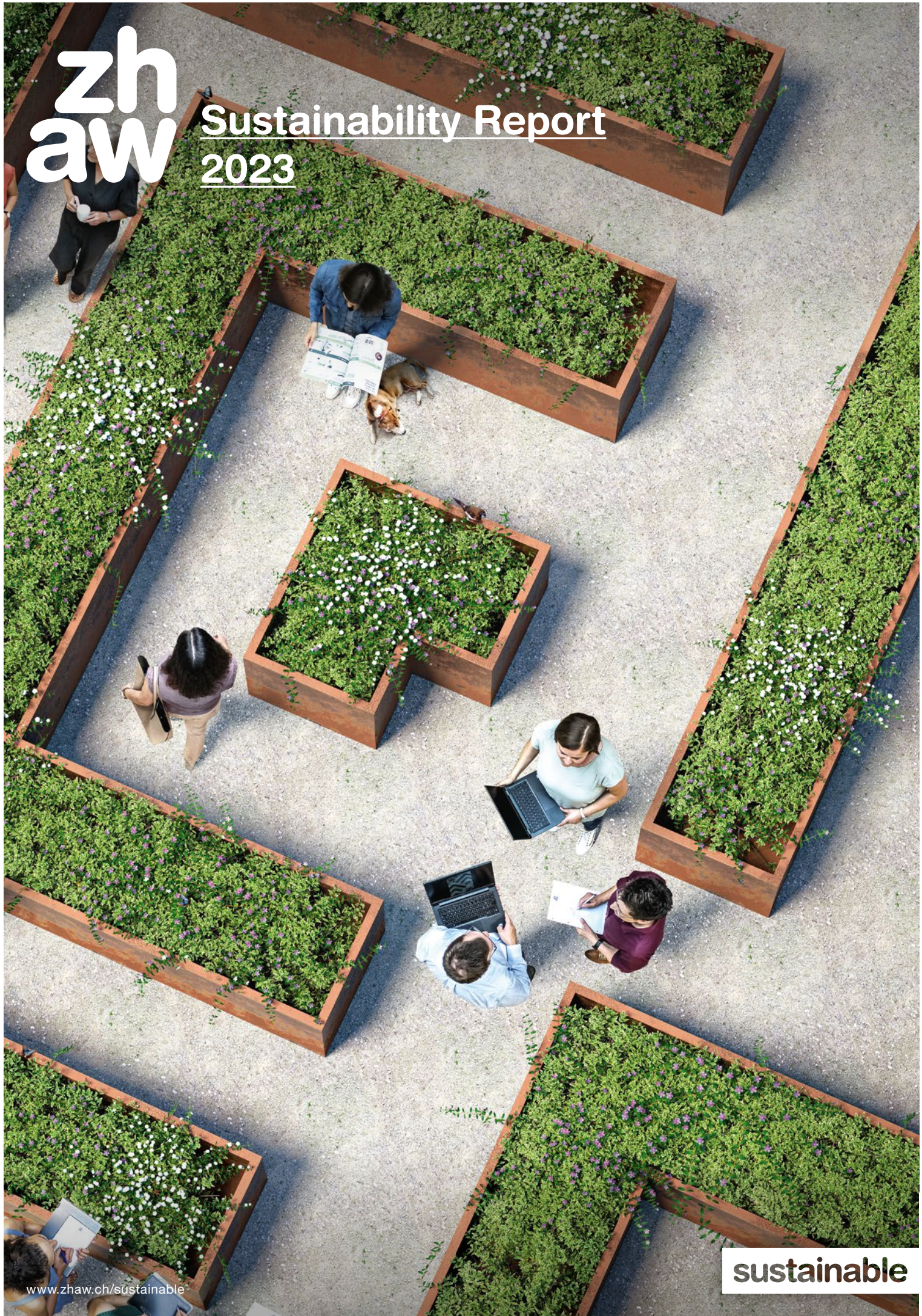




Sustainability Report 2023



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Dear sustainability enthusiasts and friends of the ZHAW

Our sustainability strategy for the ZHAW was born back in 2019. While we have been able to implement a great deal with our ZHAW sustainable strategic programme since then, there is still much work to be done. In publishing its first university-wide sustainability report, the ZHAW is providing an insight into where we currently stand in this transformation process.

An important aspect of our strategy is ensuring that our students are exposed to topics relating to sustainable development, with the university acting as a laboratory in which they can utilise their entrepreneurial skills and put their ideas into action. Innovative solutions and an entrepreneurial mindset are the order of the

day. After all, specialist knowledge alone will no longer be enough if we are to successfully deal with the environmental, social and economic challenges we are facing. These three dimensions of sustainability are closely linked and thus should always be considered as a whole.

At the ZHAW, we want to work hand in hand with the university's employees and students to implement our sustainability strategy. Some of them feature in this report as representatives of the many other ZHAW employees and students who work passionately to promote sustainable development. These contributions are made in the areas of research, teaching and university operations as well as at a personal level with

the aim of finding answers to the most pressing questions of our time. Rapidly progressing climate change, in particular, is a challenge that we all have to face up to. In 2022, the Canton of Zurich adopted a long-term climate strategy which aims to achieve net zero greenhouse gas emissions by 2040 – or by 2050 at the absolute latest. As an interim target, emissions are to be halved by 2030 relative to 1990. The ZHAW is also pursuing this objective. The path to achieving these reductions will be a challenging one and needs each and every one of us to play our part. I hope you can take inspiration from reading our report.

Prof. Dr. Jean-Marc Piveteau
ZHAW President



In dialogue with the students

Students Rebecca Schmid and Marion Müller meet Urs Hilber and Reto Schnellmann. They all want to make the ZHAW more sustainable, but have different ideas about how best to achieve this goal.



How would you assess the implementation of the sustainability strategy so far?

Rebecca Schmid: The objectives laid out in the Green Impact Book have not been met and not all of the measures adopted in 2019 under the sustainability strategy have been addressed with the required level of urgency. We therefore take a critical view of how the strategy has been implemented thus far.

Urs Hilber: Compared to where we started, we find ourselves in a very different place today. This is clearly evidenced by the first ZHAW-wide sustainability report. We have defined a change process in our sustainability strategy. Implementing this process is proving challenging, but it is also providing additional motivation, as we can also clearly see just how urgent this change is.

Marion Müller: We would like there to be greater transparency as regards the reasons why certain goals have not been met as well as how it might be possible to implement them in a timely fashion.

Reto Schnellmann: Our fact-based approach can only be implemented if we know what we are comparing our progress with. Collecting the required data has proven far more challen-

ging and time-consuming than we had anticipated. In addition, the need to manage the coronavirus situation and counter the potential energy shortage that was looming last winter tied up a number of resources. At the same time, however, the latter also gave rise to measures that will support us in achieving the net zero target.

Question to the students: what specific measures would you like to see from the ZHAW?

Rebecca Schmid: In the form of a petition, we, the Sustainability Commission of Alias, are calling on the Executive Board to take concrete measures aimed at tackling the climate crisis and thus to reduce greenhouse gas emissions by at least 50 percent by 2030 relative to the 2017-2019 baseline. We propose the definition of an emissions budget as well as clear targets for reducing greenhouse gas emissions.

Marion Müller: During the coronavirus pandemic, we saw how drastic changes brought about a sudden reduction in emissions of more than 40 percent. In the medium term, however, we propose that the ZHAW take measures in those areas where a major leverage effect can be achieved. We assume that a purely plant-based catering menu would reduce emissions

from this area by around two-thirds. Furthermore, travelling by train within Europe and limiting the number of intercontinental flights in favour of online meetings could see the lion's share of flight emissions being saved.

«It is important that the specific measures are developed as part of a participatory process in collaboration with employees and students.»

Rebecca Schmid

Other measures might include extending the service life of IT devices from two to four years and implementing energy-saving measures in buildings like we did during the energy crisis last winter.

Rebecca Schmid: It is important that the specific measures are developed as part of a participatory process in collaboration with employees and students so as to ensure that any negative impacts on university operations are minimised to the greatest extent possible. We are also calling for both basic and subject-specific content on sustainability to be taught as part of all degree programmes in order to adequately prepare us for our future professional lives.

The ZHAW is nothing without students. Is there an argument that the perspective of the university's most important stakeholders has not been sufficiently taken into account in the ZHAW's sustainable development measures to date?

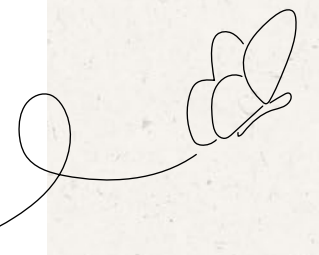
Urs Hilber: The demands outlined in the petition are justified and are already being addressed by our Executive Board. Our challenge and task lies in getting all ZHAW staff and students on board and encouraging them to make the topic their own. I would like to see the petition attract several thousand signatures, as this would make it easier to subsequently implement its demands. I am working on the assumption that those who sign the petition will follow through with their own actions.



Rebecca Schmid is studying for a Master of Science in Environment and Natural Resources at the School of Life Sciences and Facility Management and is responsible for the committees at Alias.



Urs Hilber is the ZHAW's Head of Sustainable Development, Dean of the School of Life Sciences and Facility Management and a member of the Executive Board.



Reto Schnellmann: The university isn't an island. Instead, it is part of an overall system with numerous stakeholders. Each and every one of us is therefore called upon to make a contribution through our specific actions and sacrifices. At the same time, it is essential that we don't also lose sight of aspects of social and economic sustainability.

Marion Müller: The fact that we are represented in various committees and have a voice in the University Conference means we certainly yield an influence on university policy. We also have two student representatives on the Sustainable Development Committee (SDC) who communicate our concerns: we find the collaboration and the willingness to enter into dialogue within this body to be very valuable. Despite this involvement in the SDC, however, we feel that the voices of students and staff are neither sufficiently heard by the Executive Board nor adequately taken into account in shaping the university's sustainability policies.

Other cantonal universities have set themselves the goal of achieving net zero by 2030. Why has the ZHAW taken the decision to base its target on the canton's climate strategy, which aims to achieve net zero by 2040 or by no later than 2050?

Urs Hilber: Responsibility for the ZHAW's emissions can be assigned in roughly equal measure to our mobility behaviour, our resource consumption and the energy required by our buildings. The Executive Board wants to halve greenhouse gas emissions by 2030 – fully in line with what our students are demanding. This is an ambitious goal. It isn't possible to reduce air travel at a university to zero, as both teaching and research now take place on an international scale and require social interaction. Our diet has deep cultural roots, while converting all of the heating and cooling systems in our buildings to run on non-fossil fuels is a generational challenge.

Reto Schnellmann: Net zero isn't a task that we can accomplish alone. With regard to the conversion of our buildings in particular, we work closely with the canton, which assumes responsibility for our cantonal real estate and the rental agreements with private individuals. In short, achieving the net zero target by 2030 would only be possible by purchasing carbon credits abroad, which in my eyes represents a modern form of selling your indulgences.

«Achieving the net zero target by 2030 would only be possible by purchasing carbon credits abroad, which in my eyes represents a modern form of selling your indulgences.»

Reto Schnellmann

Urs Hilber: And for me, this is where an ethical aspect also comes into play. Most decision-makers at universities who have resolved to achieve the net zero target by 2030 will be retired by the time the results come in. The problem will then be left at somebody else's door. Our Executive Board wants to set realistic goals that it can achieve. It wants to take on responsibility and not simply pass on problems to future generations.

What impact do you hope this first ZHAW sustainability report will yield?

Rebecca Schmid: For us, the report is of crucial importance, as it will create transparency about the ZHAW's emissions. This in turn will make it clear where the levers for developing effective solutions lie.

Marion Müller: I hope that the report will be communicated on a broad scale, meaning that greater attention is afforded to the topic of sustainability at the ZHAW. If more people take an interest in this issue, we can work together to advance solutions to the problems we face.

Reto Schnellmann: It is my hope that the numerous efforts undertaken by the ZHAW in the

area of sustainability will be spotlighted, that the report will generate additional awareness of the challenges that still lie ahead and that it will encourage even more of the university's staff and students to become active themselves and make a contribution.

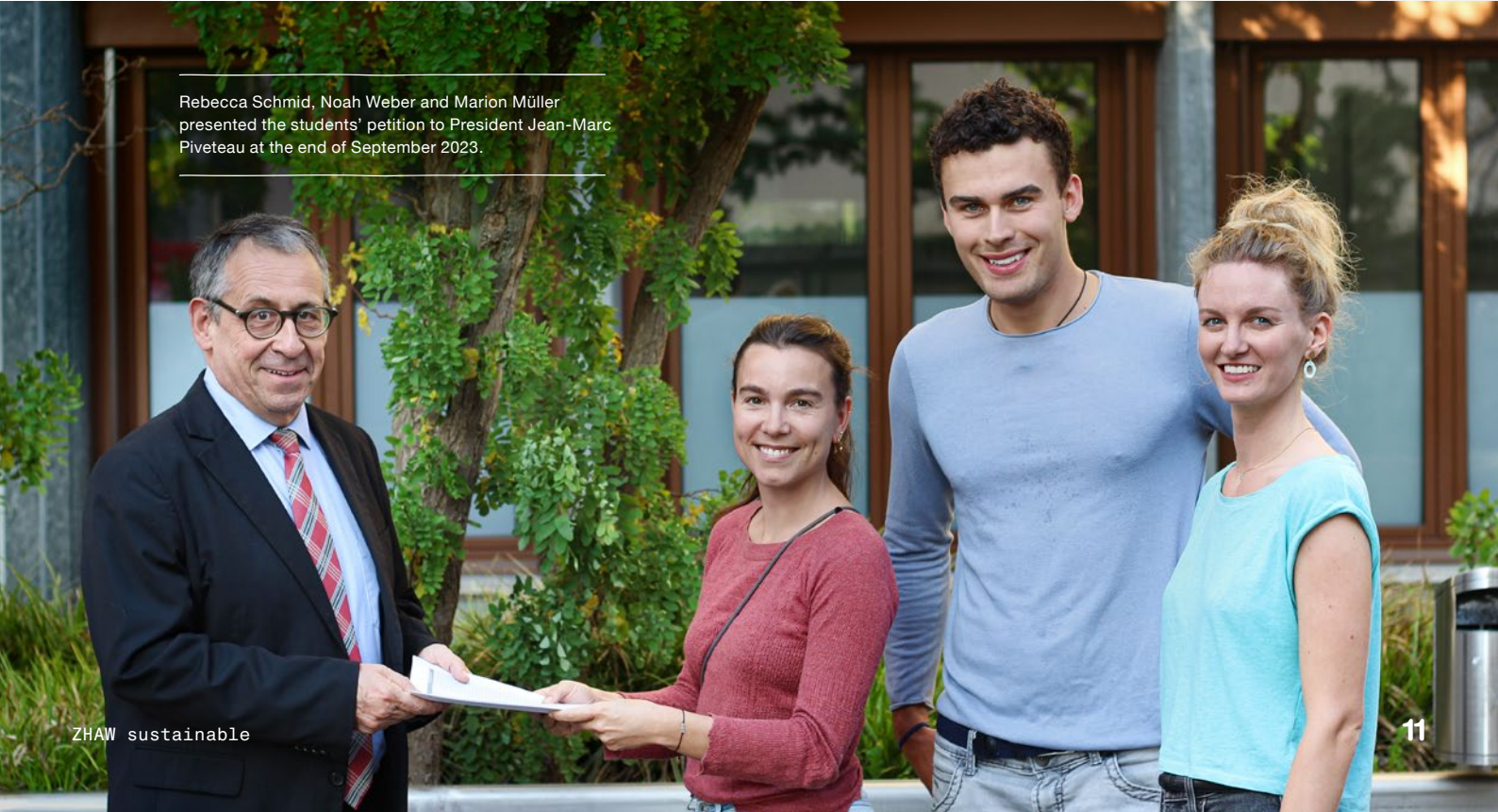
Urs Hilber: Reading this sustainability report has emboldened me. It is incredible to see how much is already being achieved at the ZHAW – even though this can, of course, never be enough. In the past, the School of Management and Law with its PRME Report and the Institute of Natural Resource Sciences with its own sustainability report had already taken on a pioneering role with their reporting in this area. This first ZHAW-wide report provides many people who have recognised the signs of the times with a platform to have their say. I hope that they are able to inspire others and motivate them to become part of the community and get involved themselves. The possibilities are enormous and each and every contribution counts.



Reto Schnellmann is the Managing Director of the ZHAW and a member of the Executive Board.



Marion Müller is studying for a Master of Science in Applied Psychology at the School of the same name and is a member of the Sustainability Commission of Alias (NaKt).



Rebecca Schmid, Noah Weber and Marion Müller presented the students' petition to President Jean-Marc Piveteau at the end of September 2023.

More than just a strategy

Sustainable development at the ZHAW is a vibrant principle of action and a responsibility for all stakeholders. The sustainability strategy is enshrined at the highest level of the university and relates to all areas of activity.

Sustainable development is giving rise to cultural, organisational, infrastructural, curricular and didactic change at the ZHAW. This is necessitating behavioural adaptations and new skills from staff and students alike. [The sustainability strategy](#) therefore features motivational objectives and measures relating to the ZHAW's academic programmes, continuing education, research, knowledge transfer, services, operations and governance. The sustainability strategy is long term and participatory, combining both top-down and bottom-up initiatives. The ZHAW is guided by the UN's 2030 Agenda and its 17 Sustainable Development Goals. Sustainable development is firmly enshrined within the ZHAW and is

also discussed regularly within the Executive Board, where Urs Hilber has been appointed Head of Sustainable Development. He leads the ZHAW sustainable strategic programme as part of the President's Office.

ZHAW sustainable is pressing ahead with the implementation of the sustainability strategy at the ZHAW in collaboration with the Schools, the President's Office, Finance and Services and the university's students. ZHAW sustainable is supported in performing its work by the [Sustainable Development Committee \(SDC\)](#). The overarching objectives on the next page have been defined as part of a participatory process.



→ [The 17 Sustainable Development Goals at a glance](#)



Visibility

We make visible the areas in which sustainable development is taught and researched at the ZHAW and show that we have a correspondingly broad range of expertise.

Community Building

We build a community and contribute to fostering internal and external contacts and promoting the exchange of knowledge and collaboration between the ZHAW's Schools in the field of sustainability.

Student Experience

We bring ZHAW students into close contact with sustainable development issues during the course of their studies and provide them with positive experiences in this area.

Green Impact Book

We not only collect data in the Green Impact Book, but also lay the foundation for a real-world laboratory and implement measures aimed at reducing our CO₂ emissions and increasing levels of renewability.



«Sustainable development necessitates dialogue and joint action. It is therefore important for us at the ZHAW to discuss our own actions and whether they are reasonable. This will allow us to take a decisive step in the right direction.»

Urs Hilber is the ZHAW's Head of Sustainable Development, Dean of the School of Life Sciences and Facility Management and a member of the Executive Board.

With its **Green Impact Book**, the ZHAW is laying the foundation for a real-world laboratory, collecting data and taking measures aimed at reducing its greenhouse gas emissions. Working on the basis of the available consumption data, it will further specify the university's environmental sustainability goals.

→ [More about the Green Impact Book](#)

How is sustainability enshrined within the ZHAW?

Numerous experts from all of the university's Schools work, research and teach in the area of sustainable development at the ZHAW. In doing so, they apply different approaches and adopt the perspective of their respective discipline. Sustainability is enshrined in all of the ZHAW's areas of activity.

→ [Sustainability in research and development](#)

→ [Sustainability in education](#)

→ [Services for more sustainability](#)

Where do we stand?

The measures defined in the sustainability strategy primarily address the areas of education, research and innovation, university operations and governance at the ZHAW. This overview provides an insight into what has already been implemented and where the ZHAW still has some catching up to do.



→ Integration in the Executive Board and the Schools ⓘ

The Executive Board has appointed a Head of Sustainable Development. The ZHAW sustainable strategic programme has been set up with a team. The ZHAW Sustainable Development Committee has been established with members from the Schools, the President's Office and Finance and Services as well as students.



