

THE IMPLENIA MAGAZINE



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IMPACT ONLINE

You will find lots more reports, videos and pictures of projects, topics and people at Implenia in the digital version of IMPACT.



Integrated services across all phases of a building's lifecycle



André Wyss, CEO of Implenia

Implenia develops, plans, builds and manages homes, workplaces and infrastructure for future generations. Our goal is the long-term, integrated optimisation of buildings and structures for our customers in terms of sustainability, quality, profitability and efficiency. This issue of IMPACT, which focuses on "lifecycles", shows how we are bringing enthusiasm and great expertise to this challenge. From development to construction, operation, modernisation, maintenance and demolition, as a leading construction and real estate service provider, we provide sustainable solutions for every phase of a building's life.

We have a similar ambition as employers. From our apprentices and the interns in our trainee programme, to our many experienced professionals and long-serving experts, we want to offer stimulating work and genuine development opportunities to everyone who works here, and to keep them in our team for the long term. Thanks to our impressive large-scale projects, modern technologies and working methods, and to colleagues who are passionate about what they do, working at Implenia remains exciting and fulfilling. Interested? We look forward to finding new team members to help us shape the world of tomorrow sustainably.



André



REAL ESTATE SALES AND DEVELOPMENT IN WETZIKON

Implenia is selling a centrally located property in the "Stadtraum Unterwetzikon" master plan development zone. It has also been asked by the buyer to develop the project over the next few years into a building with public facilities on the ground floors and apartments above. The planned development will be made even more attractive by the enhancement of the area around Wetzikon station; by 2029 it will form part of a new and diverse urban district offering a high quality of life.

COMPLEX BRIDGE BUILD-ING IN WINTERTHUR

The new Neuhegi-Grüze district of Winterthur needs better public transport links, so the city authorities have asked Implenia to build a challenging 390 m bridge for pedestrians, cyclists and buses spanning the train tracks. "Querung Grüze" should be ready in 2026. This central transport hub will serve the two middle platforms of Grüze station as well the planned new "Grüze Nord" S-Bahn stop. The work includes specialist work on the foundations and protective structures, various civil engineering services around the tracks, and complex scaffolding structures.

BIM FOR MAJOR CONTRACT IN ESSEN

As part of the sustainable development of the Nord Technology Park in Essen-Frillendorf, Implenia, as general contractor, is building an office block with adjoining workshop and high-rise garage with 220 parking spaces, as well as a daycare centre, by 2025. Implenia's services cover turnkey construction, including detailed building design, and a Value Engineering process for financial optimisation. BIM models of the building were generated during the bidding phase; these are now being successively enriched with additional data for further planning and execution.

EXPANSION AND NOISE ABATEMENT IN GRÜNAU

Implenia is working until 2027 on the expansion of the Zurich-Grünau motorway intersection, which includes repairing the existing road surface between the Schlieren and Altstetten junctions. In preparation for this, it is carrying out extensive demolition, excavation and plant management work, as well as building a road waste-water treatment plant. 3,800 m² of noise abatement walls will protect residents from noise pollution once the project is complete. The refurbishment of this section of the motorway will also enhance the local physical environment.

NEW CODE OF CONDUCT

Integrity, one of our five corporate values, is the foundation of our corporate culture.

Implenia's good reputation and the success of its business absolutely depend on us complying with legal regulations in our day-to-day work and behaving ethically towards all stakeholders. To maintain this reputation, Implenia employees need a common understanding of how to interact with each other and with third parties. The most important rules are clearly summarised in the newly launched "Code of Conduct: How We Work". Individual topics are illustrated by Dos and Don'ts, Q&As and many practical examples. In addition to the interactive PDF version, the CoC is of course also available online – accessible to all employees and external users. Implenia CEO André Wyss has made it clear how important the Code is: "The Code of Conduct is part of the employment contract for each and every member of Team Implenia".

Our partners – including suppliers and sub-contractors – play a significant role in our business, so they too need to follow the applicable rules. Implenia regulates cooperation with its partners through the "Code of Conduct for External Business Partners".

At Implenia, we comply with the law and behave ethically. Everyone benefits from this and it helps to maintain Implenia's good reputation. Integrity is the basis for our continued shared success.



COMPETITION

As an Implenia employee, are you an expert on compliance? Then you could win a trip for two!

To enter the prize draw scan the QR code, familiarise yourself with the Code of Conduct, and then test your knowledge! We wish you every success and a great trip!



To the competition

PROJECT MILESTONES



LAST BLAST AT JOHANNELUND

Work on Sweden's longest road tunnel, the Stockholm bypass, is in full swing. Several parts of the project are complete and work is now transitioning to the fit-out phase till 2024. Implenia Sweden carried out the final blast at the Johannelund project, which forms part of the bypass, this summer. According to the Swedish Transport Authority, this means that 98% of the entire rock tunnel has now been excavated. The 6.9 million m³ of rock that has been removed would fill 12 massive arenas. The Johannelund project includes the construction of two parallel, 3.6 km long road tunnels with four connecting ramp tunnels, four vertical 10 metre-wide ventilation shafts lying at depths of between 30 to 50 m, plus a series of escape tunnels.

