### **ETH** zürich







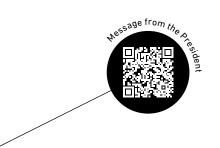


Sustainable energy supply and climate protection, cybersecurity, artificial intelligence, and health and nutrition are national and global challenges. ETH Zurich helps to overcome them with its high-calibre research, education and training and its status as a driver of innovation in Switzerland. As a central training institution for the natural sciences and engineering professions, the university plays an important role in combating the skills shortage. In partnership with industry, it develops technical innovations that are key to maintaining Switzerland's high degree of competitiveness. ETH safeguards prosperity and strengthens Switzerland's resilience in a volatile and uncertain world. Reliable funding of the education system is an investment in the future because every franc invested directly or indirectly in ETH Zurich generates five to six francs for Switzerland.

Analyses conducted by ETH Zurich show that for every franc invested in the university, between five and six francs are generated for Switzerland and the Swiss economy.

This value is created in the form of graduates, spin-offs, salaries paid, supplier payments and investments in Swiss companies (venture capital).





"ETH always thinks ten to twenty years ahead. We are working on initiatives on artificial intelligence and green energy, in collaboration with the institutions within the ETH domain, industry and the cantons. We are also focusing on space science as an important field, not only for research and education, but also for technology transfer."

Joël Mesot, ETH President



In January 2024, ETH joined the League of European Research Universities (LERU). This move boosts networking with Europe's tuniversities. LERU is committed to promoting basic research and raises awareness among political decision-makers. (image: ETH Zurich / Al generated)

### Cooperation in research and education

ETH Zurich is laying down the groundwork to enable it to anticipate future technological developments and social challenges at an early stage and to develop solutions for them.

To this end, it is stepping up national and international cooperation in research and education.



What the campus in Heilbronn will look like. (image: pesch partner/Topotek 1)

### Generous donation: ETH plans a new centre in Germany

Digital transformation is not only revitalising the economy; it is also key to solving global challenges. To help shape this change responsibly, ETH is planning a new teaching and research centre in Heilbronn, Germany. There and in Zurich, 20 professorships are to be created over the next 30 years. This has been made possible by a generous donation from the Dieter Schwarz Foundation. This partnership with the Dieter Schwarz Foundation allows ETH Zurich to further develop its research and teaching, particularly in the field of artificial intelligence, to an extent that would not be possible with regular ETH funding and structures.







### **Diversity**

Addressing diversity has become a central task of university development. ETH Zurich is working on a diversity strategy that underlines its commitment to diversity and inclusion. The aim is to create and foster an open university culture that embraces all members of the university community. ETH Zurich's diversity strategy is aligned with the ETH Board's Diversity Strategy 2025–2028.







### Sustainability

ETH Zurich has been documenting its sustainability performance for more than 20 years. Sustainability is firmly embedded at ETH not only in research and teaching but also in campus life and in our dialogue with society. The university's holistic approach to sustainability encompasses environmental, social and economic dimensions and plays a key role in its strategic development. By generating knowledge, innovation and science-based solutions, ETH Zurich makes a wide-ranging contribution towards achieving the United Nations Sustainable Development Goals (SDGs)

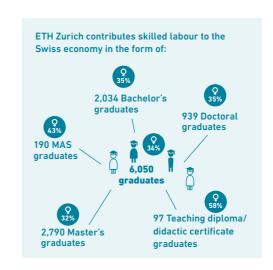








## ETH graduates are one of the most important resources of the Swiss economy



Alongside research, education is the key to Switzerland's prosperity. With around 4,000 Master's and doctoral students graduating each year, ETH Zurich makes a significant contribution to combating the skills shortage in Switzerland – particularly in the STEM fields and human medicine. ETH Zurich's excellent reputation attracts the best talents internationally. More than two thirds of foreign graduates remain in Switzerland to start their careers. The university's researchoriented, class-room-based degree programme conveys fundamental and subject-specific knowledge at the highest level. It features independent learning, the development of individual strengths and a flexible study structure. The result is creative thinkers who responsibly help shape the future and solve problems in a complex world. The quality of teaching is constantly improved through modern technologies and scientific findings.