→ Sustainability cockpit ⓘ

A concept is in place for integrating collected sustainability data (in accordance with the Green Impact Book) into a cockpit and will be implemented soon.



→ Communication concept and sustainability communication ⓘ

A communication concept is in place and is being implemented centrally in cooperation with Corporate Communications at the ZHAW.



→ Sustainability report ⓘ

The first sustainability report is being published in 2023 and a concept for future editions is in place.



→ Indexing ⓘ

A prototype for the indexing of publications, projects and modules relating to the 17 SDGs (based on vocabulary lists) is currently being finalised and tested.



→ Generic competences ⓘ

Sustainability skills are becoming ever more important in the ZHAW's degree programmes. Programmes are underway to support and coordinate the Schools in this regard.



→ ZHAW sustainable school ⓘ

Although the topic has been explored, it has not yet been possible to create a joint offer for the ZHAW as a whole besides the MOOC 'Vision 2030'.



→ ZHAW Sustainable Impact Programme ⓘ

The programme has been established and supports sustainability projects across the entire ZHAW in the areas of teaching, research and entrepreneurship. Student projects are also offered support.



→ The ZHAW as a real-world laboratory ⓘ

While the concept of a real-world laboratory has been further defined and promoted by the Sustainable Impact Programme, it has not yet been firmly established.



→ Consolidated continuing education portfolio in the field of sustainability ⓘ

Although the range of continuing education programmes in the field of sustainable development is growing, the ZHAW does not yet have a portfolio that is coordinated across departments.



→ Competence centre for applied sustainability ⓘ

Working in cooperation with other cantonal universities (University of Zurich, Zurich University of Teacher Education, Zurich University of the Arts), the ZHAW has co-founded the:

→ Zurich Knowledge Center for Sustainable Development.



→ ZHAW Market Place for Applied Sustainability ⓘ

This topic is yet to be explored.



→ Framework for research in social responsibility ⓘ

At the suggestion of the Student Committee for Sustainable Development (NaKt), the Executive Board has decided that the ZHAW will work even more intensively than before to address ethical issues. The ZHAWARE page provides a collection of documents, projects, publications and contact details as well as other content relating to the topic of ethics. Based on the results of a survey, a series of events on the topic of "ethics and higher education" has been launched.

→ ZHAWARE



→ Green Impact Book ZHAW ⓘ

The sustainability data for the Green Impact Book has been re-recorded and the ZHAW's system boundaries in this area have been explored further. Basic measures have been implemented in the categories of mobility, energy and resources. Further measures are also being examined. A revision of the Green Impact Book has been planned to ensure that it keeps representing the current situation.



Not yet started / no progress



Relative improvement achieved



Well on track



Objective achieved

Objectives of the Green Impact Book
The ZHAW reduces

- 1 greenhouse gas emissions caused by mobility
- 2 the energy consumption of its infrastructures and buildings
- 3 water consumption
- 4 paper consumption
- 5 the amount of waste generated

The ZHAW increases

- 6 the share of sustainable consumption
- 7 the use and production of renewable energy
- 8 the amount of ecologically managed green spaces and roof areas



Sustainable Development Committee

The Sustainable Development Committee (SDC) of the ZHAW comprises leaders, experts and students from all of the university's Schools and locations.

The SDC's task is to address sustainability issues at the ZHAW in cooperation with representatives from all of the Schools, the President's Office, Finance and Services and the students. Its mandate also entails supporting ZHAW sustainable in implementing the university's sustainability strategy. In performing its work, the SDC places an emphasis on transparency, inclusion and a willingness to engage in dialogue.

The SDC follows national and international developments and strives to improve the exchange of information, both internally and externally. During the committee's five meetings per year, the SDC members work on selected issues relating to sustainable development at the ZHAW before subsequently presenting them to the Executive Board. To this end, working groups are also set up outside the Sustainable Development Committee.



«ZHAW sustainable is placing the university under an obligation to become more sustainable in all its facets. While this is a good thing, it won't be a walk in the park! The Sustainable Development Committee helps to negotiate the many interests at play.»

Dora Fitzli is General Secretary of the ZHAW and a member of the SDC.



«The Sustainable Development Committee provides the perfect setting for me to work on an issue that is of central importance for our university and society as a whole, namely environmental, economic and social sustainability.»

Michael Dietmann is Head of Resources and Systems at the ZHAW School of Applied Psychology and a member of the SDC.



«The committee brings together strengths and expertise in the area of sustainability. This will play a key role in the successful implementation and further development of the ZHAW's sustainability strategy and its efforts in the area of facility management. The linking of operational themes with the ZHAW's performance mandate is an exciting and promising development.»

Thomas Larcher is Head of Facility Management at the ZHAW and a member of the SDC.



«It is important to me that sustainability is more than just a label and is instead embraced as part of university life at the ZHAW. It is fantastic that the work performed by ZHAW sustainable has already inspired concrete initiatives in the Schools.»

Carmen Koch is a lecturer at the Institute of Applied Media Studies of the School of Applied Linguistics and a member of the SDC.

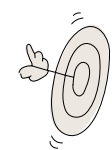
→ The current members of the SDC at a glance

Outside the SDC, dedicated working groups come together to address specific topics in further detail. For example, working groups dealing with the Green Impact Book and the integration of sustainable development within the curriculum are already in place.

→ To the working groups

Balanced gender representation at all levels

Equal gender participation is a core value of the ZHAW, which has set balanced representation at all levels as a declared goal.



Organisational measures

Flexible working and leaderships models (e.g. co-leadership arrangements)

Inclusive job advertisements and a policy of taking potential into account

Target values at a School level



Recruitment and selection process

Network building and active sourcing of the underrepresented gender

Selection committees: transparency, standardisation, equal opportunities

Raising of awareness and development of skills among managers



Staff development

The «Frauen für Führungspositionen» (women for management positions) mentoring programme to promote the next generation of women leaders

Academic mentoring programme (AMP) at the ZHAW School of Management and Law to achieve a gender balance where professorship vacancies arise

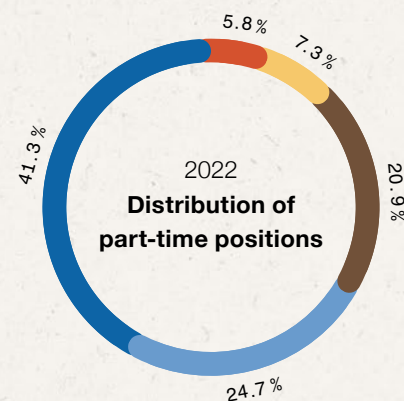
These packages of measures are supplemented by further measures aimed at promoting an inclusive university culture. The ZHAW is also working to develop offers that allow for a better work-life balance and has joined the Advance association, which advocates gender equality in business.

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Full-time and part-time positions at a glance

The majority of employees at the ZHAW work part-time, which makes it easier to improve work-life balance.

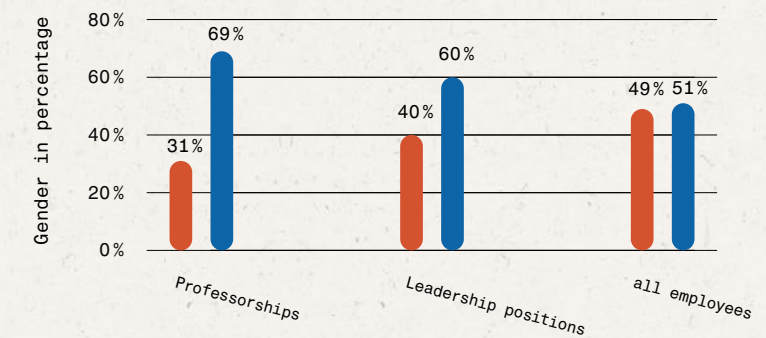


- 29% or less
- 30–49%
- 50–69%
- 70–89%
- 90–100%

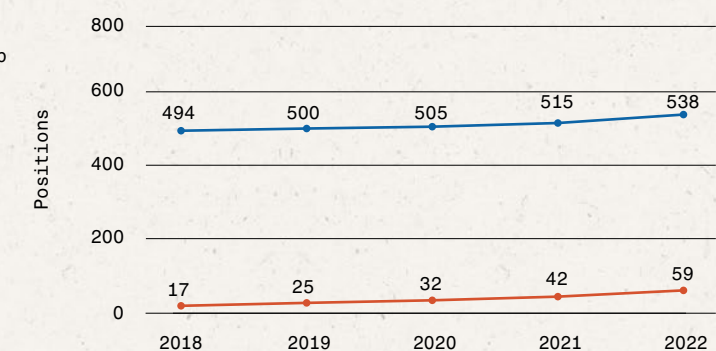
The **Diversity Unit** is responsible for establishing inclusion, equality and equal opportunities as part of the ZHAW's DNA and thus also for making it a barrier-free university. With its projects, advisory services and training courses, it makes a significant contribution to ensuring social sustainability at the ZHAW.

→ [Learn more](#)

Gender ratio as a percentage



Development of co-leadership positions



Campaign for respectful cooperation

To promote a healthy learning and working climate, the ZHAW focuses on prevention.

Solve conflicts at an early stage, provide help and set clear boundaries in order to protect personal integrity. With these calls to action as part of the ZHAW Respect campaign, the ZHAW makes clear its zero-tolerance stance towards discrimination, sexual harassment and bullying. The campaign serves to provide all of the ZHAW's employees and students with information on the wide range of support services they can draw on in the event of conflicts. It also supports managers in fulfilling their responsibility to deal with inappropriate behaviour in a professional manner.

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→ [Go to the campaign](#)



«The half-day leadership training sessions were well attended. At universities, in particular, the focus is placed on the specialist expertise that managers bring to the table. This means that it cannot always be taken for granted that they will be able to competently deal with situations involving conflicts or inappropriate behaviour.»

Svenja Witzig is Head of the Diversity Unit as part of the ZHAW President's Office.

Barrier-free accessibility as a base for ensuring equal educational opportunities for all

The ZHAW is continuing to invest in the removal of structural, digital, didactic and individual barriers.

People with physical or mental disabilities as well as those with chronic illnesses are confronted with countless obstacles when completing degree programmes or continuing education courses. The ZHAW has therefore checked all of its buildings with respect to their barrier-free accessibility and is now working to gradually eradicate any shortcomings. In the area of ICT, the ZHAW provides access to barrier-free information and tools wherever possible.

Barrier-free didactics

To support teaching staff in performing their work, the Diversity Unit has developed an [online training module on the Swiss MOOC Services platform](#). The module, which teaches the basics and competences required for barrier-free didactics, can be accessed and completed at any time. Teaching staff can also take advantage of a [free advisory service](#) should they have any specific questions regarding implementation issues.

Equal opportunities thanks to academic accommodations

Individual measures are also needed to ensure that people with disabilities can exercise their right to education and equal opportunities. With this in mind, the ZHAW has moved to review and optimise its system of academic accommodations. For example, since the entry into force of the new Regulations on Academic Accommodations on 1 February 2022, all processes have been governed on a uniform basis, the associated counselling services and application process have been centralised and all Schools have appointed an academic accommodations contact person. Students and participants in continuing education courses are provided with expert support by the academic accom-

«With the new process, the responsibilities at the ZHAW are more clearly defined. This creates the necessary transparency for this important legal entitlement for our students with disabilities.»

Katja Dimitrakoudis is the specialist responsible for academic accommodations within the Diversity Unit. She examines the requests, advises the applicants and then writes the applications that are finally submitted to the Schools. She also heads up the new working group of academic accommodations contact persons and ensures coordinated implementation by maintaining constant communication with the Schools.

modations advisory service, which is based within the Diversity Unit. "I attach a great deal of importance to providing comprehensive advice and discussing the specific situation that the individual in question is facing. I also make sure to involve those responsible in the Schools from the very beginning," explains Katja Dimitrakoudis. She believes that this approach serves to facilitate a mutual understanding and makes it easier to implement the measures to everyone's satisfaction. Digital workflows are a new feature that allow applicants to submit their applications online. This means they can subsequently be processed internally by the various offices involved in a seamless fashion.

→ [Learn more](#)



Refugees given the chance to study at the ZHAW

Following the outbreak of war in Ukraine, the ZHAW immediately moved to take in students from Ukrainian universities who had fled their home country, removing the red tape that such measures often entail. Thanks to the experience that the ZHAW has gathered during this process, it will now also be in a position to support students from other war-torn and crisis-hit regions in the future.

By the end of spring semester 2023, a total of 23 students from Ukrainian universities had been able to participate in various degree programmes at the ZHAW as "visiting students." The visiting students, who were granted access to the ZHAW's infrastructure, were not required to pay any tuition fees or meet the regular registration deadlines. They were thus able to familiarise themselves with the requirements and content of the ZHAW degree programmes they



«The ZHAW recognises the importance of societal changes in connection with climate change, the energy transition and global political shifts. It is responding in a proactive and sustainable manner to the challenges posed by a politically and socially challenging time characterised by migration.»

Sandra Nonella is Co-Head of International Affairs.

attended and also had the opportunity to get to know the university itself. Since then, various scenarios have been discussed at the ZHAW as to how to ensure that all students from war-torn and crisis-hit regions can in future be provided with support in accessing university education, thus ensuring they can start, continue or extend their studies.

A welcoming university for refugee students

Among those who have fled to Switzerland, there are many individuals who meet the educational requirements to study at a university level. What's more, some also have the desire to do so. They include prospective students who perhaps wanted to start a degree programme in their home country before having to flee, existing students who had already started their university journey before arriving in Switzerland, and graduates who have already completed a particular level of tertiary education. Since autumn semester 2023, refugees with an academic background or an interest in beginning, continuing or furthering their academic pursuits have been able to attend courses at the ZHAW as [auditors](#) or [mobility students](#). This means that they have had the



Further information and admission requirements:

- [ZHAW for Refugees website](#)
- The ZHAW is a member of the [Uni4Refugees: Broadening Diversity in Higher Education Institutions project](#)
- Questions and contact: restart.international@zhaw.ch

opportunity to get to know the university environment and familiarise themselves with the level of expertise and linguistic competence expected of students, while at the same time getting a closer look at the subject area they wish to pursue. This allows them to find out whether their skill set is a good match for life at the ZHAW and, on the other side of the coin, whether the university itself lives up to their own expectations. They can also use this time to further foster their integration into Swiss life and make new contacts. Refugees can be enrolled as [regular students](#), too, provided they meet the generally applicable admission requirements.

ZHAW digital



→ More about the strategic initiative

«In my view, it is the intertwining of the digital transformation and sustainability that forms the backbone of any future-oriented university. By using digital technologies, the ZHAW will be able to pursue its sustainability goals in an effective manner and develop innovative solutions. Digitisation provides opportunities for us to improve our resource management and promote sustainable infrastructure.»

Rebecca Brauchli is Head of the ZHAW digital strategic initiative.

What impact is digitisation having on us as people? How is it affecting our university and society as a whole? In which areas is artificial intelligence being employed? And are banks

still necessary in the age of Bitcoin? ZHAW digital looks at the digital transformation in all its facets and works on innovative projects in the areas of teaching and research.

ZHAW entrepreneurship



→ More about the strategic initiative

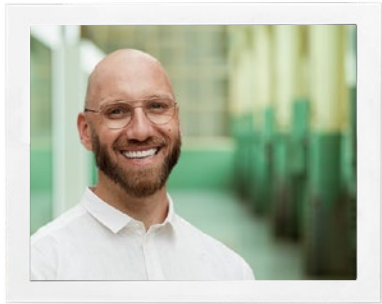
«Sustainability-oriented entrepreneurs seek to incorporate social, economic and environmental objectives in their solutions.»

Anita Buchli is Head of the ZHAW entrepreneurship strategic initiative.

The ZHAW is an entrepreneurial university. It is a place where entrepreneurial thinkers and doers come together to expand their horizons and grow. What they all have in common is their will to tackle the challenges facing society and the economy – and to do so in a courageous

and responsible manner. They benefit from a community that is invigorated by teamwork and the diversity of the university and its partners.

Lifelong learning strategy



→ More about the lifelong learning strategy

«The topics of sustainable development and lifelong learning are strategic focus areas of the ZHAW, as their interdependence paves the way for the development of emergent approaches in our complex world. Sustainable development is dependent on lifelong learning, as future generations will have no choice but to quickly adapt to the constantly changing circumstances they are confronted with. Lifelong learning is sustainable by nature and provides the basis for continuous personal development and the responsible transformation of society.»

Christian Wassmer is a research associate at the ZHAW President's Office and focuses his work on university development and research. He is also a member of the SDC.

In our world characterised by persistent change, the requirements placed on us, our knowledge and our skills are also in a constant state of flux. Learning is becoming a lifelong task. This is where the ZHAW comes in. It wants to create edu-

cational programmes that satisfy market demand and that meet both societal and individual interests. The lifelong learning strategy provides the ZHAW with a guide for navigating this continuous development process.

ClimateChange@ZHAW



→ More about ClimateChange@ZHAW

«With ClimateChange@ZHAW, we are able to better consolidate our multidisciplinary strengths, allowing us to develop more effective solutions in the areas of climate protection and climate adaptation.»

Paula Castro leads the researchers' bottom-up initiative. She is a research associate at the Center for Energy and the Environment at the School of Management and Law.

Numerous research groups at the ZHAW are turning their attention to issues relating to climate change. With its wide range of disciplines, the ZHAW is involved in innovative projects relating to urban regions, the agricultural sector, the tourism

industry, architecture and general energy matters. ClimateChange@ZHAW is an initiative launched by ZHAW lecturers and researchers with the aim of pooling the university's strengths and increasing its visibility to the outside world.

ZHAW Students' Association



→ More about Alias

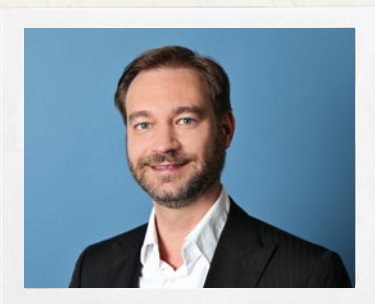
«We are committed to making sustainability a central issue at our university by raising awareness among students and maintaining a dialogue with ZHAW sustainable. Together, we are striving to ensure a more sustainable future at the ZHAW.»

Rebecca Schmid is a member of the Sustainability Committee of Alias (NaKt) and sits as a student representative on the SDC. She studies natural resource sciences at the ZHAW.

Alias is the ZHAW's official student body and thus the mouthpiece of the student population. In order to represent student concerns and interests, Alias maintains a dialogue with the ZHAW and sits on various university committees. In addition

to having a say on university policy, the various departments and committees of Alias provide important points of contact for students, which they can draw upon in connection with queries relating to diversity or sustainability matters, for example.

ZKSD – Zurich Knowledge Center for Sustainable Development



→ Zurich Knowledge Center for Sustainable Development

«At the ZKSD, we are convinced that sustainable development can only succeed if committed individuals exchange their knowledge across disciplinary and institutional boundaries as well as between the realms of theory and practice. This is exactly what we are working to promote. Here, people from the four partner universities collaborate to make a contribution to sustainable development and draw inspiration from the perspectives and ways of thinking of other disciplines.»

Matthias Huss is the Executive Officer of the ZKSD.

The ZKSD is an inter-university centre run by the ZHAW together with the University of Zurich (UZH), the University of Teacher Education (PHZH) and the Zurich University of the Arts (ZHdK). Its aim is to contribute to sustainable development.

To do so, it works to make the research knowledge of the supporting institutions systematically available for teaching and the social discourse on the United Nations 2030 Agenda with its 17 Sustainable Development Goals.

Sustainable Impact Program

The ZHAW supports impactful projects conceived by its students and employees and promotes young entrepreneurship in the field of sustainable development.

The ZHAW is pursuing two strategic goals with its Sustainable Impact Programme (SIP): in addition to promoting a culture and community of sustainable development at the university, the ZHAW also wants to use

therefore needed to overcome the local and global challenges in the area of sustainable development.