MODERNISATION OF SIX BUILDINGS IN CUGY

Implenia, operating as total contractor, celebrated the topping-out ceremony for the project on the Chemin de l'Epi d'or in Cugy in August. Our teams are renovating six buildings containing a total of 80 apartments while tenants are still living there. Completion is scheduled for 2024. The contract includes renovation of the building envelope and pipework to the existing apartments, creation of 20 new apartments in the attic, smart home installations, works to comply with the Minergie label and much more. Work is proceeding on schedule and to everyone's complete satisfaction.

NEW CONSTRUCTION OF A COMPANY FIRE STATION

Implenia is currently replacing the company fire station at the Ruhr Oil Refinery in Gelsenkirchen-Horst in Germany for BP subsidiary Ruhr Oel GmbH. The new L-shaped building comprises a two-storey main block with workshops, storage areas, social and office spaces, plus a social wing, a five-story exercise tower and a vehicle hall. The building is designed around a steel skeleton and concrete structure. Implenia will also be installing blast-proof exterior doors, windows and sectional doors, as well as outdoor facilities.

TWO FURTHER PHASES OF BERLIN DECKS

Working within a joint venture, Implenia has been awarded the contract for two further construction phases of the innovative BERLIN DECKS City Campus. An innovative, sustainable research and media district is being built on this former industrial site on the northern edge of Moabit. The anchor tenants are the German Film and Television Academy Berlin and Mercedes Benz subsidiary MBition. The contract also includes a technically demanding tenant fitout. Implenia is already building the first two phases of this diverse neighbourhood, which is scheduled for completion in 2026.

DISTRICT HEATING TUNNEL IN HAMBURG

Implenia is building slotted walls with a depth of up to 42 m for the start and end shaft of a district heating tunnel under the River Elbe. We are using a tunnel boring machine to drill a 1.16 km-long tunnel with a diameter of approximately 4.5 m, which will be lined with precast concrete elements. Access and operating equipment will be built into the two shafts ready for future operations. The contract also includes installation of the technical building equipment as well as the district heating pipework with supply and return flow.

Site visits

Some Implenia employees are using TikTok to guide interested viewers through their construction sites and provide an insight into their multifaceted working world.









An wincasa .

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Implenia develops, plans, builds and manages homes, workplaces and infrastructure for future generations. By systematically thinking in terms of lifecycles, we aim to achieve long-term, holistic sustainability, quality, profitability and efficiency – in our construction projects, in the management and operation of real estate, and across the entire value chain.



From planning to construction, management and operation, to maintenance, modernisation, demolition and recycling, structures and properties go through several different phases throughout their lifespan, each with its own specific challenges and opportunities.

As a sustainable construction and real estate service provider, Implenia deploys a wide range of approaches to generate long-term added value at every stage of this lifecycle. In this issue of IMPACT, we use concrete examples to highlight some of our solutions:

- We discuss how towns can make the very most of their bridges' useful lives
- We look at how to plan new CO₂-neutral buildings
- We show how concrete for a new dam is being produced as part of a successful circular economy
- We explain how to build new motorway bridges in a way that avoids disrupting car and ship traffic
- We see how heritage buildings from the last century can be made fit for modern requirements, by increasing their energy efficiency, for example
- We discuss managing real estate in a way that preserves value for the long term
- And we present technological innovations that save time, material and costs when constructing new buildings

Sustainability is one of our corporate values. "Lifecycle thinking" helps us meet our commitment to a sustainable balance between economic success and social and environmental responsibility in everything we do.

FOCUS ON PRESERVING BUILDINGS









Even bridges get old and infirm. According to current estimates, around 4,000 bridges on German motorways alone need renovating or replacing either right now or in the next few years. This is time-consuming, expensive work that disrupts traffic and can annoy the public. How can the federal government, Länder and municipalities keep their infrastructure fit for purpose? How can systematic building management over all phases of a structure's lifecycle help? And how can private providers help the public sector keep bridges from collapsing? In this podcast, Henning Schrewe, Head of Civil Germany, and Patrick Roth, Project Manager Innovation and New Business Models, discuss new

technologies and approaches such as the recently launched wrap-around service for municipalities.



NEW: White paper on the subject



THE PATH TO CO₂-NEUTRAL BUILDINGS

How can we develop the buildings that future generations deserve? Where do we focus, which levers do we pull and which goals do we pursue? Implenia Real Estate Development's easy-to-understand white paper provides answers.

Focus: You can only create CO₂-neutral buildings if you take account of a property's entire lifecycle and pay particular attention to construction emissions.

An analysis of 36 of Implenia's own development projects shows that around two thirds of greenhouse gas emissions are generated during construction and only one third during the operational phase. So if a building is to achieve a net zero carbon footprint, its entire lifecycle has to be considered – and especially the construction phase.

Levers: There is no one route to net zero; achieving it requires a combination of different strategies. There are effective levers that can be used to regulate both construction and operational emissions and create CO₂-neutral buildings. These include choice of location, technical equipment, materials and products. Net zero requires a combination of different strategies that might include, for example, well-designed materials, compact buildings, carbonefficient energy systems and low-carbon building materials.

Goals: If it's not measured it can't be taken into account. Dashboards show how our projects are doing with regard to CO₂.

