We at Sato Kogyo highly appreciate your generous patronage and support, without which we could not have achieved our success as a general contractor since our firm’s establishment in 1862 at the dawn of modern Japan.

Expounding on Sato Kogyo’s guiding corporate philosophy of ‘Total Project Excellence’, we have strived in years past to enhance customer satisfaction, build safe, secure and comfortable spaces and develop high-quality social infrastructure. Going forward, we remain dedicated to placing our customers’ interests first, responding to society’s needs, maintaining excellence and being a good partner to high-tech service organizations.

We look forward to your continued support in the years ahead.

Masafumi Miyamoto, President, Representative Director

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Building

Building is about creating “spaces” that make living safe and comfortable.
The basics for construction are that the spaces are beautiful, efficient, and usable for many years to come.
At SATO KOGYO Co., Ltd., we always return to these basics, while exploring and developing techniques, and carry out construction of a variety of uses with sincerity.

Civil Engineering

Civil Engineering is the building of a social infrastructure that supports industries and people’s lifestyles.
The basics for civil engineering are to produce efficient, durable infrastructures which take the environment and the economy into consideration.
At SATO KOGYO Co., Ltd., a lot of know-how is reflected in our construction plan—from the fundamental research of the materials we use, to the overall structural efficiency and appearance of the projects.

Environment

Environmental affairs involve considering the future of our earth, fulfilling responsibilities for conservation, and establishing proper waste management practices.
The basics for the environment are to strive for a symbiosis between man and nature.
At SATO KOGYO Co., Ltd., we propose and support people’s lifestyles to be at their optimum level.

Overseas

Our advanced Japanese construction technologies are well-appraised overseas and we have many achievements to show for it.
The basics of our overseas work is to respect the culture of each country and to execute high quality construction to meet our customers’ needs.
SATO KOGYO Co., Ltd. currently has several large projects under construction.
With the time,
With society,
We keep moving forward.

SATO KOGYO Co., Ltd. has its roots in Toyama in 1862 and since then, we have been active and moving forward with our country. Our first task during early period of Japan's industrial development was the flood prevention work for the rivers which had often overflowed their banks and troubled people in our hometown Toyama. Since then, we have contributed to the establishment of the social infrastructure through various construction projects not only in Japan but also in foreign countries, and mainly in Southeast Asia. Our aim is to protect people's quality of life and place the top priority on our customers' satisfaction.

It is our pleasure to achieve such a contribution as a group of technicians. We will keep moving forward with the time and with society.
Building Works

In the world, there are many types of buildings: educational, cultural, entertainment, residential, hospital, office, commercial, research, and manufacturing. Irrespective of the types of building, the fundamental purpose of any building is to be “a Vessel for People”. Hence, buildings must be able to sustain the lifestyle and culture of the occupants. Our philosophy is to always striving for excellence in design and construction to fulfill the aspirations of the occupants and caring for the building to keep the best condition throughout its life.

National Cancer Center Hospital (Tokyo Metropolitan)

South Ward, Toyama University Hospital (Toyama Prefecture)

Kikuchi Hospital (Kumamoto Prefecture)

The University of Tokyo Kavli Institute for the Physics and Mathematics of the Universe (Chiba Prefecture)

Tohoku University Building of Civil Engineering and Architecture (Miyagi Prefecture)

Chiyoda Ogawamachi Kurosuta (Tokyo Metropolitan)

Simonoseki Branches of Yamaguchi District Court and Family Court, Shimanto District Court (Yamaguchi Prefecture)

Grand Plaza (Toyama Prefecture)
The objective is to provide quality living space with due consideration for the environment. We have the technology and expertise to create buildings that are not only physically durable but are also flexible in layout to accommodate the changing needs and expectations of different eras.

Now is the time to construct buildings that can last more than 100 years and abandon the concept of “Build and Scrap.” The long-life technology for building is possible because the building is designed to have high floor height and wide column space, such as distribution center, other than applications for shopping center/office building. Precast members also can be applied for the columns.