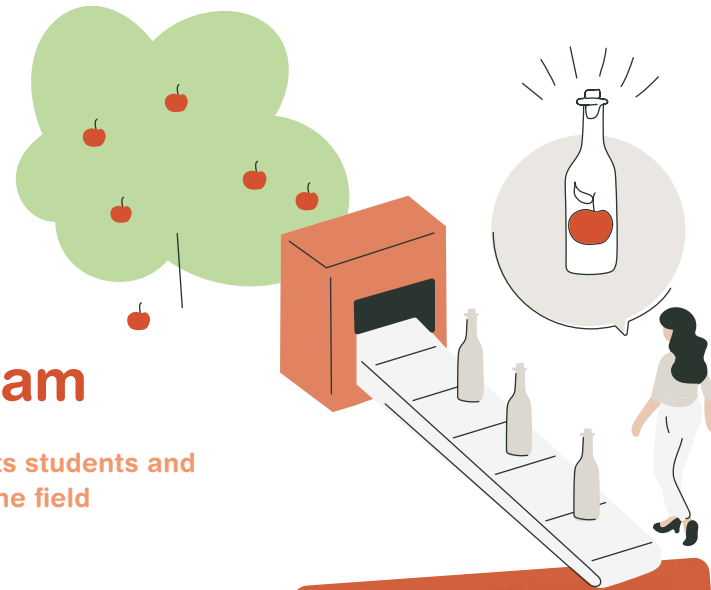
Wide-ranging opportunities for students

Numerous students have been able to realise their sustainability projects at the ZHAW or in the local region thanks to the provision of financial support and coaching opportunities. The programme has thus already succeeded in creating a basis for real-world laboratories on several occasions. Each September, the ZHAW also presents the SDG Award in Winterthur in collaboration with the Swiss Green Economy Symposium as a way of recognising particularly valuable student dissertations. And finally, the Impact Entrepreneurship Programme offers support to sustainable business and organisational ideas put forward

«For the ZHAW, assuming joint responsibility for sustainable development means promoting innovative solutions through research activities and the transfer of knowledge. Students and employees should have the opportunity to get involved with their own projects and thus to become part of a sustainability community at the ZHAW and in the local region.»

Francesco Bortoluzzi is the Head of Sustainability Programmes at ZHAW sustainable.

the SIP to help achieve the goals laid down in the ZHAW Sustainability Strategy and the objectives set out under the 2030 Agenda with its 17 Sustainable Development Goals (SDGs). Effective contributions are



What is a real-world laboratory at the ZHAW?

In a real-world laboratory, possible sustainable solutions are tested on an experimental basis on campus or in the local region. Real-world laboratories take real problems or challenges as their starting point and thus not only contribute to sustainable development, but also to the generation of new knowledge in terms of context-specific systems, objectives and transformations.

by students as they navigate the road to self-employment. Some of the student projects also receive backing from the national U Change funding programme and the ZHAW Foundation.

New teaching modules and interdisciplinary research

Employees are also appreciative of the support offered by the ZHAW: they can apply for funding for their teaching or research projects in order to further enshrine the topic of sustainable development within the curriculum and create innovation. New teaching modules have already been launched in this way and have subsequently become established after receiving start-up financing. In the area of research, the programme has already facilitated numerous interdisciplinary projects with a great deal of innovative value and a significant impact on the SDGs.

→ Sustainable Impact Program

Impact Entrepreneurship

In the SIP, the ZHAW also supports entrepreneurial ideas that tackle social or ecological challenges. Impact Entrepreneurship comprises three offers: Innovative start-ups present their sustainable concept in the Sustainability Safari event series, participants develop their own ideas in the Sustainability Booster and specific start-up ideas are promoted and professionally supported in the Sustainability Incubation Programme.

→ More information



The Winterthur Music Festival is setting a good example.

Student projects in a real-world laboratory

Three examples show how students have implemented their projects in practice, generating a sustainable impact in the process.

Making music festivals sustainable

In her Bachelor's thesis, Lotta Widmer investigated the Winterthur Musikfestwochen music festival in terms of its social, environmental and economic sustainability. Based on her analysis, she drew up an action plan containing more than 70 measures. In performing her work, she turned the festival into a real-world laboratory. And her findings could help to point the way forwards for other events. Lotta Widmer was presented with the SDG Award at the Swiss Green Economy Symposium 2022 in recognition of her outstanding work.

→ Video about the project



Lotta Widmer studied natural resource sciences.

Fallen fruit given a new life as field and meadow cider

Food technology students Selina Lüthi and Dominic Spichtig are using previously discarded fruit sourced from in and around the Zurich municipality of Wädenswil to produce cider. In doing so, they are focussing on apple and pear varieties from standard trees. The fruit is collected with the help of volunteers before subsequently being pressed and turned into cider. Not only is otherwise unused fruit being given a new life as delicious cider, but it is also being produced in the local region in an environmentally friendly manner.

→ Video about the project



Selina Lüthi and Dominic Spichtig have utilised fruit that has fallen from standard trees.

Students organise a Sustainability Day

Students at the School of Management and Law have launched a Sustainability Day. The theme day revolves around the topics of social responsibility and sustainable development and is aimed at all of the ZHAW's students and staff as well as those living in the local area. The aim of the Sustainability Day is to raise awareness and make people more conscious of sustainability-specific issues while also promoting entering into dialogue on this topic.

→ More about PRME at the ZHAW

→ Other funded ZHAW student projects



This student team organised the day in 2022.



Clay as a building material: The staircase consists of 3D-printed formwork elements filled with liquid clay.

Research into sustainable development

The SIP also promotes research into every aspect of sustainability.

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Translation assistance in crisis situations

The project explores how machine translation services can be used to facilitate verbal communication between refugees, authorities and NGOs as well individuals working in the field of education.

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→ [More about the project](#)

Tools for social entrepreneurship

To help social and impact entrepreneurs fulfil their potential and come up with innovative project ideas, a virtual map has been created that includes the most important support services and key players in Switzerland.

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→ [More about the project](#)

Clay steps produced using a 3D printer

The construction industry causes a large share of global CO₂ emissions. Together with the University of Lugano (USI), the ZHAW wants to make a contribution towards making construction more sustainable – with digital production methods and alternative materials.

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→ [To the article \(German\)](#)

→ [To the video](#)

→ [Other funded research projects](#)



«I am convinced that the only way to ensure a sustainable future is to adopt a holistic approach. It is important to think about environmental awareness, economic responsibility and social change together.»

Frank Wittmann is the Dean of the School of Social Work and a member of the Executive Board.

«We should listen to the students.»

With the support of the SIP, Jens Baier and Josef Spillner have established the topics of the circular economy and green IT as part of their teaching.

How well have your educational projects been received by your students?

Josef Spillner: Within one optional module, we have combined the core topic of software development with a sustainability-oriented mobility application. While this represented a lot of new content all at once, the students have familiarised themselves well with the subject matter thanks to the provision of supporting documents and input from specialists. The feedback we received was predominantly positive and the practical results speak for themselves.

Jens Baier: Generally speaking, the topics of the circular economy and sustainability are considered relevant by most students. However, many of them lack the requisite knowledge to incorporate these aspects into their own work. One of the reasons we initiated this project was to provide them with a tool to do just that.

What's next?

Jens Baier: We have developed a user-friendly tool that also allows for student work to be examined critically from a sustainability and circular economy perspective. The aim now is for the tool to be used as part of other projects as well as in Bachelor's and Master's theses – by both students and lecturers. Looking ahead, it would be conceivable to conduct a follow-up project that develops the tool further and ensures it is updated on a continuous basis.

Josef Spillner: During the course of the project, we switched the focus of parts of the course to digital sustainability. The new content was also used in subsequent semesters, albeit in different versions and based on research results.

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What would you recommend to other lecturers who apply for support for their teaching project?

Josef Spillner: We should listen to the students, as they are more likely than the business com-

munity to have a feel for important topics that have been underrepresented in the curriculum to date.

Jens Baier: For me, interdisciplinary exchanges and cooperation are especially important – between lecturers, institutes and the different degree programmes.

→ [Find out more about both teaching projects \(German\)](#)



Jens Baier is a research associate at the Institute of Product Development and Production Technologies of the School of Engineering.



Josef Spillner is a lecturer at the Institute of Applied Information Technology of the School of Engineering.



Denis Kriegesmann is project manager for sustainable building at CSD Engineers. He studied natural resource sciences at the ZHAW.

«The industry is learning»

Denis Kriegesmann wants sustainable building to become the standard. And he wouldn't object if we were to pick up the pace in this area.

Driving sustainable development in the construction industry. This is the aim of Denis Kriegesmann, who works as project manager for sustainable development at CSD Engineers. This goal dates right back to when he decided to study natural resource sciences at the ZHAW many years ago. «In my previous role as a structural draughtsman, it had already become clear to me that we are facing a climate crisis and need to rethink how we do things, including in the construction sector,» says Kriegesmann. His studies provided him with the tools to help bring about this change in thinking.

Aesthetics before sustainability

His ambition hasn't changed since then. On the contrary: «I now believe that the need for action is even more urgent. Unfortunately, the construction industry is a long way off making a sufficient contribution to achieving the net zero target.» The environmental engineer believes that this has nothing to do with a lack of opportunities. «We can propose many variations that will allow for a project to be made sustainable.» However, this does not make

things any easier for the specialists involved. «In construction, in particular, it's important that we work together even more closely in interdisciplinary teams, exchange ideas with one another and spur each other on.» At the same time, says Kriegesmann, sustainability still isn't considered as important as aesthetics, for example. It is for this reason that Kriegesmann's job today is often «to keep a close eye on what other people are doing or even step on their toes,» as he puts it with a mischievous smile on his face.

Development is palpable

However, he is confident that people's motivation to build sustainably will increase sooner or later – and thus that efforts in this area will go beyond merely satisfying label requirements. «The industry is learning. The pressure being exerted from all sides is helping, while newly trained young people are contributing new approaches that can't help but incorporate sustainability considerations.»

«Those who have responsibility and decision-making powers have to use this for the benefit of sustainable development. This applies to all sectors and organisations, including the ZHAW.»

Denis Kriegesmann



Anke Domschky is a lecturer in landscape architecture and urban studies at the Institute of Urban Landscape of the ZHAW School of Architecture, Design and Civil Engineering as well as a member of the SDC. She developed the module together with Nathalie Baumann, lecturer in biodiversity and urban ecology.

Coming together to achieve eco-friendly urban development

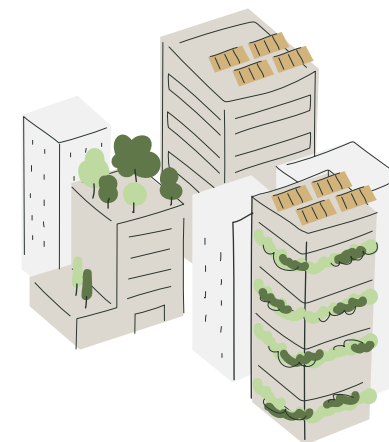
The Eco Urbanism optional module brings together students from natural resource sciences and architecture – laying the foundation for the green cities of tomorrow.

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Taking a look beyond your own discipline has its benefits: budding architects get to learn the interrelationships between urban ecology, biodiversity and urban planning. At the same time, aspiring environmental engineers have the opportunity

to familiarise themselves with urban life, architecture and urban planning. Together, they explore sites in Zurich and Winterthur, where they look at the aspects of urban densification and planning, façade and roof greening, water management and plan-



«Students learn to create liveable urban spaces that counter climate change and a loss of biodiversity as our urban landscapes become increasingly dense.»

Anke Domschky

ning processes. The students then come together in interdisciplinary teams to develop proposals on how to promote a liveable environment for people, animals and plants. If the vision for the future of dense yet green cities is to be turned into reality, empathy for neighbouring fields and a desire to plan across disciplinary boundaries are essential.

Shine a light only when necessary

Patrik Deuss has developed intelligent lightning systems that can reduce electricity consumption by up to 90 percent.

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His idea for a decentralised lighting system in which each light has its own «brain» was born during his Bachelor's thesis as part of the Energy and Environmental Engineering de-

gree programme. Together with the electrical engineer Florian Gärtner, he founded the start-up LEDCity, which now has more than 40 employees and specialises in commercial buildings. Their aim is to convert some 12 million lightning systems by 2030 and thus to reduce electricity consumption by an amount equivalent to that produced by a nuclear power plant. By 2040, they want to cut global electricity consumption in the lighting sector by 80 percent.

You can't start early enough... Society and the economy need well-trained specialists in the MINT disciplines, which comprise mathematics, informatics, natural sciences and technical sciences. However, in the case of informatics and technical sciences, in particular, such experts are in short supply. With various programmes aimed at promoting young talent, the ZHAW School of Engineering wants to help rectify this shortage of skilled workers.

→ Offers for children

→ Read more



«By 2030, we want to convert 12 million lights and thus save an amount of electricity equivalent to that produced by a nuclear power plant.»

Patrik Deuss is the founder and CEO of LEDCity. He studied energy and environmental engineering at the ZHAW.



Cathérine Hartmann is a research associate in the area of environmental psychology at the Psychological Institute of the ZHAW School of Applied Psychology as well as a member of the SDC.

«Students want to know how they can make a difference»

Understanding People and their Environment, Behavioural Change and Sustainable Business Management: environmental psychologist Cathérine Hartmann teaches on these and other courses across several Schools.

What do you teach as an environmental psychologist?

Cathérine Hartmann: On the one hand, it is about conveying general knowledge: how does behavioural change work and what theories and models are used in this area? What are the drivers of and barriers to behavioural change? What intervention techniques exist? And then it's about designing interventions aimed at achieving behavioural change: the development of so-called campaigns and recommendations that all aim to bring about the most sustainable behaviour possible in a variety of areas, including mobility, nutrition, energy, waste and consumption.

Do you sense that things are changing as regards the importance attached to this topic?

Cathérine Hartmann: Sustainability concerns everyone. Most students don't choose this course with their future professional career in mind, but

rather out of a personal concern and an interest in how they can make a difference at an individual level. This broad interest is helpful for establishing the discipline of environmental and sustainability psychology, which is still in its infancy. Our students spread the word about this field in a more informal way or even incorporate aspects of it in professional practice. Some have also already reported back to me that they have drawn on their knowledge in the context of their part-time job with the aim of initiating behavioural changes within the organisations they work for.

What should students take away from your lessons for their future career?

Cathérine Hartmann: Behavioural changes in the area of sustainability are associated with a number of challenges. However, they are essential for securing a liveable future. What's more, such changes are definitely possible. There are always levers and

mechanisms for exerting influence that we can work with to ensure that humankind ultimately ends up in a good position or perhaps finds itself doing even better than before.



«Sustainability necessitates creative solutions. Only changes in our attitude and behaviour that benefit sustainability will make it possible for us all to lead a life of health and well-being.»

Christoph Steinebach the Dean of the Applied Psychology and a member of the Executive Board.

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Standing up to hate

Judith Bühler studied social work at the ZHAW. Now a teacher, she passes on her experience with a great deal of passion.



Judith Bühler was still studying when she founded the JASS association as part of her project internship. The association remains committed to diversity to this day, fighting against discrimination aimed at minorities and pursuing the dream of an inclusive, free society. In her role as chair of the association, Judith Bühler has already had to overcome many challenges, ranging from political debates about funding to sheer

hatred and personal threats aimed at her. These experiences as well as her professional experience in the association and later as head of an integration office have shaped who she is today. She has since returned to the ZHAW and now finds herself on the other side of the lecture theatre. She teaches on topics including social project development, hate speech, online radicalisation and digital social work.

«I want to see committed and innovative social workers who won't shy away from occasionally being bold, who refuse to be intimidated and who don't allow things to get them down.»

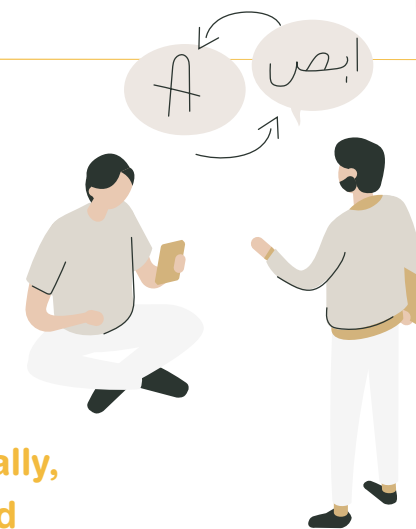
Judith Bühler is a research associate at the Institute of Delinquency and Crime Prevention of the School of Social Work, leader of the DIZH project "safety-for-refugees.ch" and Programme Director of the CAS in Digital Skills in Social Work.

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Integration through language

When people integrate linguistically, they feel part of a community and can establish new roots.



The BA in Language and Integration – German as a Foreign/Second Language represents an attractive, versatile and practice-oriented choice for anybody who is interested in working with language(s) and people in an intercultural environment. Those who opt for this degree programme embark on a journey that will provide

them with the tools to work in a professional field with a future and open up access to roles both at home and abroad. The degree programme also lays the foundation for students to pursue a meaningful, sustainable career, as it places a focus on the individual and the development of their language and communication skills.

«Linguistic integration is part of my biography. I grew up in Bulgaria and know the feeling of being 'excluded' when you don't speak the local language, but also the joy of belonging to a new language community. That's what this degree programme is all about.»

Marina Petkova heads up the BA in Language and Integration at the ZHAW School of Applied Linguistics together with Oliver Winkler.

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Kristin Hammer and Ruth Eggenschwiler are lecturers and module convenors on the BSc in Midwifery at the Institute of Midwifery and Reproductive Health at the School of Health Professions.

Climate change in health-related disciplines

Students at the School of Health Professions tackle climate change topics.

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How does climate change impact our health? And what health-related opportunities do climate protection measures offer? These questions are at the heart of the Climate (Change) and Health optional module, which Kristin Hammer and

Ruth Eggenschwiler have developed in the context of interprofessional teaching and the concept of [planetary health](#). The aim is to discuss the complexity of health and disease against the backdrop of climate-related issues and the spectre of climate change as well within societal contexts, allowing participants to identify possible courses of action.

«It is important to us to discuss with students in an interprofessional context, allowing them to expand their own profession-specific perspectives and to consider the issue of climate change and health in a more comprehensive manner.»

Kristin Hammer

Exploring sustainability goals with entrepreneurial thinking

In a new course, students from the disciplines of health, business, engineering and social work come together to form interdisciplinary and international project groups.

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The Creating Meaningful and Impactful Solutions course held as part of the long-established Winter School of the School of Health Professions focuses on Sustainable Development Goals numbers 3 (Good Health and Well-being) and 4 (Quality Education). In the first iteration of the course, the participating students primarily turned their attention to the question of how the mental health and well-

being of students completing their first semester at the ZHAW could best be supported. They worked on the topic by applying the design thinking process in iterative cycles. Working in dialogue with first-semester students, they identified the challenges they face and their needs. They put the ideas they developed to the test using prototyping tools and assessed them in terms of both their business potential and impact. The course, which is held in English, will now also be integrated into the 2024 edition of the Summer School and will be open to all BSc programmes as well as their international partners.

«Working together across professional and national boundaries not only provides students with the opportunity to learn from one another, but also to familiarise themselves with different perspectives and approaches.»

Verena Langlotz Kondzic is International Relations Coordinator and a lecturer at the Institute of Occupational Therapy of the ZHAW School of Health Professions.



«We have a responsibility to raise awareness about these issues and provide training on them»

The topics of corporate responsibility (CR) and circular economy (CE) appear to be gaining in importance in the public eye. Christian Vögtlin explains in an interview what impact this has on management training.



How do you assess the development of CR and CE?

Christian Vögtlin: More and more people in society are becoming aware of these topics, and the pressure on companies is therefore growing. I believe there are two primary reasons for this. On the one hand, the major challenges we are facing as a society, with climate change being the prime example, are becoming ever more urgent and also more tangible. On the other, the pressure being exerted by stakeholders is increasing. One such example is the exponential

growth in the volume of legal regulations concerning CR and CE in the EU as well as in Switzerland. Another is the pressure from young employees who are increasingly demanding that their employers demonstrate a commitment to the environment, as the a [Deloitte study](#) reveals.