Implenia Real Estate Switzerland is targeting net zero operational emissions for its own real estate development projects by 2030, and net zero construction emissions for these projects by 2040. To measure our goals systematically, we need a controlling tool that shows where a project or project portfolio is in relation to $\mathrm{CO}_{2},$ and whether the strategy is on course or not.

Our "Net Zero – The Path to Carbon Neutral Buildings" white paper highlights levers and recommendations for net zero buildings. Action is certainly required because the construction sector currently accounts for 37% of greenhouse gas emissions. You can find the study here:





ROCK CYCLE

Even for experienced construction professionals, this is a mind-boggling site. A new double-curved arch dam is being built across seven construction seasons 1,900 m above sea level on the Grimsel massif in the Bernese Oberland. From autumn 2025, it will replace the 90-year-old dam that holds back the almost 100 million m³ of water in the Grimsel reservoir – and that has developed a crack. The special concrete required is made right at the foot of the wall, with the team using rock and aggregate from previous blasting operations in the area to make the gravel.



Site manager Julia Geist is responsible for materials management, which includes supervising a gravel works 1,650 m above sea level





There is a breathtaking view of the high mountain landscape. The road snakes its way up to the Grimsel Pass, which connects the Bernese Oberland with the Upper Valais. Located at 2,163 m, the pass also lies on the European watershed between the Mediterranean and the North Sea. mer's day, the lake is glittering, while the rocky outcrops and man-made structures present themselves in their brightest light. But it can be very different. "In 2021, when we started building, it rained a lot. That was difficult: If it is wet for weeks on end, motivation begins to dip."



Circular economy: The concrete is made from rock taken from the dam wall and other projects

"If the weather is good, it's just perfect here," laughs construction manager Daniel Seliner. He is spending his third year at this once-a-generation construction site and has already experienced all kinds of weather. On this particular hot late-sum-

STEPPED CONSTRUCTION

Around 100 people work for the Grimsel joint venture – a partnership between Frutiger, Ghelma and Implenia. The team operates from the beginning of April to the end of October, working in shifts



SPITALLAMM-GRIMSEL DAM

Between 2019 and 2025, Kraftwerke Oberhasli AG (KWO) is replacing the dam wall. The old wall is in need of renovation, but will remain in place and be flooded at a later date. By replacing the Spitallamm dam, KWO is making sure that the water from Lake Grimsel can be used for electricity production without interruption for many years to come.

Start of construction: May 2019 Completion: October 2025 Construction volume (Implenia): CHF 98 million Client: Kraftwerke Oberhasli AG (KWO) for seven days a week. The high-altitude construction site is blanketed under thick snow all winter, so can only be accessed for about six months a year – and this time needs to be used well. Formwork starts at 6 a.m. and then concrete is poured from 4 p.m. The aim is to pour a three-metrehigh block of concrete every day and thus raise the dam wall in staggered sections.

"First of all we build the 'lead blocks' nine to twelve meters high, and then raise the 'trailing blocks' to catch them up – so it looks like battlements are growing up side by side. This saves time. We erect formwork on all sides of the primary blocks, while the trailing blocks only need it on the sides facing up and down the valley. It allows us to work on different levels and keep out of each other's way," explains Daniel.

When a block is finished and the concrete is hard, the team releases the formwork and uses the crane to position it three metres higher. This has to be done very precisely. "There are no 90-degree angles here at the double-curved dam wall. Everything is curved, so each block is measured with the theodolite," says Daniel Seliner.

ON-SITE CONCRETE PRODUCTION

The concrete is made at the mixing plant directly at the foot of the dam using fly ash and a lower cement content. Site manager Julia Geist has been supervising concrete production here since 2022, as well as looking after the project's own gravel plant, which is located about three kilometres down the road at an altitude of 1,650 m.

"Concrete usually has a standard composition, but here the client has precisely specified the recipe," Julia tells us. "We use aggregates up to 125 mm in diameter, which makes it a highly exceptional concrete!"

The material for concrete production comes from the immediate surroundings, as Julia explains: "We gather the rock and aggregates ourselves. First of all we reused rock removed from the dam wall, and we're now using rock dumped around here in the eighties when tunnels were being excavated for the Grimsel system."



↑ Holding almost 100 million m³ of water the Grimsel reservoir is central to Switzerland's energy supply



With approximately 500 m³ of concrete poured each day, one of the blocks grows 3 m in height every 24 hours

SHORT TRIPS ARE GOOD FOR THE ENVIRONMENT

There are several steps required before this rock can be used to make concrete, and these have to be coordinated to ensure the quality and timing are right. "First of all, we have to remove things like plastic and wood. The broken up rock is then broken up even more, washed and screened in the gravel plant, before being processed into the various rock components needed for the concrete. We then drive it around 3 km up to the concrete plant by truck and tip it into the appropriate silos."

The fact that the trips are so short saves time and is good for the environment. If longer distances do have to be covered, the team uses environmentally friendly transport, as Julia explains: "Cement and fly ash are the only things we have to bring up from the valley. Some of this is brought up by electric truck."

The concrete itself is mixed directly at the foot of the dam wall – in accordance with strict specifications to ensure it meets the high quality requirements. "We have our own on-site lab, where the material is continuously tested and the process documented," says Julia.

