

**MAIL
ING. 31**

gruner >

OUR 2020

TOGETHER

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WORKING
TOGETHER



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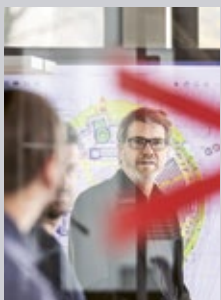
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Gruner uses a wide range of electronic tools for optimizing customer solutions. Personal collaboration nonetheless remains crucial (see p. 14 ff.).





DEAR READER

Through our roughly 1,100-strong workforce, we are able to draw on an extraordinary depth of know-how and project experience in virtually all fields of construction-related design, production and maintenance. Without partnerships, however, our hands would be tied. Whether outside our core business areas – with clients, architectural practices, contractors and other project parties – or in relation to our own competencies in the design and supervision of construction works: collaboration is paramount for project success.

This is what prompted us to devote this issue of our customer magazine, MAILING.31, to the subject of collaboration. In it, we give my Executive Committee colleagues the chance to discuss the topic of partnership and its significance (page 6), examine the kind of teamwork needed for high-profile buildings like the new Herzog&de Meuron-designed children's hospital in Zurich (page 14) and ask a key Gruner customer, the CEO of Burckhardt+Partner, for his thoughts on the subject (page 18). In these corona-dominated times, however, the development of personal ties, despite its increasing importance, has if anything become even more difficult. As a consequence, digitalization assumes yet another pivotal role. At the same time, we continue to promote in-house collaboration within Gruner to ensure that you, as our partners and customers, can fully benefit from our in-depth expertise.

MAILING.31 is something of a novelty. Not only does it contain the usual – and hopefully absorbing – reading matter on a keynote topic, it also maps out our previous year. From now on, then, it will correspond to what listed companies would call their "annual report." MAILING.31 thus presents a summary of the past year, complete with highlights (page 4) and facts and figures (page 32). Our aim is to supply you with a single publication containing everything worth knowing about Gruner, spiced with up-to-the-minute stories that bring the facts and figures to life. As before, this annual publication will be complemented by the news and reports posted on our website at www.gruner.ch and our social media channels.

Despite a tight market environment, 2020 still saw us achieve a respectable result and maintain profitability at the previous year's level. By seizing on opportunities that arose, we managed to intensify our customer focus and expand our competencies through new sites in Fribourg (Switzerland) and Dernbach (Germany) and with the year-end acquisition of Basler&Hofmann West AG in Zollikofen (Switzerland). Our market position in Switzerland and internationally, backed up by very healthy order books, allows us to face the new year with confidence. We are nonetheless mindful of the challenges that confronted us in 2020 and will also burden us in 2021. The measures taken by the authorities in response to the pandemic and the reaction of market players will continue to impact business in the construction industry. With our workforce, however, we have the know-how and experience to benefit, for example, from the demands placed by the energy revolution or the mobility rethink and to deliver forward-thinking, customer-oriented solutions.

Yours

A handwritten signature in black ink, appearing to read 'O. Aebi'.

Olivier Aebi
CEO Gruner



TURNOVER

CHF 139.9 million
-2.8%

NEW HEAD OF BUILDINGS

In May, Stephan Gürtler took over as Head of Business Area Buildings from Kurt Rau, who went into retirement. Stephan Gürtler has strengthened the business area management team and made several organizational changes.

HEADCOUNT

1,018
-1.1%



BASLER & HOFMANN WEST AG TAKEOVER

On 23 December, the contract was signed for the acquisition of Basler & Hofmann West AG. With this purchase, Gruner is strengthening its market position in building services and infrastructure in the Bern region.



BÜTSCHWIL BYPASS OPENED

In Switzerland's Toggenburg region, September saw the inauguration of the nearly 4 km long Bütschwil bypass, with its three bridges and four cut-and-cover tunnels. Gruner had commenced work on the CHF 200 million project in January 2013. A near-record-breaking 15 months later, the first construction plant arrived on site for the start of the six-year contract period.



COMPETITION WIN FOR TRIPLE-SIZE SPORTS HALL

Backed by architect Penzel Valier and the HVAC/plumbing/M&C designs of Gruner Building Services Basel, design-and-build contractor ERNE AG won the "full-service" competition for the triple-size sports hall at the Dorf primary school in Sissach.



WORKS TO WORLD'S BIGGEST RESERVOIR

Funded by the World Bank, designed and constructed under the supervision of Gruner subsidiary Stucky, the rehabilitation of Zambia's Kariba Dam on the world's biggest artificial reservoir (by volume) is currently in progress. The project includes renovation of the dam itself and the stilling basin (pictured).



START ON SITE IN BERN'S HISTORIC CORE

February saw building work commence at a history-steeped site in the Swiss capital. In the comprehensive renovation of the historic landmark Capitol building in Kramgasse by HIG Real Estate Investment Foundation, Gruner Building Services Bern is responsible for the HVAC/plumbing design and coordination.



REHABILITATION OF RITOM HYDRO-POWER PLANT

As part of an engineering consortium, Stucky is supervising the works for a new penstock in an over one-kilometer tunnel, a new powerhouse and a new balancing reservoir for the Ritom hydro-power plant in southern Switzerland. The Ritom hydropower plant supplies SBB (Swiss Federal Railways) and parts of Ticino with electricity.

PROJECTS

6,527
+6.9%



NEW FOOTBRIDGE NEAR ZURICH

Gruner handled the design and project management for a new pedestrian and cycle bridge in Urdorf (Canton of Zurich), built as part of the new Limmattalbahn rapid transit project. The bridge was fabricated in a steel shop before being welded together on a freeway breakdown lane near the final location and installed in a single night.

POWER CONSUMPTION PER OCCUPIED WORKPLACE

1,013 kWh p.a.
-4.6%

PARTNERSHIP

THE KEY FACTOR FOR SUCCESS



Stefan Mützenberg, Reto Hagger and Stephan Gürtler (from left) discuss the potential of different kinds of partnership for the success of Gruner.

Partnership-based collaboration, whether in-house or external, is crucial to remaining competitive in a heavily contested market. What is Gruner's strategy for attracting partner companies, customers and employees? And is there any scope for optimization? We asked the heads of Gruner's three business areas, Stephan Gürtler, Reto Hagger and Stefan Mützenberg.

This may sound a little provocative, but do partnerships need contracts or is it just a matter of trust?

Stephan Gürtler: That's a good question. Particularly in our line of business, companies are shaped by individuals. So, first and foremost, partnerships should function at a personal level. For me, if the chemistry between partners is right, then the contract shouldn't be the top priority.

Reto Hagger: That's what I think too. As I see it, partners who get along well don't really need a contract. Contracts may sometimes be necessary, but they aren't essential for collaboration.

or maybe because of this, though, I think it's important for partnerships to be sealed by a contract. This establishes a clear definition of tasks and responsibilities that will rule out any possibility of conflicts during the project.

Gruner has a wide-ranging service portfolio. What potential does this offer for retaining market competitiveness?

Hagger: I do indeed believe that, given our extremely wide diversification, in-house partnerships and collaboration between the organizational units hold considerable untapped potential.

Gürtler: That's true. We're very well positioned in terms of technical expertise and our in-house specialists rank among the international crème de la crème. We must exploit this potential even more, Gruner-wide.

Mützenberg: A lot of services can be provided by our own Gruner experts. At the same time, public calls for bids often place such exacting and diverse requirements with regard to references and key positions that they can't be met by Gruner alone, without external partner companies.

On some projects, Gruner's in-house potential needs supplementing by alliances with outside partners. What potential do such partnerships offer?

Hagger: The trend – not only in the infrastructure sector – is towards general and "total," or design-and-build, contractors: as clients are increasingly on the lookout for single-source design and production solutions with a single point of contact, designers and contractors are forging partnerships. That's why we need to position

Stefan Mützenberg: I very much enjoy working with companies who share my idea of partnership. If we have the same values and pursue the same goals, then no one is going to put his or her interests first. Despite



ourselves as an ideal partner for construction firms. The Infrastructure Central Switzerland and Zurich, Brugg business units are leading the way: working in tandem with the contractor Anliker, they were able to clinch a large-scale general contract.

Gürtler: Competitions are still very important in the buildings sector. Spontaneous enquiries from architectural practices about participating in a competition reflect well on our reputation. A winning entry may then lead to further enquiries from the architect the next time round. This, for example, is how a successful, long-standing partnership with architectural practice Burckhardt + Partner evolved.

AS I SEE IT, IN-HOUSE TEAMWORK HOLDS THE BIGGEST POTENTIAL.

**Reto Hagger, Member of the Executive Committee
Head of Business Area Infrastructure**

Mützenberg: Power station projects, for instance, tend to be very complex and necessitate extensive interdisciplinary collaboration. To react quickly, we must therefore position ourselves even before the call for bids is issued. Here, partnerships with rival firms or companies whose services complement our own will give us greater clout when facing tough competition. Outside Switzerland, where most of our energy projects are located, we also seek and cultivate partnerships with local businesses in order to have on-the-spot representation and, not least, to remain competitive price-wise.

Gruner is very much on track. But isn't there still some potential for optimization?

Hagger: We designers have a reputation for wanting to optimize everything and deliver the best technical solution – which isn't certain to be the best for the customers and users. In our role as designer, we must therefore listen carefully and consider things more closely from the business perspective of clients and contractors. Only then can we work properly with a general or design-and-build contractor in putting forward a competitive bid.

Gürtler: We've already discussed the potential of in-house collaboration. To offer attractive service packages for customers in future, these in-house partners must work together well and commit themselves to the overriding objective. With this in mind, we have launched a number of initiatives, such as a values-reinforcement scheme or the introduction of new, shared customer support and project management software.



Mützenberg: Particularist versus holistic thinking: as I see it, major disparities still exist within the company on this count. I agree with Stephan: to be well positioned to meet demands, it's particularly important for the managers to take the initiative.

A team spirit makes a company strong. How do you go about creating this at Gruner?

Gürtler: The company restructuring has transformed us from a discipline-based to a regionally organized outfit. The next step within the regions involves cluster formation and stronger contacts between the regional business units. This process will further promote in-house collaboration and improve our regional offerings.