### Expansion of the lifelong learning programme

In addition to educating Bachelor's, Master's and doctoral students, ETH Zurich is active in the field of continuing education. By developing new, needs-based models for lifelong learning, the university contributes to the employability of the population and thus to Switzerland's competitiveness.



A core feature of the "CAS ETH: Sustainability to Regeneration" programme is the combination of science, design and transformative practice in real-world laboratories. (image: ETH Zurich/SOURCE)

### CAS programme on sustainability and regeneration

The new "Certificate of Advanced Studies ETH in Regenerative Systems: Sustainability to Regeneration" continuing education programme offered by the Department of Civil, Environmental and Geomatic Engineering builds on the MOOC series "Designing Resilient Regenerative Systems" launched last year to address the complex and unpredictable challenges of today. It introduces tools for dealing with problems and gives practical demonstrations showing how transformations can be achieved through sustainability, leading to regeneration. The CAS is a hybrid offering, being taught online with a ten-day practical component at the MonViso Institute in Italy.



Students and degree awards

# ETH Zurich contributed to global knowledge through more than 8,300 new publications. According to the Dimensions database, 69% of ETH publications in 2023 involved international partners, while almost half (46%) involved partners in the EU.

### Interdisciplinary research for tackling the challenges of our time

ETH Zurich conducts open-ended basic research and applied research at the highest level. ETH researchers produce excellent results and find solutions to the challenges of our time. Reliable basic funding from the federal government, competitive research grants, collaboration with industry and generous donations guarantee an outstanding research environment. Interdisciplinary cooperation and national and international networking are vitally important for the university. Research ethics (for research on humans and animals) and scientific integrity provide the normative framework. ETH's strategic action areas are Health and Medicine, Data and Information, Responsibility and Sustainability, and Materials and Manufacturing.





Professors Tanja Stadler and Barbara Treutlein were awarded the Cloëtta Jubilee Prize for their outstanding achievements in biomedical and developmental biology research. (image: ETH Zurich / Carolin Arndt)

### Award-winning ETH researchers



ETH Zurich offers a superb environment for cultivating academic excellence. This is reflected in the prestigious honours and prizes won by its researchers.

### Ethics and sustainability in research

ETH Zurich provides all its services in the most resource-saving and environmentally friendly way possible. When it comes to animal experiments, ethical considerations are also important. Consequently, ETH Zurich promotes research into and implementation of the 3R principles (replace, reduce, refine).

### One animal experiment instead of many

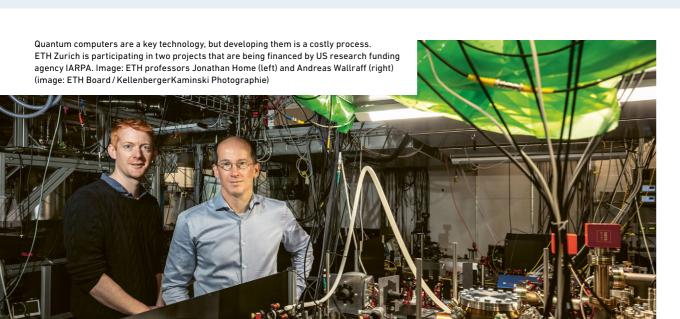
To track down the genetic causes of diseases, the usual method is to switch off a single gene in animals and study the consequences this has for the organism. It often takes many attempts to achieve success. ETH researchers have developed a method that allows them to switch off several dozen genes in just one experiment. They modify individual cells in different ways and analyse the consequences for each cell. The method is particularly suitable for studying diseases with complex genetic causes. The researchers have discovered genes, for instance, that are relevant for a severe genetic disorder.