What does this mean for business education?

Christian Vögtlin: We have a responsibility to raise awareness about these issues among future generations of managers and to provide training on them. Ideally, this will be achieved through a combination of specialised courses and programmes as well as by integrating relevant aspects into the overall curriculum. The MSc in Circular Economy Management provides such a specialised programme. And the MSc in International Business is now being restructured in such a way that both CR and ethical aspects will be systematically integrated within the various courses. In the area of continuing education, we are also observing increased demand for programmes on these topics.

What career prospects can students look forward to?

Christian Vögtlin: There is ever more demand for expertise in the areas of CR and CE. This isn't just limited to multinational companies. Small and medium-sized enterprises are also increasingly trying to position



Christian Vögtlin is Co-Head of the Center for Corporate Responsibility at the ZHAW School of Management and Law. He is responsible for the CAS in Corporate Responsibility and heads up the interdisciplinary MSc in Circular Economy Management with two other lecturers.

themselves in the area of sustainability, and they need experts to help them do this. At the same time, consulting services are on the rise, while administrative bodies and non-governmental organisations are also increasingly on the lookout for CR officers. In-depth knowledge in these fields is also becoming more relevant in various specialist divisions within companies, be it procurement, production or marketing, just to name a few examples.

Towards responsible management education

The ZHAW School of Management and Law has been part of the PRME initiative, which defines six principles for responsible management education, for almost a decade.

→ More about PRME at the ZHAW



«The aim of our educational programmes is to enable all students to tackle the challenges that arise in their professional field in a competent manner. It is important to us that the topic of sustainability is addressed in all of our specialisations. At the same time, we also offer specialised and interdisciplinary courses.»

Reto Steiner is Dean of the School of Management and Law and a member of the Executive Board.

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Yvonne Pirchl-Zaugg and Birgit Reutz lecture at the Institute of Natural Resource Sciences of the School of Life Sciences and Facility Management. Together with a team of lecturers, they developed the specialisation, which was awarded second place in the ZHAW teaching award.

Learning from real example

Students are supporting municipalities in developing more sustainably – and preparing themselves for the professional world in the process. A win-win for both sides.

Students who choose the specialisation in Environmental Systems and Sustainable Development (UNE) as part of the Bachelor of Science in Natural Resource Sciences spend three semesters working on a case study. The aim is to support the respective region in becoming more sustainable. From situational analyses and on-site workshops to the specific development of measures, the students take care of any tasks that arise, working in close communication with those responsible on the ground and with the support of their lecturers.

«The ideas sometimes develop further in the respective region and later grow into projects of their own.»

Birgit Reutz

ment in theory, implementing it is infinitely more difficult.» Birgit Reutz adds that «by also linking the basic modules strongly with practice, the students can learn an enormous amount at various levels in a short space of time.»

Regions benefit

Numerous great ideas have already emerged from the work performed in this living lab. Examples include a festival aimed at countering the ageing of a mountain community, a «future package» that allows people to try out an eco-friendlier way of living without entering into any obligation, a travelling market that provides the population with access to local produce, and a library of things that lends out everyday items in addition to books and games. At the end of the cooperation, the regions are provided with concepts that are ready for implementation as well as a whole host of ideas.

In the Bachelor of Science in Natural Resource Sciences, the living lab has been addressing the topic of sustainable development with partner regions since 2017. It is currently working together with the Fribourg municipality of Düdingen, which has recently formed an environmental committee.

→ [Learn more \(German\)](#)

From theory to implementation

In addition to other lecturers, they also receive support from Birgit Reutz, the head of the specialisation, and Yvonne Pirchl-Zaugg, the partner region coach. The latter explains that «while we talk a lot about sustainable develop-

On the road as mobile midwives

When they set up their mobile midwifery practice for refugee women, graduates Eli Reust and Laura Alemanno had no idea of what they would experience.

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Two years after completing their studies, the two midwives launched the Mambrella project, a mobile midwi-

fery practice where refugee women can be examined and cared for. They raised funds through crowdfunding, purchased a bus from which to operate their mobile practice and set off for Greece and the refugee camps situated there. Over a period of many months, they examined pregnant women in the camps, provided care for

families with newborns, distributed packages containing nappies and breastfeeding tea, and listened to the concerns and needs of those housed there. Mambrella is now working with the NGO Amurtel Greece and is firmly established in Greece.

→ [Read more \(German\)](#)



Giving animals a voice

Silvano Lieger is Co-Managing Director of Sentience, a political non-profit organisation that is active in the areas of animal protection and sustainability in Switzerland.

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His organisation has set the wheels in motion for popular initiatives on sustainable food, basic rights for non-human primates and the abolition of factory farming in Switzerland. He is also part of the initiative committee of the environmental responsibility initiative. Silvano Lieger studied organisational communication at the ZHAW.



«Our impact on animals and the environment is enormous – and often damaging. It is for this reason that I use my skills in the area of strategic communication to trigger changes in policy that lead to a more sustainable future and a better food system.»

Silvano Lieger

Promoting solar power

Elias Kost is CEO of Solafrica, an independent Swiss non-profit organisation that works to promote solar energy.

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Solafrica operates in various African countries with the aim of providing access to clean energy in economically deprived regions while protecting the climate at the same time. Elias Kost has a Master's degree in Business Administration from the ZHAW.



«Solar energy is the future! If we are to stop climate change, we need to make sure that everyone can benefit from it. That's why I am committed to facilitating the rapid spread of solar energy in economically disadvantaged regions of the Global South.»

Elias Kost

Continuing education: greater sustainability from cities to the business world

4 The CAS courses presented here promote sustainable change within centres, municipalities or organisations.

CAS in Urban Landscapes

The future of urban development will lie in how we shape our city landscapes. A high quality of life in the settlements we inhabit can only be ensured over the long term through sustainable development and the strengthening of our urban landscapes. This process will require skilled individuals who possess both the technical and methodological expertise that allows them to take action and plan across disciplinary boundaries.

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→ To the offer (German)

CAS in Participatory Urban and Municipal Development

Sustainable developments in the complex field of urban and municipal development necessitate mutual understanding, diverse networks and interdisciplinary collaboration. Participation provides opportunities to incorporate the perspectives and knowledge of various target groups and stakeholders.

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→ To the offer (German)

CAS in Sustainable Smart Cities & Regions – Data, Energy and Mobility

The topic of smart cities and regions is gaining in importance as a development concept for sustainable cities, municipalities and regions at a global level and in Switzerland itself. The aim is to preserve resources and ensure a high quality of life through digitisation, networking, the promotion of innovation and the participation of the population and businesses. Smart technologies also provide various interest groups with considerable potential for making financial savings.

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→ To the offer (German)

CAS in Climate Strategies

What does the net zero target, which is to be achieved by 2050, mean for companies, municipalities, cantons and other organisations? An adaptation and climate protection strategy is needed to properly handle the risks arising from the impact of climate change and the regulatory interventions aimed at tackling it. In this CAS, participants develop scientifically sound and field-tested strategies for their own or a chosen organisation that will support them in sustainably transforming their organisation and delivering a roadmap for achieving net zero emissions.

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→ To the offer (German)



«While participation is a multifaceted term, ideas about what exactly it entails often diverge considerably.»

Anke Kaschlik is a lecturer in community development at the School of Social Work.



«By providing in-depth insights into sustainable smart city processes and topics, we prepare participants for the challenges that exist in the conflicting fields of sustainability and digitisation in the context of urban transformation processes.»

Vicente Carabias Hütter is a lecturer in technology foresight at the School of Engineering.



«Tailor-made strategies provide the foundation for effective measures in the areas of climate protection and climate adaptation. We use examples and live experiments to get across how a climate strategy can lead to success.»

Regina Betz is a Professor of Energy and Environmental Economics at the ZHAW School of Management and Law.



Online continuing education courses for at home

The ZHAW is offering publicly accessible courses on the online edX learning platform. Two examples are provided below.

Global challenges at a glance

The free massive open online course (MOOC) Vision 2030 provides an introduction to the most important global challenges for sustainable development. A focus is placed on nutrition, urban development and social justice. With its mix of text, images, videos, tasks and forum discussions, the MOOC is a kind of interactive online lecture. Those who complete the course gain a general overview of the system and familiarise themselves with new approaches. Drawing on expertise from all of the ZHAW's Schools, the MOOC was designed in three blocks that address the three focus areas of the Swiss federal government's strategy for sustainable development.

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→ To the MOOC

Sustainable corporate financing

The edX Sustainable Corporate Financing course teaches the different aspects of sustainability in corporate financing, breaking them down into individual topic blocks. It initially provides a general introduction to the topic before then highlighting the possibilities and limitations of quantifying sustainability aspects and finally analysing various forms of corporate financing in detail. This includes looking at sustainability in the areas of equity financing, debt financing and bank financing as well as in connection with impact-oriented forms of financing. For those with a more in-depth interest, there is also the 'Sustainable Financing Expert' course or the CAS 'Corporate Finance & Sustainability'.

→ To the edX course



«The course aims to show how we can achieve the sustainability goals that are especially relevant for Switzerland by 2030.»

Nico Frommherz is a research associate at ZHAW sustainable and project leader for the MOOC Vision 2030.

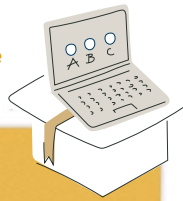


«An enhanced transfer of knowledge in the area of sustainability in the financial sector is essential for achieving sustainability and promoting the SDGs.»

Beat Affolter heads up the Centre for Corporate Performance & Sustainable Financing at the Institute for Financial Management of the School of Management and Law.

What are MOOCs and OERs?

Open educational resources (OERs) are freely accessible educational materials that are published under an open licence, such as the Creative Commons licences, and made available free of charge. This allows them to be modified and redistributed by others in accordance with their open licence. MOOCs (massive open online courses) are especially suitable for the use of OERs, as they are globally accessible. The ZHAW encourages its employees and students to create open learning materials and to form a nationwide OER community in cooperation with other universities.





At the Winterthur Lagerplatz, the head-end structure of Hall 118 served as a case study.



Turning old into new

Reusing building components allows for greenhouse gas emissions to be saved on a large scale. A ZHAW case study reveals how this can be implemented in practice.

Buildings are responsible for some 40 percent of all greenhouse gas emissions worldwide. A considerable share of these emissions is generated during the buildings' creation. At the ZHAW School of Architecture, Design and Civil Engineering, the reuse of building components is being investigated from a cultural, architectural

construction, energy consumption and economic perspective.

Steel skeleton was once a distribution centre

The researchers used the K.118 construction project of Baubüro in situ AG as a case study. At Winterthur's Lagerplatz, the company renovated the front building of Hall 118, which is home to the ZHAW Centre for Product and Process Development, among others, and added three floors. To a large extent, the project used building components that had already been used before. For example, the steel skeleton needed to support the new floors was originally used in a distribution centre in Basel that was later dismantled. The outside staircase, which provides access to the three floors, is also made of steel, which was sourced from the demolished Orion office building in Zurich.

500 tonnes of primary material saved

A small section of the aluminium insulated windows and the granite

«Cities can become a gold mine as a source of potentially reusable materials, opening up new architectural possibilities and strengthening the local construction industry.»

Guido Brandi is a research associate at the Institute of Constructive Design at the School of Architecture, Design and Civil Engineering. He was co-project leader of the interdisciplinary "circular construction" research project, which was undertaken in cooperation with Baubüro in situ AG.

façade panels have also been given a second life as part of the K.118 project, with the latter forming the tile coverings in the kitchens and toilets as well as on the balcony arbours. The façade sheeting and industrial windows didn't have to travel quite so far: they were disassembled at the Ziegler printing works and the Sulzer Werk 1 site in Winterthur. In total, the reuse of construction components allowed for a full 500 tonnes in new materials to be saved, equating to a saving of around 60 percent in terms of greenhouse gas emissions.

The researchers have published the project results in the German-language book "Reuse in Construction. A Compendium of Circular Architecture"

→ [Learn more](#)

Building with less material

A steel-chamber hybrid construction system could increasingly be used for resource-efficient and cost-effective housing construction in Switzerland.

The chamber concrete construction system comprises steel sheets filled with liquid clay. It solves construction-related challenges such as fire protection, while at the same time ensuring that aesthetic, constructional and economic requirements are met. This innovative building concept is being developed to market maturity as part of an Innosuisse research project with the ZHAW Centre for Building Technologies and Processes.

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«Sustainability has always been part of architecture. A look at recent history reveals that it was indeed architects and civil engineers who took a far-sighted and courageous stance against environmental destruction during the 20th century. Construction has always paved the way for social and technical innovation.»

Oya Atalay Franck is Dean of the School of Architecture, Design and Civil Engineering and a member of the Executive Board.



The visualisation shows what a steel chamber flat might look like upon being realised.



Energy discourses: the need for consistent language

The development and implementation of the Energy Strategy 2050 has created a field of communication that is now being examined at the ZHAW.

Political and technological change hinges on the development of a linguistic basis that provides common ground in public discourses and enables us to understand one another. A research project has now identified patterns of language use in connection with energy issues in Switzerland. Examining three of the country's four national languages, the project looked at how these patterns

of language use are evolving across the borders that separate different institutions, media outlets and areas of society. The results reveal differences between Switzerland's national languages as well as the increasing importance of the debate surrounding renewable energies.

→ [Energy Discourses in Switzerland study](#)

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Researchers at the School of Engineering: Co-project leader Saskia Drossaart van Dusseldorp from the Meteorology, Environment and Aviation research unit at the Centre for Aviation is working together with Manuel Renold, an expert in the field of intelligent systems for modelling and simulation at the Institute of Data Analysis and Process Design.

Using simulations to combat heat stress

Urban densification is causing our cities to heat up, leading to the emergence of heat islands. ZHAW researchers are using sensors to identify and investigate hotspots in the cities of Zurich, Basel and Winterthur.

On average, temperatures in urban heat islands are often much higher than in a city's outskirts. At night, in particular, inner-city areas do not cool down as much as surrounding areas. This leads to heat stress, which can have serious consequences for the population, with young children, the

«Climate change is a reality and will increasingly influence our urban climate in the future. It is about protecting the population and allowing them to live comfortably in urban areas.»

Saskia Drossaart van Dusseldorp

elderly and people with cardiovascular diseases particularly susceptible to the effects of the higher temperatures.

Recommendations for measures

At the ZHAW, research is being conducted into how different urban districts will have to change against the backdrop of increasing heat stress in order to maintain their residents' quality of life over the longer term. The researchers' primary tool is the use of simulations of different urban typologies in which they can vary certain parameters. This approach enables them to come up with recommendations for optimal packages of measures that can be put into action in specific urban areas.

Results help urban planning

As part of an Innosuisse project, the researchers have already been able to create temperature maps for Zurich and Basel – drawing on specifically

«The dense network of temperature sensors provides us with a benchmark for future modelling studies on urban heat islands.»

Manuel Renold

measured data obtained using hundreds of sensors. In a next step, these are then compared with the modelled temperatures in order to validate the simulations. The forecasts of where heat hotspots will be found in the future or could potentially develop provide a useful aid in the area of urban planning and design. In a follow-up project, sensors have also been placed within Winterthur's urban area with the objective of monitoring heat islands in the canton of Zurich's second largest city on the basis of measurements taken over a period of five years.

The financial risks of the biodiversity crisis

The loss of biodiversity also poses economic risks. The ZHAW is developing a digital guide to help companies navigate the challenges in this area.

Digitalization Initiative of the Zurich Higher Education Institutions (DIZH)

The DIZH's goal is to promote cooperation on digitalisation between higher education institutions in Zurich, thus strengthening the greater Zurich area as a hub for research and business.

→ Learn more

Around the world, the extinction of species is reaching unprecedented levels. Nevertheless, the loss of biodiversity remains an unrecognised environmental risk at all levels. For companies and their financial stability, this risk could be particularly hazardous. It is for this reason that a team comprising members from the School of Management and Law and the School of Life Sciences and Facility Management has joined forces with the industry partners WWF Switzerland, Globalance and Infras. The Biodiversity at Risk project is being funded by the Digitalization Initiative of the Zurich Higher Education Institutions (DIZH) as part of a Rapid Action Call.

Digital solution

The interdisciplinary project group is aiming to develop a fully digital, scientifically sound solution. The aim is to provide companies and people with decision-making powers clear points of reference with respect to the financial risks associated with the loss of biodiversity. Digitisation is making it possible to process large volumes of data and communicate them in a comprehensible manner using digital tools. Digital technologies therefore offer great potential for shaping a sustainable future.

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«Our project results, which take the form of a functional, user-friendly interface, should encourage companies to invest more in the conservation of biodiversity.»

Tomasz Orpiszewski is co-project leader and a lecturer at the Centre for Asset Management at the ZHAW School of Management and Law.



Networking between researchers

The Sustainability Science Dialogue is a series of events that promotes the interdisciplinary networking of researchers (at the ZHAW and beyond) in connection with priority sustainability issues in Switzerland.

→ Learn more



«The energy transition necessitates innovations in the areas of technology, business, politics and communication. ZHAW researchers from a wide range of disciplines therefore contribute their expertise to both internal and external networks.»

Dirk Wilhelm is Dean of the School of Engineering and a member of the Executive Board.

Supporting people with a migration background

A mentoring programme promotes professional and societal integration.



Working in close cooperation with the Swiss Red Cross (SRC) nursing assistant course, researchers have put together a mentoring programme named BEGIN. As part of this programme, older volunteers draw on their social and cultural skills to support younger people with a migration background in completing training and embarking on a professional career in the nursing segment. This not only serves to promote the professional integration of migrants

into a field grappling with a shortage of skilled workers, but also helps foster a sense of solidarity between the generations. The ZHAW Psychological Institute conducted the project under the direction of the Bern University of Applied Sciences (Institute of Ageing) and in collaboration with the University of Applied Sciences of the Grisons (Institute for Multimedia Production) and the SRC.

→ [Learn more \(German\)](#)

«Two generations come together on an equal footing and exchange ideas and experiences, with both sides benefiting. The resource-oriented approach, which focusses on individual strengths, provides a good basis for integration.»

Project initiator Beate Schwarz is a Professor of Development and Family Psychology at the ZHAW Psychological Institute.

P4Play: a European doctoral programme promoting children's play

As one of four partner universities, the ZHAW is training two of eight doctoral students with the aim of researching and promoting children's play.

P4PLAY, which is funded as a Marie Skłodowska-Curie Action by the EU's Horizon Europe funding programme, is a doctoral programme aimed at occupational therapists. P4PLAY stands for the four dimensions of «people,» «place,» «policy» and «practice» and intends to explore knowledge about children's play and the consequences of a lack of play opportunities. The goal is to develop innovative and creative solutions that

allow all children to exercise their right to play. In addition to the ZHAW, University College Cork, Lulea University of Technology and Queen Margaret University are involved as partner universities. Fifteen partner organisations, including NGOs and public institutions, are also participating in the programme.

→ [Find out more about the doctoral programme \(German\)](#)



«It fills me with pride to represent the ZHAW and the Institute of Occupational Therapy in this European project and thus to contribute to improving the living conditions of children.»

Christina Schulze is a lecturer at the Institute of Occupational Therapy of the ZHAW School of Health Professions. She specialises in the care of children and young people with a focus on their participation and social integration.



Barbara Baumeister is a lecturer and project leader in the area of Research and Development at the Institute of Diversity and Social Integration of the School of Social Work.

A digital coach lends a helping hand to family carers

People who care for somebody close to them are faced with challenges around the clock. An app now offers help that is tailored to the needs of those affected.

to become a kind of digital coach,» she says. The app is being designed to provide information that is tailored to the individual situation of the family carer and the person they care for.

«We mustn't leave family carers to struggle alone. The burden they carry must be cushioned by society. In doing so, we will not only improve the well-being of the carers, but also those being cared for.»