Mützenberg: In the course of restructuring, the former Energy division was recast as the Business Area Energy, comprising three business units to which a fourth was added. As the business unit heads had liaised very closely beforehand, a long history of collaboration already existed. Regular meetings are also held to promote technical information-sharing.

THE REVISED LAW ON PUBLIC PROCUREMENT MEANS WE CAN BETTER POSITION OURSELVES IN TERMS OF OUR QUALITY STANDARDS.

**Stefan Mützenberg, Member of the Executive Committee
Head of Business Area Energy**

Hagger: The Business Area Infrastructure is split into seven business units. The management team meets up to discuss the fields in which optimization potential exists. We pinpoint strategic focus



The smooth teamwork between the three business area heads manifests itself in the lively discussion of their common objective: positioning Gruner as an attractive partner in the market.



areas where joint measures are then implemented, such as digital development and training or process standardization. This is also a tremendous source of inspiration for our employees: they realize they can make an active contribution and thereby make a difference – which also bolsters in-house collaboration.

The revised Swiss Federal Law on Public Procurement took effect on January 1, 2021. According to our construction industry umbrella organization, Bauenschweiz, the new contract award culture will sharpen the focus on qualitative competition. Is this a chance for Gruner?

Mützenberg: Given our size and capacity for innovation, this really is an opportunity for us. It will, of course, also help us ward off cheap competitors seeking to enter the market with low prices and low quality. It will enable us to better position ourselves in terms of our quality standards. We will be offering palpable services, not just hourly rates.

Top-class services demand top-class people. Doesn't collaboration with training and research institutes also play a role in attracting qualified staff?

Hagger: It certainly does. Hence our efforts to find teaching appointments for our employees so that young talents can get to know us as early as possible. At the moment, there's a fierce battle for well-qualified employees. That's why we also adopt other strategies. For example, once a year, we invite bachelor students from the School of Engineering at the Zurich University of Applied Sciences to visit us. This can generate useful contacts. Last year, it helped us recruit three bachelor graduates.

Mützenberg: We also offer students from training and higher education institutes internships or the chance to write a master thesis at Gruner. We also provide recognition for young talent through

two annual awards for students who have written outstanding, innovative academic theses: the Prix Alfred Stucky at the Swiss Federal Institute of Technology Lausanne and the Gruner Innovation Award at the University of Applied Sciences and Arts Northwestern Switzerland. These are valuable gestures.

OFFERING THE DIGITAL "NERDS" THE RIGHT PLATFORM COULD PAY ENORMOUS DIVIDENDS.

**Stephan Gürtler, Member of the Executive Committee
Head of Business Area Buildings**

Gürtler: But a culture shift is clearly noticeable, brought about by the digital "nerds," who are well networked, mobile and unattached. They work for companies they like and which offer them a cool job. Global networking is extremely dynamic and takes place at a subsidiary level though to a very high technical standard. It represents, as it were, a parallel business model to our own. If we can offer these digital talents the right platform for them to flourish, then Gruner could benefit enormously.

DRINA RIVER BASIN MANAGEMENT

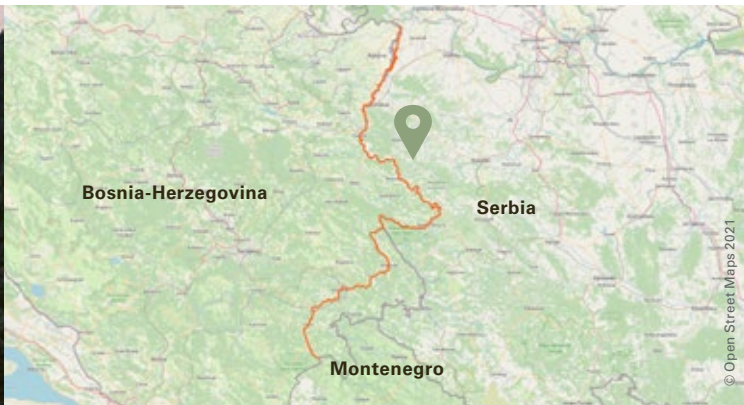
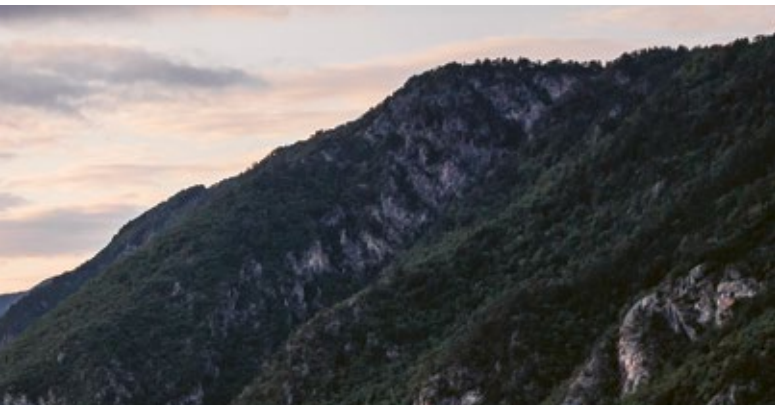
Three countries – one aim



The River Drina's catchment area is a key hydrological system in the Balkans – and an unpredictable one during high-water periods. A project cofinanced by the World Bank and planned by Gruner for the three countries of Bosnia-Herzegovina, Serbia and Montenegro sets out to mitigate the consequences of droughts and flooding.



CANE CEKEREVAC
Head of Energy Balkans



In his novel “The Bridge on the Drina,” Literature Nobel Prize winner Ivo Andrić uses a late-eighteenth-century flood in the Drina valley to describe a scene of solidarity between different peoples: all the residents of Višegrad flee to the higher part of the town and find refuge in the houses of their fellow citizens – whether Moslems, Christians or Jews. They then spend the night telling stories to each other. However, on the regular occasions over the years when the river broke its banks, there was rarely a happy end. On 27 March 1896, a combination of heavy rainfall and melting snow led to the destruction of several settlements in the Drina river basin. And in the first days of December 2010, following a long period of heavy rain, the volume of water carried by the River Drina and some of its tributaries was enough to submerge large parts of many towns and villages, and necessitate the evacuation of several thousand local residents.

The brief

The basin of the approx. 350km long River Drina crosses the three countries of Bosnia-Herzegovina, Serbia and Montenegro. A series of dams and separate, often national initiatives have so far been unable to fully alleviate the problems arising from high water and droughts that have sometimes involved the impairment of water quality or environmental damage. This prompted the World Bank, on the basis of an open international call for bids, to com-

COLLABORATION WITHIN THE JOINT VENTURE RAN SMOOTHLY. EACH PARTNER MADE CONTRIBUTIONS IN THOSE AREAS WHERE IT OFFERED THE BEST EXPERTISE.

Cane Cekerevac

mission a joint venture comprising a Norwegian firm, a Serbian institute and Gruner company Stucky SA to help establish an effective water resource management system for the Drina river basin. The project embraced sustainable water use, flood control and environmental management while also allowing for public participation.

The report

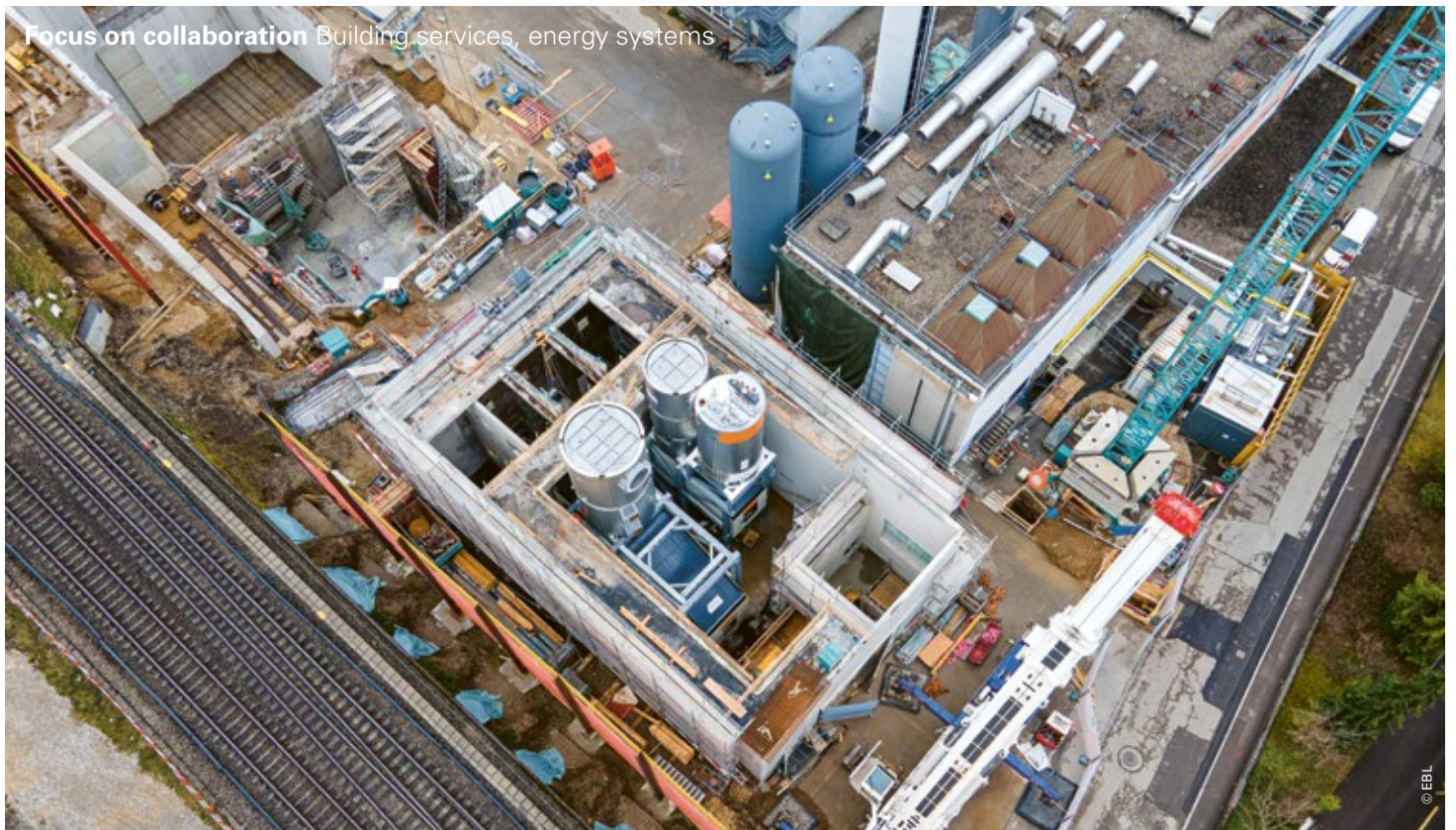
“Collaboration within the joint venture ran smoothly,” says Cane Cekerevac, Head of Energy Balkans at Gruner. “Each partner made contributions in those areas where it offered the best expertise.” For the full duration of the project, which spanned several years, the work was coordinated on a weekly basis to maximize efficiency. As Cekerevac sees it, effective communi-

cation also played a crucial role in both data collection and the involvement of the many stakeholders. The World Bank, as credit provider, also actively participated with its own technical team. “Quite obviously, given its massive scope and the numerous stakeholders, a project like this can only be successful if all parties pursue the same goal,” explains Cane Cekerevac.

