Annual Report SSHE 2018

April 2019

Safety, Security, Health and Environment

Contents

1 Organisation and Priorities

1.1 Organisation

Following a number of organisational adjustments in 2017, there were no changes in 2018. From a personnel perspective, however, there were mutations:

- In the Alarm Organisation section (AO), two vacancies were filled: Dario Gangemi as of 1 January and Angela Käppeli as of 1 April. Both are polyvalent employees who are capable of performing tasks in both the Uniformed Security Service (SiDi) and at the Emergency Desk (AZ). For the time being, they will be deployed in the SiDi. The AZ training will take place following the successful implementation of the new Alarm Management System (AMS).
- In the Risk Management and Commissions section, Susann Görlinger switched to the office of the Vice President for Human Resources and Infrastructure (VPPR), where 30 per cent of her duties are staff duties. Previously as 50% co-head of the mobility platform, she had already reported to the VPPR.

The collaboration between SSHE, Real Estate, IT and Purchasing Coordination (Financial Services department; FD) with ETH transfer as regards dealing with spin-offs was continued. The hand-over of the responsibility for its continuation and coordination to ETH Transfer was set for January 2019.
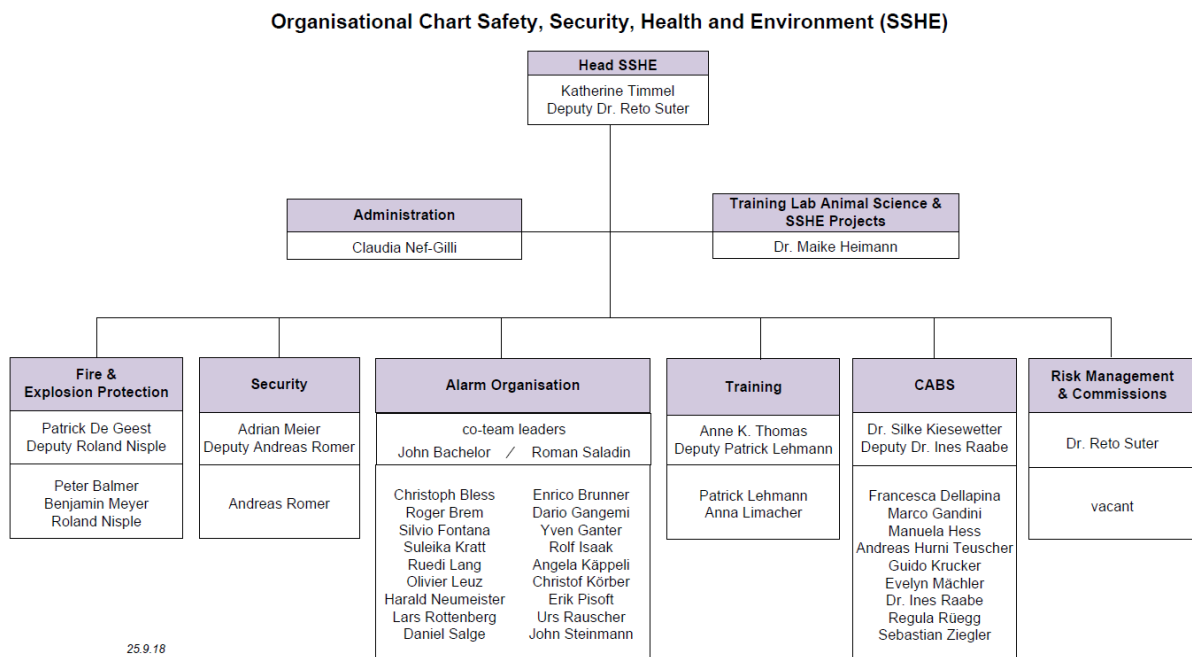
Organisational Chart Safety, Security, Health and Environment (SSHE)

Head SSHE
Katherine Timmel
Deputy Dr. Reto Suter

Administration	Training Lab Animal Science & SSHE Projects
Claudia Nef-Gilli	Dr. Maike Heimann