40 KM OF WATER PIPES IN THE CONCRETE

To ensure the new dam does not develop cracks, it essential that the concrete is mixed and poured correctly. It is also very important that it hardens evenly, which means that it has to be cooled – with water – as it is being poured. This is made possible by the 40 km of water pipes that run through the new dam wall.

Cold water is drawn from the reservoir and returned to the Grimsel system after use, as Daniel Seliner explains: "The reservoir water contains a lot of sediment. We clean it after we've used it – and then feed it back cleaner than when we took it out. We check and document the water quality on a daily basis. It goes without saying that we need to take good care of the environment."

AGAINST THE CLOCK, 3 METRES AT A TIME

Once the formwork for the next block has been installed, the cooling and injection lines laid, and the joint tapes, recesses and formwork for the inspection walkways etc. put in place, the concreting can begin: a large fork-lift truck brings the concrete to the concrete bucket, which the crane then lifts up to the new section of wall, where the team is ready and waiting with spreading and vibrating machinery. By 3 a.m. every night, around 500 m³ of concrete has been poured into a prepared block. And so the wall grows a little higher every day.

As the intensive construction season draws to a close, Daniel Seliner looks back contentedly on his day's work: "This is my third year here on the construction site, and it's going very well. The teams quickly bonded at the start of the season, and we all enjoy working on such a once-in-a-lifetime project. We are fully motivated and are even ahead of schedule, so I'm confident that we'll be able to hand the dam over to the client in autumn 2025."





"We use water from the reservoir and then return it cleaner than when we took it out."



SMART BRIDGE

In the far north of Germany, on the A7 motorway from Hamburg to Denmark, Implenia is helping to build the new 1.5 km Rader Viaduct. This replacement for the old bridge will make this key part of Germany's motorway infrastructure fit for the needs of the next century.

It is ten years since serious damage was detected at the old Rader Viaduct, which opened in 1972. Given the massive increase in traffic - 63,000 vehicles are expected to use this stretch of motorway every day by 2035 - it was clear that the old bridge, which carries two lanes in each direction, would need to be replaced by two new ones by 2030.

Since the contract for the first of the two new bridges was awarded in December 2022, all those involved have been working hard to achieve the ambitious goal of completion by end-November 2026.

LOGISTICAL DEMANDS OF A FLOATING CONSTRUCTION SITE

The floating construction site on the Borgstedter See, an arm of the Kiel Canal, presents some special challenges. Three bridge piers are being erected in the water here, which requires drilling



Sönke von Fintel, Head of Hamburg Office and Project Manager of the Rader Hochbrücke joint venture

piles 40 metres deep into the river. The Implenia team made the innovative suggestion that a smaller number of larger piles could be used, which has reduced the construction time.

Implenia is providing all the logistics to make the floating construction site work, including a site ferry, a hydraulic construction site, including a construction site ferry, a push boat, as well as various pontoons, barges and two jack-up platforms. Numerous feasibility studies have been carried out to optimise the configuration of the cranes, the logistics plans for the water-craft and the mooring options. Detailed deck plans for each jack-up platform ensure that they are stable when moving and when in work mode, and create the conditions for smooth operation of the heavy-duty machinery involved.

UNIQUE HYBRID PILLARS

The other technical challenges faced by the team include the hybrid piers that will have to be built on the Kiel Canal. 50 metres high and with 40-metre-long cantilevered lateral concrete arches, there is nothing like them anywhere else in the world. Their load-bearing function works in tandem with the steel superstructure that will be pushed over the piers using the incremental launching method.

Sönke von Fintel, Head of Hamburg Office and Project Manager of the RHB joint venture, is proud of the team's performance: "Thanks to excellent collaboration with our partner, we are well on schedule to complete the new bridge by the end of 2026."





NEW LEASE OF LIFE FOR A LANDMARK

If ageing properties are to be preserved for future generations, they need the occasional overhaul. The Implenia Modernisation team specialises in preparing old properties for a new lifecycle, and in doing so preserving treasured buildings. The Brannhof department store on Zurich's Bahnhofstrasse, built in 1912, is a good example.



Johannes Hasenbank (right) in conversation with client representative Christoph Kling

Our cities and their historic buildings, are witnesses to our history and help shape our identity. But ageing properties are rarely sustainable and rarely meet modern requirements. Implenia gives these old buildings a new lease of life. The Brannhof department store on Zurich's Bahnhofstrasse broke new architectural ground when it was built in 1912. Its current overhaul, which will be completed by the end of 2023, is delivering a sustainable renovation, an improved carbon footprint, and a new usage concept: Around 4,600 m² of flexible retail space is being created on three levels, with 5,600 m² of modern workplaces above that.

HOW TO REVITALISE A LISTED BUILDING

Johannes Hasenbank, who heads the project for Implenia Modernisation, explains: "We're bringing the building technology at the Brannhof up to date to make the property fit for a new usage concept. In doing so we have to comply with numerous conditions that apply to a protected building like this. For example, we had to work by hand on the historic exterior windows and fit additional triple glazing to meet modern standards."

The team took similar care with the work they have done to preserve other historical treasures for posterity. For example, the stained glass in the hall, which dates back to 1928, was also restored by hand, while the panels in the historic stairwells are being augmented by a "Kunst am Bau" project commissioned from a contemporary artist.

