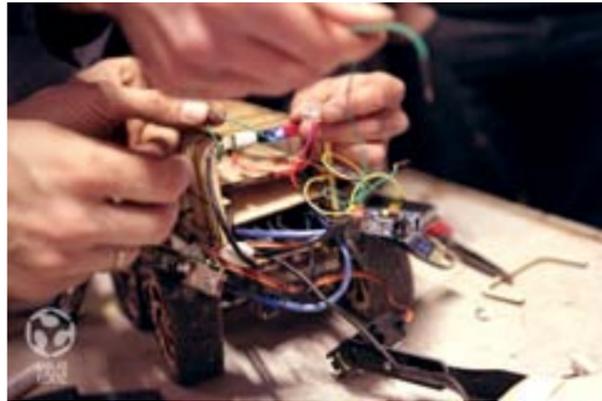


#### TSB-16 LATHE

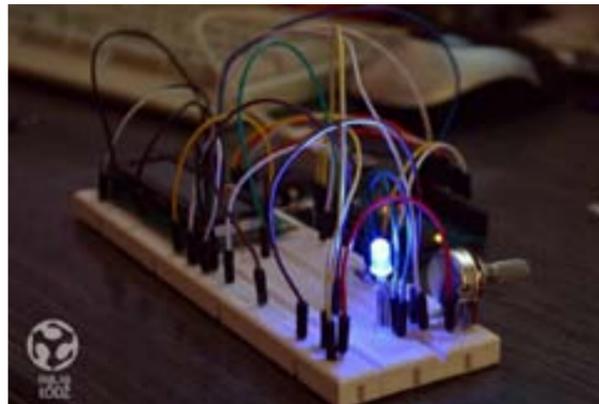
Professional machine for all lathe-work. Includes a wide range of specialist tools for the purposes of, for example, cutting threads, creating casings and shafts.



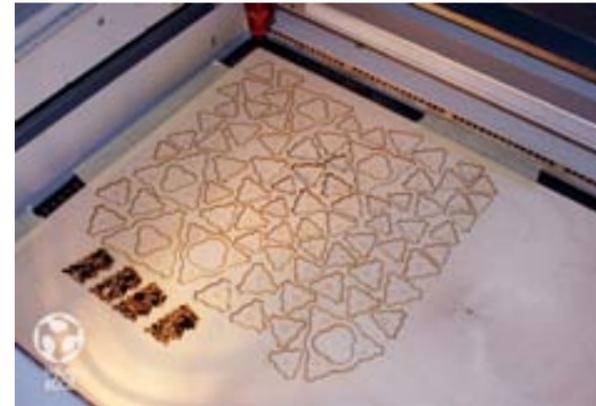
## INTO ELECTRONICS? /OUR HACKERSPACE:



For people who are into electronics, programmers and others who enjoy using microprocessor platforms like Arduino and Raspberry Pi for prototyping and learning, we have made a special area for creating steering control systems, building robots and repairing electronic items. Our Hackerspace is used for developing prototypes, running educational programs and carrying out experiments. The workshop area permanently contains many tools and materials needed by hackers, including: soldering stations, an acid bath with a station for creating PCB boards, a digital oscilloscope, Arduino and Raspberry Pi microprocessors, several dozen developer kits and tens of thousands of electronic components.

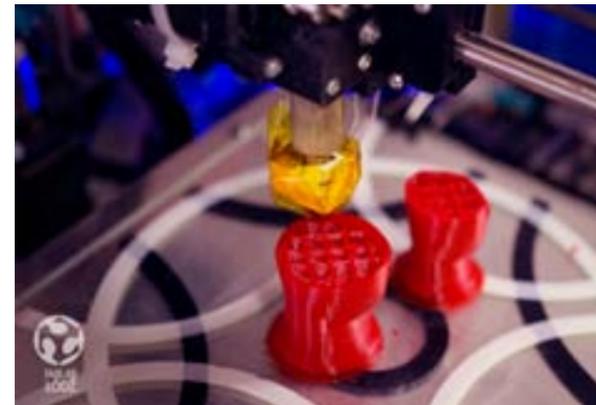


## TOOLS WE ARE CURRENTLY BUILDING:



### LASER PLOTTER

Thanks to our successful crowdfunding campaign, we are now building a CO2 laser plotter of our own design. In FabLabs around the world, this is the type of tool which is most frequently built. Due to the speed it works at, this type of plotter is invaluable to designers and artists. Such a plotter cuts and engraves plastics, plywood, paper, leather, food and many other non-standard materials.