Fire & Explosion Protection	Security	Alarm Organisation	Training	CABS	Risk Management & Commissions
Patrick De Geest Deputy Roland Nisple	Adrian Meier Deputy Andreas Romer	co-team leaders John Bachelor / Roman Saladin	Anne K. Thomas Deputy Patrick Lehmann	Dr. Silke Kiesewetter Deputy Dr. Ines Raabe	Dr. Reto Suter
Peter Balmer Benjamin Meyer Roland Nisple	Andreas Romer	Christoph Bless Enrico Brunner Roger Brem Dario Gangemi Silvio Fontana Yven Ganter Suleika Kratt Rolf Isaak Ruedi Lang Angela Käppeli Olivier Leuz Christof Körber Harald Neumeister Erik Pisoft Lars Rottenberg Urs Rauscher Daniel Salge John Steinmann	Patrick Lehmann Anna Limacher	Francesca Dellapina Marco Gandini Manuela Hess Andreas Hurni Teuscher Guido Krucker Evelyn Mächler Dr. Ines Raabe Regula Rüegg Sebastian Ziegler	vacant

25.9.18

Figure 1: Organisational Chart SSHE September 2018

1.2 Priorities

Information security

The working group Information Security, co-headed by Katherine Timmel (SSHE) and Beat Schneiter (FD), continued its duties. The data inventories in the field of the VPPR (Office of Resources, Real Estate, Facility Management, HR, IT Services, Services, SSHE, Library) were evaluated by the heads of department in conjunction with the respective Information Security Officers (ISOs) in terms of their worthiness of protection (confidentiality, availability, integrity). On this basis, existing and desired future measures to protect the data inventories were developed. With a view to recording and classifying the

data inventories within every department, the VPPR subsequently expressed the wish for the "crown jewels" of the VPPR sector (comparable to the VPFC sector) to be defined, which was realised as of August 2018. Moreover, the Information Security directive was created and approved by the School Board in spring 2018. It was decided that the new Chief Information Security Officer (CISO) will be organisationally assigned to the Secretary General. The CISO will begin in April 2019 and assume the majority of the safety officers' tasks in accordance with ETH Zurich's Use Policy for Telematic Resources (BOT).

Pilot project D-MAVT/D-ITET
The two department heads of D-MAVT and D-ITET proposed to SSHE that their departments receive intensive support with regard to safety issues. This request was based on the fact that the group members in the departments whose task it is to implement safety measures often do not know the laws and safety requirements in full, which can cause uncertainty and, in the worst-case scenario, accidents. Against this backdrop, the two departmental heads and coordinators joined forces with SSHE to work out a proposal (for the purposes of a pilot project) to expand safety services. This pilot project was approved by VPPR and VPFC and will be implemented in 2019. Should the pilot project prove future-oriented, it could be applied to other departments.

Association of European Threat Assessment Professionals (AETAP)
In April 2018, the Association of European Threat Assessment Professionals (AETAP) conference was held in Helsinki. SSHE was invited to present an overview of ten years of threat management ("Threat Management at ETH Zurich: A Retrospective"). The overview focused on measures such as basic and further training, case management, technical aids in the event of an incident, and the general work of the Threats & Violence specialist unit. The presentation was met with great interest among the participants due to its practical relevance.

2 Reports from the Sections

2.1 Training

Training modules
There were no changes to the contents of the SSHE Course Calendar in 2018. Our range of courses were attended by a similar number of members of ETH Zurich as in the previous year. The number of courses displayed declined, primarily due to a more effective utilisation of the individual modules. For example, a higher number of people attended fire safety courses distributed among fewer individual sessions. In addition, we organised fewer courses than in the previous year for the members of existing first response units. This relates to the group of first aid officers and the members of the Chemical Intervention Team (CIT). The current course programme is available on the SSHE website in the course calendar →.

Key figures		2018	2017	2016	2015
	No. of courses	187	211	237	206
	No. of participating ETH Zurich members	8321	8319	8704	7892
	No. of external participants	26	31	39	44

Lecture *Safety, Environmental Aspects and Risk Management*
The fact that SSHE held the first lecture *Safety, Environmental Aspects and Risk Management* at the D-CHAB in 2018 is particularly worthy of mention. The feedback was positive and the students put forward constructive suggestions for improvements, which will be implemented in the future.

Health

We recorded an increase in occupational accidents of 11.6% and 10.4% in non-occupational accidents in 2018 compared to 2017. SSHE attributes these figures to the steady increase in the number of ETH Zurich members, which is now reflected in the accident statistics. At 12%, the increase in recorded first aid callouts was at a similar level. The minor incidents handled by the First Aid Team are not displayed here.