CLOSE COORDINATION WITH THE CLIENT

Modernising listed buildings and running construction sites right in the city centre requires more than just technical know-how. It also needs great sensitivity. The team is working closely with the owners, the architect and the authorities involved.

Christoph Kling, who is responsible for managing the project on behalf of the client Swiss Life Immobilien AG, explains: "We're in a very central location in Zurich. This is a demanding urban development project and it is important that we always keep stakeholders, such as the authorities and the decision makers at Swiss Life, well informed."

With modernisation complete, the former department store is more energy efficient and ready for a new usage concept









PHOENIX FROM THE ASHES

50 years after its original opening, the newly renovated and expanded Alsterschwimmhalle swimming complex welcomes swimming, sports and wellness fans again. The 2,250 m² glass facade combines the latest standards with the original '70s look. Its refurbishment was a challenge – even for the professionals at Implenia Fassadenentechnik.



"We had to check each visible element to see if we could reuse the original part."

Frank Schumacher, Project Manager

The roof of the Alsterschwimmhalle rests on only three supports and spans the spacious hall like a butterfly with outstretched wings. The architecture of Hamburg's largest public swimming pool has enthralled viewers since it was opened in 1973.

As beautiful as it is, decades of continuous operation have taken their toll on the building; and user requirements have changed. Renovation and extension work began in October 2020, with the clear mission of carefully complementing the building's exceptional architecture and preserving its defining design elements.

STATE-OF-THE-ART TECHNOLOGY IN THE ORIGINAL DESIGN

Off-the-shelf solutions simply wouldn't have been good enough, as project manager Frank Schumacher explains: "The heritage authorities were heavily involved in the project. We had to check each visible element to see if we could refurbish and reuse the original part. Or find suppliers who could faithfully reproduce the original."

The 58 aluminium trusses on which the glass facade is mounted were refurbished by a company in Rostock, for example. The supports are between 4 m and 15.5 m high. Transporting them to the processing plant and back to the construction site required around 80 truck trips through Strict rules for listed buildings: After the renovation, the facade had to look like it did in 1973 – including the white plastic ventilation tubes, which no longer have any actual function

densely built-up streets. "The logistics were challenging," Frank admits. "Reinstallation required meticulous planning. The order in which each of these huge elements were delivered and the time between each delivery were crucial. There was simply no room for mistakes on the construction site."

TECHNICALLY DEMANDING STRUCTURE

The structure also presented some major technical challenges: The shell roof, made of pre-stressed concrete, can move up and down by as much as 30 cm. Telescopic sliding blocks allow the roof supports to adapt flexibly this change in height. It was clear from the start that the glass facade itself could not be reused. For one thing, the old facade was only single-glazed, so there was no way it could meet modern energy conservation standards.

Now the project is at an end, Frank Schumacher expresses his pride: "Refurbishment is generally more difficult than starting from scratch – especially for listed buildings. I'm pleased that we could help preserve this architectural landmark."







 ${\bf V}~$ In the home straight: Just before the newly renovated Alsterschwimmhalle is ready to open, water is pumped into the Olympic-size pool for the first time





ALL-ROUND PACKAGE FOR REAL ESTATE

Wincasa manages over 250,000 rented properties, with more than 1,000 employees ensuring they are in good hands – throughout their entire lifecycle. Elisabeth Ager, Head of the Strategy & Development Team at Wincasa, tells us what the priorities are and how real estate can be renovated cost-efficiently and sustainably.

Real estate goes through a typical life cycle: the property is planned, built, operated, used and then, at the end of its useful life, recycled – perhaps through conversion or demolition. Wincasa uses a comprehensive range of services to support its customers across their properties' lifecycles. "These include, for example, working with the owner to develop strategies that define which economic and environmental goals should be achieved with the property," explains Elisabeth Ager, Team Leader Strategy & Development at Wincasa. The focus might differ depending on the phase, she tells us; during the operational phase, for example, property management is the main priority.

NEW TOPICS, FAST RESPONSE

Properties usually come to Wincasa when they are already built, so the main focus will be on management during the operating phase. "This is not just the longest phase in the lifecycle of a property, but it's also one in which many complex issues arise due to changing market requirements. And you have to react to these," Elisabeth Ager tells us.

Interest rate changes might result in rent adjustments, for example; and things

like new sustainability standards, New Work or unoccupied retail space will require a response. "Our job is to manage and respond to all these issues efficiently, in accordance with the strategy and with a holistic view of the property and all the stakeholders."

COST-EFFECTIVE REFURBISHMENTS

One particularly pressing issue concerns the way owners deal with properties that need to be renovated. More than a third of Switzerland's housing stock was built in the '60s, '70s and '80s of the 20th century. After around 50 years, many of these homes, which are mainly owned by institutional investors, have already undergone one major renovation cycle. "Where energy-efficiency upgrades were implemented in the '80s or '90s, these are often already at the end of their technical lives. And apartment floor plans often no longer meet today's requirements so can only be marketed by adjusting the rent," explains Elisabeth Ager.

RENOVATION IN BATCHES

It sometimes might make sense to replace a building with a whole new one, but in most cases the property's location and the need to maintain rental income mean that cost-effective renovation is the preferred option.