The outcome

The project deliverables took the form of a masterplan, which now serves the local authorities as a basis for investment in hydropower, reservoirs and water treatment systems, for strategic environmental assessments and for river basin management planning. In addition to a careful analysis of the geology, environment, water quality, existing works and much more, the concluding report specifically contains an urgent recommendation to work together in developing the region. Collaboration is vital if the complex challenges posed by a sustainable river basin management regime are to be overcome.

Gruner engineers will also be involved in one of the next steps. As part of a team that included an Italian studio and the same local partner, they were again successful in a call for bids by the World Bank. This time, the brief requires the development of a comprehensive hydrological-hydraulic model, for use in flood control, that factors in the existing dams and reservoirs.



The high-capacity biomass heating plant forms the centerpiece of the network.

LIESTAL MULTI-NETWORK DISTRICT HEATING

Benefits of digitalization for teamwork

Replacing fossil by renewable energy – this is one of the goals that energy provider EBL (Elektra Baselland Cooperative) already consistently pursues nationwide. This involves, among other things, a focus on district heating supplied by biomass plants and multi-network systems. The Liestal multi-network district heating system marks a milestone in this strategy. Gruner is supporting EBL on this project by providing all necessary design and site supervision services.

In future, the district heating station at Liestal will supply a total of seven separate networks by means of existing and newly installed heating pipes. The centerpiece will be a high-capacity biomass heating plant that serves the entire multi-network system. Our lead design mandate for this megaproject covers all work stages under the relevant Swiss SIA standard – from concept design through to commissioning (end of 2021 for the heating station) and project closeout with the entire pipe network and building connections by 2030.

EBL's confidence in Gruner as a reliable partner stems from the successful collaboration in designing the existing district heating station. This trusting relationship was thus a sound basis for tack-

ling the overall Liestal multi-network system, especially since the long duration of the project – which is nonetheless subject to rigorous time management, strict conditions, short construction windows and spatial constraints – demands mutual confidence and dependability. Short communication paths and prompt decision-making are particularly crucial in ensuring that the project proceeds as smoothly as possible.

High level of digitalization

We employ state-of-the-art digital tools and standards that provide benefits on various levels. A model allows one-to-one coordination across the team between the as-is situation (as a 3D scan) and the project. BIM to Field provides for direct comparison of the as-is and projected status, and an on-site check on the progress made. For EBL's project manager, on the other hand, the model conveys a clear impression of the planned facilities and supports effective decision-making.

For construction management, we use an efficient planning and document management software application. By allowing centralized control of the project procedures, the program offers both the team and the client a transparent means of monitoring progress.



In the office or on site – digital tools such as BIM to Field allow prompt, efficient coordination and decision-making.



Left, from top to bottom: The demolition works were preceded by extensive planning and coordination with the various project parties to ensure smooth progress.

The complex technology requires the collaboration of many different trades in constricted conditions, all meticulously programmed and coordinated. Installation of the new wood-fired furnace demands utmost precision (despite the spatial constraints).



Not only is this a major boon for the client, it also cements the working partnership.

The alteration and extension works for conversion of the existing district heating station into a high-capacity biomass heating plant are currently in full swing. In parallel to this, the Burg, Hallenbad, Brunnmatt and Forstverwaltung heating stations are to be converted into heat transfer stations by the start-up date at the end of 2021. Work is also proceeding at full speed on the installation of the district heating pipes needed for the network connections. This requires absolute precision and maximum effort on the part of all project team members. The end result, however, will be more than worthwhile and a justifiable source of pride.



As senior project manager, Markus Butz (right), Head of Energy Systems Design, Building Services Basel, discusses progress with his team almost every day.

90%
Renewable energy

53.4_{MWth}
Connection capacity

31_{km}
Network length

Works The key steps include the installation of three fossil-fired hot-water furnaces, four large-size (approx. 650 m³) hot-water stores and two wood-fired hot-water furnace systems with a special woodchip conveyor, storage and feed system tailored to the local conditions.

Overall project aims Boost to operational efficiency, reduction in energy procurement costs, flexible use of energy sources, high supply security, maximum share of renewable energy.

Gruner services for overall project Energy system design, process engineering, pipeline engineering, heating, ventilation, cooling, plumbing, electricals, monitoring and control (M&C), environment, demolition/deconstruction/dismantling, contaminant remediation/treatment, acoustics, building physics, structural design/engineering, civil engineering, transport planning, architecture, geotechnical engineering, fire safety, security, external site drainage, flood control, structural maintenance, geomatics, surveying.

UNIVERSITY CHILDREN'S HOSPITAL, ZURICH

Perfectly interacting competencies

Zurich Lengg is the site of the city's new University Children's Hospital, which is scheduled for completion by 2023. The major, CHF 600 million development comprises an acute hospital and a drum-shaped teaching, laboratory and research center. The challenging brief for the hospital and laboratory facility, combined with the long (approx. 14-year) project duration, places high demands on all project parties. Here, the close interdisciplinary collaboration between Gruner teams is proving its worth.

The role of overall construction supervisor means assuming directive authority vis-à-vis the entire design team and bearing responsibility for everything: for safety, project management, construction management, cost planning and controlling. It also includes coordinating the in-house services provided by the various Gruner business units (BUs), whether directly mandated or acting as sub-designers. A particular benefit of the in-house interdisciplinary collaboration at Gruner is that the physical proximity allows the various teams to liaise closely with each other at any time. Any technical difficulties that arise can be immediately discussed so as to allow prompt decision-making and a joint approach. The BIM and BIM360™ Field digital technologies support data exchange between offices and also on the two sites.

WE MUST, ABOVE ALL, CREATE AN OVERRIDING PROJECT FRAMEWORK THAT ENABLES THE INDIVIDUAL TEAMS TO PERFORM THEIR TASKS AND, IDEALLY, WE MUST CONVERT COMPETING INTO COMPLEMENTARY OBJECTIVES.

Martin Kluser
Head of Project Management Department, General Planning Switzerland

As overall project manager, Martin Kluser works closely with all project team members to ensure efficient project delivery and achievement of the quality, cost and deadline targets.

A long-standing partnership brings obligations

Our mandate began with the call for competition entries in 2011 and is likely to run until 2025, i.e. the end of the two-year warranty period after building handover to the user.

The client committed itself to a 14-year partnership with the KISPI consortium (comprising Herzog & de Meuron and Gruner) and vice versa. This requires mutual trust, appreciation and a concerted effort towards achieving the common project goals. As a strong and dependable long-term partner, Gruner vouches for consistent expertise throughout the project. Our in-house competencies and extremely short communication paths enable us to identify solutions quickly and unbureaucratically, even when unforeseeable complications arise – as can easily happen on a project of this duration. Our rapid response has already benefited the project on several occasions. Whatever contractual arrangement the client selects (consortium, sub-designer, direct mandate), we assume responsibility and act as its first point of contact.





Yves Schachenmann (right) presents details of the design for the link tunnel between acute hospital and laboratory building.



Sandro Brunella and Isabel Rettig at regular "jour fixe" meeting.



Stephan Gundel, Frank Ullmann and Eugen Eckermann discuss details of fire safety design.

Weekly meetings guarantee continuous information-sharing.

The site supervisor team on the project also provides the services of a construction manager while simultaneously acting as the client's on-site representative. Collaboration with all designers and contractors working on the project thus benefits from close contacts and short communication paths – all of which directly serves the client's interests in terms of quality, cost and deadlines. At the same time, the close contacts within Gruner and with its consortium partner guarantee the prompt implementation of the site supervisor's decisions as well as acceptance, on behalf of the client, of requests put forward by the contractor. Our discussions with Gruner colleagues about digital technologies, such as BIM 360™ Field or Gamma AR, are useful and instructive for both the children's hospital contract and new projects that are just kicking off.

RONALD PFUHL
Site Supervisor, General Planning Switzerland

The seismic safety of secondary building elements, such as internal walls, suspended ceilings and building services installations, necessitates close coordination with the overall construction supervisor team and building services engineers. The short paths made possible by in-house design for the relevant disciplines are a massive advantage.

SANDRO BRUNELLA
Head of Structural Design Northwestern Switzerland, Geotechnical Engineering

Our HVACR design mandate and our role as lead spatial and technical coordinator entail complex and wide-ranging interfaces with the other experts at Gruner. This means that we are in permanent close contact with the overall construction supervisor team and our other Gruner colleagues. We are on an equal footing with the staff from all involved Gruner BUs, and the teamwork is outstanding.

FRANK ULLMANN
Head of HVAC/Plumbing II Department, Building Services Basel

We conduct our joint environmental site supervision inspections with BIM 360™ Field. The results are directly documented by tablet and used to generate the daily environmental site supervision log. The procedure for preparing the daily reports is thereby automated, simplified and time-optimized.

YVES SCHACHENMANN
Head of Environment Department, Infrastructure Basel, Environment

The fire safety team maintains a constructive dialogue with Building Services, particularly with regard to ventilation design. We liaise closely with the overall construction supervisor team throughout all phases, e.g. on preventive quality assurance issues. We also collaborate with the Safety Department on cross-disciplinary safety design.