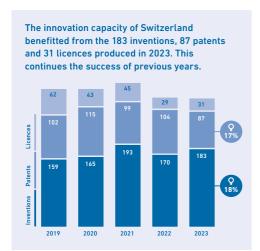






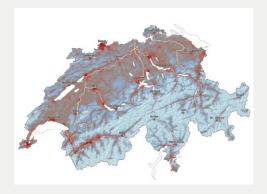
### The transfer of research findings ensures innovation and prosperity

The exchange and transfer of knowledge strengthens innovation and boosts prosperity in society. The transfer of knowledge based on ETH Zurich's world-class research also enhances the competitiveness of Swiss SMEs and large corporations. The university is involved in pioneering innovation partnerships and supports entrepreneurship, in particular through the licensing of research results and the establishment of spin-offs. Over 580 spin-offs, founded in the last 50 years, have created thousands of jobs, and attracted 330 million francs from private investors in 2023 alone – a record unequalled by any other university in Europe. What is more, ETH researchers are involved in various activities that provide the groundwork for evidence-based political decisions.



### In the service of society

ETH Zurich helps to overcome a wide range of challenges – at local, national and global level. Working with public administrations and policymakers, it adopts an interdisciplinary and transdisciplinary approach to developing solutions. ETH Zurich continued to provide scientific services for the country in 2023, working with the Swiss Seismological Service (SED), for instance.



Earthquake risk map of Switzerland. Dark red zones: very high risk; light blue areas: very low risk. (image: Swiss Seismological Service)

### Knowing where earthquakes cause damage

A destructive magnitude 6 earthquake occurs every 50 to 150 years on average in Switzerland or near the Swiss border. To find out more about the consequences of such quakes, the Swiss Seismological Service (SED) at ETH Zurich teamed up with the Federal Office for the Environment and the Federal Office for Civil Protection to develop an earthquake risk model. According to the model, the risk of damage to buildings is highest in the cities of Basel, Geneva, Zurich, Lucerne and Bern. The findings should help government agencies make informed decisions in the areas of earthquake preparedness and incident management.





### Applying new research findings

ETH Zurich is at the service of society. With its world-class education and research, it transfers knowledge characterised by groundbreaking inventions and innovative entrepreneurship. In this way it maintains Switzerland's position at the technological forefront. ETH Zurich also promotes the transfer of knowledge through cooperation with industry, political decision-makers and other partners.

### Al and robotics allow a safer intubation procedure

Intubation of the trachea can save lives. However, the procedure is challenging. aiEndoscopic, a spin-off from ETH Zurich, the University of Zurich and University Hospital Zurich, has developed a device that makes intubation easier and safer. It combines artificial intelligence and robotics: the endoscope can be inserted into the trachea at the touch of a button. The device's own software evaluates images from the mouth and throat in real time and, upon confirmation by the user, brings the endoscope into the correct position. This allows people with limited experience to intubate successfully.