Wincasa helps owners to find and implement the appropriate renovation strategy. Elisabeth Ager would advise against piecemeal renovations or sprucing up only the bits that people can see in an attempt to make a property marketable in the short term. "We find that the best outcomes are when major property portfolios contract out renovation jobs in large batches. This is more efficient and costeffective."



Elisabeth Ager, Team Leader Strategy
& Development, Wincasa

DIGITAL BRIDGE CONSTRUCTION

Implenia Norway is using cutting-edge technology to make the Tangenvika railway bridge construction site more efficient. Two employees explain the tools and methods they are working with.

At 1,040 metres, the double-track Tangenvika railway bridge will be the longest in Norway: Implenia is building it on behalf of Bane NOR, the state-owned company responsible for Norway's national railway infrastructure. High sustainability standards have been set for the KS-2 Tangenvika infrastructure project; the work has to have the least possible impact on the environment in and around Lake Mjøsa. The project is equally ambitious in terms of digitalisation: the whole thing is being planned and executed digitally and on the basis of modelling. Two of the tools and methods used for this are ISY Project and ALICE.

TRANSPARENCY WITH ISY PROJECT

"The strength of the ISY Project software is that it can connect all the different elements of a project – from 3D modelling to drone data," explains Simeon Hovinbøle, BIM Leader at Implenia for the Tangenvika railway bridge. ISY Project thus greatly simplifies the work and creates transparency. "Everyone can see what is happening in the project at any time."

WHO IS ALICE?

The team does all its scheduling with ALICE. "This software uses an AI algorithm that calculates different scenarios based on things like materials, personnel and costs, and then determines the most time- and cost-efficient way to execute a project," explains Ahmed Rashid, Implenia's Head of Planning in Norway.

OPEN TO NEW TECHNOLOGIES

Ahmed and Simeon both work with technologies that make planning more straightforward, while also making it easier to keep an eye on sustainability. "We can identify and solve challenges within the model before we start construction. Specifically, we were able to reduce waste in this project," says Simeon Hovinbøle. He has no doubts: "The work Implenia does in the field of BIM is far ahead of anyone else." Both men believe this pioneering role is the result of the Implenia mentality: "Our employees are very open to new technologies that might improve efficiency."





Simeon Hovinbøle (above) and Ahmed Rashid (below) work with modern tools such as ISY Project; the visualisation (middle) shows a formwork box for the bridge foundations



PULLING TOGETHER



BBV Systems has created an anchor system for the Groningen railway station project in the Netherlands that is unlike anything seen before in Europe. The Implenia subsidiary faced some unusual challenges when producing the system. Thomas Riss tells us about creating an anchor that can bear a load equivalent to the weight of a Boeing 747.



New dimensions: BBV Systems lengthened its production line to cope with the Groningen anchors

Groningen station is currently being redesigned so that travellers passing through the most important rail and bus hub in the northern Netherlands can get where they need to go to more quickly and comfortably. It will take a while before the project is finished. The initial civil engineering work has begun, and the anchors developed by BBV Systems are playing a major role. "Having proved what our multibond anchors could do in phase 1 of the Groningen railway station construction project, we were then asked to work on phase 2 which involved a particularly challenging task," says Thomas Riss, Construction Manager Geotechnology at BBV Systems.

The multibond anchors for the second construction phase are longer, larger and heavier than any anchor ever previously supplied by BBV Systems. They are designed for a useful life of 50 to 100 years, they are electrically insulated and equipped with sensors for permanent monitoring of anchor forces. "All in all, we're talking about anchors that have never been seen before in Germany, or presumably the Netherlands or the rest of Europe."

To make them, BBV Systems had to explore methods that were new even for this highly innovative company. It quickly became clear that the usual manufacturing steps and production processes wouldn't work for these anchors. "We had to rethink and re-conceptualise everything. My production colleagues and I were faced with some very unusual tasks."

PRODUCTION LINES ADJUSTED

Production lines were extended and relocated, and even ingrained, tried-andtested processes had to be adapted. For example: the great weight of the anchor itself and the sensitivity of its protective sheath meant that it was impossible to use the usual method of winding up the casing tube (which protects against corrosion) with a heavy-duty winch, so BBV Systems quickly developed new auxiliary structures. Another example is the construction



↑ Installation of the load cell for the multibond anchors on site at the new Groningen station

of a 50m long low-friction trough, which was designed to minimise deformations of the casing tube when the multibond anchors, which are up to 47 m long and weigh up to 1,200 kg, are rolled up on drums.

WORKING TOGETHER TO ACHIEVE THE BEST

Thomas Riss regards Groningen Phase 2 as a success story – for BBV Systems, for the patented multibond anchor and for his team. "Developing the solution required an open exchange between production and project management. Everyone was able to contribute their ideas, experiences and expertise – regardless of any hierarchy."

The team agreed that moving forward meant everyone moving together. The spirit of togetherness wasn't just evident within the company: BBV Systems also collaborated very well with the client Züblin Spezialtiefbau and all the other companies involved: "It's great to see that large and complex projects can be accomplished in this way."

The feedback from the customer – that every single anchor supplied met the requirements in terms of applying and maintaining the necessary forces – speaks for itself. Groningen railway station is scheduled to open for business in 2026. Thanks to the anchors supplied by BBV Systems, it stands on solid foundations.