Key figures		2018	2017	2016	2015
	Occupational accidents, ETH Zurich employees	182	163	156	156
	Non-occupational accidents, ETH Zurich employees	1308	1185	1091	1129
	First Aid Team emergency callouts	102	91	77	93

First Aid Team

The Interverband für Rettungswesen (IVR) is responsible nationally for emergency services and since 2017, also for the training of first aid officers. As the responsible official body, it calls for the division of first aid officers into three training levels → (website in German and French only). ETH Zurich completed the implementation of this requirement in 2018 and trained all first aid officers in such a way as to comply with the IVR's training guidelines. In addition, a handout with the most important treatment algorithms was compiled and their application was factored into the first aid officers' training.

2.2 Chemical Intervention, Occupational Safety, Biosafety & Hazardous Waste Management (CABS)

Key figures

The number of official audits rose compared to 2017, the reason being the higher number of audits by the Federal Office of Public Health (FOPH) to introduce and implement the revised radiation protection legislation. The number of audits conducted by CABS is more or less equivalent to the previous year, but way above the average taken over several years. The main reason for this was the fact that Finger 2 of the HCI Building was audited, which contains a very high number of laboratories. The number of workplace analyses is virtually constant, that of interventions by CABS or the CIT was in line with the average over several years. Pleasingly, the number of ABC incidents and incident/accident investigations decreased.

As in previous years, the total amount of hazardous waste disposed of increased. Compared to 2017, considerably higher quantities of other hazardous waste (e.g. paints, lithium-ion accumulators, spray cans, lacquers, emulsions, etc.) were handed in. The reason for this was primarily a number of exceptional disposal operations such as the disposal of lead batteries, due to the replacement of the USVs in HCI, or the disposal of contaminated soil samples (primarily from the D-USYS). Wastewater samples taken at the neutralisation plants (NEA) in Zentrum and Schwerzenbach did not exceed threshold values – neither with regard to the pH-value nor regarding chemical content. This holds true for the wastewater samples that have been taken at the NEA at Hönggerberg, too. However, the samples taken at the NEA on the Hönggerberg are not representative of the site as a whole. The chemical wastewater is not only channelled into the public sewer system via the NEA, but also directly from various buildings. With regard to chlorinated solvents, threshold transgressions were repeatedly detected here. ETH Zurich is in contact with the relevant authorities. The current state of affairs is being analysed to work out a new sampling concept and the criteria for a new performance indicator. The performance indicator for the Hönggerberg campus in its current form is inconclusive, which is why it will no longer be given.

The number of damage reports increased from 27 to 35 incidents compared to the previous year. This increase can primarily be observed in the damage category "Other causes" – predominantly damage where the precise cause could not be pinpointed conclusively. In 2018 in the building contaminants sector, 48 lower-priority renovations (2 and 3) were carried out, e.g. replacement of fire doors. The key figures have changed over the years: until 2016, only priority class 1 renovations were recorded; in 2017, all renovations in priority class 1 were completed at ETH Zurich and lower-priority renovations were now recorded. The number of devices repaired/disposed of, was considerably lower in 2018 than the previous year. Only very few of these devices are expected to still be in use.

Key figures		2018	2017	2016	2015
	Audits authorities[1]	28	23	25	23
	Audits CABS	150	145	53	47
	Workplace analyses	31	31	32	28
	ABC incidents[2]	61	72	97	109
	Intervention CABS/CIT	32	35	29	25
	Incident/accident investigations[3]	11	19	30	-
Disposal	Solvents [t]	61.6	64.7	65.8	63
	Aqueous waste [t]	28.0	26.5	26.5	19.9
	Laboratory chemicals [t]	12.9	13.1	9.1	8.6
	Other hazardous waste [t]	25.4	15.6	7.3	7.4
	Animal carcasses [t]	3.0	3.1	3.2	3
	Total [t]	130.9	123	112	101.9
Waste water	Transgression of threshold NEA[4]	-	1	2	-
	Transgression of pH threshold NEA[4]	-	-	-	-
Material damage		35	27	25	33
Building contaminants	No. of remediation projects	48	44	19	30
	No. of mobile devices remediated/disposed of	12	25	6	17

Barrier-free at ETH Zurich
This project should pave the way for people with physical limitations or special needs to gain access to ETH Zurich's services. The current situation is being evaluated in various sub-projects. Ines Raabe is heading the sub-project "Other Restrictions", which is primarily aimed at improvements for people with visual or hearing impairments. The focus is on building infrastructure (e.g. control elements and audio output in lifts or audio equipment in lecture theatres). A checklist for building inspections was compiled and tested in a pilot project.

