Stucky Ltd is a leading engineering and design company that has specialized in the hydraulic engineering and energy sectors since its foundation in 1926. To date, Stucky’s engineers and specialists have successfully completed well over 100 major schemes for the construction, extension and rehabilitation of dams and hydro-power plants in Switzerland and abroad. Our hydraulic and environmental engineering experts also design state-of-the-art water supply systems, river renaturalization schemes and flood control infrastructure and measures.
Our services
We offer a wide range of engineering, consulting and project management services for public- and private-sector customers. These cover all project stages, from inception and preliminary studies to works supervision and commissioning. Our expertise in dam and hydropower engineering is reputed both in and outside Switzerland.

Our competencies
Stucky provides extensive engineering design expertise in the fields of dams, hydrology, geotechnics, hydraulics, hydraulic steel structures, power plants, energy transmission, river and basin management, water supply and transfer schemes and flood control. Our highly qualified teams of engineers provides you with all necessary support in Switzerland and abroad.

Our presence
Stucky Ltd has its headquarters in Renens, Switzerland. Through our branches and project offices, we are represented in many countries across the world.

Our network
As a member of the Gruner Group, we can draw on the knowledge and experience of over 1,000 experts with backgrounds in some 50 different professions.
DAMS

FOCUS ON SAFETY

We offer a full range of engineering services for the construction of all types of dams. These services cover everything from the identification and preliminary studies to design and construction stages, including operation, commissioning support, monitoring and rehabilitation.
Over 20 large dams higher than 150 m, in Switzerland and abroad, are a testimony to Stucky’s expertise. Our company is a global leader in the field of structural and numerical analysis as well as dam heightening projects.

> Earth and embankment dams, CFRD (concrete-face rockfill) dams
> Arch dams, gravity dams, roller-compacted-concrete (RCC) dams, buttress dams
> Foundations, strengthening and grout curtain
> Appurtenant structures, spillways, intakes and waterways
> Dam monitoring and instrumentation
> Concrete technology

Optimization and rehabilitation
Thanks to the application of state-of-the-art computational methods, projects to optimize and heighten existing dams have now become a viable alternative to new-build structures. The rehabilitation and extension of existing facilities present highly complex engineering challenges while placing rigorous demands on the project planning and construction. Assessing load-bearing capacity and deformation behavior is extremely complicated, especially for older structures. In parallel, the works often have to be performed while maintaining generation. With an outstanding track record in rehabilitation under operating conditions, Stucky is in an excellent position to master these challenges, minimizing disruption to power production.

> Rehabilitation
> Dam heightening
> Dam strengthening
> Analysis and mitigation of alkali-aggregate reaction

Better safe than sorry
Stucky’s dam monitoring expertise is highly reputed both inside and outside Switzerland. Our services include the precise appraisal of dam behavior as well as detailed investigations to guarantee dam safety. Seismic safety certification for existing structures and assessment of the associated strengthening measures are key activities in this area. The requisite know-how stems from our many years of experience with major dams in Switzerland, many over 100 years old, and our involvement in hundreds of international projects.

> Computation and numerical analysis of dam behavior
> Expert reports on potential dam failure
> Dam safety assessment and certification
> Seismic analyses
> Checks on flood and spillway capacity
UNDERGROUND AND GEOTECHNICAL ENGINEERING

A DEEP WELL
OF EXPERTISE
Our underground engineering service portfolio covers structures such as tunnels, galleries, caverns, shafts and foundations in all project phases, along with the planning and supervision of geotechnical field investigations.

Our extensive know-how, gathered during many years of hands-on experience, paves the way for the successful design and construction of even the most complex underground works and foundations.

Our core competencies also include the repair and rehabilitation of existing tunnels and galleries for hydropower schemes and water transfers.

> Concept development, design and works supervision for underground structures
> Analysis of material properties and behavior of rock and soft ground excavations
> Analysis and computations of the stability of dam foundations
> Appraisal, monitoring, maintenance and rehabilitation of underground structures
> Grout curtains and dewatering systems
> Planning and supervision of geotechnical field investigations
> Evaluation of tunneling methods (TBM, blasting, raise boring etc.)

Powerhouse Cavern, Hongrin-Léman Pumped Storage Scheme, Switzerland
Stucky will provide you with expert support in the planning design and construction supervision of hydraulic structures, including penstocks, pressure shafts, valves, gates and stoplogs as well as with complex hydraulic transient computations.
Our references for penstocks and pressure shafts include new-build and rehabilitation projects with hydraulic head up to 1,800 m and flow rate of up to 320 m³ per second. State-of-the-art analysis paves the way for long-term project success.