"An effective tool for less stable soils"



INTERVIEW WITH THOMAS RISS

For the layman: why do you need anchors? Imagine we are fa

your job is to stop me collapsing if I let myself fall backwards. You grab me by my jacket and concentrate your strength in your arms to hold me. It is precisely this principle of pre-stressing that our anchors employ – except that instead of a human being, they stop a construction pit wall from falling over. And obviously the dimensions are completely different. A 220-tonne jumbo jet could be attached to the anchors that we used at Groningen station and the anchor would not be pulled out of the ground.

What is the main reason why multibond anchors are used at Groningen Station?

Our multibond anchors have been designed for low-load-bearing soils such as those found at Groningen station. Compared to classic grouting anchors, our staggered anchors can double or even triple the anchor load capacity under comparable conditions. It's a particularly effective tool that we can supply to customers.

What does this mean for sustainability in construction?

The final depth at which the excavation pit base is poured can be achieved faster and more energy-efficiently thanks to multi-bond anchors: they reduce the number of anchors, the drilling metres and the intermediate excavation levels required, all of which saves resources. At the Simon-Gatzweiler-Platz construction project in Düsseldorf, for example, CO_2 emissions were halved by switching to multibond anchors.

The anchors at Groningen station are equipped with sensors. What are they for?

The sensors allow permanent monitoring of the anchor forces. This monitoring is particularly useful for anchors that, as in this case, are intended to work at full capacity in the ground for 50 to 100 years.



↑ All images on this double page: ©Urban Project

GENEVA'S MINI-MANHATTAN

The "Quartier de l'Etang" is a completely new city neighbourhood built on an eleven-hectare former industrial site in Vernier near Geneva. Implenia completed construction work on this demanding major project in summer 2023. The company's team in French-speaking Switzerland has created 270 apartments, 698 hotel rooms and apartments, 230 student apartments, 90 apartments with integrated services, and office space of around 15,000 m².

"Le Temps" calls it "Geneva's mini-Manhattan": The new Quartier de l'Etang, a neighbourhood of six blocks, is located two kilometres from the historic centre of Geneva. Lying between the city and Cointrin International Airport, it is ideally connected to various transport networks - railways, trams, motorways and airports. It is divided into three zones: a light industry and services zone, which shields the neighbourhood from the railway tracks; a mixed zone with shops, leisure facilities, hotels and service trades on the western side along the motorway; and the core of the neighbourhood with apartments and space for various activities.

Implenia has played a major role in the development of the new district since 2018. Between 2018 and 2021 Implenia's team in French-speaking Switzerland was responsible as total contractor for building a residential block with 270 rental apartments on plot E, as well as providing civil engineering and special foundation services. These included laying the underground utility supply network for the first phase of the new district.





SUCCESSFUL CONTINUATION

Since 2019, Implenia has been building the "Les Atmosphères" complex within Quartier de l'Etang on behalf of a real estate developer represented by Urban Project. This consists of five buildings on a shared pedestal that complement the apartment block with 698 hotel rooms and apartments, 230 student apartments, 90 apartments with integrated services, and office space of approx. 15,000 m².

With its shopping and leisure facilities and variety of restaurants, "Les Atmosphères" is designed as a meeting place for users and residents of the neighbourhood. Three international hotel brands have come together to form Switzerland's first hotel hub, offering a total of nearly 700 rooms. This is being supplemented by multi-generational residences. The new district is certified as a "2,000 Watt Site" for its sustainable use of resources in the construction and operation of the buildings. ↓ Ideal location between city and airport: "Les Atmosphères" incorporates three hotels with a total of 698 rooms, as well as offices and space for retail and leisure activities.





(From left) Yannick Orset, director of the "Quartier de l'Etang" project at Urban Project, with Implenia Project Manager Alexandre Monteiro

SUCCESSFUL COOPERATION BETWEEN PROPERTY DEVELOPERS AND TOTAL CONTRACTOR

Yannick Orset, director of the "Quartier de l'Etang" project at property developer Urban Project says: "Les Atmosphères is the result of a successful partnership between client and total contractor. This ambitious, complex project brought with it a number of technical, financial and timetabling challenges." ordinated, the project presented us with several technical and logistical challenges where every detail counted. This is where our commitment to quality and innovation was really needed, and I look forward to seeing how the building complex will enrich life in the neighbourhood."

Implenia has been involved in the project since the study phase and was able to establish a good collaborative relationship with the client at an early stage, as Yannick Orset confirms. "Thanks to our relationship of trust, we were happy to commission Implenia to build the entire complex. Implenia was asked to think ahead to the construction and operational phase and it has maintained the necessary flexibility to adapt the project to commercial and architectural opportunities during the execution phase."

ceptional Les Atmosphères project, which and lies at the heart of the Quartier de l'Etang. ibil With limited space to work in and more than 140 major changes that had to be co-

Alexandre Monteiro, who is respon-

sible for the project at Implenia, explains:

"I'm proud to be project manager of the ex-

 \downarrow The new Quartier de l'Etang neighbourhood in Vernier near Geneva, image: ©Urban Project



SAFETY CHAMPIONS

The winners of this year's Health & Safety Award have been announced. They were presented with their prizes at the Implenia Extended Leadership Forum (IELF) on 13 September 2023. In addition to their Golden, Silver and Bronze Helmets, all three finalists received a voucher to fund a small celebration with their teams.