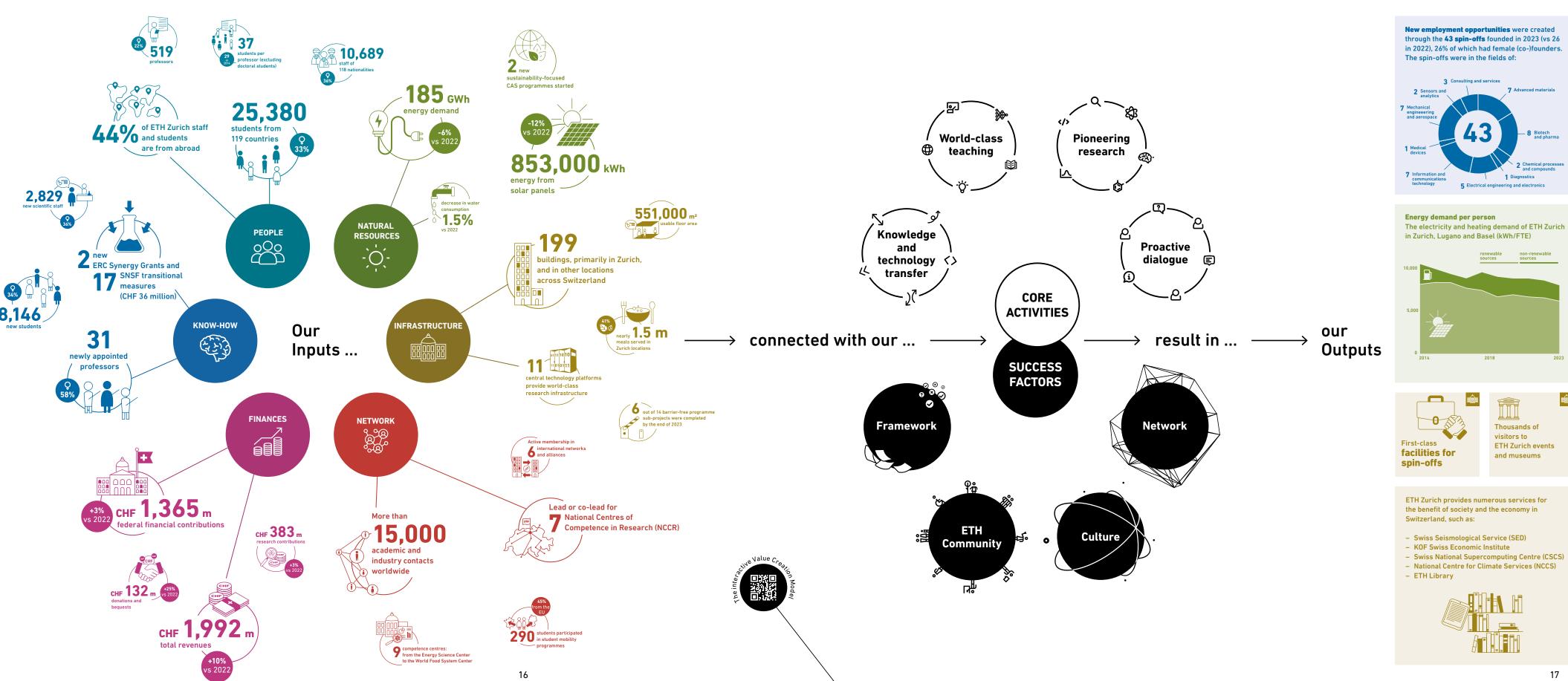


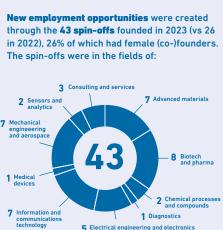
# How ETH Zurich creates value

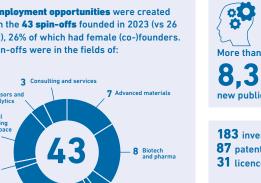
ETH Zurich engages in its core activities of research, teaching and knowledge transfer not only as an end in itself, but in the service of society. This is because research and science are drivers of positive change. The Value Creation Model illustrates the resources that ETH Zurich can draw on, the value it creates for society and the success factors it relies on.

How ETH Zurich creates value connected with our our Outputs

Unfold to see the Value Creation Model













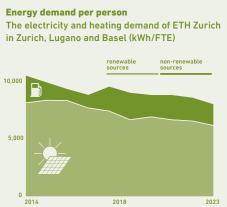


ETH researchers are regularly awarded the most prestigious science prizes.



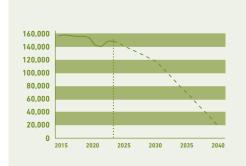
Master's and doctoral alumni hired are after one year.





In 2023 ETH reported an increase in emissions, partly explained by a delayed COVID effect. The ETH Net Zero climate targets will make a major reduction mandatory for everyone.

 $^{\prime}$  CWTS /



**1,854** tonnes of waste generated, of which 45% was recyclable material 

ETH Zurich outlined its roadmap towards becoming a

climate-neutral

university.