**Installation Condition of Steel Girders**

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**RC Column-steel girder hybrid structure system “SHOPS Method (Satokogyo Hybrid Optimum-Structure)”**

The aim of this method is to integrate a reinforced concrete column of high rigidity and high compression strength and steel girders of light weight and high bending strength by a unique connection system. Concrete of Fc=21 to 60 (N/mm²) and reinforcing bar of SD295 to SD490 can be used for the RC column. This method is effective for buildings having high floor height and wide column space, such as distribution center, other than applications for shopping center/office building. Precast members also can be applied for the columns.

**Base Isolation System**

Installation of isolation system, as the cushion of building, will prevent the seismic force, and will prevent falling window glass, and secondary disaster like fire or falling of furnitures. It will keep value added of the building high, and also protect life and our asset.

**Construction method of seismic improvement**

**Simple grout connection using fiber form**

It is a method of strengthening integrated earthquake-resistant steel girder using Steel Brace frame of RC Structure, SRC structure by bag-like fiber form. This can reduce cost, noise and vibration, and also shorten construction time because [Post-installed Anchor] is not necessary. Moreover, able to use the building even when the building is on construction.

**Satokogyo High-rise Reinforcement Concrete using structural control damper system**

Column type vibration damper using low yielding stress steel absorbs the seismic force and protects the building. Application of damage control design which considers absorption of seismic force enables to reduce column and girder sections and save construction cost.

**The typical possessive technology**

**Water supply system (cost saving) with fine-treated underground water**

The system can save cost on water supply and reduce using amount of water by introducing the supply system of underground water, which is filtered through hollow fiber membrane. Besides, it is possible for self-supply when there is any disaster, and it can be introduced without initial cost, depends on the lease contract.

**Demolition method of super high chimney**

It is the way to demolish super high steel chimney, like drop from base. Up to now there were many problems such as high cost for large crane, dangerous work on high place or even the workpiece flying away, but this problem is already improved, that the height for working place is less than 30 m from ground.

**Reinforcing method using carbon fiber sheet**

This is a method to reinforce concrete column insufficient in seismic capacity by using strong carbon fiber sheet with excellent workability and durability characteristics. It can be applied to column with wall.

**Noise and vibration monitoring system for construction site**

This is a real time data measurement and display system for noise and vibration at construction site, and it records compliance with specified limit values to minimize environment influence.

**Base isolation retrofit**

Able to improve the seismic performance function of old building from the introduce of seismic isolation equipment on the existing building. Able to use the building even when the construction is being carried out.

**Sato Kogyo Wind Environmental Assessment System**

It is the system to predictively calculate the wind around the building, which can also predict wind environment around the target building based on its shape by using database constructed from wind tunnel experiment of several conditions of the building. Able to use various steps from planning to experimental design, necessary time for analysis and saving cost because 3D analysis and wind experiment method are different.

**Sato Kogyo Noise Assessment Program**

Assess the noise from nearby environment, or noise from equipment on construction site, factory, or any shop. This result will be shown in graphical diagram, such as sound pressure level diagram, and also can analyze the efficient extraction of the sound source, and necessary measurements.

**Computational fluid dynamics system**

This is the technology to calculates air flow by computer, which will provide solution, such as proper air compressor system, reduce running cost, also important plan for indoor air flow, calculate the air blow.

**Prediction system of floor impact sound levels**

The accuracy of calculation of floor impact sound level is improved from a number of measured values, originally own extract and analyze, number of experiments, impact sound level from amount of floor. Due to this, it can contribute the quality of the sound environment of apartment and get information of the function variability.
We, Sato Kogyo, have been serving the society in a wide range of infra-structure projects related to energy, roads and rails, dams, sanitation, landfill and marine. In the designing and construction of civil engineering structures, we always emphasize on function, durability, environment and aesthetic. We are able to achieve the desired quality and result because of our years of experience and our continuing research in methodology.