Barbara Baumeister

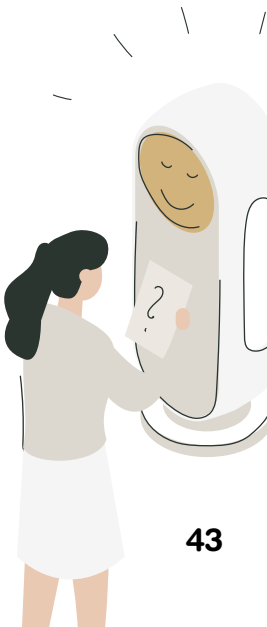
Easily accessible support services

For now, the app is being specifically aimed at relatives of people suffering from dementia. Working together with the Alzheimer Zürich association, the needs of those affected have been assessed in order to allow for the best-possible support to be offered. «Family carers carry an enormous burden and often only seek help at a late stage. We want to lower the hurdles to receiving such assistance,» says Baumeister. However, the new app is in no way intended to replace professional counselling and respite services. Instead, it should merely complement them. «Digital support is available in an easily accessible manner at all times. That is the great strength of the app. A prototype is set to be ready by the end of 2023, by which time it will already have been subjected to a test phase with relatives.»

Family carers do extraordinary work. Relatives of people suffering from dementia face particular challenges. Providing these individuals with support is the aim of the You + Care research project, which the ZHAW School of Social Work is conducting together with the Department of Design of the Zurich University of the Arts (ZHdK) and the Pro Aidants association.

Individual and situation-specific

An app is being developed to provide digital support. According to Barbara Baumeister from the ZHAW Institute of Diversity and Social Integration, the goal is for the app to be more than just a «library» with points of contact, tips and respite services for relatives. «We want it





The feasibility study categorised the agricultural land in Switzerland where electricity production would theoretically be possible. Working on the basis of three common types of use, the study then determined the potential offered by these areas.

«The potential of agriphotovoltaics is very high»

Mareike Jäger researched how much electricity photovoltaic systems could potentially produce when deployed on agricultural land as a secondary use of these areas.

You conducted a feasibility study to investigate the potential of photovoltaics in the agricultural sector. What were the most important findings?

Mareike Jäger: The study concluded that the level of potential in Switzerland is very high. Even if you exclude many areas, such as biodiversity promotion areas or natural parks, agriphotovoltaics could be used to generate twice as much electricity as Switzerland currently consumes.

What are the specific benefits that this yields?

Mareike Jäger: If we were to systematically use agricultural land to generate electricity alongside the production of food, this could make a significant contribution to the energy transition. At the same time, agriphotovoltaics has been proven to have a positive impact on water consumption, as less water evaporates from the soil and plants. However, the effects on the individual crops, which can be both positive and negative, still need to be researched more intensively.

In other European countries, electricity production on agricultural land is already more widespread. With your study, have you also managed to get the ball rolling in Switzerland?

Mareike Jäger: The legal basis for using photovoltaic systems on agricultural land wasn't introduced by the Federal Council until we start-

ed working on the study. Cantonal representatives are currently working on guidelines detailing the conditions under which they consider such dual use to be appropriate. Initial smaller-scale projects that are implementing the concept also show that this dream of the future can become reality. I believe the study represents a good basis for this process.

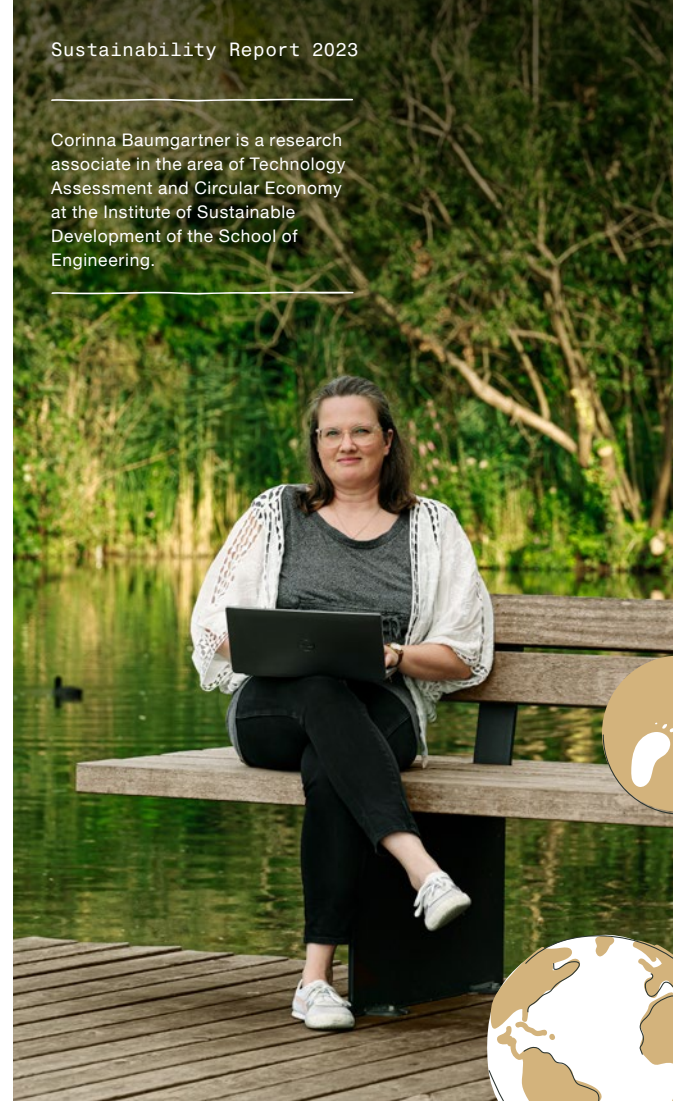


Agronomist Mareike Jäger heads up the Regenerative Agricultural Systems research group at the Institute of Natural Resource Sciences at the School of Life Sciences and Facility Management.

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Corinna Baumgartner is a research associate in the area of Technology Assessment and Circular Economy at the Institute of Sustainable Development of the School of Engineering.

What footprint do we leave online?

A tracker reveals how our internet use impacts the environment, an aspect not previously considered by existing footprint calculators.

Who invented the wheel? Or what is on at the cinema this evening? We can find the answers to whatever we want to know simply by typing our question into Google. And if, let's say, there is nothing on at the cinema that tickles our fancy, we can stream a film, an audio drama or a podcast, scroll through online media feeds or perhaps simply talk to our friends via video call.

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«Paper books or tablets? Wind or solar power? What requires more resources? In performing our applied research, we have a responsibility to find answers to such difficult questions so that the population can make sustainable decisions.»

Andreas Gerber-Grote is Dean of the School of Health Professions and a member of the Executive Board.

Tracker aims to raise people's awareness

Using the internet is part and parcel of our everyday life. Knowing this, the participants in the Youth to Engineers programme at the ZHAW School of Engineering were left wondering why our internet consumption has until now not been reflected in environmental footprint calculators. «When they told us about their observation, we thought let's put this right,» says Corinna Baumgartner, a research associate at the Institute of Sustainable Development. The online footprint calculator OFAR4ALL was developed during a two-year research project. The new tool measures our internet consumption and shows the impact it has on the environment. The tracker aims to raise people's awareness in this regard. «Internet use accounts for three to four percent of CO₂ consumption worldwide. This share is increasing and will likely reach 14 percent,» says Baumgartner.

«How much CO₂ did I emit while searching for something via Google or streaming a video? This is what we wanted to measure and in doing so determine the environmental impact. OFAR4ALL does just that.»

Corinna Baumgartner

Foundations laid for further development

OFAR4ALL works both as a smartphone app and as a browser application. The calculator is not available at present, as there is a lack of funding for its operation. «However, the program is open source. People who want to use it can get in touch with us. And, of course, we would welcome any financing solutions for operating our calculator,» adds Baumgartner. The development of the interdisciplinary team comprising researchers and students from the ZHAW and the HTWG Konstanz - University of Applied Sciences provides the basis for a new project. Under the title IoT Sustainability Lab, the calculator is being developed further to create an application that will help make buildings and the Internet of Things more resource-efficient.

Sustainability as a continuous improvement process

The ZHAW wants to adopt an evidence-based approach when it comes to sustainability. However, improving data quality is an ongoing process.

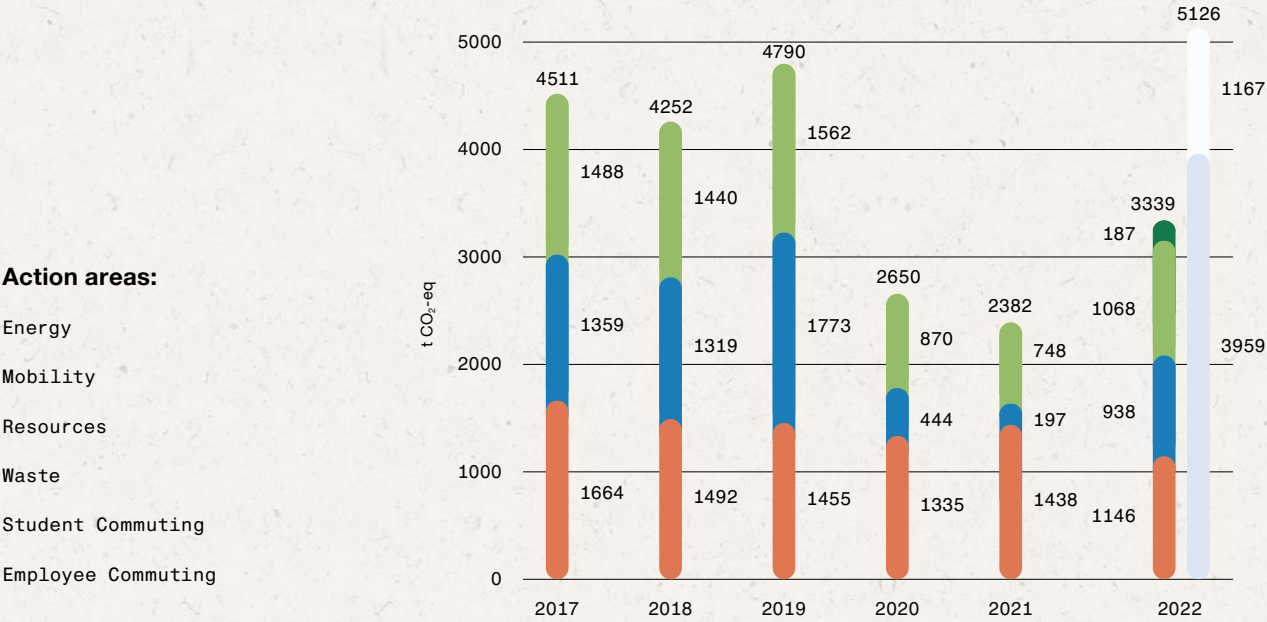
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- 13

The ZHAW is for realistic goals and evidence-based measures as it strives to achieve a sustainable transformation. These goals and measures have been jointly defined by the ZHAW's Executive Board, employees and students in a Green Impact Book that specifies concrete goals for the university's operations in the area of environmental sustainability. Since then, the ZHAW has been examining its environmental impact and identifying further effective

measures that will allow for sustainable action to be taken in keeping with the motto "you can only manage what you can measure." The ZHAW collects data in the areas of business mobility (flights, trains and vehicles), commuting (incl. students), resource consumption (catering, paper, ICT, water and waste) and energy consumption within buildings. Although there are still some gaps in the sustainability data, with this being especially

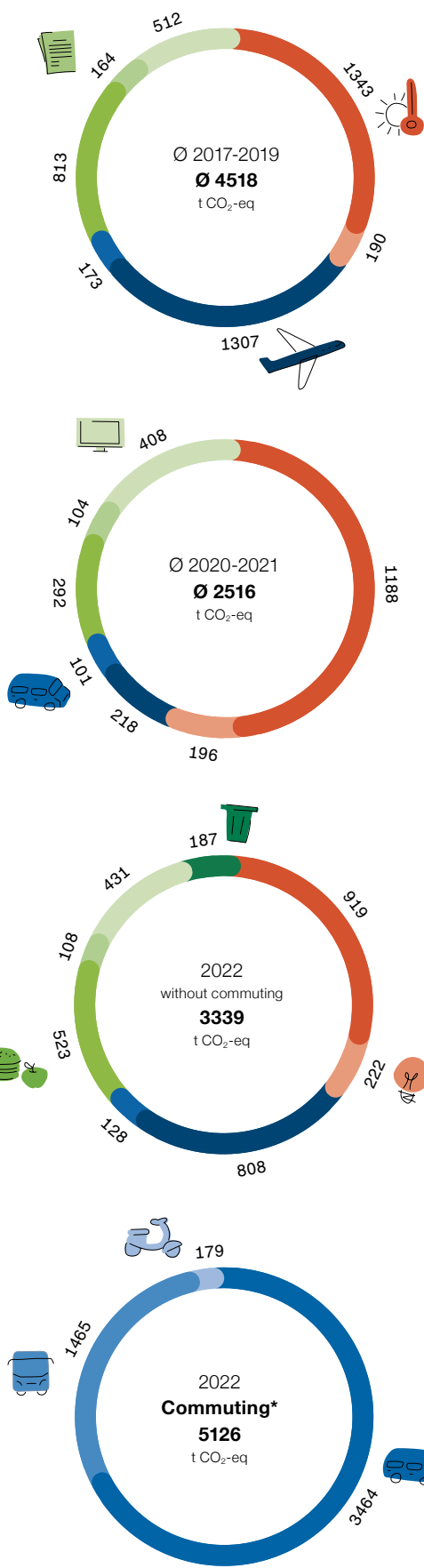
true with respect to the availability in the areas of mobility and resources, the ZHAW is continuously improving its data collection. The data is analysed internally by the Life Cycle Assessment Research Group, whereby up-to-date databases and reliable extrapolation techniques are used to project the missing data. The ZHAW is striving to improve the data quality within its system boundaries and to further develop its sustainability processes and measures.

Overview of the development of total emissions 2017-2022



The ZHAW approaches its overall emissions based on the action areas defined in its Green Impact Book for sustainable university operations. It covers the three main areas of energy, mobility and resources. The development of total emissions shows an overall downward trend, which was triggered by the changes in behaviour also influenced by the pandemic and the energy crisis. The shares were relatively balanced until 2019. During the pandemic, there were fewer emissions from mobility and resources, while energy emissions fell only slightly. Commuter mobility and waste can only be analysed from 2022 onwards. There is therefore no comparative data from previous years for these areas.

The ZHAW's carbon assessment before, during and after the pandemic



- Energy**
 - Heating
 - Electricity
 - Cooling*
- Resources**
 - Catering
 - Paper
 - ICT
 - Waste
 - Water*
- Mobility**
 - Aeroplane
 - Car
 - Public Transport
 - Other means
 - Bike*
 - Train*

What makes up the emissions in the three main areas of energy, mobility and resources? In the energy sector, emissions are caused by the generation of heat and the consumption of electricity. In the area of mobility, almost all emissions are caused by air travel and car trips, even if not all train trips have been analysed yet. In the area of resources, emissions are mainly measured through catering, ICT devices and paper consumption - as well as waste since 2022.

* The values for cooling, water and train are too small and are not shown in the respective diagrams. Details on these emission areas are shown on the following pages.

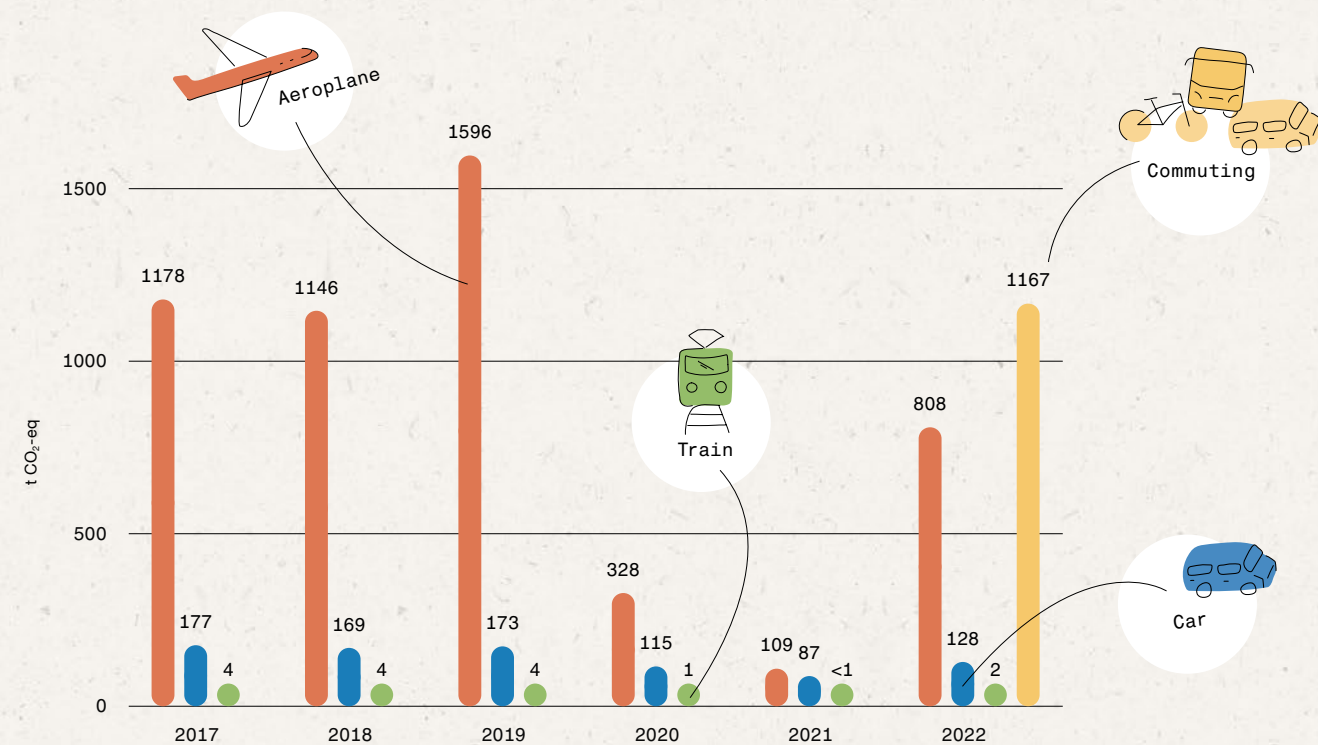


«A solid data basis makes it possible to develop effective measures to reduce emissions. At the same time, it is important to the ZHAW to also take account of the social and economic dimensions of sustainability.»

Francesco Bortoluzzi is Head of Sustainability Programmes at ZHAW sustainable.

Mobility of ZHAW employees

At a glance



Emissions from employee mobility 2017-2022 at a glance

Air travel and commuting have the greatest impact on the mobility emissions of ZHAW employees. Business train trips by employees could previously only be recorded on a partial basis due to expense accounting. However, their emissions are estimated to be very low.