...and they work for the most part in Switzerland (89% of Master's graduates, 74% of Doctoral graduates).



Thousands of visitors to **ETH Zurich events** and museums

ETH promotes innovation ciplinarity

and interdisamong students.

ETH's broad

portfolio of inter-

disciplinary units

centres and

35,000

graduates are

includes techno-

logy platforms,

other initiatives.

members of the ETH

Alumni Association.

ETH is a leading institution for science-based policy advice in Switzerland and beyond. ETH researchers were involved in important committees at the science-policy interface, including the external group of experts of the Swiss Data Science Competence Center (DSCC) and the Intergovernmental Panel on Climate Change (IPCC).



Centres of Competence in Research are under ETH leadership. միլիի

CHF 1,261 m was invested in human capital in 2023, securing nearly 13,800 jobs.

The **social and** competencies are being incorporated into all aspects of HR and personnel development.

Every franc invested in ETH Zurich generates between five and six francs for Switzerland.

ETH spin-offs raised more than CHF 330 m from external third-party investors in 2023. The five spin-offs with the largest disclosed third-party investments were:

**MV** botics

MAEMAO

wingtra

17 (graphics: ETH Zurich / FS Parker / null-oder-eins)



### A reliable partner for policymakers, business and society

In 2023, thousands of visitors enjoyed exhibitions, guided tours and events at ETH Zurich museums and locations. Some of the visitor numbers are shown below: focusTerra: **Treffpunkt** 19,000 **Science City:** 20,000 ETH tours: visitors 9.000 visitors **Graphische Sammlung: ETH Industry Day:** exhibition visitors visitors

Switzerland's prosperity is based to a large extent on its outstanding education and research system. Switzerland has been deliberately investing in this sector for generations and has created favourable framework conditions from which we benefit today. ETH Zurich is at the service of society and maintains a lively dialogue with the public, policymakers and business. Scientific progress and far-reaching technological change require open engagement with a range of stakeholders. As a leading scientific and technical university, researchers and staff at ETH Zurich impart knowledge that serves as a sound basis for decision-making and makes a key contribution to fact-based, democratic discourse.

### Encounters with the world of politics

ETH often has the privilege of welcoming foreign heads of state to Zurich accompanied by members of the Federal Council. While this dialogue helps to maintain the university's international profile, it also gives ETH an opportunity to fulfil its role as a forum for the open exchange of ideas and discussions.

### Visit by the President of Moldova

Following talks on bilateral cooperation, Moldovan President Maia Sandu visited ETH Zurich accompanied by former President of the Swiss Confederation Alain Berset. During a panel discussion in the Audi Max, they talked about the Republic of Moldova's role in the geopolitical context of Eastern Europe and the impact of the war in Ukraine on the country. The event also included a discussion between Maia Sandu, ETH President Joël Mesot and Viorel Bostan, Rector of the Technical University of Moldova. They discussed possible collaboration in the academic field.



Image (left to right): former President of the Swiss Confederation Alain Berset, Moldovan President Maia Sandu, ETH President Joël Mesot (image: ETH Zurich / Alessandro Della Bella)





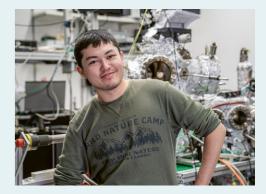


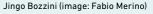
### ETH is an important vocational hub

ETH's vocational training plays an important part in the Swiss dual educational system by providing young people and adults with theoretical and practical experience in 15 different occupations. ETH Zurich has developed a new vocational training strategy in order to ensure it remains an attractive employer for vocational training and is equipped to respond rapidly to the changing demands of the future labour market.

### How an apprentice finds time for research

For his final project, Jingo Bozzini, an electronics apprentice at ETH Zurich, produced a test device that will save physicists a lot of time in developing a novel microscope. "Especially in experimental physics, it's important that we have experts who can solve technical problems and implement things effectively," explains Yves Acremann from the Solid State Physics research group. Close collaboration between researchers and apprentices is a hallmark of vocational training at ETH Zurich.