**Civil Engineering Works**

### Road and railway

- Tohoku Shinkansen, Hizamori high-speed rail and other construction (Aomori Prefecture)
- Tokyo Metro Namboku line, Minami-zao Section (Tokyo Metropolitan)
- Tokyo Metro Harajuku line, Hongo Section (Tokyo Metropolitan)
- Second Tunnel Expressway, Hamamatsu Tunnel (Shizuoka Prefecture)
- Hokuriku Shinkansen Toyama Mizuehai-Kanesho / Nakabanba Viaduct (Toyama Prefecture)
- Tokyo Metro Fukutoshin line, Shinjuku Sanchome section (Tokyo Metropolitan)
- Yokohama Municipal Subway, Green Line Kitajinshita station (Kanagawa Prefecture)
- Tosa Line, roadbed and rail construction (Tosa Prefecture)
- Soshu Line; Reconstruction work for Fukunamiya overbridge between Tamachi and Shinagawa (Tokyo Metropolitan)
- Kyoto Monorail Subway, Sato Line Kitashinagawa-Ingashita section (Kyoto Prefecture)
- The Kansai Electric Power, Pipeline nearby Nishi Umeda (Osaka Prefecture)

### Energy + Industry

- Kakkonda Geothermal Power Station (Iwate Prefecture)
- Tohoku Electric Power, Noshiro Thermal Power Station (Akita Prefecture)
- Islipo Thermal Power Station, Coal Silo (Kanagawa Prefecture)
- Oshikotani Power Station, Taisan (Fukuoka Prefecture)
- Tohoku Shinkansen, Hakkoda Tunnel (Aomori Prefecture)
- Tohoku Electric Power, Noshiro Thermal Power Station (Akita Prefecture)
- Road and railway
- Tohoku Shinkansen, Hizamori high-speed rail and other construction (Aomori Prefecture)
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- The Kansai Electric Power, Pipeline nearby Nishi Umeda (Osaka Prefecture)
Civil Engineering Works

**Bridge**

- Shinkoganezawa Bridge (Yamanashi Prefecture)
- Himinoe Bridge (Toyama Prefecture)
- Sendai-Hokubu Road/Rifu Bridge (Miyagi Prefecture)
- Akasihikayko Bridge (Hyogo Prefecture)

**Grading**

- Takamatsu Factory Park (Kagawa Prefecture)
- Shinkaiha Final Disposal Site (Hokkaido Prefecture)
- Ikari Hills (North Stage) (Osaka Prefecture)

**Marine**

- Kansai International Airport, Phase 2 Reclaimed Land (Osaka Prefecture)
- Chubu International Airport, Dike Construction (Aichi Prefecture)

**Dam**

- Tomata Dam (Okayama Prefecture)
- Tanikawauchi dam (Kagoshima Prefecture)

**River and water works, sewerage**

- Hakui River Tidal Gate (Shikoku Prefecture)
- Surge Tanks for Metropolitan Area Outer Underground Discharge Channel (Saitama Prefecture)
- Seibu Treatment Plant (Hyogo Prefecture)
- Nishikubo Water Purification Plant (Osaka Prefecture)
- Asaka Water Gate (Saitama Prefecture)
- Tomata Dam (Okayama Prefecture)
- Tanikawauchi dam (Kagoshima Prefecture)
- Shinkoganezawa Bridge (Yamanashi Prefecture)
- Himinoe Bridge (Toyama Prefecture)
- Sendai-Hokubu Road/Rifu Bridge (Miyagi Prefecture)
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Technology for Civil Engineering

Nesting parent-child shield tunneling method

Excavation of a tunnel having two different cross sections by one shield machine

The shield machine can excavate a tunnel having two different cross sections. As the result, the driving length by one shield machine increases and the economic efficiency is improved. Furthermore, noise and vibration can be reduced since rear base facilities can be minimized.

T-FREG (Tunnel Fiber Reinforced EdGing) method

Technology for prevention of exfoliation and cracking of tunnel concrete lining

This is a technology to prevent crack reduction effect and exfoliation preventive effect to the tunnel lining surface by fixing netlike fiber sheet, which will be integrated with lining concrete, to the surface part. It can provide safety and security to both the administrator and the user and it is effective for prevention of traffic disaster due to exfoliation of lining concrete, mitigation of maintenance cost for urgent repair works etc. and prevention of economic loss due to detouring.

