STUDENT PROJECT HOUSE 2024

THE MAKER-INNOVATOR'S JOURNEY

From Cara's 3D-printed prosthetics to countless other innovations, explore the learning journey happening at Student Project House.
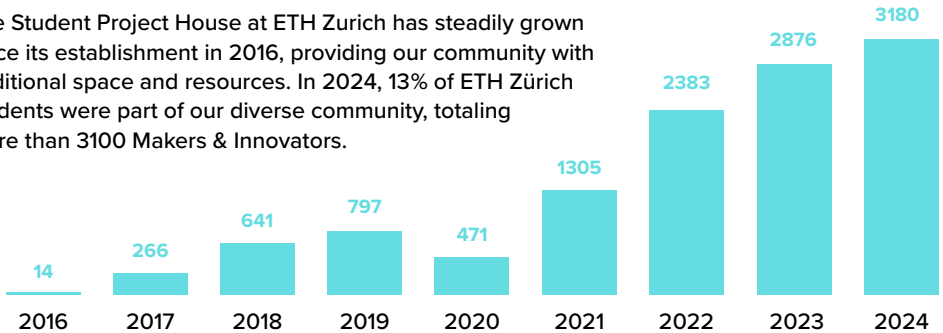
ETH STUDENT PROJECT HOUSE

SPH.ETHZ.CH

TABLE OF CONTENT

A MODEL FOR PROJECT-BASED LEARNING

The Student Project House at ETH Zurich has steadily grown since its establishment in 2016, providing our community with additional space and resources. In 2024, 13% of ETH Zürich students were part of our diverse community, totaling more than 3100 Makers & Innovators.

Year	Value
2016	14
2017	266
2018	641
2019	797
2020	471
2021	1305
2022	2383
2023	2876
2024	3180

3100+ MAKERS & INNOVATORS

The Student Project House is a lighthouse that enhances traditional education and serves as a model for collaborative and project-based learning at ETH and beyond.

Prof. Dr. Günther Dissertori
Rector of ETH Zurich

OUR FUTURE GOALS

→ Launch a **cutting-edge Food Lab** to drive innovation in sustainable food solutions

→ **Expand our Digital Makerspace** to empower more creators with state-of-the-art tools

→ **Bring the Center for Students & Entrepreneurs to life** by 2030, shaping the future of hands-on innovation

→ **Achieve ETH's Net Zero goal,** setting a new standard for sustainable impact

OUR JOURNEY BEGAN

... by supporting students and their ideas, providing a space to explore and develop projects.

We soon realized we could engage even more students by nurturing their natural curiosity and helping them develop the Maker-Innovator Mindset – even if they didn't have a concrete project idea. This insight sparked a natural evolution of our vision and approach.

OUR VISION

Students shape a better world by creating and innovating sustainably.

Our goal is to empower every student to become a maker and innovator with the mindset and skills to craft sustainable projects with positive global impact.

JOIN US ON OUR MISSION

Building on students' curiosity, we inspire and empower students to develop a Maker-Innovator Mindset.

At Student Project House, we believe allstudents are naturally curious. We help nurture this spark with opportunities to ignite their inspiration and creativity, whether they have an existing project idea in mind or not.

THE LEARNING JOURNEY

Students develop a Maker-Innovator mindset that allows them to solve problems, adapt, and find creative solutions.

The hallmarks of a Maker-Innovator Mindset

You can do it
Students gain confidence to innovate boldly.

Fail forward
Students learn that failure is an opportunity to grow.

Better together
Students engage with a supportive, active peer-to-peer community.

Seek diverse views
Students become curious about people, projects, and perspectives.

Enjoy creating
Students explore, prototype early, and enjoy experimenting.

Test and adapt
Students rethink assumptions and adapt to real-world needs.

"We gained skills in effective team-work, task delegation, prototype development, and pitching our ideas, which allowed us to transform an idea into a tangible product and present it."

"Student Project House taught me to think about innovating in terms of solving a need – not just what interests me."