EUGEN ECKERMANN
Dep. Head of Fire Safety Department Basel, Fire Safety, Building Physics Northwestern Switzerland

Gruner's corporate structure and working methods allow efficient collaboration with the HVACR design team. Above all, the joint use of BIM 360™ Field lays the foundation for uniform documentation and digital pending items management on site. This, in turn, fosters collaborative working.

ISABEL RETTIG
Project Manager, General Planning Switzerland

The maintenance of critical operational processes is a key priority for acute hospitals. That is why we have closely coordinated our activities with the building services design team since the start of the project, with the aim of providing high-availability data centers and a 24/7 central alarm station. Maximizing safety in the accommodation of immobile patients in case of safety-critical events is likewise crucial for subsequent operation. This is vastly simplified through timely coordination of the safety, fire protection and building services designs with our in-house partners.

STEPHAN GUNDEL
Senior Safety Expert, General Planning Switzerland

Project facts and figures



Acute hospital

Gross floor area

72,000 m²

Total cubic content

302,000 m³

The new building houses a child-friendly acute hospital equipped with state-of-the-art facilities. It stands only three stories tall, with each story possessing its own distinctive character and catering for different uses.

Teaching, laboratory and research center

Gross floor area

13,000 m²

Total cubic content

48,000 m³

The new building is arranged around a glazed central courtyard. Here, the sharing of knowledge and ideas between employees is of pivotal importance for the promotion of innovation.



14 years

Project duration with Gruner (2011–2025)

KISPI consortium

Herzog & de Meuron and Gruner

8 business units

Sub-designers and direct mandates

Range of services: call for bids, construction management, cost planning, environmental site supervision, fire safety, HVACR design, overall supervision, pre-certification and final certification to DGNB Platinum, site supervision, surveying, sustainability consulting, sustainable quality management for security and safety, technical coordination, transport planning, work programming.

LINDENPARK RENOVATION IN ALLSCHWIL

Partnership on an equal footing



Built in 1973, the Lindenpark development in Allschwil offers the combined benefits of an urban site and green surrounds (picture: visualization after renovation).

Gruner has for decades assisted Helvetia Versicherungen in drawing up renovation concepts for existing residential properties. Although, as a major Swiss institutional investor, the insurance group has its own in-house specialists, it values the mutually beneficial long-term partnership. Fundamental to this, of course, is the development of high-quality solutions.

The Lindenpark complex was built in 1973 in the then typical architectural style and comprises 120 residential units, a crèche and a 196-space indoor car park. Located in Allschwil on the fringes of Basel, it occupies an attractive site surrounded by parkland, sports and school facilities. Nearly 50 years on from their completion, the buildings needed to be made fit for the future.

Helvetia again entrusted Gruner with the necessary condition survey as a means of clarifying, among other things, whether modernization or replacement was the better option. Gruner subsequently developed the renovation concept, complete with architectural planning and cost estimation. Building refurbishment means, on the one hand, creating value within a predefined context and, on the other, addressing the present and future needs of residents in terms of comfort and sustainability. Not surprisingly, Helvetia views real estate as an investment vehicle. Its properties must nonetheless survive on the market and thus offer tenants a pleasant living environment.

The structural fabric of the three Lindenpark buildings – two high-rises with twelve residential stories each and one five-story medium-rise – is in good condition, the internal walls not being loadbearing. Energy-efficient renovation of the facades, layouts, kitchens, bathrooms and infrastructure (electrical installations and supply/waste water pipes) made sense and the associated works are currently in full swing. The balconies are also being fully glazed to allow virtually year-round use.

The fact that Gruner has also taken on the construction management remit for the Lindenpark modernization and provides a wide range of other specialist design services makes things much easier for Helvetia. Still, nothing can be taken for granted: for Helvetia, as for any other client, Gruner must prove itself against the competition at every stage of the project. And, inevitably, on some occasions in the past, it has lost out on contracts. But always being in the running for such projects is Gruner's reward for having cultivated a strong partnership on an equal footing: each party knows what to expect from the other – and does indeed expect this. The first high-rise on the Lindenpark site will be ready for occupation in spring 2021. By February, all apartments were already let or reserved.

OVERTIME, YOU BECOME BETTER ACQUAINTED. YOU GET TO KNOW EACH OTHER'S PRIORITIES, STRENGTHS AND WEAKNESSES. YOU INTERACT AS PARTNERS AND WORK TOGETHER ON AN EQUAL FOOTING. THEN – PROVIDED THE NECESSARY STANDARDS ARE MET – THIS WILL PAVE THE WAY FOR A LONG-TERM RELATIONSHIP.



JÜRIG FINK
Head of Construction Management Department,
General Planning Switzerland



Ready for occupation as of spring 2021, the renovated apartments now sport glazed balconies (picture: visualization).



Samuel Schultze (right), Chief Executive Officer at Burckhardt+Partner, and Sandro Brunella, Head of Structural Design Northwestern Switzerland at Gruner.

COLLABORATION MOVES US FORWARD

Were they married, next year would mark their golden wedding anniversary. Almost 50 years have passed since their first joint major project: the BIS (Bank for International Settlements) tower. Burckhardt+Partner and Gruner had evolved together, have had their ups and downs, have been unfaithful, have even competed, but have always come back to each other. What is the secret of their relationship and what does the future hold? We asked Samuel Schultze, Chief Executive Officer at Burckhardt+Partner, and Sandro Brunella, Head of Structural Design Northwestern Switzerland at Gruner.

Fifty years of partnership-based collaboration – what, for you, is the essence of a good partnership?

Sandro Brunella: The most important thing for me in any partnership is being able to trust, support and complement each other. But for partners to grow and evolve together, there must also be scope for friction and for any conflicts that may result.

Samuel Schultze: For me, partnership-based collaboration means working together as a practiced team on an equal footing. You have faith in your opposite numbers because you know and acknowledge their abilities. All partnerships are demanding: positive experiences are needed for them to grow. This must also allow you – and here we agree – to be frank and forthright, especially in difficult situations. In the final analysis, a partnership sets out to create added value for both partners through efficient collaboration and successful solutions.

Does Gruner meet your expectations of a good partner?

Schultze: We are architects and have no ambitions to employ building services designers or civil engineers. That's why we need the backing of selected partner companies. Our collaboration with Gruner is very fruitful and enjoyable because we know what we will get. We, for our part, try to maintain a certain routine in our collaborations with Gruner by always deploying the same project managers. Having Gruner as our project partner also enables us to submit competitive bids and devise the best solution for the stated budget. Not all partners are willing to take entrepreneurial risks. Some simply insist on the result of their pricing.

Has the interplay between architect and engineer changed at all in recent years, e.g. in terms of tasks, responsibilities or know-how?

Brunella: Architects continue to play their traditional lead role – and rightly so, given their basic knowledge of all disciplines and ability to shape the big picture. However, projects are becoming ever more complex and demanding. And the higher the complexity or demands, the greater the need for interdisciplinary collaboration with engineers as well as other design consultants and experts. This trend is clearly observable with “award-winning” buildings, where interdisciplinary collaboration between architect and consultants figures prominently even at the concept design stage.

Schultze: Gruner used to deal purely with construction engineering while Burckhardt+Partner was an architectural practice and nothing more. The roles were fairly clear-cut. Through its strategic shift, Gruner has significantly broadened its base: as well as fire safety, transport planning and building services expertise, for example, it offers lead design services that include organizing its own calls for bids. It even has in-house architects for projects with a minor architectural component. (laughing) Which may make us competitors. All in all, however, we complement each other very well on an interdisciplinary basis.

THROUGH OUR INPUT AS ENGINEERS, WE CAN MAKE A DECISIVE CONTRIBUTION TO SHAPING THE BUILDING AND ACHIEVING A SUSTAINABLE, COST-EFFECTIVE SOLUTION.

Sandro Brunella

What conditions will have to be met in future for successful interdisciplinary teamwork between architect and engineer?

Schultze: Architects are said to focus purely on the styling of their buildings and have little interest in anything else. In our company, I believe there is a general willingness to recognize and accept the decisive contribution made by Gruner in delivering a good solution. That makes us a congenial partner. We endeavor to blend, as intelligently as possible, the technical and creative talents of, say, a structural designer with the skills of the architect. Armed with specialist know-how that far outstrips our basic knowledge, Gruner makes a key contribution to project success.

Brunella: Of greatest importance, as I see it, is that we share the same perception of values and the common goal of project success. We must display mutual understanding and comprehend the capabilities as well as the limitations of our project partner. My priorities at the concrete level of implementation are collaborative project management, the lean concept and clear, unambiguous communication. Despite or maybe exactly because of digitalization, the latter is becoming ever more important.

The construction industry is having to face and respond to various developments. How do you deal with these as partners?

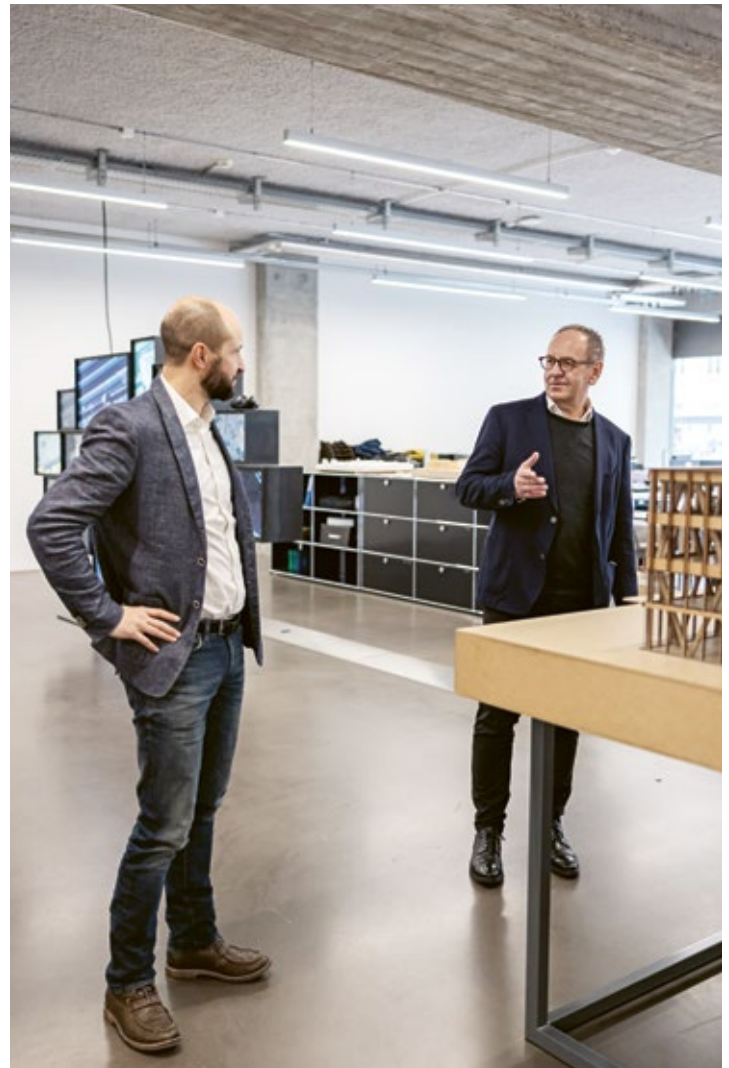
Brunella: Land shortages, for example, have increased the emphasis on inner-city densification. By developing good concepts, we can positively influence this trend. Early stage design is another promising option in that it will allow us to harness digital technology for the development of projects that make both economic and ecological sense. Engineers can offer architects or project developers decisive support in this process. This also calls for an innovative mindset and the courage to use new materials and technologies.