The typical possessive technology

Total blast system
The construction to excavate blast method at mountain tunnel becomes safer and faster due to the process development (Drilling, Marking, Expert, and Changing) of the entire system which is automation and laboroning. It is also applicable to a large section road tunnel and underground power generator plant.

Enlargement of live line tunneling method
For tunnel in widening construction, this method is applicable to wide ranges of geological substances from hard rock to soft rock, and uses moveable blast protector. It is possible to shorten construction period and to reduce construction cost while ensuring safe passage of other vehicles.

No grouting excavation for shield on launch and reach system
For departure and arrival of shield construction, it is a method of shield departure and arrival that can develop (at lower limit). This will install the manufactured gate at the open position of shield departure and reach until the designated position under the water with the first step of Caisson method such as unturning ring.

Compact shield tunneling
Reinforcing integrated segment, which is attached 3/4 slit hinges, is applied to this shield method. According to wheel transport system with invert gitter guide, rail facilities such as rail, rail/mixed etc.) will be unnecessary. (Developed under the corporation of Tokyo underwater road)

Horizontal PC-block for dam inspection gallery
Installation desk, concrete placement including special construction techniques that are different from PC-block inspection gallery is unnecessary. Safety and construction is improved. This can save Construction time and cost due to less manpower.

A seismic design and reinforcement for power plant facilities
From our skillful experiences on design and seismic back-check, investigation guideline on Seismic design of application for approval for nuclear-power plant construction, the operation of design, earthquake resistant diagnosis, and research and development for quake response analysis and liquefaction failure analysis of water intake, drainage and tank of (nuclear power) nuclear-power plant will be implemented.

Measure against soil liquefaction by controlled blasting
This is a method that causes artificial liquefaction phenomenon by controlled blasting in loose sandy soil under ground water level to compact the ground in extremely short time and increase the strength by making the soil particles denser in process of dispersion of increased water pressure.

Concrete diagnosis technology by impact acoustics method
This is a system that evaluates soundness of concrete surface layer by utilizing principle of hammering inspection. This system allows a person having little experience of the hammering inspection to detect defects in the concrete surface layer such as exfoliation, cavity and the like and perform quantitative evaluation of concrete thickness.

Tunnel face forward geotechnical prediction system by inverse analysis using displacement measurements
This is a system to predict the geotechnical state of unexcavated part less than 15m away from the tunnel works but by inverse analysis based on data of axial displacement and vertical displacement obtained by measurement of tunnel convergence on a marine basis.

Simple mixture technology of local exhausted material
Mix local exhausted material such as riverbed sand or excavated soil together with cement and water in order to make material for structure. Moreover, CSJ small mixture is completely mixed type, and applicable to a wide range of purposes.

Installation method of long size reinforcing anchor bars by water jet drilling
This is a method to drill insert holes for reinforcing anchor bars by injecting high pressure water supplied by high water pressure pump through water jet drilling machine without damaging existing reinforcing bars.

Anti-seismic reinforcement by soil improvement for underground structure
This is a technology to improve seismic performance of underground structures such as a duct structure by soil improvement at surrounding pit to restrain forces against the structure caused by earthquake. The most appropriate improvement method is composed in consideration of circumstances and conditions of the structure. It has been applied to many water intake facilities of thermal power stations.

Exhibition risk evaluation technology for concrete structure surface using non contact acoustic imaging method
This is a technology to investigate the IR and separation of the surface part of concrete structure by remote measuring and evaluating infrared distribution on the concrete surface generated from Long Range Acoustic Device (LROD) by utilizing Scanning Laser Doppler Vibrometer (SLDV).

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Environmental Business

The corner stones in our effort to deal with environmental issues are “Power from Nature”, “Recycle like Nature” and “Wisdom of Nature”. We at Sato Kogyo conscientiously adopt these corner stones in our development and application of environmental technology to provide a safe and comfortable environment for all.

Measures for the environmental safeguard

Optimum heating control system for turf ground

It is the automatic ground temperature control system, which manage the proper temperature for grass cultivation by increase or reduce temperature of hot/cold water though underground pipes. It will control temperature of passing water by referring information controlled by computer, like sunshine condition which is different from field site of roof or climate information from each type of sensors, estimating the cooling of the soil or special soil that heat slowly even heating. This system is already implemented in Nissan Stadium, Kashima Soccer Stadium and Ajinomoto Stadium.