"Meeting like-minded individuals in an environment where grades are not the priority enabled me to have more self-confidence and continue with the project."

The Student Project House provides students with a unique environment where they gain meaningful experience and develop the competencies to drive positive change.

Dr. Judith Zimmermann
Head of Unit for Teaching and Learning

PROJECT SUPPORT

From curiosity to creation

We meet students where they are, guiding them through self-driven learning to follow their curiosity, discover their passions, and take the first steps in their innovation journey. Through our workshops, interactions with peers, and ongoing support, students learn at their own pace, even when they don't have aclear project idea initially. Because this isn't about the destination – it's about the journey of developing self-confidence, resilience, anda fearless Maker-Innovator's mindset.
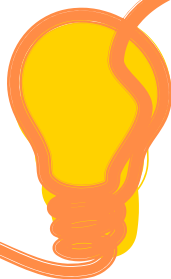
Without academic pressure, students can lean into their intrinsic motivation to innovate and take ownership of their projects. With access to resources like the Student Project House Project Hub and funding opportunities, they benefit from a structured yet flexible environment to turn their ideas into reality.

MAKERSPACE & LABS

Allowing students to chart their own path

Students can define their own path with specialised spaces and workshops to support their learning and project development.

The **Makerspace** allows students to test, build, and refine their ideas in a real-world, hands-on environment, with no pressure, no deadlines, no grades – just pure exploration and learning.

The **Digital Makerspace** offers support for those working in digital design, coding, with Large Language Models, and virtual reality.

The **Life Science Lab** allows students to explore life sciences and conduct experiments in biosafety level 1.

The **Metal Makerspace**, set to open in 2025, will offer students additional opportunities for hands-on experimentation through metalworking projects.


143

Machines and devices available for prototyping

OUR MILESTONES IN NUMBERS

510 PROJECTS IN 2024

Since we opened our doors in 2016, we've been committed to fostering innovation and hands-on learning among all students. With the opening of our new facility at ETH Zentrum in 2021, we greatly increased our ability to support student projects.

2016	2017	2018	2019	2020	2021	2022	2023	2024
2	8	18	36	47	140	286	437	510
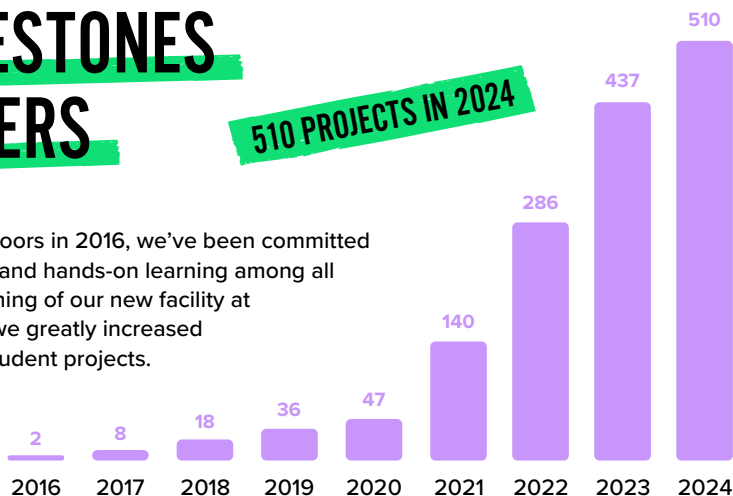
2562

Active Makerspace users in the Student Project House community.

50

Volunteer instructors available to support our makers.

986

ETH students using our coaching or project support.