Hazardous waste disposal points
Hazardous waste is being recorded fully electronically at Zentrum (CNB), in Schwerzenbach, at Techno-park and in Lindau/Eschikon. On the Hönggerberg (HCI), the conversion to the electronic system is making steady progress; gradually, an increasing number of waste categories can be recorded. The new film How to dispose of hazardous waste at ETH Zurich → outlines the changes for the users and how to obtain customer cards, disposal containers or hazard symbols.

[1] Audits conducted by the FOPH or the Canton of Zurich's Office of Waste, Water, Energy and Air (AWEL).

[2] Incidents in labs or workshops (e.g. reactions that have spiralled out of control, burns, gas alarms, accident investigations).

[3] This category was first recorded in 2016. It involves follow-up investigations to events such as lab accidents with a view to defining measures to prevent similar incidents from occurring in the future together with the users affected.

[4] Alarms in the neutralisation plants (NEA).

2.3 Risk Management and Commissions

Refining operational environmental management
Headed by SSHE, ETH Zurich's Environmental Commission opted for and implemented a reinforcement of operational environmental management. Based on a survey on operational environmental management conducted at the end of 2017 with the support of the company Ecosens, fields of action were identified and measures defined which were subsequently implemented in the course of last year. Concrete results of the refinement included better consulting of the VPPR, a stronger focus on the implementation of concrete environmental measures or increasing the meeting rhythm. At the end of 2018, a decision was ultimately made to rename it Environmental Commission → (from, in German "Umwelt*fach*kommission" into "Umweltkommission") in order to take into account the further development and distinction from technical environmental protection (which contains, amongst other things, hazardous waste disposal and hazardous materials).

Compiling guidelines for sustainable events and green IT
In the first half of the year, SSHE compiled guidelines for the sustainable handling of resources at ETH Zurich with the aid of the University of Zurich's Sustainability Team. The Sustainable Events guidelines contain tips on what needs to be taken into consideration when planning and conducting a sustainable event. The Green IT guidelines, in turn, contain recommendations for the ecological handling of IT devices from procurement to disposal. The guidelines are available here →.

Risk management reviews in all departments of the VPPR sector
Within the scope of the twice-yearly risk management cycle, risk management reviews were on the agenda for all departments in the VPPR sector. From Facility Management and IT Services to CSCS, those responsible revised and updated their risk catalogues. The review in the Real Estate department is worthy of mention, which, besides the regular revision, also needed to consider new requirements on the part of the ETH Board.

2.4 Fire and Explosion Protection

Fire alarms
Fortunately, the fires recorded in 2018 were merely smaller incipient fires that could mostly be traced back to human error or otherwise technical defects. While the number of alarms – the majority of which were still false alarms – is comparable to the previous year, the number of fire brigade callouts rose again for the first time since 2016. This can be attributed to increased carelessness during maintenance and repair work. As in the past, the Fire Brigade charges the cost of deliberate false alarms to the culprit: CHF 1,980 per false alarm.

Key figures		2018	2017	2016	2015
	Total no. of alarms	51	52	56	65
	Actual fires	9	8	4	7
	False alarms	42	44	52	58
	Fire brigade callouts	17	12	24	32

AlarmNet
ETH Zurich's internal first response units are reliable and reach the location of the incident quickly thanks to technology which works but is getting old. The existing systems are outdated and must be replaced by the end of 2020. Consequently, a public tender for a new, high-availability radio communication and messaging network for ETH Zurich was published in early 2018. The contract was awarded to a Swiss

company with extensive experience in this field. The improvement of the radio coverage will be implemented across the ETH, both inside and outside the buildings, and is due for completion by autumn 2019.

Network control system test
SSHE was also involved in conducting the network control system test – in conjunction with the voltage conversion from 11 to 22 kV on the Hönggerberg. Thanks to the forward planning, the test was conducted without any major problems. The hotline operated by SSHE answered 19 calls in total. The on-call internal first response teams did not need to be deployed.

2.5 Security

Course: first response building areas and Alarm Organisation
During the "First response in incidents" course for members of the Facility Management and SSHE in the spring of 2018, the basics of first response were conveyed to over 200 people. A "follow-up" first response course for members of staff who were unable to attend the first course was held in November.

Awareness-raising campaign for e-bikes
On 19 July 2018, the city police force visited Joseph-von-Deschwanden Square with their prevention tent on the topic of e-bikes. SSHE organised the campaign in collaboration with the Services department. It was evident that various members of ETH Zurich were interested in the topic. Although many cyclists are well informed about the technical data, there was a need for clarification, especially regarding the legal aspects (wearing cycling helmets, licence plate, driving licence, no entry etc.). During the practical part of the prevention campaign, around 30 people took to the saddle of the e-bike provided and completed the laid out course.