### ETH Zurich's workforce plays a key role in the university's success

ETH Zurich's international positioning is contingent on its ability to recruit the most talented people from around the globe. With its attractive working environment, culture of mutual respect, state-of-the-art infrastructure and flexible forms of working such as the Future of Work and Lifelong Learning Hub, ETH is successful in attracting highly professional and committed staff, many of whom enrich Switzerland's own labour pool. Particular emphasis is placed on continually developing the Social and Leadership Competencies of all ETH employees, as well as promoting equal opportunities and inclusivity. The different perspectives and experiences of staff and students augment the university's strength and generate added value in a highly competitive global environment.

The ETH social and leadership competencies are a combination of skills, knowledge and attitudes that empower employees to act decisively based on shared values. Communicated in January 2023, they have gained widespread recognition. Presently, they are being incorporated into all aspects of human resources and personnel development and serve as the fundamental framework for the upcoming Lifelong Learning Hub tailored to all ETH employees.

Living inclusivity

cting responsibly

Building bridges

Enabling per

Nurturing
well-being



### For the first time in the history of ETH Zurich, more women than men were appointed professors.

Diversity is one of ETH Zurich's success factors. Promoting women is therefore a top priority at professor level and in new appointments. To sustain this percentage rise in future, the university has set itself a target of 40 percent females for new professorships. This target was exceeded in 2023: out of 31 in total, 18 new appointments were female professors (58 percent, compared with 48 percent in the previous year).



### Exploiting potential, maximising performance

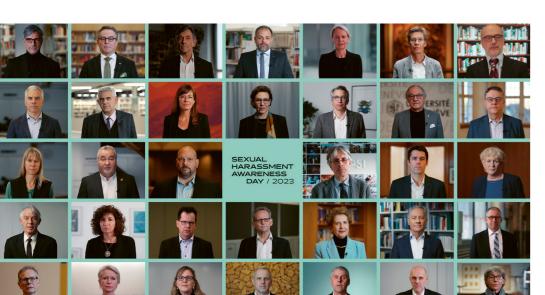
Highly qualified and motivated staff are the key to excellence in research and teaching. Personnel development therefore plays a central role at ETH Zurich. The university supports the personal and professional development of its employees with a diverse range of offerings to ensure they maintain a high level of performance and continue to develop their skills over the course of their entire career.



### Collaborative learning environment for all ETH staff

Continuous acquisition of knowledge and ongoing personal development are crucial for ensuring we are ready to meet future demands. The Lifelong Learning Hub (L3H) creates a space in which all ETH employees have flexible access to a broad range of learning content – such as workshops, online courses and podcasts – at a time and place that suits them. The predefined learning paths contain suggestions for "learning nuggets", geared to the user's current career stage and work role. In terms of content, the focus is on ETH Zurich's social and leadership competencies so as to ensure they can be embedded more firmly and developed to the full.



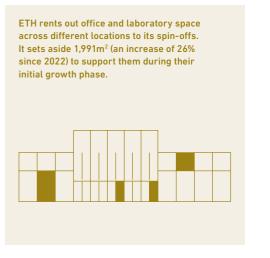


The annual Sexual Harassment Awareness Day took place on 23 March 2023. For the first time, Swiss universities and other research institutes, including ETH Zurich, joined forces to promote a culture free from sexism and sexual harassment. (image: Universities Against Harassment)



# A sustainable, inclusive campus, combined with state-of-the art technology, offers excellent teaching and research facilities

ETH Zurich develops inspiring and future-oriented environments for teaching and research. It combines a sustainable campus with state-of-the-art technology platforms, creating the ideal conditions for students and tutors to develop innovative ideas and engage in globally relevant research. Its sustainable campus development is the product of its deep awareness of its environmental responsibility. Accordingly, ETH Zurich sets itself ambitious sustainability goals, including the achievement of its greenhouse gas emissions targets and the promotion of sustainable mobility options for ETH members. Inclusion is a top priority at ETH Zurich: the university wants to remove barriers and welcome people from different backgrounds and abilities, allowing them to develop their full potential.