Schultze: However, we too must continue to evolve – whether in terms of our business model or our know-how. We must forge ahead with digitalization in order to more thoroughly and widely exploit its potential. Here, I think that Gruner and Burckhardt+Partner, given their size and wide range of services, are in a similar position. We can benefit from each other and, together, venture into unknown territory where we both may sometimes end up learning things the hard way. Collaboration on an equal footing moves us forward.

Brunella: We are currently examining the possibilities offered by digitalization on our joint Lonza project for the new Ibex® production building I06. The demands in terms of project volume and timeframe are immense. We have found a good way of using building information modeling (BIM) and bringing the client on board. On the ongoing Hinterkirch residential scheme too, we are jointly studying the options for the productive use of digital technology. As a basic rule, it's important to create transparency from the very start. Just because digital tools exist doesn't mean you have to use them if they don't boost working efficiency or deliver more precise results.

Where do you see the potential for developing the collaboration between architect and engineer?

Schultze: Engineers are often accused of being blinkered. It's all to do with their precise way of thinking and structured, analytical approach. But there's more than a technical side to the engineering profession. It's also extremely creative: it involves being open and ready to integrate other influences in your work and process these



OUR COLLABORATION WORKS WELL
BECAUSE WE CAN DISCUSS THINGS
ON AN EQUAL FOOTING.

Samuel Schultze

imaginatively. In my opinion, this aspect is still underexploited and, here, our collaboration on the ongoing Lonza project offers a good test bed. It's an intriguing project with a high degree of modularity and flexibility. We are building a shell without even knowing how it's going to be "filled." This means we must work together in finding inventive solutions to best meet the demands placed by subsequent process planning schemes. That's an incredibly creative task.

Brunella: I agree that engineers need to shake off their specialist mentality. Otherwise, it's impossible to grasp the complex interrelations governing sustainability, for instance. Creativity and a capacity for innovation are essential. By the same token, architecture

students should learn to think in structures. Ideally, this should also entail interdisciplinary collaboration. Competitions also offer a good learning platform given the need for an interdisciplinary approach at a very early stage if an appropriate solution is to be found.

And when will Burckhardt+Partner embark on its next joint project with Gruner?

Schultze: Ask me something easier. Given the current trends in the construction sector, the farther you plan ahead, the more diffi-

cult this becomes. Nor can we gauge the impact of the corona pandemic over the next two or three years. But one thing is certain: agility and innovation will be needed more than ever before – which will make our partnership with Gruner increasingly important for the projects ahead.

JOINT PROJECTS



Hinterkirch residential estate, Reinach BL
 Client: AG für Planung und Überbauung, Basel
 Project period: 2020 to 2023
 Employer/architect: Burckhardt+Partner AG
 Gruner service: Structural design



New Ibex® production building 106, Visp plant
 Client: Lonza AG, Basel
 Project period: 2017 to 2020
 Employer/architect: Burckhardt+Partner AG
 Gruner services: Structural design, excavations, incl. bored pile foundations



SKAN AG, new-build headquarters, Allschwil
 Client: Suva (Swiss Accident Insurance Fund), Lucerne
 Project period: 2018 to 2020
 Employer/architect: Burckhardt+Partner AG
 Gruner services: Structural design for building and excavations, steel and concrete construction



BIS tower, administrative and conference building, Basel
 Client: Bank for International Settlements (BIS)
 Project period: 1972 to 1976
 Architect / lead designer: Burckhardt+Partner AG
 Gruner service: Structural design

OBFELDEN/OTTENBACH FREEWAY FEEDER

Individual strengths combined in general contract

Although they were venturing into uncharted territory, the Infrastructure Central Switzerland and Zurich, Brugg business units scored an immediate success. With contractor Anliker AG as both partner and employer, they clinched their first general contract.

Juri Schuler, what prompted you and your team to acquire this out-of-the-ordinary mandate?

The job is indeed unusual and something of a challenge given that general contracts are rarely encountered in the infrastructure sector! Though we knew we were entering uncharted territory, we also knew we have the necessary departments, competencies and references together with an outstanding network. So why not?!

What were the key criteria for finding a partner?

As we aimed to have most of the works performed by the "GC+", we approached a large construction company. Thanks to our good network of contacts, we were able to win over Anliker as partner and employer. This immediately paid off at the prequalification stage in that we made it into the second phase as "GC+ Obfelden/Ottenbach" together with two competing GCs. "GC+", incidentally, is a cross between a general and a design-and-build contractor.

How did you convince Zurich's cantonal authorities?

The key factors were the track records of the involved companies, their successful collaboration over many years, geographical proximity to the project and famil-

Juri Schuler (right), Head of Infrastructure Central Switzerland and Senior Design Manager, holds daily meetings to ensure proper coordination of all design activities.

ilarity with the cantonal design standards. Anliker, in the lead role, and our company also put together a sound bid for the cantonal Building Department that included construction works and preliminary design services. Though the bidding phase was highly demanding and work-intensive, it was worth it in the end!

Do you intend to pursue this acquisition strategy?

Absolutely. I'm convinced clients will award more and more mandates like this in future, so we must ready ourselves. The constant evaluation and improvement of our collaboration will enable us to gather valuable feedback for further GC mandates.

What makes you an attractive GC partner?

The BUs from the Business Area Infrastructure are reliable partners and vouch for top quality in the execution of construction-sector design mandates. By adding GC mandate experience and project-specific competencies to our already broad service portfolio, we will be able to offer future GC partners certainty and added value at the technical design stage.



We champion active teamwork based on an appreciative, professional attitude and target maximum success in the design and implementation of projects with our partners.

Juri Schuler



Anliker's operatives are hard at work, even in cold weather. The Rickenbacherstrasse roundabout is part of the new Obfelden bypass.



The amphibian protection systems along the route are among the project's many ecological measures – as are the small wildlife underpasses below the new road near the Bibelaas fen.

255 m tunnel

Cut-and-cover tunnel for traffic calming and noise abatement in the center of Bickwil

3.5 km

Total freeway feeder length with two concrete roundabouts and three T junctions

3-year duration

Project period from autumn 2020 to spring 2023

Aim: Channeling of feeder traffic to new junction with N4 freeway at Affoltern am Albis

Mandate: Construction services / works, from technical design to production stage as GC+ mandate

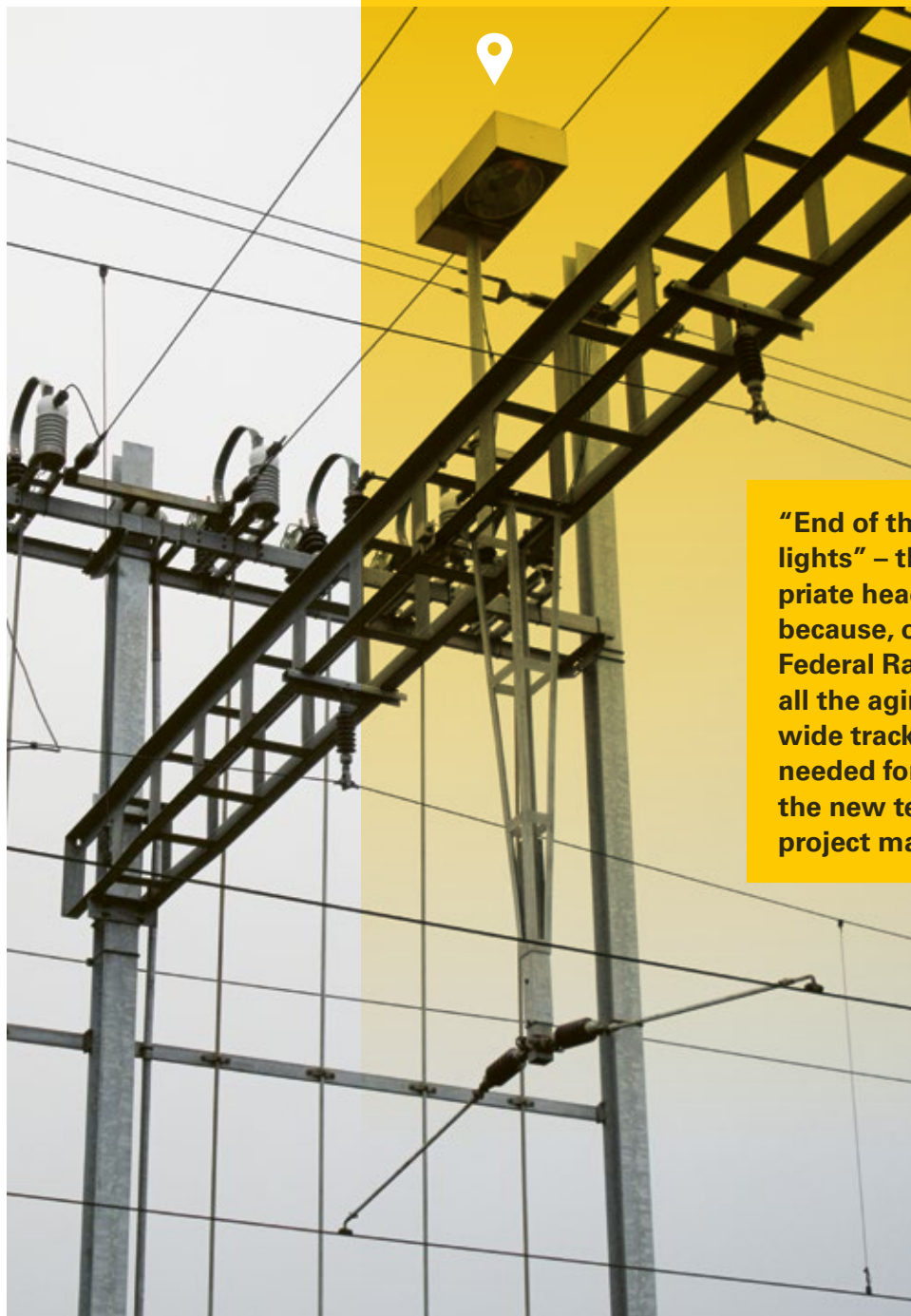
Gruner services: Overall design/planning based on combined expertise in highway, utility and foundation engineering, civil structures and environment

Decisions are jointly discussed and agreed between the companies based on a pragmatic, expedient approach. The boundaries between design and production dissolve. The site manager becomes part-engineer while the site supervisor suddenly starts thinking like a contractor! Ultimately, we're all in the same boat – a fact driven home day after day when we gather together in the temporary site office in Obfelden!