Solar power system

Utilization for solar power business of unused lands and/or properties not fully exploited has received a lot of attention as a new investment, since it can not only contribute to measures against global warming but also secure stable profits. At Sato Kogyo, as our own business, we started operation of a mega solar power plant of 1.4MW in Kikukawa city, Shizuoka prefecture from Sep.2013. Based on this know-how, as an EPC contractor, we have provided the most appropriate proposals of solar power system from planning stage to operation and maintenance support stage and secured 7 solar power stations until now. From Mar.2015, we started operation of all quantity buyback type low voltage rooftop solar power system at a laboratory building of our technical research institute and weather data and electricity generation data are being collected.

System of radioactive decontamination and volume reduction for soil

As construction plans of interim storage facilities and final disposal sites are made concrete, radioactive decontamination and volume reduction technologies become more important. This system can separate a fraction of silt and clay which strongly absorbs radioactive substances by washing and classifying the contaminated soil using two-stage wet washing (primary washing and micro-bubble whirl collapse washing) and it can reduce the radioactivity concentration in the remaining soil (sand and gravel) which is a major part of the contaminated soil. The muddy water generated as a result of the washing is classified and collected as “dewatered cake” through flocculations/settlement treatment and dewatering treatment. This technology was adapted as one of “Decontamination Technology Demonstrations Projects in 2011 fiscal year” (Dec.2011 ~ Feb.2012) publicly solicited by Japan Atomic Energy Agency and it was concluded that it is applicable to radioactive decontamination sites. In Dec.2012, the operation of an actual plant having a larger treatment capacity was implemented for radioactive decontamination project of public facilities at tizumaki-village in Fukushima prefecture and, from Jul.2015, another classification and volume reduction project is being performed in Fukushima prefecture.

Sewage sludge fuelization system

Sewage sludge fuelization system “SA-RPF method” is a technology to produce a new fuel by mixing and solidifying fermented and dried sewage sludge and plastic & paper wastes. It has a feature of reducing greenhouse gases emission due to self-heating by aerobic-fermentation technology instead of using fossil fuels to dry the sewage sludge in conventional technologies. The aerobic-fermentation drying technology can increase storage stability along with reducing odor, comparing with existing technologies, and it is also possible to produce solid fuels of calorific values according to requirements of users by adjusting the quantity of the mixing plastic waste. It can reduce cost of the installation and the maintenance in comparison with conventional technologies and incineration systems because of the simple system. It has a construction technology examination certificate of Japan Institute of Wastewater Engineering and Technology issued in 2014 fiscal year.

Plastic & paper Fuel

SA-RPF : Abbreviation of Sewage-slugde Aerobic-fermentation Refuse

Waste disposal

Landfill

Regarding the wastes, the final proper disposal is required along with promoting recycling. Sato Kogyo is operating the first controlled landfill type and least controlled landfill sites in Esashi-cho, Hiyama-gun, Hokkaido by a joint venture company with Kakuyma Kaihatsu Co., Ltd. of Hokuusei Group which is based in Sapporo city and operating his business. We will build up performance records in operation and management besides our technologies cultivated by our construction works so far.

Restoration of illegal waste dumping site / Disaster waste management

In treating the wastes, it is important to optimize the waste disposal route, the treatment method and selection and installation of facilities according to the properties of each waste, the environmental conservation measures during the work, coordination with concerned organizations and so on, in consideration of circumstances surrounding areas for each project. At Sato Kogyo, based on our experiences and know-how through our projects of restoration of illegal waste disposal site and disaster waste management, we can provide a proper and efficient resolution plan.
Sato Kogyo has been very active in South East Asia since the early seventies and has successfully completed numerous building and civil engineering projects, some of which are high profile landmarks in these countries. Our approach has always been to understand and respect the philosophy and culture of the host countries while introducing innovative engineering solutions. It has been an enriching experience for our staff and we are poised to be engaged in the many exciting upcoming projects in these dynamic economies.
Company History