All Implenia employees were able to submit nominations at the beginning of the year, and a specialist jury of safety managers selected the three finalists in the spring. These three teams then made a video to showcase the occupational safety measures they had developed. Based on these videos, another jury of representatives from all our business units and country units decided on the placings.





1ST PLACE: MOBILE SOS STATION

An interdisciplinary team made up of builders, carpenters, locksmiths and electricians at Implenia Zurich produced a prototype mobile SOS station and tested it at the TOKEH project in Zurich. Their idea is currently going through the Kickbox innovation process. The SOS station brings together all the essential tools for dealing with an accident, including defibrillator, first aid kit, eye bath, fire extinguisher and fire blanket. It can be transported to where it is needed by crane or pallet trolley.





2ND PLACE: SMALL MEASURES, BIG IMPACT

Ralf Walser has 35 years of industry experience and is currently working as Senior Project Manager at Lucerne Cantonal Hospital (LUKS). This is where he launched the "Safety+ Baumeister Deutschschweiz" programme, which aims to achieve a big impact with small measures. These measures, which are scalable and can be transferred to all projects, include safe work routes with clear markings and barriers, and visits to each other's construction sites to correct any potential blind spots.

3RD PLACE: SAFETY THROUGH BIM

The Marienhof project to build a second core subway route in Munich's city centre receives up to three groups of visitors per week. Meanwhile, more than 70 trucks pass through the crowded construction site every day. Pedestrians have to be kept away from vehicle routes to ensure everyone's safety. The project team uses the BIM model to show new workers and visitors exactly where the danger areas and escape routes are.

WE ARE IMPLENIA

More than 9,000 people from an incredible 92 nations work in a huge variety of roles – with great expertise and enthusiasm – to help Implenia successfully design, plan and build the world of tomorrow. Meet some of your colleagues.



RUN VERONICA RUN

Project engineer Veronica Gerdin is the first person in Sweden diagnosed with MS to complete an ultramarathon. Veronica started running in 2016 after working with her running trainer to find a way to cope with the neurological condition – and prove to her doctors that impossible is possible. This season, Veronica is running with Implenia as sponsor.



"I'M JUST LIKE A KID IN A GREAT BIG SANDPIT!"

Mathias Geschwandl, a mason, road construction team leader and civil engineering foreman, has been at Implenia for a year and he loves the big, beautiful projects that take him all over Switzerland. He is currently working on the Lavater school site in Zurich.



TAKING THE INITIATIVE TO COLLABORATE

From fleet management to IT, assistants are often the first points of contact for Implenia's branches and projects. Assistants from all over Germany have formed "Group Power Assistance Teams" to exchange ideas about how to tackle their challenges efficiently together.



Implenia's social commitment knows

no geographical boundaries: every year,

a number of Implenia employees put in

an intensive three month stint to help the

Smiling Gecko Campus in Cambodia expand

its operations. We hear from site manager

Bilal Eker about his experience there.

SUSTAINABLE COMMITMENT

IN CAMBODIA



"MOTIVATION BEGINS TO DIP WHEN IT RAINS"

Daniel Seliner is site manager at the replacement Spitallamm dam project. Up at 1,900 m above sea level, he and 100 colleagues are building a once-in-a-lifetime structure against an imposing Alpine backdrop. He tells us about the highlights and challenges.



"I WANTED TO GO TO THE MOUNTAINS"

Civil engineer Julia Geist already worked at Implenia in Düsseldorf when she was studying in Germany. After graduating, she applied for a job in the Swiss high mountains and as site manager is now responsible for materials management at the Spitallamm dam replacement project. The huge construction site, 1,900 m above sea level, is a dream job for this particular lowlander.



"I SOMETIMES TAKE THE STAIRS ... "

Kurt Reubi is Wincasa's project manager for elevator systems. He knows the lift industry like the back of his hand – from assembly, service and repair to equipment sales, he has experience in wide variety of roles. In our interview, he tells us all about lift installation and explains why the Panorama elevator at the Rhine Falls was his most important project to date.



BUILDING ON THE WATER

Newly-qualified civil engineer Nadine Bendt is completing her trainee programme at Implenia in Germany. After an assignment on the second core subway line in Munich, she is now site manager at the floating construction site on the Borgstedter See, coordinating all the different subcontractors who are working on the replacement Rader viaduct. She would recommend the trainee programme to anyone who wants to gain a comprehensive insight into construction work.

THE PEOPLE BEHIND OUR PROJECTS





BRINGING FRIENDS TO IMPLENIA

Henrik Sandbakken joined Implenia after former fellow students already working here told him lot of good things about the company and actively recommended him. He now works as a project engineer for earthworks at the Fornebu – Lysaker project in Norway. His team is responsible for, among other things, blasting the shafts that will lead to the tunnel.



TECHNIQUE, ENDURANCE AND STRENGTH

At Implenia, we firmly believe that a good balance between work and leisure is crucial to our well-being. So we try to motivate all our employees to adopt a healthier and more active lifestyle. Jan Eriksson, Country Head Safety at Implenia Sweden, spends most of his free time on his enduro motorbike. Implenia has sponsored him for some time now. We talked to him about his passion.



D2

READY FOR THE NEXT



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