Stefan Annen
Senior GC+ Manager
Anliker, contractor and GC+ partner

ROLLOUT OF SBB'S LED NETWORK

Agile strategy for SBB mandate



524

operating points

19 years

project duration

4.4 GWh

reduction in energy consumption p.a.

CHF 6.1 mn

annual cost saving
(maintenance, repair, disposal, energy)

“End of the (rail)road for 21,700 track lights” – that would be an equally appropriate heading for this article. This is because, over the next 20 years, Swiss Federal Railways (SBB) plans to replace all the aging light fixtures on its nationwide track network. Among the things needed for an efficient switchover to the new technology generation is agile project management.



The position of all lights above the traction current installations and next to or below high-voltage transmission lines makes access, the maintenance of operations during the works and the associated safety precautions extremely challenging. Apart from the lights, the electrical installations also have to be adapted.

Gruner's willingness to take new directions was very helpful. To try out new project management methods, the project team must be prepared to learn new things and commit to continuous improvement on the basis of reviews.

Marc Wicki
Package Project Manager for SBB LED network

The renewal of SBB's infrastructure is a never-ending story. This is just as well because maintenance, repair and renovation are essential for guaranteeing the system's functioning and safety. At the same time, ecology, sustainability and energy-efficiency are a growing priority. The LED network rollout, scheduled for completion by 2040, represents a key plank in SBB's sustainability strategy. The project involves the replacement, at 524 operating points, of the existing, outdated, energy-inefficient and high-maintenance sodium vapor lamps by efficient, up-to-the-minute LED technology. The benefits are obvious: superior lighting performance, energy savings, lower environmental impact, less maintenance, reduced costs and greater safety for railway staff and users. Moreover, the intelligent control system helps to minimize light pollution.

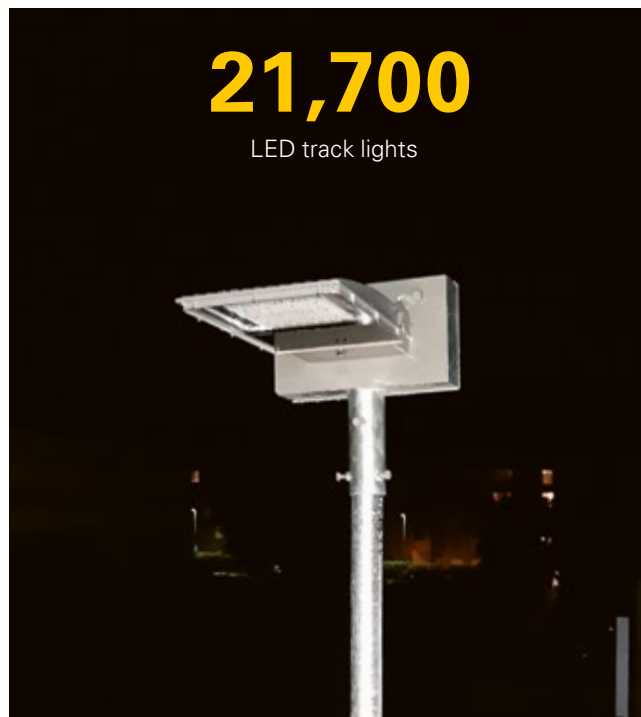
Robust, long-term partnership

The scheme is highly complex on account of both its duration and project management requirements. The fact that each operating point has to be treated more or less as its own subproject automatically generates a multiplicity of internal contact persons at SBB; it also calls for careful overall coordination of the individual subproject phases throughout the project period. Another factor concerns the position of the lights between track, traction current installations and high-voltage transmission lines, which limits accessibility and thus requires the works to be performed exclusively on closed, de-electrified track sections during predetermined night-time intervals. The coordination effort needed to program the works and organize the workshifts in good time is enormous. That is why SBB opted to collaborate with Gruner on the basis of a client support mandate – not least because the long project duration demands a practiced, reliable and "robust" partnership.

SCRUM – the agile project-in-project

Work on the pilot and first packages revealed a frequent lack of reliable information – on the location, age and functional status of the individual lights for example. This necessitated an additional process step whereby a small team initially collected data on site, reviewed the current data situation and prepared a rough, preliminary project development concept. For this first step, SBB decided to adopt the agile, state-of-the-art SCRUM project management method. Gruner was the only external partner to be involved from the start – with its own employee – in assembling the team and methodological expertise.

By applying the SCRUM method, SBB managed to bring all in-house and external units (SBB, Gruner, lead design teams) to one table, promote interdisciplinary and cross-company collaboration within the framework of an overall project team. This brought improvements in terms of speed, efficiency and coordination, thus ultimately achieving a consistently high standard of project management.



Intelligent, monitored lighting system with new track lights

SBB project video (in German):



MICHAEL BONT
Head of Infrastructure Basel, Environment

RECONSTRUCTION OF THE WALDENBURGERBAHN

BLT and Gruner: in line with each other

When transport operator Baselland Transport AG took over the historic Waldenburgerbahn, it was already clear that the aging rail line would need full-scale rehabilitation and modernization. As a strong partner, Gruner is assisting BLT with this complex task at several levels. At the same time, the two companies are adding another chapter to their history of successful collaboration.

Baselland Transport AG (BLT) is one of the biggest public transport service operators in the Canton of Basel-Landschaft and neighboring regions, carrying some 55 million rail, tram and bus passengers per year. The now aging Waldenburgerbahn rail line, which was built in 1880, has been part of the network, as route 19, since 2016. The 13 km line links the village of Waldenburg to the cantonal capital Liestal.

An extensive infrastructure rehabilitation project costing some CHF 300 million and due for completion in 2022 will now see route 19 adapted in line with contemporary demands. The works will include reconstruction of the 13 km line complete with stops plus extensive flood control measures along the Vordere Frenke stream. Given its size, complexity and narrow timeframe, the BLT project is split into seven work packages. Gruner is assisting the client on packages 3 and 5 by providing a wide range of design and site supervision services in the fields of civil, highway, rail and utility engineering, civil structures, environment, surveying and hydraulic engineering/flood control. We have also been tasked with the environmental site supervision, flood control and tracklaying site supervision for the whole project.

The overall project places high demands on all involved. As a result, BLT has now additionally entrusted us with the client project management role for certain parts of the works. This is where the long years of shared project experience and well-versed teamwork between BLT and Gruner pays dividends and, as always, the collaboration is running smoothly.

Among the biggest challenges during the construction phase is the tight schedule that provides for simultaneous operations at different points along the whole rail line. The preparatory works for packages 3 and 5 have been completed to plan. The focus is now on using the period of full closure just as efficiently and successfully in order to complete the main works on time and as specified.

ON BEHALF OF THE CLIENT



FREDY FECKER
Gruner
Client Project Manager

Fredy Fecker, on this major project you have assumed the role of client project manager. How did that come about?

BLT is not adequately staffed for a project of this size. To avoid recruiting staff members, only to lay them off at the end of the project, it decided to appoint external specialists to handle the client's project management role.

In what areas do you support BLT as its project manager?

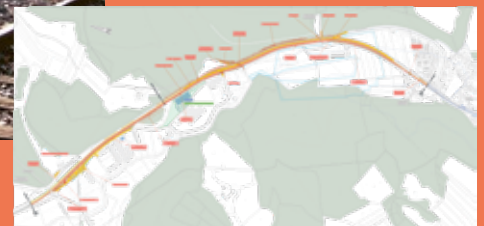
I'm responsible for overseeing three of the seven packages for the Waldenburgerbahn and coordinating work with SBB's four-track expansion project at Liestal station. The various tasks include land acquisition, coordination with the relevant communal and cantonal agencies, and management of the appointed design practices.

Your function probably involves liaising very closely with BLT, doesn't it?

BLT has provided me with a fully equipped workplace at its headquarters in Oberwil. That naturally simplifies collaboration with BLT's in-house specialists and drastically shortens the information and decision-making paths. Collaboration within this welcoming team is based on a high degree of mutual trust, and I experience it as highly constructive and enjoyable.



The Waldenburgertal rail line will be fully rehabilitated by 2022: this will include everything from the track and rolling stock to the stops and the station in Waldenburg.



PACKAGE 3: LAMPENBERG-RAMLINSBURG STOP TO HÖLSTEIN

PARTICULARLY INTRIGUING ABOUT THIS PROJECT IS THE DIVERSITY OF THE TASKS IN THE VARIOUS DISCIPLINES COVERED BY GRUNER'S IN-HOUSE SPECIALISTS AS WELL AS THE COLLABORATION WITH THE OTHER DESIGNERS INVOLVED IN THE PROJECT.

Bernhard Senn

13 km Liestal–Waldenburg

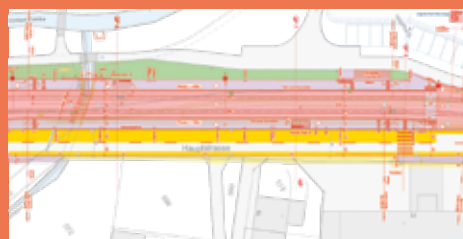
The reconstruction works span the entire rail line, including the stops, and are proceeding simultaneously at different locations.