- Sukekuro Sato founds Sato Gumi at Yanase Village in Toyama Prefecture in 1862 (Bunkyo 2).
- Implemented flood prevention works on the 4 main rivers in Toyama Prefecture (Shogawara River, Jizun River, Jouganji River, Kyoraku River) in 1896 (Xitou 2).
- Carried out construction of the Tokaido Line (between Numazu and Fuji) in 1885 (Meiga 18).
- Invited Dutchman Johannes de Rijke for major renovation works at the Jouganji River in 1892 (25).
- Rebuilt Hognami Temple’s Toyma Betsuin which had been destroyed by fire in 1896 (29).
- Constructed Toyma City Hall in 1930 (Taisho 9).
- Reorganized and established Sato Kogyo Co., Ltd. in 1931 (Showa 6).
- Completed the renewal and renovation project of a historical building in Singapore “Victoria Theatre & Concert Hall” in 1951 (26).
- Opened the Sapporo Branch, followed by the opening of branches at 9 power company locations in 1955 (31).
- Achieved the tunnel digging speed record in Japan of 25.1 m/day during the winter season’s construction of the Kurobe Tunnel in 1959 (34).
- Publicly listed/Started OTC trading on the TSE. Listed on the 2nd section of the Tokyo, Osaka, and Nagoya stock exchanges in 1961 (listed on the first section in 1962).
- Opened the SATO Museum for the 100th anniversary in 1961 (36).
- Developed a fully automated tunnel shield boring machine in 1965 (40).
- Completed development of the “TM450GM,” Japan’s largest tunnel boring machine in 1968 (43).
- Established the Central Technical Research Institute as a part of the company’s 110th year anniversary endeavors in 1972 (47).
- Opened the Tokyo Branch in 1980 (55).
- Utilized the world’s largest tunnel boring machine (12.84 m) for the construction of Tohoku Shinkan’s “2nd Ueno Tunnel” in 1981 (56).
- Completed construction of the Benjamin Sheares Bridge in Singapore in 1991 (Heisei 3).
- Completed the Georgian Terrace Project in Atlanta, Georgia, USA in 1992 (4).
- Completed the first ever revolving roof “Ball Dome” in Japan in 1993 (5).
- Developed the soil temperature control system “SOLCON” to support the healthy growth of grasses in 1994 (6).
- Awarded the Japan Society of Civil Engineers’ “Tanaka Prize” for restoring the Morosuke Bridge, the first ever restoration of a historical civil engineering structure in Japan in 1996 (7).
- Designed and constructed Yotsuya Cooporas, the very first high-end apartment built in Japan in 1999 (31).
- Completed construction of the Benjamin Sheares Bridge in Singapore in 2001 (13).
- Awarded ISO 9001 and ISO 14001 certifications in all 11 branches in Japan in 2002 (14).
- Pushed through the smoke-free campaign in construction sites in the Kabukicho area of Shinjuku, Tokyo in 2006 (18).
- Completed construction of the Hakoda Tunnel, the longest inland tunnel in the world in Iwachinotai in 2006 (18).
- Established “WATERLINE,” the first canal concept reformation promoted by the Tokyo Metropolitan Government’s Bureau of Port and Harbor in 2006 (18).
- Started in the food recycling business (SK-Biomass Recycle Center) in 2008 (20).
- Completed the Maritime Bayfront Bridge in Singapore in 2010 (22).
- Supported Japan Football Association’s “JFA Heart Project” in 2011 (23).
- Concluded the first disaster relief agreement with Sendai city government (Provision of a sport hall to Echigo-Nakagami as an emergency evacuation site) in 2012 (24).
- Concluded the first disaster relief agreement with Sendai city government (Provision of a sport hall to Echigo-Nakagami as an emergency evacuation site) in 2013 (25).
- Completed the solar power system business (Kikuyu City Kurashawa Mega Solar) in 2013 (25).
- Completed the renovation and renewal project of a historical building in Singapore “Victoria Theatre & Concert Hall” in 2014 (26).