Stucky’s portfolio also includes water transfer schemes of several hundred kilometers, and associated pumping stations.

> Design and work supervision for steel-lined pressure shafts and penstock made from concrete/steel/GRP/cast iron
> Hydraulic steel structures
> Design and analysis of hydraulic model tests
> Hydraulic and transient computations
> Expert reports on performance of existing facilities and steel structures
> Assessment of residual safety, damage surveys, rehabilitation concept
STRUCTURAL DESIGN

PRECISION FOR HIGHEST PERFORMANCE

Stucky develops tailored structural design solutions for challenging projects. These include powerhouses, hydraulic structures, buildings, bridges and infrastructure facilities.
In designing all types of complex structures, Stucky capitalizes on its proven track record in numerical modeling for linear, non-linear, static and dynamic computations. We also have a strong experience in the field of concrete technology with a particular focus on the long-term behavior and on the effects of alkali-aggregate reaction (AAR).

This is backed up by comprehensive consulting services covering all technical, social, environmental, economic and financial issues.

> Powerhouses
> Reservoir impounding
> Weirs
> Valve chambers
> Static and dynamic computations
> Analysis and computations on structural stability
> Finite Element modeling
> Seismic safety certification for structures
> Alkali-aggregate reaction
The need for operational flexibility and reliability of high-voltage electricity networks, switchgear and power plants is steadily growing. This is a result of the electricity market liberalization and the development of generation and intermittent energies. We innovate and design the electro-mechanical equipment and energy feed-in for run-of-river or regulated, small and large hydropower plants.
In the field of energy transmission, we conduct network analyzes and other investigations into the grid connection of power plants. We also specialize in the design of high-voltage power lines and air- or gas-insulated switchgears.

Our core competence covers all types of power plants ranging from small hydropower to large powerplants, up to 3,000 MW.

> Works supervision and commissioning of
  > Power plants
  > Substations from 72.5 to 400 kV
  > Gas-insulated and outdoor switchgear from 33 to 400 kV
> Factory acceptance tests
> High-voltage power lines up to 400 kV
> Substations up to 400 kV
> Design of energy supply and electrical protection cables for railway systems

> Cable routes, cable tunnels, cable trenches
> Small hydropower plants
> Local and national dispatch centers
> Pumped-storage hydropower plants
> Pumping stations
> Rehabilitation of hydropower plants
> Control systems
> Analysis of energy potential and assessment of hydropower potential
Natural systems tend to be highly complex. Understanding them requires broad-based, interdisciplinary expertise covering all the associated technical, scientific, social, environmental, economical and financial aspects.
Stucky's specialists provide the knowledge and experience needed to analyze natural processes and develop tailored solutions. The company's service portfolio ranges from risk assessment studies on specific issues and projects to mitigate natural hazards to the renaturalization of watercourses.

> Irrigation and drainage schemes
> Hazard maps
> Hydrological and hydraulic studies
> Water resources management
> River structures, water retaining structures, transverse structures, bedload and drift wood retention basins
> River training
> Renaturalization of watercourses
  – Uncovering, revitalization, bio-engineering
  – Fish passes and ladders
  – Bedload analysis and computations
  – Hydropriaking
> Minimization of flood risks
  – Planning and maintenance of water courses
  – Measures to protect property
  – High-water alarm systems
> Dam break studies
> Studies on environmental impact of river engineering works

Specific activities
> Numerical modeling
  – Hydrological models for catchment areas
  – Hydraulic models
  – Coupled models for bedload transportation
> Development and supervision of physical model tests
> Cartography and GIS analyzes

Fish Ladder Aubonne, Switzerland

Debris Rake on the Marivue River, Switzerland
WE VOUCH FOR QUALITY

Certifications

> Environmental management system: ISO 14001:2004
> Occupational health and safety management system: OHSAS 18001:2007

All of our contracts have to comply with the directives of our quality management system (QMS) and are supervised by a Project Supervision Committee.

This allows us to guarantee the required quality standards, identify and mitigate risks in advance, develop interdisciplinary solutions, promote ideas and experience sharing between Project Engineers, Experts and our Clients.

Our code of ethics obliges us to enforce the following principles:

> Integrity
> Provision of first-class services and quality
> Sustainability, social and environmental responsibility
> Personal responsibility and accountability
> Compliance with laws and international standards