86%

The percentage of projects focused on **environmental or social impact.**

BIOL 3%
HEST 5%
BAUG 3%
ITET 12%
MAVT 37%
CHAB 5%
USYS 3%
PHYS 8%
INFK 13%
ARCH 3%
MATH 4%

A diverse community

Our Makerspace community spans across all departments of ETH Zurich. This highlights the widespread appeal of our offer and the breadth of our impact.
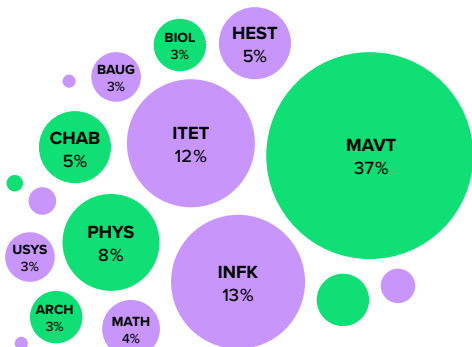
OUR IMPACT

What students learn at the Student Project House

At the Student Project House, students enhance their subject-specific competencies, acquired through their curricular programmes and lectures, by developing additional competencies.

Notably, students report gaining social and personal competencies through engaging with their own projects, which are crucial for becoming future-ready graduates.

1 **Communication**
Ability to communicate with others in different contexts and forms

2 **Creative thinking**
Ability to produce and implement novel and useful ideas

3 **Self-awareness and self-reflection**
Ability to understand own strengths and weaknesses and enhance self-development

4 **Problem-solving**
Ability to define a problem and find a solution to it

5 **Project management**
Ability to manage projects and produce results

6 **Team work and cooperation**
Ability to work with others to pursue common goals and achieve results in a constructive atmosphere.

The Student Project House community is incredibly powerful. It really helped me connect with other students and experts. I can always learn new skills, and someone is always available to help and listen to me

Fayçal M'hamdi
Co-Founder – Alter Ego

CHARTING NEW TERRITORIES

Recent additions to our offerings

"Having access to the Student Project House Life Science Lab made our biotech project achievable. Finding lab space is a huge challenge, and this gave us the opportunity to bring our idea to life."

Jannik Neumann
Co-Founder – Hephaistos

Life Science Lab

The Life Science Lab, piloted in 2023, enables interdisciplinary creativity and student innovation across diverse fields, including applied biosciences, chemistry, engineering, as well as health sciences and technology. Thanks to a generous donation from the Georg H. Endress Foundation, we were able to recruit more staff, grow our partnerships, and nearly double the number of students using the lab in 2024.

**More info about the
Life Science Lab**

Digital Makerspace

Launched thanks to the support of generous donors, the Digital Makerspace offers ETH students access to help sessions and a broad range of AI, cloud service, and extended reality tools. In 2024, participation nearly doubled, driven by expanded workshops, increased student engagement, and new tools such as the Meta Quest 3 and Apple Vision Pro. The Digital Makerspace continues to evolve, shaping the next generation of digital innovators.
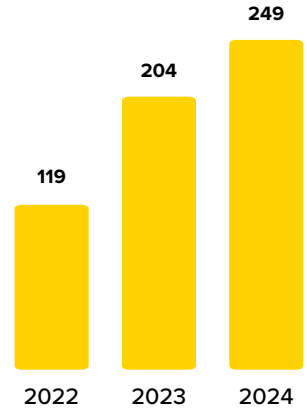

**More info about the
Digital Makerspace**

COMMUNITY EVENTS

The total number of events at Student Project House grew from 119 in 2022 to a whopping 249 in 2024, reflecting our commitment to fostering a dynamic and engaging community and expanding our collaboration across ETH.

249

204

119

2022   2023   2024

The SDG pitch event

Held in collaboration with ETH for Development and ETH Entrepreneurship, students took to the stage to pitch their projects and share how they support the UN Sustainable Development Goals (SDGs).

Two standout projects earned special recognition. SoftSocket was awarded the Jury's Award - Biggest Potential for their innovative approach, and Hephaistos earned the Audience Award – Best Pitch for their engaging presentation and clear vision.
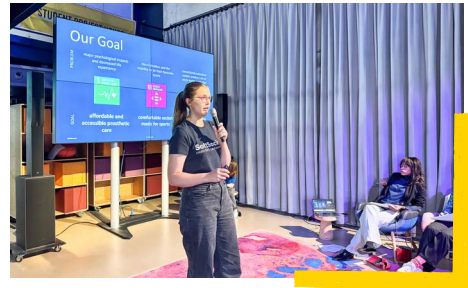
Cara Ammann presenting Project SoftSocket at the SDG event.