Reconstruction of Hognami Temple’s Toyma Betsuin and the company badge of the SATO KOGYO Co., Ltd.

In 1989, Toyma city suffered from a massive fire, and Nikko Hognami Temple’s Toyma Betsuin was also set on fire. Betsuin at the time was getting ready for the 400th anniversary of Raimeyo-shounin’s death, but such was considered not possible due to the damage caused by the massive fire. However, Sukekuro Sato, who founded Satoyasu, decided to reconstruct Betsuin itself. Supervising the reconstruction work personally, the Betsuin project was completed in just over a month. Moreover, he donated the total construction cost. The anniversary ceremony was performed successfully. The following year, Kurobe-cho Sanmei Station visited Satoyasu’s residence and placed the Japanese hat-coat/haori with the “Sagari-fuji” symbol over Sukekuro’s shoulders to express his appreciation for the reconstruction work.

The Jyoganji River was built in the 15th century in the Kurobe Valley in Toyama Prefecture. It was also built by Sukekuro and converted into a toll bridge. The first Sasatsu Bridge was destroyed by runoff from melting snow and it had been considered impossible to rebuild it due to both technical and financial difficulties. However, in 1960, at the request of the prefectural government, Satekuro attempted to rebuild the bridge using the platform method at his own expense. This method has now evolved to become the calcium method, and the upper part of the bridge was built in a truss shape and was the longest span in Japan at that time.

Sasatsu Bridge and Aircraft Book of Construction Work

In 1956, we completed “Yotsuya Cooporas”, the Japan’s first condominium type high-rise housing complex, which made the people’s life more convenient. Since then, “Cooporas” has become synonymous with a housing complex.

Yotsuya Cooporas

In the 20’s during the Showa era, there were few quality reinforced concrete housing complexes. Following the legal reform, we dared to enter into the private housing complex market where no one ever did. In 1958, we completed “Yotsuka Cooperas”, the Japan’s first condominium type high-rise housing complex, was built by a private company. This is located in the high-end residential area of Yotsuya, Tokyo, in coordination with JCB, the Japan Credit Bank. “Cooporas” is a Japanese-born English word, meaning a cooperative house. It is not just a housing complex but residences based on discussions with tenants, the designer and the contractor covering the whole process from acquisition of land, design, and construction, and incorporating the individual lifestyle of the tenants. Since then, “Cooporas” has become synonymous with a housing complex.

Yotsuya Cooporas

Kurubé Tunnel

Kurubé Tunnel is the 4th construction area of the No.4 Kurubé River power station. At the site, which is an important transport route, large-scale equipment such as power generation equipment (condenser, cooling tower, etc.) had to be transported underground to the power station. The construction project involved the construction of an underground power station approximately 10 km downstream, and Sato Kogyo was in charge of this area of 6,666 m, including two-thirds of the downstream area (and the digging work for an area of 1-150 m). Construction started in August 1959.

The mouth of the Kurubé Tunnel was located in the Sakurou Valley about 600 m above the Senro Valley where the base camp was located. Materials and food had to be sent up the sheer cliff by climbers until the tramway between the two points was constructed. In order to maintain the delivery time, the work had to continue during the winter. In December 1959, full-face excavation was carried out and on January 23, 1959, We achieved a Japanese digging record of 25.1 m/day. The tunnel broke through on February 6, and the center point difference was only 2.3 cm.

Sakuroudani Lodging and Snap shot when Kurobe Tunnel was bored through

Benjamin Sheares Bridge

First long bridge in Singapore connecting Changi Airport and downtown. For this project according to the international package deal tender system consisting of the survey, design and construction, our bridge plan, using mainly pre-stressed concrete, was selected.

Construction started in January 1977 and was completed in September 1981. In memory of the President Benjamin Sheares, who died during his period of service and leaves his legacy to the world, the Benjamin Sheares Bridge was named after him. A $5 dollar coin and 50 dollar note were issued to mark the completion. The bridge has become well known as a national symbol worldwide. The Benjamin Sheares Bridge was praiseworthy for its construction technique and aesthetic design and won the Tanaka prize awarded by the Society of Civil Engineering in 1981.