### ETH Zurich committed to sustainable construction

ETH Zurich consistently tailors its real estate portfolio to the demands of teaching, research and knowledge transfer, as well as the necessary support services. Innovative project methods and cost-conscious project management help to push down costs, allowing more resources to be allocated to academic work.



With a total floor area of 39,000 m<sup>2</sup> across eight storeys, the new BSS laboratory and research building in Basel has enough space for around 350 staff and up to 250 Master's students. (image: ETH Zurich / Alessandro Della Bella)

### Move to the new BSS and GLC buildings under way

Last year ETH professors, researchers and staff were able to move into two new buildings. The BSS laboratory and research building in Basel is the new home of the Department of Biosystems Science and Engineering (D-BSSE). The integration into the Schällemätteli campus provides optimal conditions for collaboration with local research partners as well as with pharmaceutical and biotech companies. In Zurich, the new GLC building on the Gloriarank site offers space for the Department of Health Sciences and Technology (D-HEST) and the Department of Information Technology and Electrical Engineering (D-ITET), creating a modern development and laboratory building that brings together teaching, research and translation in the fields of health, medicine and medical technology.



### ETH as tenant and partner

The development of new premises is driven by the steady rise in staff and student numbers. ETH plans to gradually expand its own portfolio of properties in keeping with the special building regulations for the Hönggerberg campus. It rents some premises in order to satisfy the acute demand for space. This strategy allows flexible management and the effective use of resources.

### ETH Zurich expands its presence at Innovation Park Zurich

ETH Zurich has rented more space at Innovation Park Zurich (IPZ) in Dübendorf under a 20-year agreement. In Hall 2 the main focus is on fixed-term cooperation projects between industry and spin-offs or research groups. In future, Hall 3 will be available for student teams to carry out their own projects and take part in international competitions, for example. By choosing the IPZ site, ETH aims to strengthen collaboration between science and industry in the Greater Zurich Area.







The visualisation shows the interior of Hall 2 of Innovation Park Zurich in Dübendorf after refitting, (visualisation: KCAP)

The "smart moves" awareness campaign is part of ETH Zurich's efforts to reduce its greenhouse gas emissions to net zero by 2030. It keeps ETH members up to date on sustainable mobility options and via campus events motivates them to become more energy efficient. (image: ETH Zurich / Nicolas Duc)



## ETH Zurich's governance guarantees the university's high-quality assurance while providing the necessary flexibility

The ETH Act grants the university academic, organisational and financial autonomy. This is in addition to a strong sense of individual responsibility, which the Executive Board encourages all ETH employees to embrace. ETH Zurich's leadership combines a presidential structure with a well-established system of participation and freedom at the academic department level. Within the university, the President has overall accountability for the areas of strategy, appointments and finances. The system of participation ensures broad acceptance of the decisions made. The rETHink organisational development project is a good example of the university's ability to focus its strengths and benefit from the creative drive of its members.

### **Academic departments**

Architecture and Civil Engineering	Engineering Sciences	Natural Sciences and Mathematics	System-oriented Natural Sciences	Management and Social Sciences
Architecture	Mechanical and Process Engineering	Mathematics	Earth Sciences	Management, Technology, and Economics
Civil, Environmental and Geomatic Engineering	Information Technology and Electrical Engineering	Physics	Environmental Systems Science	Humanities, Social and Political Sciences
	Computer Science	Chemistry and Applied Biosciences	Health Sciences and Technology	
	Materials	Biology		_
	Biosystems Science and Engineering		_	

### Protection of intellectual property rights

Alongside teaching and research, the commercialisation of research findings is part of ETH Zurich's mandate. The goal of technology transfer is to produce the maximum economic benefit for society and to plough back money into research. Protecting intellectual property is a priority for ETH Zurich.