Events
The Freshers' Party for new students at ETH Zurich (ESF), ETH Day and the Polyball are among the biggest events to take place at ETH Zurich. In 2018, they all went off without incident, supervised by the Security section and partly in cooperation with external security staff. A big thank-you to all those involved internally and externally. Without clear prior consultations and the good collaboration, especially with the staff of the building areas responsible and the Services department, holding events of this scale would be far more complicated.

Besides the aforementioned events, demonstrations also demanded the attention of the security staff in 2018. In early March, the "Tuition fees protest day" took place. A few days later, a group of Kurds congregated without prior notice on the Polyterrasse to begin a protest march, and at the end of March, an initial silent protest against animal testing was held outside the main building. A major demonstration on the topic aimed at ETH Zurich and UZH then followed at the end of May. In collaboration with Zurich City Police, SSHE Security helped ensure that this campaign went off without incident, too.

Key figures		2018	2017	2016	2015
	Number of events supervised by Security	35	36	44	21

Offences
The number of thefts reported (both private and ETH Zurich property) fell compared to previous years. However, it is unclear whether the reason for this is an actual decline in offences or that fewer offences were reported. We would like to take this opportunity to point out that both we and the police can only take action if offences (of any kind) are reported as promptly as possible. One successful example was the arrest, detention and conviction of a delinquent thanks to the good cooperation between the affected members of ETH Zurich, Security and the Police. Nonetheless, our main objective remains prevention.

We would be delighted if you utilised our advisory services; we are glad to provide you with information and, if you so desire, we can also conduct a security assessment for you.

Key figures		2018	2017	2016	2015
	Thefts of ETH Zurich property	4	18	25	26
	Thefts of private property	29	64	71	43
	Vandalism	7	7	7	4
	Graffiti	28	13	25	14

2.6 Laboratory Animal Science Training and SSHE Projects

Changes due to revision of the legislation
Due to the revision of the Animal Welfare and Animal Welfare Training Act, amendments to the basic training were necessary. Basic training must now be accredited by the Federal Food Safety and Veterinary Office (FSVO) instead of the Federation of Swiss Cantonal Veterinarians (VSKT). A major change is the introduction of a written examination in all basic courses for people who perform or lead animal experimental studies. These examinations have to be introduced for all basic courses as of March 2019. Moreover, course providers must be approved by the FSVO – the ETH Zurich-LTK cooperation was granted this approval in 2018. The FSVO has also accredited all basic courses in the ETH-LTK cooperation, including the examination procedure and the scheduled introduction of e-learning for theoretical basic training (cf. Outlook).

Newly developed courses
A new advanced training module was also developed in 2018. LTK Module 22 on Reproducibility in Animal Research. Module 22 is all about the reproducibility of studies involving animals and the question of by which means this can be ensured. The course tackles the much discussed "reproducibility crisis" directly. The module is conducted in collaboration with Servan Grüninger (President of Research and Technology Switzerland, REATCH) and Dr Paulin Jirkof (3R Coordinator UZH). As it was well received by the participants, two fully booked courses could be conducted. The course will be offered again in the coming years. In addition, as a one-off, two internship days were offered within the scope of the basic training course of researchers who work with non-rodents (LTK Module 20). For organisational reasons, however, it will not be possible to repeat them in future.

Swiss Specialised Veterinarian in Laboratory Animal Science title
Sponsored by the Swiss Association of Veterinarians in Industry and Research (SAVIR), the Swiss Specialised Veterinarian in Laboratory Animal Science title was successfully implemented. The registration for the specialised veterinarian title was facilitated by a specially set up website (www.svlas.ch →). The first candidates have already qualified for the oral examination to be held in the spring of 2019.

2.7 Alarm Organisation AO (Emergency Desk and Uniformed Security Service)

Procurement and implementation of a new alarm management system (AMS)
Within the scope of a WTO tender, the company PKE was selected as the supplier for a new alarm management system ((AMS) for the Emergency Desk. It should now be possible to process and manage incidents using this workflow-based tool. The implementation phase began in 2018; the rollout is scheduled for mid-2019.