Remodeling of stop for disabled access, including new stop amenities, trackbed construction and tracklaying, double-tracking, erection of several retaining walls, rock excavation and stabilization, reconstruction of two level crossings, rehabilitation and reinforcement of the existing wall along the Vordere Frenke stream plus demolition and reconstruction of a second retaining wall, rehabilitation and reinforcement of existing stream culverts, rehabilitation of cantonal road partly including cycle path, rehabilitation of municipal road, and extensive utility works.

Preparatory works already commenced in the northern part of package 3 while the line was still operating in autumn 2020. The remaining works will be performed during the line closure between April 2021 and December 2022.

From 75 cm to 100 cm

2022 will see the gauge altered from the existing narrow 75 cm to 1 m.



PACKAGE 5: HIRSCHLANG STOP, AT APPROACH TO NIEDERDORF

The package 5 works mainly comprise renovation and conversion of the stop for disabled access, including new stop amenities, trackbed construction and tracklaying, rehabilitation and reinforcement of existing stream culvert, new retaining wall on piled foundation along existing cycle path, rehabilitation of cantonal road, utility works.

The preliminary works – most importantly the rerouting of utility lines, site establishment and temporary traffic measures – commenced in autumn 2020. The main works are due to follow as of April 2021 during the line-closure period.



BERNHARD SENN
Transport Infrastructure,
Infrastructure Basel, Environment

21-month time window

The line will be kept completely closed during the four-track expansion work at Liestal station. All the main works along the route have to be performed within this narrow time window.

CLIENT CONSULTING Always well advised



Designing and building projects is a challenging endeavor involving manifold tasks, the clarification of numerous issues as well as compliance with a growing multiplicity of standards, requirements and conditions.

Do you lack the necessary time, capacity or expertise? As an independent client consultant, we will support and accompany you across all phases of your construction project. Our consultancy team is made up of proven specialists with practical experience and an instinctive feel for your needs. Moreover, thanks to the close interdisciplinary teamwork within Gruner, they at all times have full access to our in-house expertise.

Client consulting for Switzerland Innovation Park

A typical example of our services is the client consulting and support mandate for Switzerland Innovation Park Basel Area, a private Swiss non-profit organization that performs and supports industry-focused applied research and development. Its headquarters is now located at the forward-looking, 40,000m² BaseLink campus in Allschwil.

KEY TO THE SUCCESS OF ANY CONSULTING MANDATE IS MUTUAL TRUST AND A TEAM SPIRIT AMONG ALL INVOLVED.

Christian Brendelberger

Here, Switzerland Innovation Park Basel Area provides some 6,000m² of office and laboratory space for start-up companies. Switzerland Innovation Park Basel Area appointed a lead designer to handle the tenant outfitting. As client consultant, we were already involved prior to the appointment, having assisted the client team in the transparent formulation of the brief. During the project period, we are monitoring the quality of the lead designer's services and advising the client on its technical and design-related decision-making. The project planning optimizations have allowed Switzerland Innovation Park Basel Area to cut total investment by some 15 % without any compromises on quality. We should be delighted to advise and support you too on your next building project.

Switzerland Innovation Park Basel Area provides 6,000m² of floor space for start-up companies: offices, meeting rooms, circulation spaces, communal areas, café, 600m² ISO 7 cleanroom, 1,700m² (bio, chemical and analytical) laboratory.



CHRISTIAN BRENDENBERGER
Head of Quantity Surveying,
General Planning Switzerland



DIGITAL TWIN

Performance gap analysis

Despite innovative building services systems and modern design methods, many buildings still fail to meet or fully meet their performance targets in terms of comfort, energy use and energy costs. The "digital twin" offers an efficient means of measuring and analyzing the discrepancies. This involves interfacing a 3D model of the built environment with the real-world behavior of buildings, systems and infrastructure on the basis of real-time data measured by sensors. Synergies are created by using target values from planning and design in conjunction with the measured data and conducting real-time comparisons as part of a

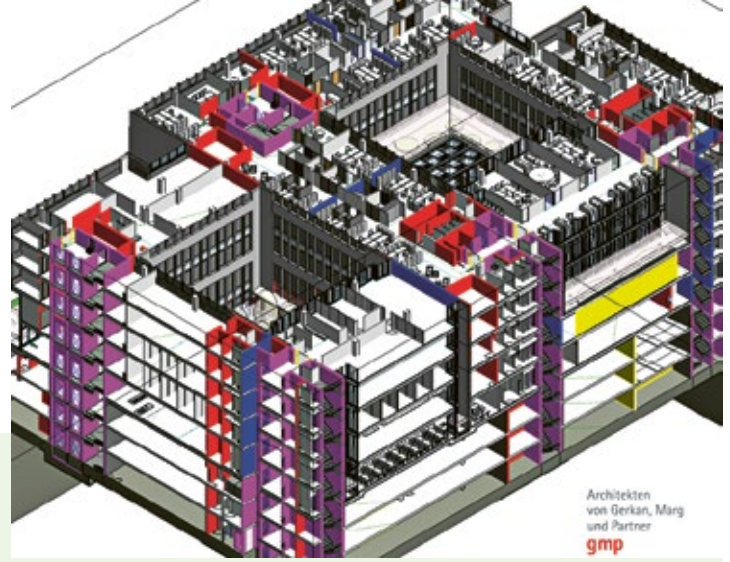


BIM IN FIRE SAFETY

Massive efficiency-boosting potential

BIM (building information modeling) design is already firmly established among specialists and is also gaining increasing importance in the field of fire safety due to its great efficiency-boosting potential. Merely by virtue of its diverse automation and optimization possibilities, the method offers enormous benefits.

Gruner was quick to recognize BIM's potential for fire safety design. But how can the fire safety engineer be integrated in the BIM-based design process and interact with the other design disciplines? Clearly defining the requirements and the scope of services in advance is key: Only then will the fire safety consultant's involvement in the BIM design process offer added value for all project team members. The workflow essentially resembles that of the traditional design process. The fire safety engineer receives a building model from the architect as the basis for design and the inclusion of parameters that are used to define the fire safety requirements. Being a computerized method, BIM offers a wide variety of



Generated with just a few clicks in the fire safety design model: floorplans, elevations and sections along with 3D visualizations showing the fire safety parameters.

options in terms of automation which, among other things, open up completely new options for fire safety designers.

To read the full report on the potential offered by BIM in fire safety, please visit our website.



OLE MATTHIESEN
Senior Project Manager,
Fire Safety Germany North

Long read
(in German) at
www.gruner.ch:



model-based performance gap analysis. This analysis pinpoints any differences between the actual measurements and specified design values, thereby serving as a basis for targeted optimizations throughout the building's life cycle.



YANNIC BRANDSTETTER
BIM Project Manager, Digital Business Solutions

Keynote speech (in German)
at Digital Construction
Event 2021:



The Grosspeter Tower innovation project in Basel gave us and our collaboration partner Siemens the chance to demonstrate the practical implementation of model-based performance gap analysis with a digital twin.

TRAINEES

What we achieved as a team!

Working together for a good cause: each year, we donate time in the form of a voluntary work initiative by trainees from various sites in Switzerland. In 2020, we supported the charity [bergversetzer.ch](https://www.bergversetzer.ch) in assisting a young farming couple, Nicole and Michu Widmer, with their building project in Oshwand.

It was fun working with the whole team. It's just a shame we had separate rooms, because last year I really enjoyed chatting with my roommates.

Matthieu Fatien, Stucky, also a participant in 2019



Making sure everything goes to plan: discussing the necessary demolition works on the house and the construction of a shed for pigs and cattle.

I learned a lot of new things this week – not only about how to use my hands, but also what teamwork means.

Fabio Ris



Working towards a common goal: the heavy, glazed window unit needs safely transporting to its place of installation.

It was great to see how the trainees worked hand in hand.
[bergversetzer.ch](https://www.bergversetzer.ch)

Wow ... what a week we spent together! No grouchiness or moaning from start to finish, just everyone in a great mood and a fantastic team performance. Everyone mucked in and lent a helping hand wherever possible. So, once again, we'd like to extend a MEGA thank-you!

Nicole and Michu Widmer



A super motivated crew with an incredible team spirit!

The teamwork with the trainees from the other BUs and different sites in Switzerland always ran smoothly, and even the language barrier with the Stucky trainees was quite easy to overcome. The practical experience you gather gives you a better understanding of what you do when you're designing.

Hanna Gough,
also a participant in 2019

You get a chance to see the other Gruner trainees with who you otherwise have no contact.

Dennis Eleganti

The saw Group and Gruner Structural Design Eastern Switzerland have been working together successfully for around 15 years. Their collaboration includes a three-month "trainee exchange." While Gruner gives saw's trainees an insight into civil engineering, saw introduces our trainees to work in a technical office and a factory. This benefits both companies: the experience gained in the technical office enables our trainees to support saw in case of capacity bottlenecks.



A taste of life in another training company



Out of the office and into the factory: Leonie spent one month gathering practical experience in producing the precast-concrete units that she had previously drafted.

That was really hard work

This summer, I'll complete my "Federal VET Diploma – Engineering Draftsperson" training at Gruner Wepf. After that, I'd like to gain my higher vocational school-leaving certificate. I've learned an enormous amount in the four years and have also been given a taste of the bigger picture.

As early as the first year, I had the chance to spend three months working at saw, one of our customers. For the first two months, I drew precast-concrete units, which are one of saw's core business areas. Then I spent a month in their precast factory, where I was also able to fabricate the units. Though it was really hard work, it made a nice change from working in the office.