### A strategic cornerstone

Hundreds of inventions and patents are filed and new licences issued each year at ETH Zurich – all based on intellectual property rights.

The Executive Board plans to dedicate more resources to the strategic development of intellectual property issues. One point of emphasis will be protecting the intellectual property created at ETH Zurich so that researchers can use their knowledge in spin-off companies. Given this backdrop, the Executive Board has appointed an Associate Vice President for IP Policy: Stefan Bechtold, Professor for Intellectual Property, who took up the post on 1 September 2023.



Stefan Bechtold, Associate Vice President for IP Policy (image, montage: ETH Zurich/Giulia Marthaler/Adobe Stock)





Executive Board and organisation chart







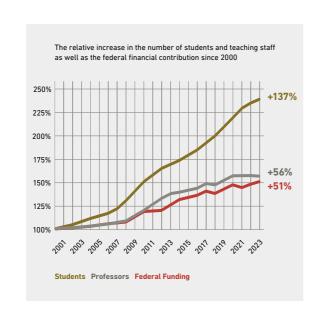


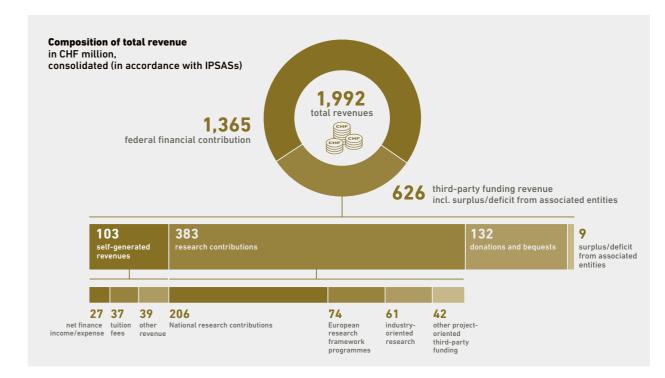
More about finance

## The total contribution from the federal government provides the basis for a sustainable funding policy

Stable and reliable funding from the Swiss federal government is essential to ETH Zurich's ability to fulfil its basic mandate and to develop strategically. This strengthens Switzerland as a research and development location and makes ETH one of the world's best and most competitive universities. Without financial planning certainty, ETH is unable to perform its diverse functions as a national university and compete at the international level.

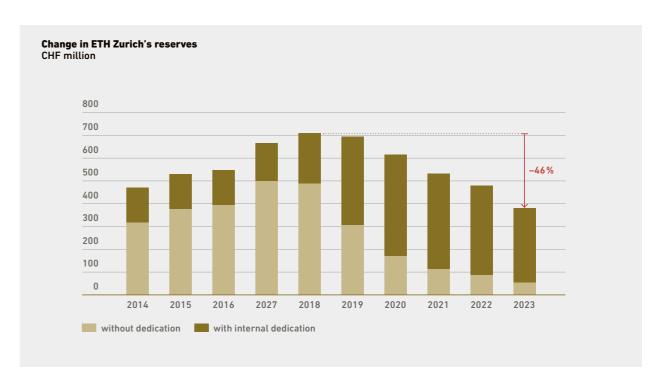
One challenge is the growth in student numbers, which is rising significantly faster than funding. A deterioration in the faculty-to-student ratio could jeopardise connections with the world's best universities in the medium term. ETH is looking for solutions to manage growth while maintaining the quality of its teaching.





ETH Zurich generated total revenue of CHF 1,992 million, including a federal financial contribution of CHF 1,365 million. The remaining CHF 626 million comprises third-party funds (including the surplus from associated entities). The sum of the figures displayed may not match exactly due to rounding effects at the various levels. (images on this page: ETH Zurich / null-oder-eins)

ETH Zurich's reserves have also declined by almost 50 percent since 2018. The university now has just 54 million Swiss francs of reserves without dedication that can be used to cover special events. This means that the only way for ETH Zurich to compensate for the cuts in basic funding planned by the federal government for 2025 is by prioritising and reducing services accordingly.



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