### 3D PRINTER

3D printing has already revolutionised the process of prototyping products and is one of the basics for digital fabrication. And the FabLab team in Łódź also knows something about 3D printing. Currently two teams are working on our own designs for two such printers: one delta 3D printer; and one "H" 3D printer.



### PLASMA CNC CUTTER

CNC cutters are designed to cut steel according to the requirements of engineers or artists. Thanks to the ability to steer these cutters very precisely and their great power, it is possible to cut non-standard shapes and elements even from very thick metal. Constructors: Lukasz Ciacka, Sławomir Pietras, Krzysztof Piech, Krzysztof Kudra.

### 3 OUR ACHIEVEMENTS & EXPERIENCE

## OUR WORKSHOPS

The FabLab in Łódź offers a wide range of workshops and courses which are designed to promote technical knowledge and help people to learn more manual skills. Over the last two years, almost 300 people have visited us from all over Poland in order to learn something in a hands-on way under the supervision of experienced experts in areas like electronics and robotics, using a 3D printer, bee-keeping (including how to build a bee-hive), blacksmithery, decorative work, drawing designs, renovating furniture, artistic glass-work, bike maintenance, car engine mechanics and even welding. Our workshops are very much a hands-on experience for the participants, who are often complete beginners in the subject matter.



## EVENTS

Apart from developing our own technical projects and running workshops, an important part of FabLab's life is the organisation of events, meetings and presentation. For example, we run as regular events: the show-and-tell "Makers' Night" event, the "Make Camp 2013" festival, and the "makemake" competition for robot designers. All of the above initiatives are designed to integrate in an interesting way technology and the practical knowledge held in the local community.

We also take part in local, national and international events. In 2013, we took part in the Łódź Design Festival "Make Me" competition with our Veggie Coaster, and as an organisation we gained the "One-Up for Łódź" award. We were the only group from Poland which took part in the international "Fab Jam" competitions for FabLabs. And we also took part in the Sumo Challenge 2014, where we won first place in the Freestyle category. For our own community, we translated into Polish the subtitles of the "The Maker" documentary film, which describes the development of the world-wide maker movement, and we then organised the first showing of this film in Poland.

We have also taken part in many open-air events, cultural events and theme-based events, including: the Urban Summer Festival 2014, Press Tour 2014, the Fair for Creatives on Piotrkowska Street, Foto Festival, VII European Business Forum for Łódź as well as the "Robot Nights" event.



## 4 OUR COMMUNITY

For more than two years, we have been independently developing our own technical infrastructure as well as creating a community of makers and experts, and the result is something quite unique. Thanks to the fact that FabLab brings together groups which were previously not working together (amateur tinkerers, professionals, artists, visionaries), the effect is to positively stimulate cooperative work and the exchange of knowledge. Now, workshop participants, business clients, both regular and occasional makers as well as students can all carry out many projects which would not be possible without the synergy of technologies and technical knowledge which we have in our FabLab. The best examples of this can be seen in the CNC milling machines which we made, artistic installations, students' works which contribute to their degree grade, meetings of groups on particular themes and our daily contact with young makers. We believe that there is huge potential for creativity in every person, but this potential lies dormant for lack of a suitable environment and tools. The maker movement and the growing idea of FabLabs in Poland is really important for the youngest generation so that they grasp the traditional idea of "Yes, we can do it!", so that they learn to repair what is broken and are able to conceive and make new things. Our work for (and with) our group of young makers is a pleasure and consistently demonstrates how quickly even the youngest of them can develop their hidden talents - all they need is the creative environment which we are developing for them in our FabLab.



## OUR PARTNERS:

In the course of our projects and activities, it has been our pleasure to work with many organisations and companies:



And:  
 KLASER ICT  
 ELECTROPARK  
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 WOJEWÓDZKI ZWIĄZEK PSZCZELARSTWA W ŁODZI ZAC-  
 ZAROWANY OLÓWEK  
 KOŁO NAUKOWE PL SKANER  
 MŁODY TECHNIK NARZEDZIOWA.COM  
 VICTORIA S.C



## Fundacja FabLab Łódź



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