Explanations

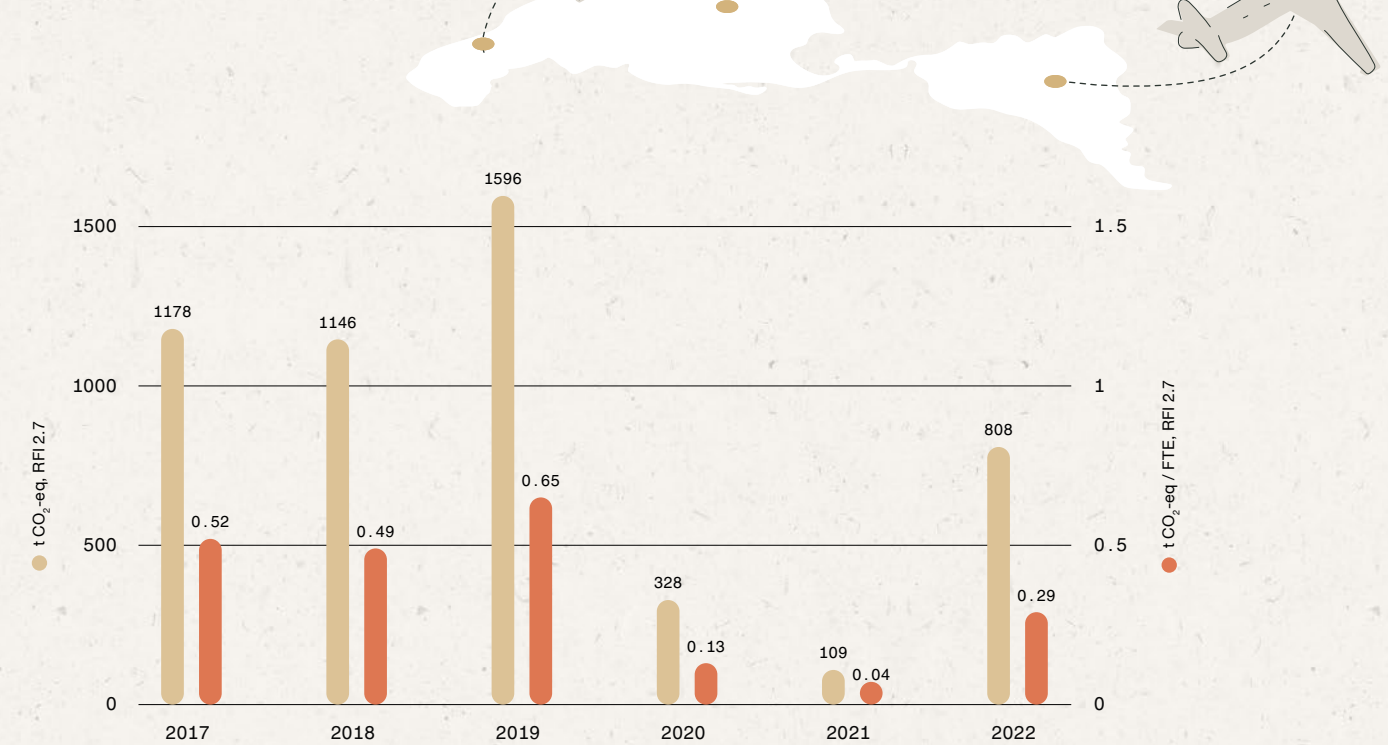
Includes:

- Exclusively business travel by employees
- Car: Private cars used for business trips (expenses), ZHAW fleet, Mobility service
- Train: international train trips booked via the SBB Business Portal

Does not include:

- Train trips by employees, settled via expenses
- Student mobility (semesters abroad, excursions, etc.)
- Commuter mobility of students (see pages 54/55)

Air mobility



Emissions caused by the air mobility of employees 2017-2022, absolute and per full-time equivalent (FTE)

After an absolute and relative increase in flight emissions in 2019, the pandemic led to a sharp reduction. With the lifting of travel restrictions, flight emissions have rebounded. In 2022, they were around 60% of the average emissions in the three years before the pandemic.



Susann Görlinger (centre) is Flying-Less project manager at ifeu and consultant to the ZHAW, Nadine Klopfenstein Frei (right) is project manager 'Sustainable Travel @ ZHAW' and Francesco Bortoluzzi is Head of Sustainability Programmes.

Sustainable travel at the ZHAW

Despite its international focus, the ZHAW is aiming to reverse the trend and reduce its flight emissions.



At the ZHAW, the majority of greenhouse gas emissions in the area of mobility are caused by air travel. If commuting is taken out of the equation, flight emissions alone accounted for around one-third of the ZHAW's total emissions in 2022. In light of this fact, ZHAW employees and students should be encouraged to take personal responsibility for their actions in this area. ZHAW sustainable worked together with the School of Applied Linguistics as part of the 'Sustainable Travel @ ZHAW' project to examine which approaches and mechanisms might

be suitable for bringing about a corresponding change in mindset. In performing its work, the project team employed the qualitative method of focus groups with the aim of raising awareness among (frequent) travellers at the ZHAW about the specific need to cut flight emissions. At the same time, it also wanted to work with them to develop approaches for achieving this reduction.

→ Find out more about the project

«At universities, there will always be travel, as this is important for both research and the development of intercultural skills. However, sustainability considerations require that we come together to strategically rethink our approach to internationalisation.»

Francesco Bortoluzzi

«The ZHAW can take on a leading role in Switzerland in the area of sustainable travel if it succeeds in effectively addressing conflicting goals and finding socially acceptable alternatives.»

Susann Görlinger

«There is a strong desire among the respondents for a clear and supportive framework that stipulates a travel or emissions budget and provides planning options.»

Nadine Klopfenstein Frei

Calculating the full scope of emissions

In calculating its flight emissions, the ZHAW doesn't just take account of its greenhouse gas emissions, but also other environmental impacts. Curdin Spirig explains what this is all about.

In order to take account of non-CO₂ emissions from air traffic, the ZHAW has chosen to apply a multiplication factor of 2.7 for its climate accounting. This decision is based on the pragmatic implementation of an internal recommendation from those working on the ZHAW's applied research into sustainability and is underpinned by the available data. The ZHAW is striving to further improve its analysis so as to better illustrate the climate impact of its business travel.

→ Learn more

What emissions does aviation produce apart from CO₂?

Curdin Spirig: In addition to CO₂, the combustion of kerosene in aircraft engines also produces nitrogen oxides, water vapour and soot particles. While both CO₂ and water vapour, as greenhouse gases, have a direct impact on the radiation balance and thus also on our climate, the effect of the other pollutants is more complex due to the way they interact with the atmosphere at a physical and chemical level. In certain layers of the atmosphere, for example, soot and water vapour emissions lead to the formation of persistent contrails that are responsible for a significant part of the climate impact attributable to air traffic.

How can this be calculated?

Curdin Spirig: Determining the climate effects of non-CO₂ emissions is a highly complex process. This means that it is not yet feasible to explicitly calculate these effects for individual flights. In order to nevertheless incorporate non-CO₂ emissions in our calculations, the CO₂ emissions of each flight can be multiplied by a certain factor that represents the average climate impact of air traffic as a whole, making it possible to estimate the total warming effect.

To what extent do these non-CO₂ emissions impact the climate?

Curdin Spirig: According to the latest findings, non-CO₂ emissions are responsible for two-thirds of the climate impact stemming from aviation. If we only consider the CO₂ emissions generated by air traffic, this leads to a severe underestimation of the climate impact. There is still a relatively large degree of uncertainty as regards the effects of non-CO₂ emissions and it is for this reason that they are the subject of current research. We already know that these effects are strongly dependent on atmospheric conditions, with factors such as temperature, humidity and altitude all playing a part.



Curdin Spirig is a research associate at the Centre for Aviation of the School of Engineering. The focal points of his research are meteorology, climatology and aircraft emissions.



«Intercultural competence cannot be measured in air miles. On the contrary: those who understand how other worlds tick use physical travel as something extra and all other communication channels as courants normal. This has the benefit of saving jet lags and ensures a climate for cooler heads.»

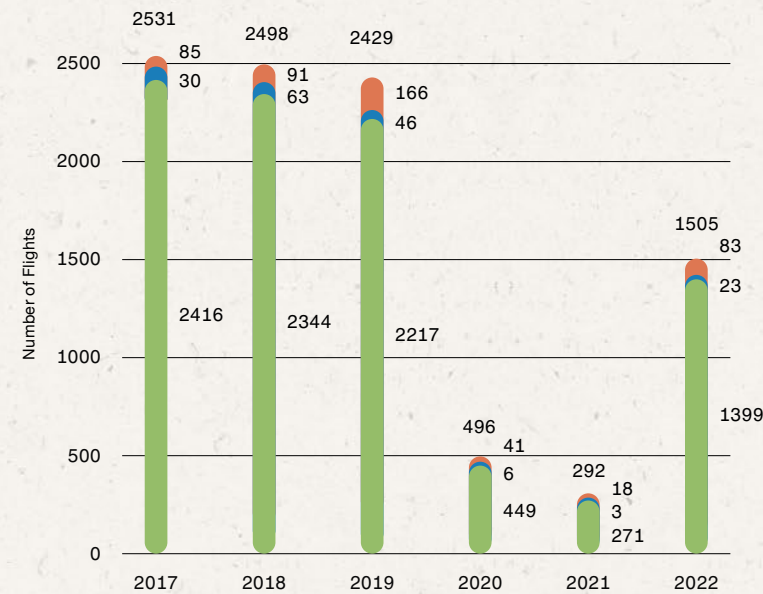
Daniel Perrin is Dean of the Department of Applied Linguistics and a member of the Executive Board.

Air mobility of employees

Individual flight connections: Travel class and emissions

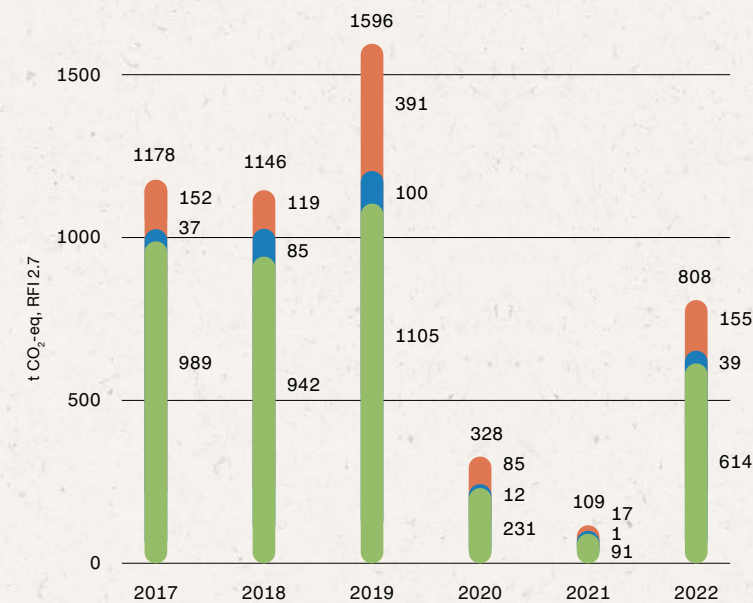
Number of flights by flight class

- Business
- Premium Economy
- Economy



Emissions by flight class

- Business
- Premium Economy
- Economy

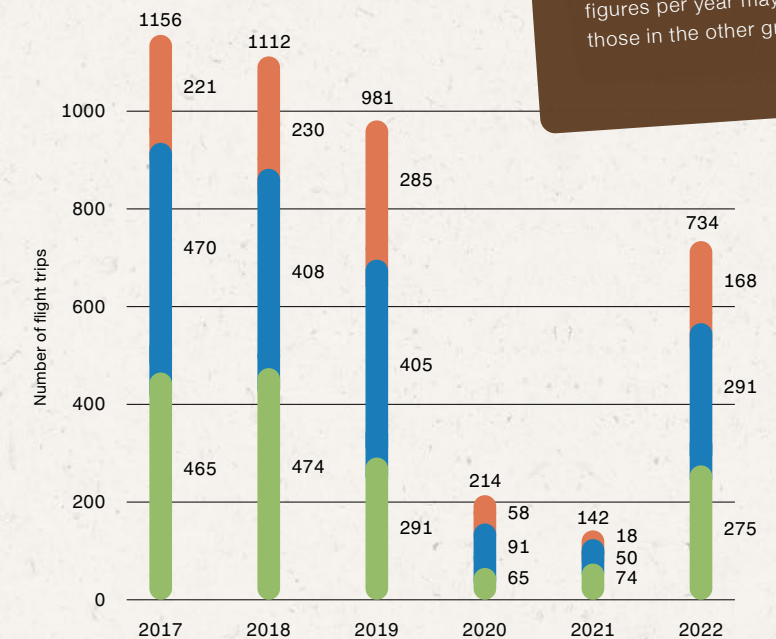


The breakdown by flight class shows that emissions increased in 2019 despite the downward trend in the number of flights. This is partly due to a higher proportion of long-haul flights in Business Class, which emit almost twice as many greenhouse gases as Economy Class.

Final destinations* of air travel: Distance and emissions

Number of flights by distance to final destination*

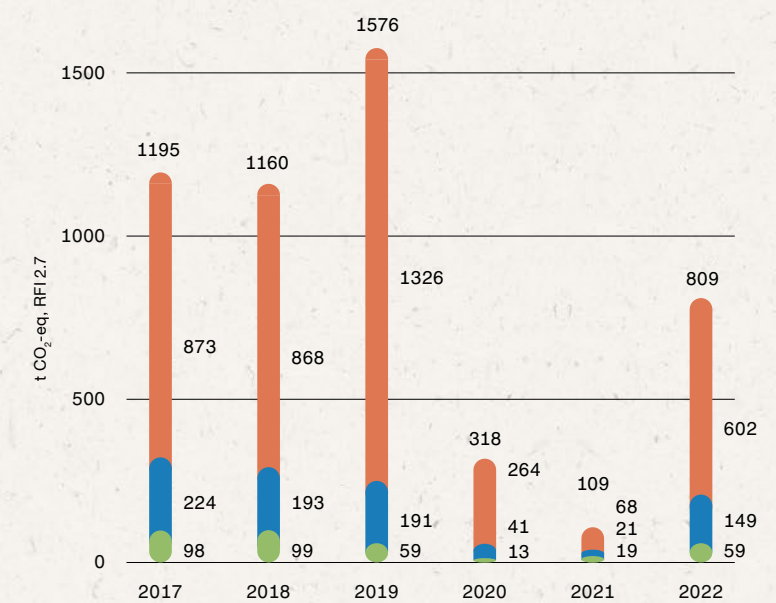
- > 4500 km
- 1500-4500 km
- < 1500 km



* Final destinations of air travel are approximated on the basis of a distance calculation starting in Zurich (based on the clustering of routes linked to one person and one trip). As the travelling period may extend over a change of year, the total figures per year may differ from those in the other graphs.

Emissions from air travel by distance to final destination*

- > 4500 km
- 1500-4500 km
- < 1500 km



The diagram categorise emissions by flight distance: short, medium and long-haul. The impact on emissions and therefore the potential for savings is greatest on long-haul flights. Although the total number of flights decreased in 2019, emissions increased. This is due to a higher proportion of long-haul and Business Class flights.

Commuting: «The greatest potential lies with car travel»

Researchers at the School of Engineering wanted to gain a better understanding of the mobility behaviour of the ZHAW’s staff and students. To this end, they conducted a survey to provide a basis for recording and analysing the university’s commuting-related mobility. The project was led by Andrea Del Duce, Head of the Sustainable Mobility research group.

What struck you the most when you saw the figures on commuting-related mobility at the ZHAW?

Andrea Del Duce: It was great to see that the majority of students and staff travel by public transport or bike, meaning they already use sustainable means of transport. This is also due to the ZHAW being well connected to public transport. Only around 5 to 25 % of commuters travelling to the ZHAW do so by car. However, the greenhouse gas emissions that these car trips produce are significantly higher than those caused by public transport or more active forms of mobility. Car travel is therefore responsible for the largest share of emissions attributable to commuting-related mobility at the ZHAW.

Where do you see potential for improvement?

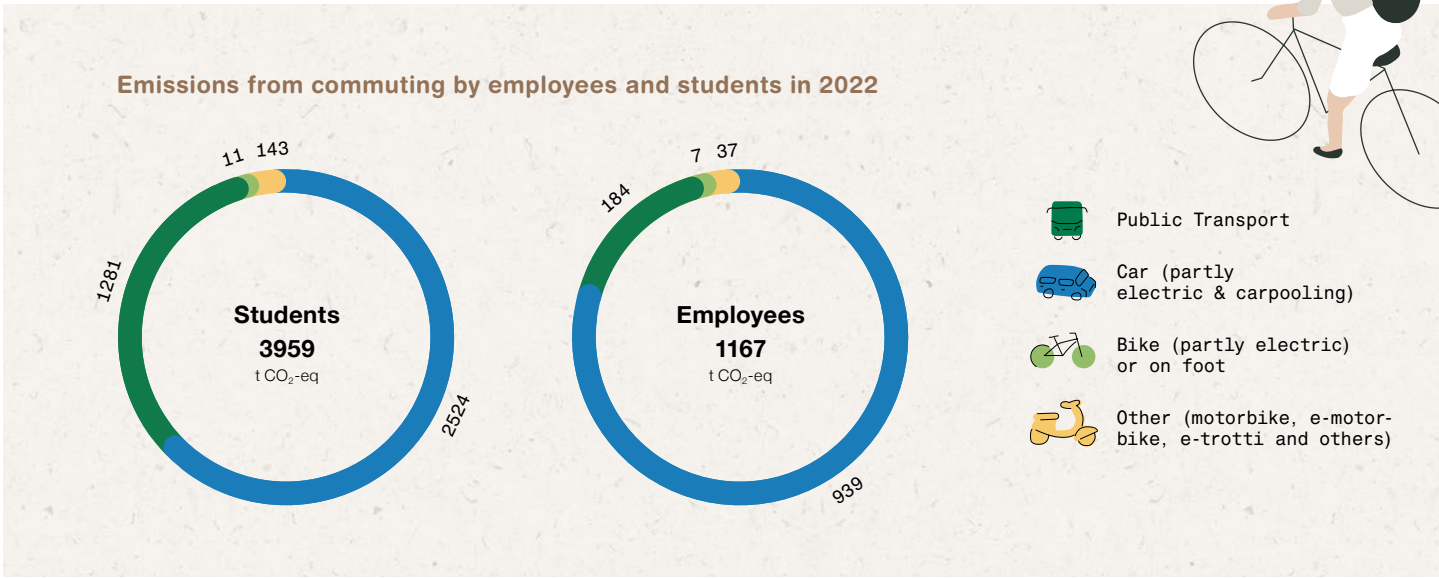
Andrea Del Duce: The greatest potential lies with car travel. However, this also represents a challenge, as despite the fact that car trips account for a large proportion of our commuting-related carbon emissions, the share of people coming by car is small. Some of them may find themselves in a situation where switching to public transport is far from practical.

What incentives could the ZHAW provide?

Andrea Del Duce: In our surveys on possible incentives, around 20 % of the feedback received from car drivers mentioned the costs associated with public transport. Making a contribution to commuting costs as a way of rewarding public transport use could send an important signal. In the medium term, measures to promote e-mobility may also become more relevant. However, this should not in turn lead to commuters switching from public transport to an electric car, for example. After all, public transport and active mobility remain the most sustainable solutions.



Andrea Del Duce is a lecturer and Head of the Sustainable Mobility research group at the School of Engineering.



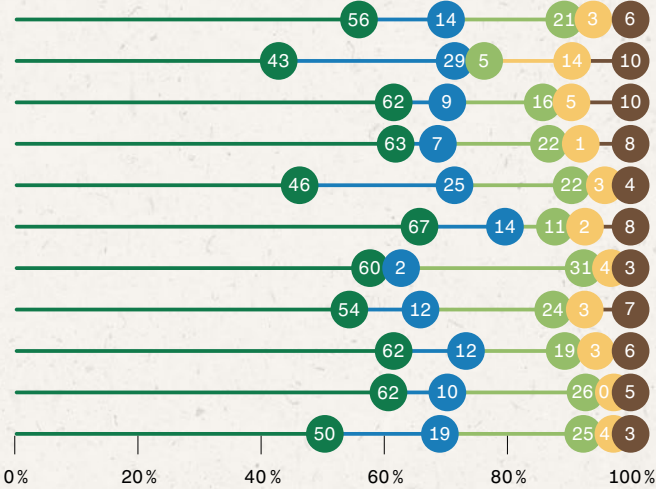
Choice of means of transport for commuting per department

Employees

How do employees get to the ZHAW? More than half use public transport, one in five come on foot or by bike. The ZHAW has good public transport connections at most of its locations. Only a few employees come by car, but this is the main cause of commuter emissions.