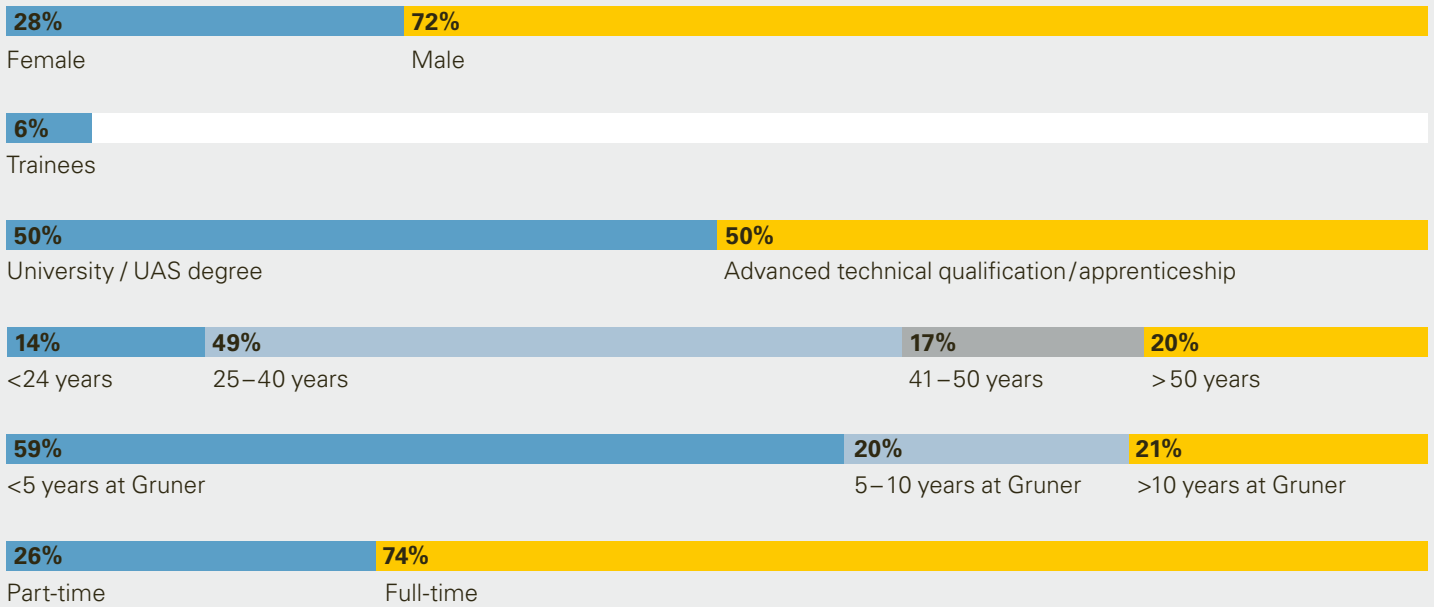
By witnessing the entire process – from drafting to production – in those three months, I acquired valuable additional know-how. Plus I got to know some new colleagues.

Leonie Fricker, 18,
trainee engineering draftsperson (Federal VET Diploma)

A SATISFACTORY YEAR

HUMAN RESOURCES

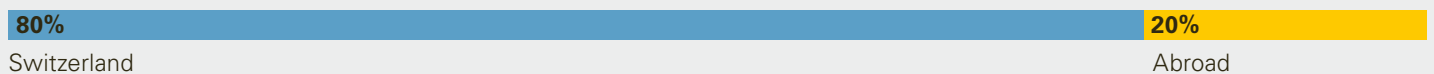
1,018 employees
from 49 countries



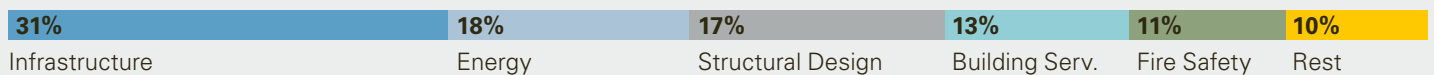
BUSINESS AND CUSTOMERS

CHF 140 million turnover
CHF 165 million new orders

TURNOVER BY MARKET



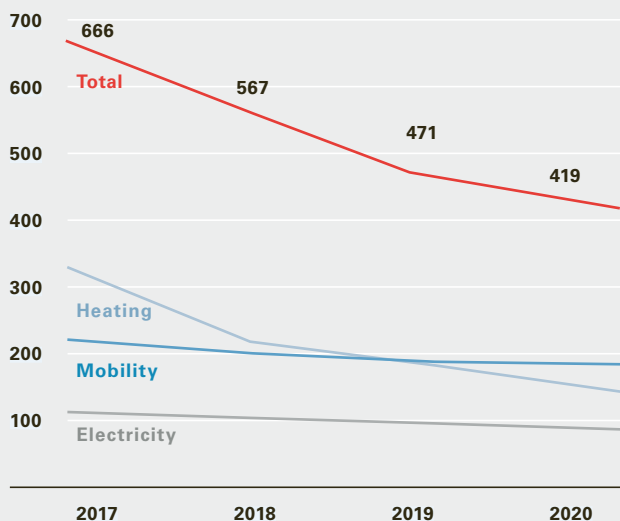
TURNOVER BY COMPETENCIES



ENVIRONMENT

419t CO₂ p.a.
-11.1%

4-YEAR CO₂ EMISSION COMPARISON (CO₂ IN T.P.A.)



ELECTRICITY PER OCCUPIED WORKPLACE

1,013 kWh p.a.
-4.6 %

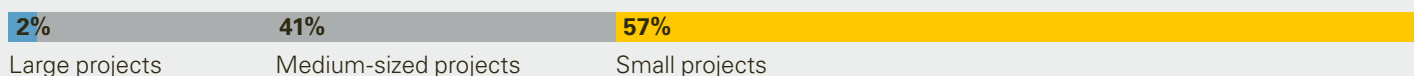
HEATING ENERGY PER OCCUPIED WORKPLACE

1,152 kWh p.a.
-21%

6,527 projects
+7 %

66 % "Very good"
customer rating

PROJECTS BY SIZE



CUSTOMER SATISFACTION IN TERMS OF "SERVICE QUALITY"



INNOVATION AND NETWORKING

RESEARCH PROJECTS

Our experts are welcome visitors at professional events, where they also give talks. Moreover, they are regularly involved in research projects, e.g. at the Swiss Federal Institute of Technology (ETH) Zurich and the University of Applied Sciences and Arts Northwestern Switzerland (FHNW). In its latest FHNW project, carried out in collaboration with other companies and based on real-life projects, Gruner is investigating the impact of digitalization on work processes, the roles of the various participants and the requirements placed on project team structures and members.



KEY MEMBERSHIPS

As a leading engineering and design company, Gruner is heavily networked. We are an active member in our industry's national organizations (Swiss Society of Engineers and Architects/SIA, Swiss Association of Consulting Engineers/usic, Building Digital Switzerland) and the key professional associations in our fields of activity and markets. We are committed to knowledge sharing and know-how transfer – all for the benefit of our customers.

PRIZE-WINNING THESES

Gruner's close ties with higher education institutes is further illustrated by the awards it presents for outstanding and innovative theses. The Prix Alfred Stucky has been awarded at the renowned EPFL (Swiss Federal Institute of Technology Lausanne) since 1947. In 2020, it was won by Ms Mona Seyfedine (pictured above), a civil engineering graduate and future engineer. Her master thesis "Gondo Throttled Surge Tank – Numerical Modeling and Design Review" best met the main criteria for the award, i. e. originality and practicability. At the University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Gruner Ltd sponsors the annual Gruner Innovation Award. The 2020 winner was Timo Daniel (pictured top, middle) with his excellent bachelor thesis "Deconstruction of the Josefstrasse waste incineration plant, Zurich: Special civil engineering measures and deformation assessment."

140 memberships national and international

OUR COMPETENCIES AT A GLANCE



INFRASTRUCTURE RAPID PROGRESS – SAFE ARRIVAL

We are there to help people who are on the move and need reliable services. We offer our customers advice and support in the development and implementation of large- and small-scale infrastructure projects, at local, regional, national and international level, for public and private transport facilities as well as electricity, water, district heating/cooling and gas utilities.



ENVIRONMENT NEXT STOP – THE FUTURE

Regardless of facility type – whether for buildings, roads, tunnels, landfills or the open countryside – we provide surveys, analyses and counselling, and develop comprehensive solutions for our customers' projects. Our sound decision support maximizes the benefits for the environment and humankind – in the near future and for generations to come.



BUILDING SERVICES ALL-ROUND COMFORT

We develop intelligent integral concepts for buildings where owners and users can feel at home. The life-cycle perspective nonetheless remains firmly in focus. Light, shade and the indoor environment are simulated before the first pipe is even laid. Architecture, structure and M&E equipment are skillfully reconciled throughout the concept, design and implementation phases. As experts in the use of geothermal energy, gas and biomass for heating, cooling and electricity generation, we are also helping to implement Switzerland's energy strategy 2050.



STRUCTURAL DESIGN METICULOUS DESIGN THAT STANDS ABOVE THE REST

We develop the optimum structural solutions for buildings and bridges. With an open-minded, innovative approach to the realization of complex and creative architecture, we are your engineering partner of choice. In terms of sustainability and visual impact, our structures always deliver what is promised. And for structural maintenance and improvement schemes, we are never short of good ideas.



SAFETY, SECURITY THE LESS RISK, THE BETTER

We help to protect infrastructure, companies and individuals while improving security at major events. Our risk analyses and assessments enable us to pinpoint hidden dangers. We partner our customers in analyzing possible solutions and put in place effective measures that prevent minor incidents from triggering major crises.



LEAD DESIGN, GENERAL PLANNING BETTER WAYS OF MANAGING CONSTRUCTION

In ensuring the smooth progression of design and construction, we adopt a variety of roles: as general planner/lead designer on new-build, refurbishment and alteration projects, we eliminate all interface problems in the design and production processes. At the design stage, we reconcile the demands of clients and architects. At the construction stage, we keep a tight grip on costs, deadlines and on-site workmanship.



FIRE SAFETY BETTER SAFE THAN SORRY

With profound expertise and a fiery commitment, we offer our customers advice and support on both small and large-scale projects in the fields of fire safety and building physics. All our efforts are geared to delivering a convincing solution that satisfies all criteria. Although a residual fire risk always remains, our consulting services and innovative engineering methods ensure that this remains at an acceptable level.



ENERGY CLEAN ENERGY FOR CLEAN LIVING

No matter how deep the water, with hydropower plants we are never out of our depth. We oversee energy projects – production plants, distribution systems such as high-voltage lines, transformers and smart grids as well as strategic developments – in Switzerland and worldwide, from the feasibility to the commissioning stage, always with an eye to optimizing technical, safety, ecological and economic performance.

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