Complete testing and optimisation of all alarm help files (AHF)

SSHE took over the management of the alarm help files from the Facility Management. All users were subsequently prompted to check their existing alarm help files and correct or supplement them if necessary. The response was satisfactory but incomplete, which is why a second appeal was launched. The project should be completed in 2019.

Introduction of a new planning software for shift plans

In 2018, a new software programme for planning shifts for the AO staff was procured and implemented. The shift planning for the second half of 2018 was compiled with the aid of the new tool and the planning for 2019 is based entirely on the new method.

Key figures

As regards lift rescues, the legal regulations were evaluated. The focus was on the question, whether training in the individual lift model was a mandatory requirement, or not. Because of this evaluation (cf. SSHE Newsletter 1/2018 →), lift rescues were handled more restrictively by the SiDi, which is a major reason for the decline in this key figure. Clearing of escape routes increased compared to the previous year; however, the situation here appears to remain positive based on a comparison over several years. Gas alarms increased compared to 2017, although only four of them were "real" gas alarms, the others all being false alarms. Fortunately, floods are at an all-time low, although the reason for this is unclear. The fluctuations in open building entrances, open windows and lights left on can primarily be attributed to the fact that the SiDi has been recording the key figures using a mobile phone tool as of 2018. In addition, the rules for recording key figures were adjusted by the co-team leaders and a consolidation process launched. Nevertheless, this development is a concern, especially regarding the room lighting, and must be monitored. The decline in technical malfunctions compared to the previous year is as significant as it is positive; the percentage of technical malfunctions remedied by the SiDi remained roughly the same.

Key figures		2018	2017	2016	2015
	Lift rescues	4	10	22	18
	Clearing of escape routes	50	36	185	480
	Gas alarms	40	29	26	18
	Floods	5	13	16	12
	Open building entrances	616	408	690	700
	Open windows	305	237	225	401
	Room lighting	7629	6162	4448	3484
	Technical malfunctions overall	447	583	207	255
	Technical malfunctions dealt with in-house	323	408	188	232

3 Outlook

Management
– ETH Board audit of the SSHE department.
– Adaptation of the Use Policy for Telematic Resources (BOT) to the Information Safety directive by the Legal Office, SSHE and IT.
– Handover of duties as IT security officer in accordance with BOT to the CISO by the head of SSHE.
– Realisation of the pilot project MAVT/ITET (2019/2020) in collaboration with the two department heads and coordinators, and the CABS section.

Training
– Review of the range of courses offered, and check on individual course modules with regard to the use of new learning technologies.
– Production and release of film sequences on the topic "Medical Emergency – What to Do?" and the e-learning modules on the SSHE topics in ETH Zurich's Compliance Guide.
– Finalisation of the SSHE safety training concept after delays came about in 2018.

CABS
– Determining a single point of contact for closer supervision and lab and workshop safety in the MAVT and ITET departments including the implementation of subject-specific audits, checks and courses for the group safety representatives (GSR).
– Ensuring that ETH Zurich's radiation protection officers comply with the periodical further training in accordance with the revised radiation protection legislation and that these trainings are documented.
– Conclusion of the conversion of the training module "How to Play It Safe in a Lab" from a classroom to an online course.

Risk Management and Commissions
– Conclusion of the project of the working group Critical Infrastructures, stipulation of the critical infrastructures and processes at ETH Zurich.
– Implementation of a new ETH Zurich risk management tool in the VPPR sector.

Fire and Explosion Safety
- Realisation of evacuation and response drills in collaboration with Protection & Rescue Zurich in the LFO Building.
- Pilot project on implementing digital language communication (AlarmNet).
- Continuation of measures as regards optimising involvement in building projects.

Security
– Complete takeover of the area of "video surveillance, maintenance and value preservation retention".
– Assisting with the realisation of the project "Safety in ETH Zurich's car parks".

Laboratory Animal Science Training
– Implementation of the written examination for basic training courses in accordance with amended legal regulations from March 2019.
– Increase in course fees from March 2019 by 25% due to adjustment of the course costs to general pattern of inflation and due to additional work as regards the introduction of the aforementioned examinations.

– Introduction of an e-learning programme from the end of 2019 / beginning of 2020 for theory in basic training modules. Preparation of the programme in cooperation with the Réseau des Animaleries de l'Arc Lémanique (RESAL).

Alarm Organisation
- Definitive implementation of the new Alarm Management System (AMS) and transfer to productive operations.
- Completion of the review/optimisation of the alarm help files (AHF) and transition into the periodical control process.
- Raising of the first aid training level for the AO staff from IVR1 to IVR2.