Anime Drawing Project (ZUN-Anime)

Projects have begun to inspire events and workshops of their own, with new student-led initiatives emerging. One example, Project ZUN-Anime, has even become a student association, bringing Animanga fans together weekly at the Student Project House.

Project ZUN-Anime gathering.

DRIVING AN AI-POWERED BIOTECH REVOLUTION

From the Life Science Lab to global impact

Driven by a shared enthusiasm for sustainable solutions, six ETH Zurich biotechnology master's students joined forces to revolutionise the chemical, agricultural, and pharmaceutical sectors with a fresh approach to enzyme catalysis.

The Life Science Lab provided Hephaistos with a dedicated space and the networking opportunities to develop a groundbreaking machine-learning model, refine their concept, and win an impressive range of acclaimed competitions.

But the true impact extends far beyond the success of the project itself. Hephaistos' approach allows the sector to rethink how medicine is produced and crops are grown – and provides a viable alternative to traditional, environmentally harmful chemical processes.

Check out their website

hephaistos.bio

AI-POWERED EDUCATION

We learned to embrace the iterative process and thrive in an environment like the Student Project House, where pivoting is not just accepted but encouraged.

Gero Embser & Friedrich Wicke
Founders – Bloom

20 Min
https://www.20min.ch › Digital › AI

ETH-Studenten: KI-Nachhilfe für 2 Franken pro Stunde

17.02.2025 — Zwei ETH-Studenten bieten mit ihrer KI günstige Nachhilfe in Mathe, Deutsch und Englisch an. Die KI richtet sich an Primarschüler und ist ...

bloom.boo

REIMAGINING SPORTS WITH PROSTHETICS

softsocket.ch

Advancing accessibility and performance

Driven to improve and modernise athletes' options for prosthetics, Cara Ammann and Lisa-Marie Frühauf were inspired to create SoftSocket, an adaptive sports prosthetic.

Cara Amman working on the SoftSocket prosthetic in the Makerspace.

The duo prototyped their project, a textile-based design dramatically improving athletes' comfort and fit, with essential resources offered by the Student Project House. SoftSocket gained international recognition, including as a Red Bull Basement World Finalist, for its ability to revolutionise performance and comfort for all athletes.

> **Our Student Project House coaches taught us that we should never be afraid to ask for help.**
>
> Cara Ammann

3D PRINTER KIT

FROM CURIOSITY TO 3D INNOVATION

How a passion for learning led to tangible creation

Henry working on his 3D printer.

As a bachelor's student in ETH's Department of Mechanical and Process Engineering (MAVT), Henry Alvarez joined SPH eager to learn through making – although he didn't yet have a concrete project idea. Exploring 3D printing, he noticed that certain parts were hard to find, which sparked the idea to create modular components for a DIY 3D printer.

With support from his project coach and the Makerspace team, Henry developed a system that allowed students to build 3D printers using mostly in-house materials. Today, Henry offers 3D printer DIY kits to students interested in building their own.

FUTURE ENERGY STORAGE TECHNOLOGY

From Makerspace to a pilot with Amazon

David Taylor and his friends set out to address a global need: more efficient and sustainable storage of renewable energy.

Driven by this shared vision, they tapped into Student Project House Makerspace resources, building and refining their prototypes of a membrane-less flow battery, taking part in SPH coaching sessions, and engaging with our sparring partner network.