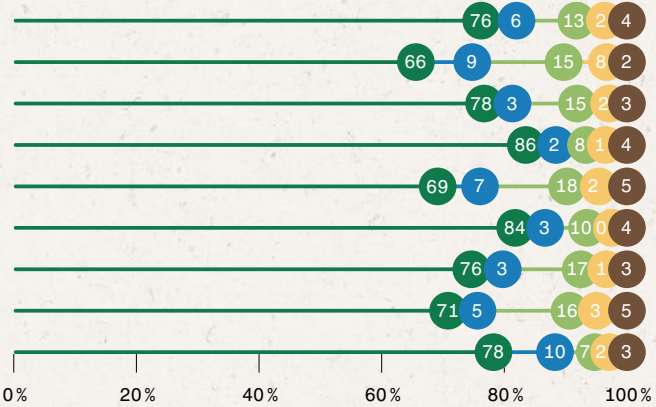


Public Transport
Car (partly electric & carpooling)
Bike (partly electric) or on foot
Other (motorbike, e-motorbike, e-trotti and others)
Combination



Students

How do students get to the ZHAW? Public transport clearly dominates and only a few come on foot or by bike. Even fewer use cars, which are the main source of commuting emissions. In its location planning, the ZHAW attaches great importance to ensuring that both current and new campus locations are easily accessible by public transport.



Driving to the ZHAW?

In keeping with the university’s sustainability strategy, parking fees at the ZHAW have now been aligned with those customary elsewhere in the local area.

The era of subsidised parking spaces at the ZHAW came to an end this year. This has resulted in higher parking prices, making commuting by car a less attractive proposition. By raising parking prices, the aim is to encourage those who could also travel to work by public transport or bike to switch to more sustainable

alternatives. Personal, social, and work-related circumstances that mean certain individuals are dependent on driving to the ZHAW will be taken into account when parking permits are allocated. In justified situations, it will also be possible to reduce the fees or waive them entirely.

9

11



«Generally speaking, the ZHAW and its various locations are blessed with excellent public transport links. Only a limited number of parking spaces are available for cars – with priority being given to those who need them for personal or work-related reasons.»

Susanne Hersener is a service management specialist in the area of mobility.

Energy emissions at the ZHAW locations

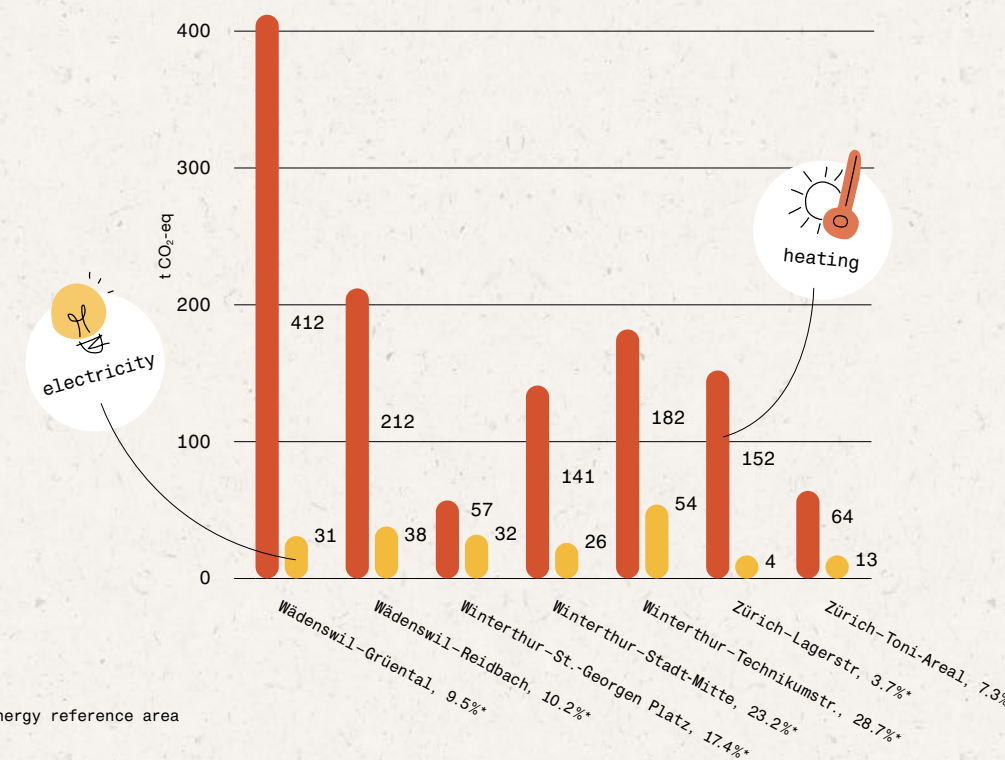
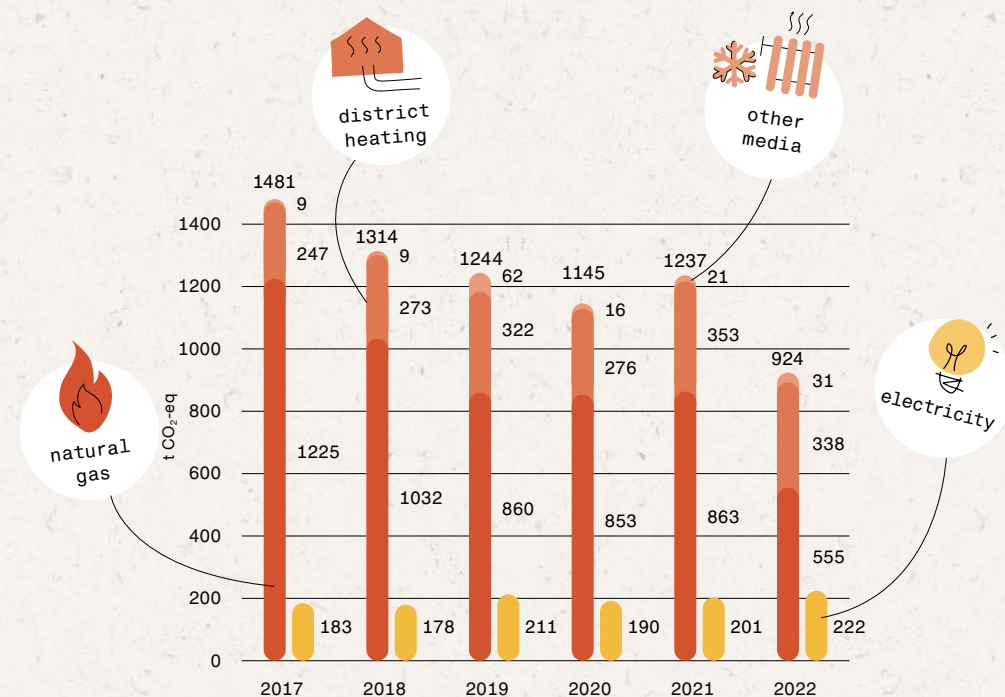
At a glance

Emissions from energy consumption 2017-2022

Emissions from heating and cooling have fallen slightly. This is due to improved operational efficiency through optimised management and changes in energy sources. Recently, the energy crisis in particular has been tackled with a proactive campaign involving all locations, students and employees. Although the absolute consumption of electricity and heating is similar (see energy consumption on page 59), emissions from electricity consumption are significantly lower than those from heating due to the high proportion of renewable energy sources. The slight increase in electricity consumption and its emissions is due to additional buildings.

Average annual emissions from energy consumption per campus 2017-2022

The seven ZHAW campuses differ significantly in terms of emissions from heating and electricity due to their size and the energy sources used. There is potential for reduction, particularly in the case of heating from natural gas at the Grüental campus.



* Share of the campus in the ZHAW's energy reference area



Jonas Züger is Head of Technology and Engineering in Facility Management at the ZHAW. Marco Linpinsel is responsible for sustainability data and processes at ZHAW sustainable.

Collecting energy data: a time-consuming and complex process

Exactly how much electricity, gas, oil, district heating and water does the ZHAW consume? Jonas Züger and Marco Linpinsel are looking into this question in almost detective-like detail. Yet it will take some time before they have a definitive answer.

The ZHAW is spread out over more than 70 buildings at three locations. Around 40 percent of the properties are owned by the canton. In these buildings, there is transparency about energy consumption. However, some 60 percent of the ZHAW's spaces are rented by the canton. «As we are not the tenant ourselves, we have no direct contractual relationship with the owner,» explains Jonas Züger, Head of Technology and Engineering in Facility Management at the ZHAW. «This means that we have to rely on the goodwill of everyone involved when it comes to collecting the data.» In these instances, it is the Real Estate Office of the Canton of Zurich that is the contracting party in the lessor-tenant agreement. As the energy costs are charged to the tenant, one might assume these are available. «It isn't that simple,»

says Züger. «The bills don't always detail the actual consumption figures attributable to the ZHAW. Some are included in the service charge bill or split equally between various tenants.» Züger also points out that «in some cases, the meter readings are not in the bill at all.»

Canvassing for data

The ZHAW therefore relies on the Real Estate Office, as the rental agreement partner, requesting the energy consumption figures and the lessors then making these figures available. Yet in practice things often look different: «The lessors are under no obligation to provide these figures and merely have to provide access to the relevant files – this means all the work is left to us,» says Marco Linpinsel, who performs this task with ZHAW sustainable. «I went door-to-door and dealt with various administrators and fellow tenants.» However, these efforts were not without success. Linpinsel and Züger were able to quantify the utilised heating sources as well as water and electricity consumption at a level of 87%,

84% and 95%, respectively. «Out of this data, extrapolating the figures for each campus with a relatively high degree of accuracy is possible,» says Linpinsel.

An increasingly relevant topic

Data availability has improved a lot thanks to Jonas Züger and Marco Linpinsel. It is hoped to further establish these processes in the future. For Züger it is also important to emphasise that the Real Estate Office is providing greater support in terms of data procurement than ever before: «You notice that things are changing and the topic is becoming increasingly relevant. While we have got the ball rolling, the path we have embarked upon is long and we are moving step by step.» Support is also provided on the technical side. The Office of Planning and Architecture uses an energy data tool that the ZHAW can also use. In the future, the energy data for each building will be recorded in a uniform manner. Züger adds: «Ideally, this process would be automated rather than manual, but for now it will have to do.»

«Questioning the status quo is part of our job»

The operating technicians at the Technikumstrasse campus in Winterthur and the Grüental campus in Wädenswil are demonstrating great initiative in their efforts to optimise energy consumption.

In the basement beneath Technikumstrasse in Winterthur, Eduard Kuhr points to a new heat exchanger mounted on a district heating pipe. «This is where the city's district heating reaches us before we distribute it around the campus buildings,» explains the Head of the Operating Technology at the Winterthur campus, who shares with us that the system represents a larger-scale, long-term investment aimed at saving energy over the next 20 years.

Making little tweaks

The first floor of the main building is home to a further investment. The so-called follow-me lighting detects the movement of people and illuminates those sections of the corridor that are

currently being used to be brighter than the others. In those areas where nobody is present, the lighting output is reduced to 10 percent. A technical room housing various ICT components is located right next door. «In rooms like this, we have adjusted the cooling system,» explains Kuhr. Alongside the major investments being made, it is little tweaks like this which have been optimally implemented by the specialists from Facility Management that are making a difference.

Dynamic adjustments

Let's now turn our attention to the banks of Lake Zurich: here too, the aim is to optimise heating and air conditioning settings while ensuring a comfortable environment

and consuming as little energy as possible. Timo Baumann, the Head of the Operating Technology team in Wädenswil, explains that «constantly reviewing things and questioning the status quo is an important part of our job, as conditions and requirements are always changing.» Following the energy renovation of the GA building's façade, for example, it has been possible to optimise the heating output via the control system. However, technical developments such as modern fibreglass air filters and more efficient motors in the ventilation systems are also helping to save energy.

Dedicated working groups

Collaborating in working groups, Timo Baumann and Eduard Kuhr regularly put forward proposals for improving energy consumption at an operational level. «We subsequently discuss our own thoughts as well as new ideas and suggestions that have been put to us on campus,» explains Baumann. «Together, we decide which of them are feasible and how they can be implemented.»



Eduard Kuhr is the Head of the Operating Technology team at the Technikumstrasse campus.

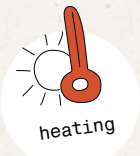


Timo Baumann is the Head of the Operating Technology team in Wädenswil.

What makes up energy consumption and emissions?

The proportion of renewable energy used to generate heating is growing continuously. In 2022, over 50 % of energy came from renewable sources. The use of fossil fuels such as natural gas and heating oil is declining, as these will be replaced by district heating and woodchips in the long term. The ZHAW already sources almost all of its electricity requirements directly from renewable sources.

Energy consumption



heating

		2017	2018	2019	2020	2021	2022
Energy reference area	m²	176'322	176'161	182'116	205'765	206'266	207'073
District heating	MWh	7'215	8'578	10'535	9'796	11'690	9'238
Natural gas	MWh	4'956	4'177	3'478	3'453	3'494	2'245
Wood chips	MWh	0	232	202	776	975	1'776
Thermal energy heat pump	MWh	1'036	1'052	962	608	910	483
Heating oil	MWh	9	0	179	0	0	0
Cooling	MWh	948	885	731	633	854	1'105
Total energy	MWh	14'164	14'924	16'087	15'266	17'923	14'847
Share of renewable energy	%	39%	43%	44%	45%	48%	53%



electricity

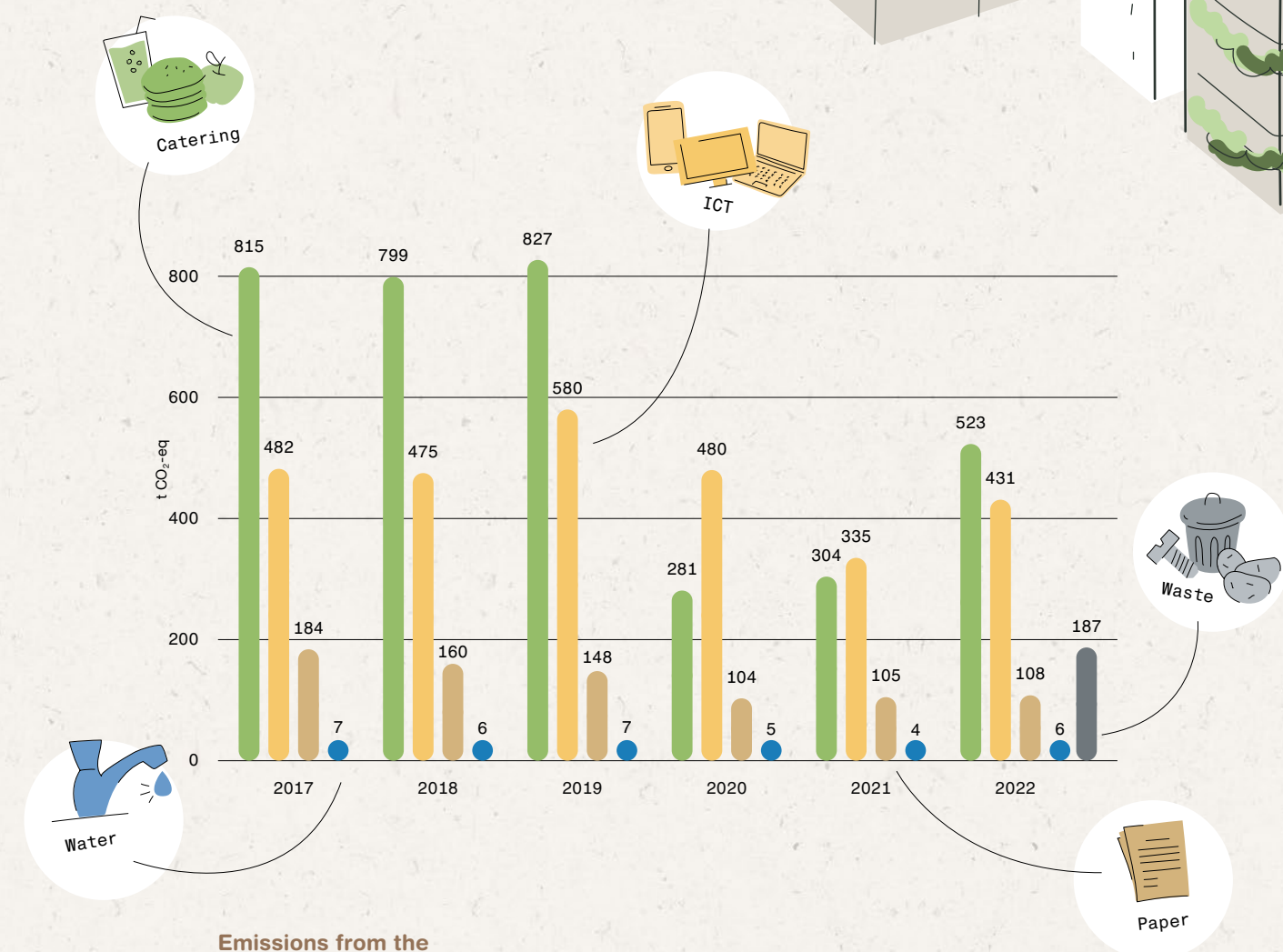
Grid supply (various mixes)	MWh	12'826	12'506	12'910	11'701	12'392	13'650
PV power generation	MWh	0	0	9	100	90	98
Total	MWh	12'826	12'506	12'920	11'800	12'481	13'748
Share of renewable energy	%	96%	96%	99%	99%	99%	99%

Explanations:

- The above values represent the total consumption of the ZHAW and are based to a small extent on extrapolations.
- The data availability of actual consumption values varies depending on the campus, year and medium.
- The average data availability is between 2017-2022: 95.5 % electricity consumption 89.0 % heating consumption 90.1 % water consumption
- The data gaps were extrapolated at campus level, per year and medium, taking into account the energy mix available on campus. Efforts are being made to increase data availability.
- Cooling: Cooling is only displayed if its energy data is available separately. Otherwise it is included in the electricity.
- PV power generation: only includes the large-scale system of the GA Wädenswil building. Smaller test systems are also in operation.

Resources

At a glance



Emissions from the resource consumption 2017-2022

Emissions in the area of resources consist of catering, ICT devices and paper consumption. Water consumption causes only minor emissions. Paper was steadily reduced in the years before the pandemic thanks to the introduction of multifunction printers; a trend that continued after the pandemic. Starting in 2022 waste has also been measured.

«Our principles are part and parcel of our daily routine»

The ZHAW's procurement activities take account of all aspects of sustainability, as Managing Director Reto Schnellmann explains in the following interview.



Reto Schnellmann is the Managing Director of the ZHAW and a member of the Executive Board.

What forms the basis of the ZHAW's procurement activities?

Reto Schnellmann: The ZHAW has an official [procurement policy](#), which forms the relevant basis for all of the university's procurement activities. Despite the fact that they were only adopted by the Executive Board in 2022, the majority of the principles set out in the policy reflect practices that have been in place at the ZHAW for a number of years. These provisions were originally found in the financial regulations or general terms and conditions, or were laid down by the procuring entities themselves. With the new policy, an overarching document is now in place.

What role does sustainability play in the ZHAW's procurement policy?

Reto Schnellmann: Due to the ZHAW's size, the provisions of contract tendering law are often applied to our procurement activities. Specifically, this means applying a list of criteria incorporating price, functional, quality and sustainability

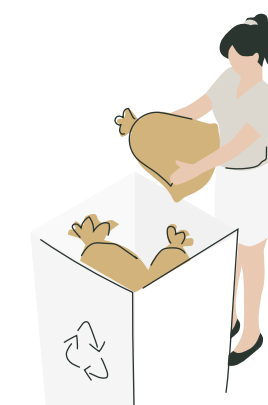
aspects. We understand sustainability in all its dimensions. Alongside the environmental aspects, which have recently gained importance, social and economic considerations also play a role.

How successfully has the policy been implemented to date?

Reto Schnellmann: It is fair to say that wherever F&S assumes the role of lead buyer, the principles laid out in the policy have already been in place for some time and are thus part and parcel of the daily routine. Conversely, the establishment of these principles within the respective Schools is certainly still a work in progress. Awareness of environmental and social aspects is also continuing to increase, as are the opportunities these areas present. These aspects are thus becoming ever more established as part of the ZHAW's procurement activities. As universities should also act as role models, I consider this to be an important development.