From 2022 to 2023, the ETH spin-off secured over 8 million Swiss Francs in grants from organisations like SPRIND and the Migros Pioneer Fund. They've also been recognised by top climate innovation awards and landed a partnership with Amazon to pilot their solution for accessible and reliable renewable power on a global stage.
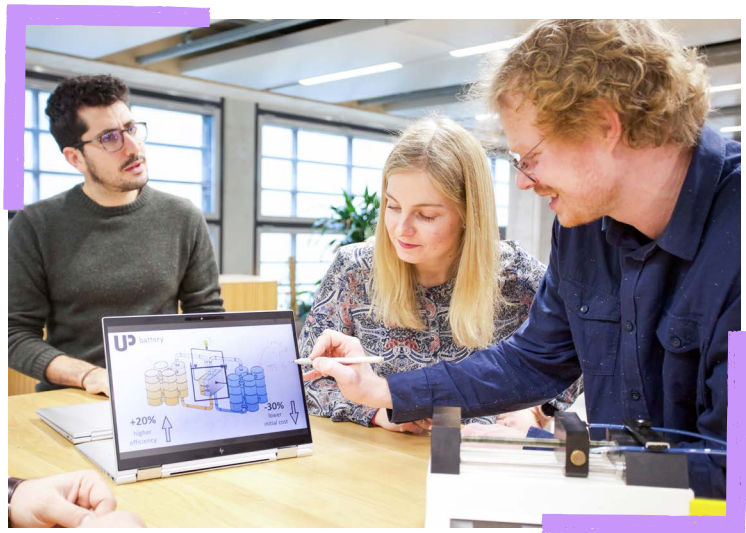
The Unbound Potential team working on their design.

Watch a video of Unbound Potential in action

TACKLING THE GLOBAL WATER CRISIS

A PhD-powered real-world solution

Driven by a deep personal love for rivers, Jessica Droujko set out to address the global water crisis by transforming the way water data is managed and monitored.

At the Student Project House, this spark transformed into a vision that would become Riverkin – a system designed to provide accessible, real time data on river health. Jessica benefited from the resources and coaching she needed to transform her PhD research into a real-world solution.

Gaining recognition from various organisations, Riverkin is now poised to lead the way in freshwater resource management. Its work is empowering communities and companies with crucial data across the globe, from Switzerland and Greenland to India, helping to preserve natural ecosystems and ensure sustainable global water use.

> **The Student Project House has been instrumental in helping me transition from a PhD into the Pioneer Fellowship.**
>
> Jessica Droujko
> Co-Founder – Riverkin

Learn more about Jessica

Jessica Droujko, placing her river sensor.

> **Student Project House gave me the skills and confidence to explore new technologies and be part of a supportive, diverse community.**
>
> Jessica Andermatt, Makerspace Instructor

GENDER DIVERSITY & SUSTAINABILITY

Our team designing the ETH Diversity Award.

Fostering female innovation

We're committed to ensuring all innovators and makers have access to resources and opportunities. From 2023 onwards, we've made female participation a core objective at the Student Project House. We know that with support from our collaborators we can further level the playing field and achieve greater gender equality.

Our dedication to sustainability

Inspired by ETH Net Zero 2030, the Student Project House aims to be the first entity of ETH to reach net zero. We have begun quantifying emissions, identifying areas for improvement, and integrating sustainability into daily operations. We actively support all student projects focused on sustainability, providing resources, mentorship, and a platform to drive impactful change.

Celebrating diversity and inclusion

Student Project House was invited to design and create the award for the ETH Diversity Award at the Makerspace. We were thrilled to play a part in helping the diversity team recognise Student Project House's ongoing efforts to make ETH a more inclusive space.

Project Itératif working on laptop bags from recycled textiles.

More sustainability info here

THANK YOU FOR BEING THE WIND IN OUR SAILS

Student Project House is only possible thanks to the support of donors, sponsors, and volunteers who generously share their resources, time, and materials.

Thank you to each and every one of these guiding lights who have made it possible for us to support 3100+ students' development of a Maker-Innovator Mindset in 2024.

Reach out to Lucie Rejman, Head of the Student Project House, to find out how you can help us continue to chart our course.

lucie.rejman@sph.ethz.ch

"We support the Student Project House because we share a commitment to entrepreneurial spirit and hands-on learning. We're impressed by how the SPH empowers students to build, test, and learn from failure, developing a maker-innovator mindset that can change the world."
Asuera Stiftung

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