Are further developments planned in sustainable procurement?

Reto Schnellmann: We will continue to question existing routines and strive for improvement. Although we have been making efforts in the context of sustainability for years, there is further potential both in the procurements for which the ZHAW is directly responsible and in the canteens and buildings used by the ZHAW. It is important that we work together with the involved stakeholders to find good solutions here. Ultimately, the most sustainable form of procurement of all is to avoid procurement altogether, which means the future behaviour of the university's staff and students will likewise play a decisive role.



«We are continuously developing our range of meat-free dishes»

Markus Löffler is responsible for the external canteen operator at the ZHAW. The current offering is to be developed further in collaboration with the contracted caterer.



Markus Löffler is the Head of the Shared Service Centre and Deputy Head of Facility Management.

What is the ZHAW doing for a more sustainable catering?

Markus Löffler: In its sustainability strategy, the ZHAW specifically defines the reduction of food waste as a goal for its university catering operations. Further targets include cutting the amount of waste from disposable tableware, promoting more sustainable products, and reducing both meat and fish consumption. We also track the needs of our guests through annual surveys, which reveal that topics such as animal welfare, regional and sustainable products in our menus are also important to our guests. In our catering services we aim for a change process requiring both operational as well as social and economic considerations. By providing an attractive offer, we want to play our part to help increase people's acceptance of this change as best we can. Our caterer is also pursuing its own sustainability goals, with the ZHAW providing active support.

What's progress been like in realising these objectives?

Markus Löffler: We have defined a price range for our menus. This gives our caterer flexibility in increasingly use products from sustainable production practices and also offer animal-based separately on demand. For example, a nutritious vegan or vegetarian meal is

offered as a basic dish. Our guests then opt to individually add a meat or fish component for an additional charge. This approach enables an expansion of our vegetarian and vegan range; sometimes also more expensive organic or fair-trade ingredients can also be used. We also offer a menu at a reduced price daily. And thanks to flexible menu prices, our guests can decide individually how much they are willing to pay for sustainable consumption.

And what is the situation with food waste and other waste?

Markus Löffler: Food waste is measured and recorded by the caterer as part of annual spot checks. These samplings reveal that food waste fell continuously up to 2019. Sadly, no representative data are available for the Covid pandemic years. In 2022, a slight increase was recorded relative to 2019. Most food waste results from the leftovers found on guests' plates. There is also food-preparation waste as well as waste generated through overproduction. Here our more flexible and individualised offer, with the option to select certain components, shows potential. A positive impact can also be had by adjusting portions and offering additional servings if needed. A closer alignment of food production to demand, based on insights from historical data, is

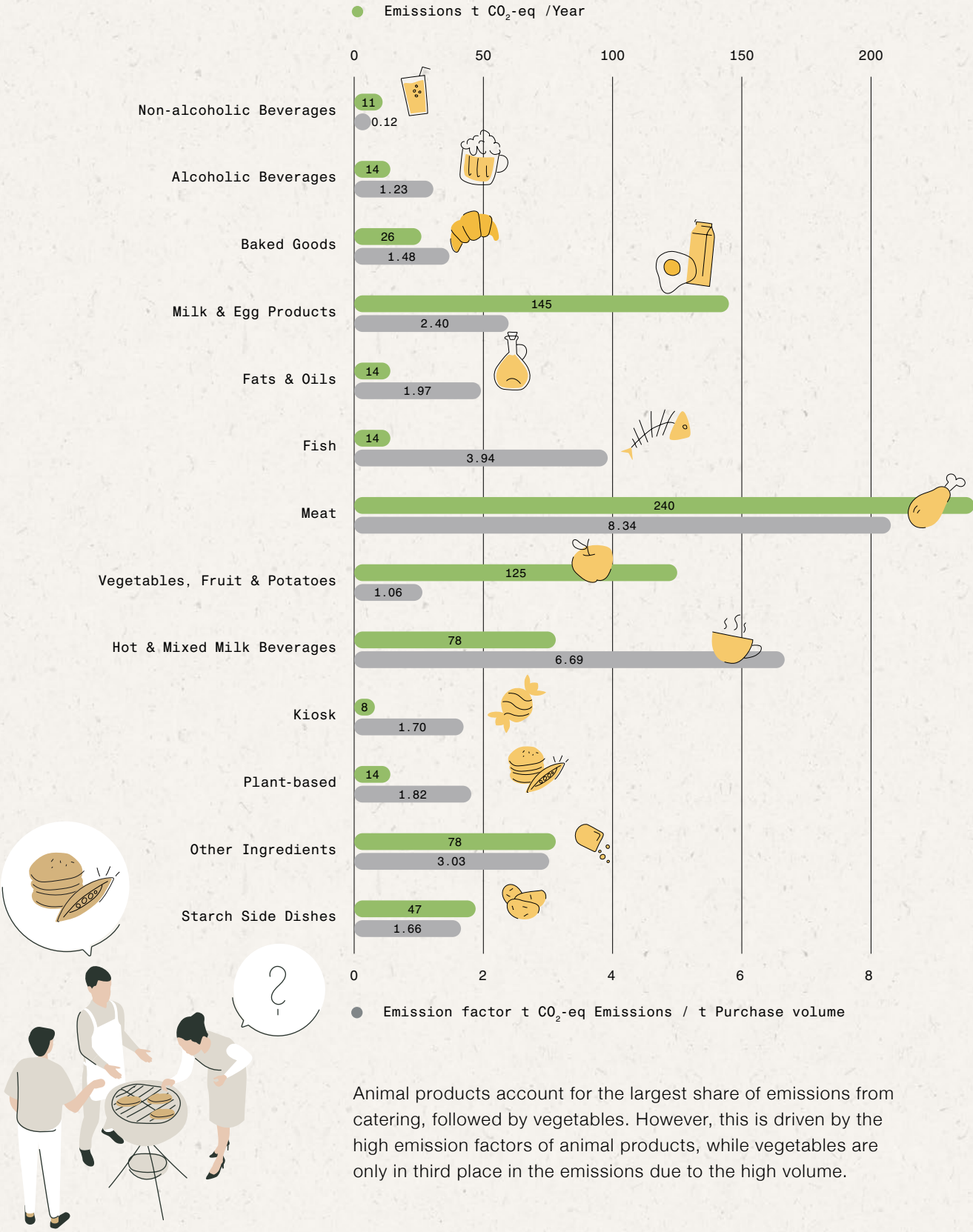
also promising. Unsold components of our menus are reused wherever possible. The volume of waste generated through single-use packaging and tableware is being reduced constantly thanks to the introduction of reusable tableware for take-away at most locations. Going forwards, this solution is to be scaled further.

Animal-based products account for the largest share of emissions in catering by far. How is emission reduction tackled?

Markus Löffler: The scientific findings of the NOVANIMAL study, carried out also at the ZHAW canteens in Wädenswil, show that our vegetarian and vegan offer is continuously expanded and developed. Our surveys and operating experience show that a substantial share of our guests would not yet be ready to accept an exclusively vegetarian or vegan offer. The sustainability strategy does not aim to bring about sustainable consumption through prohibitions intended to reduce the use of animal-based products, but rather by making alternatives as attractive as possible. This approach is also supported by the NOVANIMAL study. The Menu Sustainability Index developed at the ZHAW has also been recently introduced as an assessment tool that provides guidance in selecting eco-friendly and health-conscious meals.

Catering

Average annual emissions from catering 2017-2019 and emissions per purchase volume



Animal products account for the largest share of emissions from catering, followed by vegetables. However, this is driven by the high emission factors of animal products, while vegetables are only in third place in the emissions due to the high volume.

The life cycle of ZHAW devices

The ZHAW optimises the lifespan of its devices by offering three- to five-year warranties as well as support and advisory services. And it does so without users having to sacrifice efficiency or workplace convenience.

Since 2016, the ZHAW has been recording the lifespan of its devices, including laptops, desktop computers and tablets. As the data is still young, it remains too early to make a statement on the average lifespan of the university's devices. Nevertheless, ICT is striving to optimise the lifespan of its devices, for example by offering three- to five-year warranties, rapid support and purchase consultations. Ultimately, however, it is the cost centres themselves that decide how long a device can meet the requirements of everyday working life and be used efficiently.

Yet at the same time, the returning of devices to ICT does not necessarily mark the end of their useful life. In some cases, they can still be used as laboratory, emergency or examination devices, as the technological requirements here are not as demanding. Should it not be possible for the devices to be used for alternative purposes at the ZHAW, they are sold to a certified broker who overhauls them before they are put on the used equipment market. Unusable devices, on the other hand, are recycled by Facility Management.



«Oftentimes, we find ourselves having to strike a balance between environmental and organisational sustainability. While a new device isn't always the answer, an unsuitable device can hinder our daily work.»

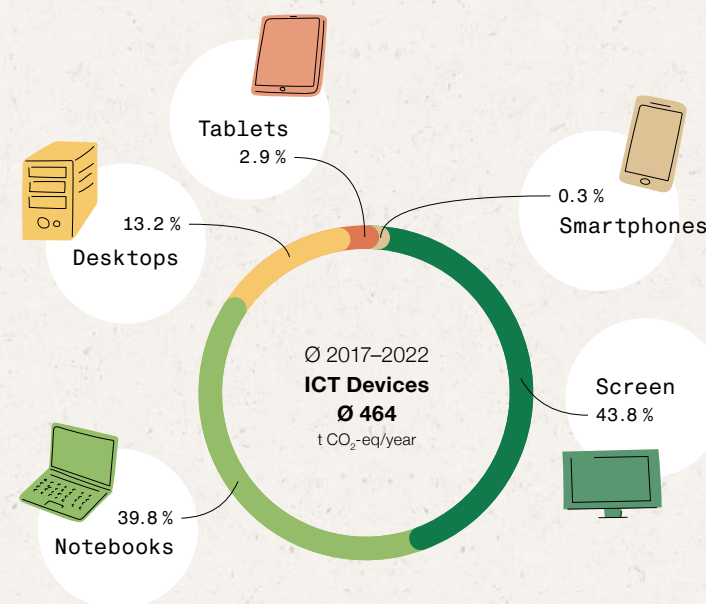
Damian Nussbaumer is ICT Site Manager for Wädenswil and Zurich.

ICT

Average annual emissions from ICT devices 2017-2022 and shares of device class

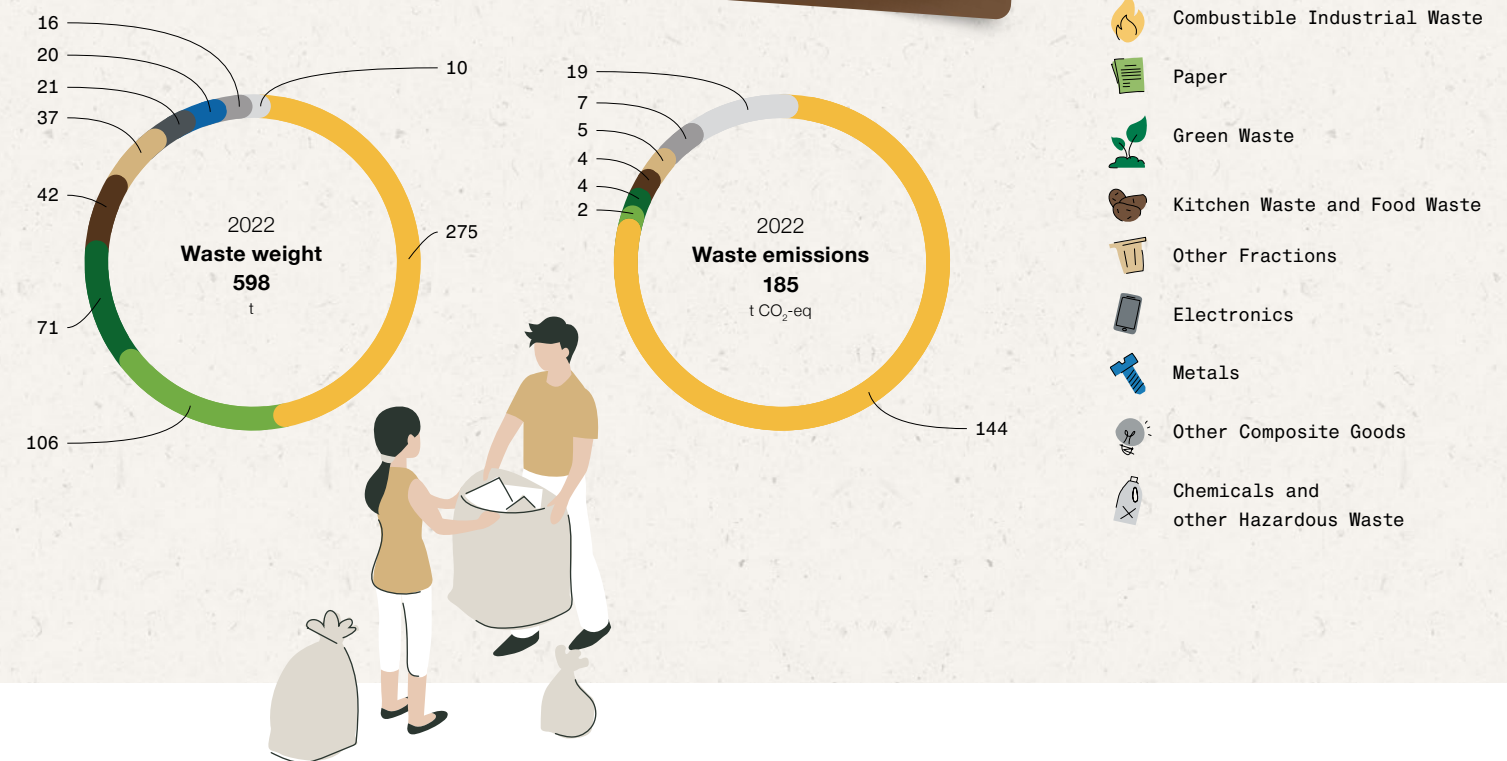
Monitors and notebooks account for the largest share of emissions from ICT devices. Anyone who uses their work device for longer and can do without a second monitor is actively helping to reduce emissions.

Does not include: cloud services, access points/routers, printers/copiers/scanners, conference systems/telephones, projectors, switches, other hardware.



Waste

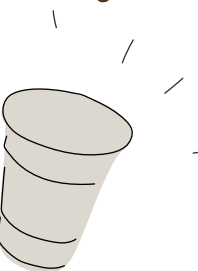
Weight and emissions by waste fraction in 2022



The ZHAW has been practicing waste separation at its sites and buildings for many years. However, the most effective measure to reduce waste is to reduce procurement quantities and extend procurement cycles.

Disposable cups will soon be consigned to history

It is hoped that around 800,000 disposable cups will be saved each year thanks to deposit-free reusable alternatives now being made available for coffee «to go» at the ZHAW canteens.



The ZHAW was already encouraging the guests of its canteens and cafeterias to «bring their own cup» for their coffee to go as far back as 2017. What is more, those who did so were rewarded with a discount. Prior to this, around 80 % of the more than one million hot drinks consumed each year across the university had been sold in disposable cups. This considerable volume of disposable cups presents annual savings potential of around 340,000 litres of water, 80,000 kWh of energy and more than 16 tonnes

of CO₂. However, despite the reward system and repeated promotions, the campaign failed to yield the desired success. The ZHAW is therefore now focussing on the use of reusable items in its catering establishments. With a view to increasing levels of acceptance, a conscious decision has also been taken not to charge a deposit for the reusable coffee cups. An initial pilot test at the Mäander cafeteria in Winterthur proved a success. In autumn semester 2022, deposit-free reusable cups were also introduced

across the entire St.-Georgen-Platz campus as part of an extended test phase. The experiences gathered to date confirm that guests are making use of the deposit-free reusable cups. What's more, it appears that this system can also be deployed economically – the feared loss of the reusable cups has failed to materialise. Working together with its external caterer, the ZHAW is now looking to introduce deposit-free reusable cups in all catering establishments throughout the university.



New Campus T: flexible, innovative and with green surroundings

In addition to providing a base for the technical innovation of the School of Engineering, the campus will now also better showcase the neighbouring Eulach.



A new campus with a park is to be built on the grounds of the School of Engineering in Winterthur. The buildings and green space that will make up the campus are to be realised in four stages over a period of around 15 years. During the first construction phase, the canteen building is to be removed. The newly vacated area facing the Eulach river will become home to the campus park, which will provide a recreational space for people and a habitat for both plants and animals. The park is to be neighboured by two new laboratory buildings, which will be constructed in accordance with high sustainability standards and boast an innovative energy concept. A thermally activated building system (TABS) will allow for

the buildings to be heated and cooled in an efficient manner. Waste heat is to be utilised, while a power-to-gas plant will produce hydrogen from solar power. The modular room layout will mean that the laboratory buildings can be used flexibly – this ability to adapt to future needs promises to result in a lengthy service life. The canteen located on the first floor of the large laboratory building will also be multifunctional. The mobility concept envisages people making their way to the campus in a more sustainable fashion – via public transport, by bike or on foot. Only a few parking spaces have been made available for cars, with priority being given to providing an improved infrastructure for cycling.

Gardens in Grüental

At a unique location in Wädenswil situated high above Lake Zurich, the ZHAW cultivates and maintains a number of gardens that are rich in variety and home to more than 4,000 different plant species.



The gardens and green spaces are dedicated to themes that are closely related to the research and educational activities of the Institute of Natural Resource Sciences. Innovative design and communication methods are applied in order to depict the interrelationships that exist between plants, animals and people. Visitors get to experience sustainability up close with all their senses and are encouraged to explore ways of acting consciously and in an environmentally friendly fashion in their interactions in and with nature. The gardens are freely accessible and excursions for school groups and individual guided tours are also offered.

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→ To the gardens



The popular video series with master gardener Thomas Kimmich offers a great deal of background knowledge and makes it possible to also experience the gardens from the comfort of your own home.

→ To the videos



«The green spaces and cultural areas at the Grüental campus provide an inspiring experiential setting. It is a place where sustainable learning takes place, theory is translated into action and research is put into practice against a real-life backdrop that also provides a platform for the necessary skills to be developed.»

Regula Treichler is a research associate at the Institute of Natural Resource Sciences of the School of Life Sciences and Facility Management in Wädenswil.



Bringing an additional buzz to the ZHAW's campuses

Biodiversity: In the future, things could become livelier around and on top of ZHAW buildings.

Not all locations are as biodiverse as the gardens at the Grüental campus. The ZHAW would like to expand the university's ecologically managed green and roof areas with the aim of boosting biodiversity on campus. To date, however, this goal had not been defined in detail. Nils Honetschläger from the Institute of Natural Resource Sciences conducted a research project in which he and others investigated possible measures and examined key figures with a view to increasing biodiversity at the university's locations. Working in consultation with F&S, he assessed the areas surrounding the ZHAW's various properties as well as their roof surfaces with respect to their current use, maintenance and environmental condition. Drawing on the potential

for improvement he identified in this way, he then put together a list of possible measures. These measures have been defined with various objectives, including protecting existing areas and structures of high environmental value, adapting the way in which green areas and roof surfaces not yet managed according to environmental considerations are maintained and, finally, creating a springboard for new green spaces of this kind to be established at suitable locations. The impact that these measures might have on both operating expenses and maintenance costs was taken into account during the study. A strategy for implementing the measures is now being drawn up in collaboration with the responsible centres and specialist departments.

→ [Learn more](#)



Today



Proposed change

Today



Proposed change

Today



«The recommendations focus on boosting biodiversity and ensuring a more prudent use of resources, while also improving the environment in those spaces utilised by employees and students.»

Nils Honetschläger is a research associate at the Institute of Natural Resource Sciences at the School of Life Sciences and Facility Management. His work focuses on a wide range of areas, including the strategic and design planning of outdoor areas on the Grüental campus and linking the gardens with the topics taught there.



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