World Heritage Irrigation Structures

Tachibaiyousui Irrigation Canal

[Mie Prefecture / Taki-cho, etc.]

Tachibaiyousui Irrigation Canal

A multi-functional canal preserved together with the community

- The area was poorly watered and could not be cultivated for growing rice, but the canal was completed in 1823 by applying mercury drilling technology that was implemented for 1,300 years, taking a total of 250,000 man-days.
- Since the canal is up to 30 km long, water can be stored in the canal itself. This reduces the risk of flooding damage and helps ensure a stable water supply.
- During the postwar period of high economic growth, a crisis threatened the survival of the facility, but it was overcome by maintenance in unison with local resident through the "Hydrangea Festival" and other events.

Tachibai weir in around 1907

Hikozaemon Hydrangea Festival at Daishi no Sato
(Visitors enjoying the Tachibaiyousui boat descent)

Yanagidani tunnel (excavated without timbering)

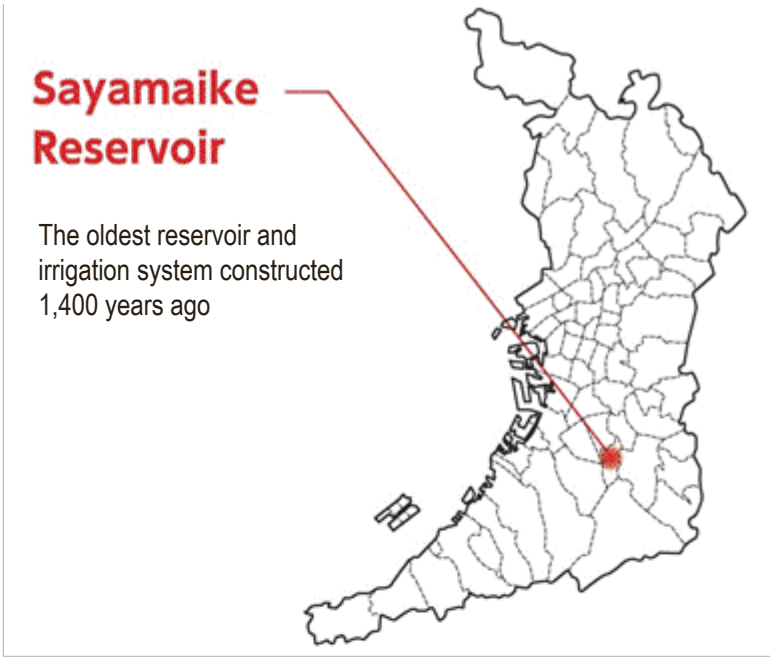
"Enge" excavation

Contacts: Tachibaiyousui Land Improvement District: TEL. 0598-49-4522

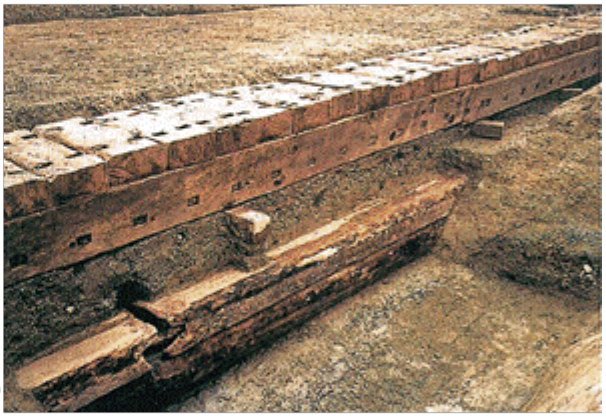
World Heritage Irrigation Structures

Sayamaike Reservoir

[Osaka Prefecture / Osakasayama City, etc.]



- Sayamaike reservoir is the oldest artificial reservoir in Japan constructed 1,400 years ago. It is also listed in the oldest history book in Japan.
- When constructed, the technology of the Korean Peninsula was widely used, and Chinese technology was applied, even in the renovation 800 years ago. This is evidence of technological exchange in Southeast Asia.
- The history of the irrigation system of Sayamaike reservoir is one of development and renovation of irrigation systems in Japan. Recent renovations uncovered many wooden gutters and historical relics.



Traces of many repairs,
excavated wooden gutter
(Above: Edo period, Below: Nara period)

Above: Sayamaike reservoir before the Heisei renovation (in 1998)
Below: Sayamaike reservoir after Heisei renovation (in 2000)

View of water from the sky above Sayamaike reservoir (in 2012)

Contacts: Board of Education, Osakasayama City: TEL. 072-366-0011 (ext. 827)

World Heritage Irrigation Structures

Tanzansosui Irrigation System

[Hyogo Prefecture / Kobe City etc.]

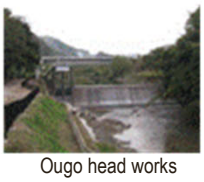
Tanzansosui Irrigation System

A modern irrigation network was constructed with new technologies actively taken from the West

- This area was located on a plateau, from which drawing water was extremely difficult. They used to grow cotton, but in the Meiji era, they were affected by cheap imported cotton and people lived in poverty.
- Leveraging input from domestic and foreign engineers, Tanzansosui was completed using the British iron pipes made with what was then ground-breaking technology and applying the siphon principle.
- Stable rice cultivation has been achieved while utilizing reservoirs spanning 81 locations. In recent years, the history of this regional development has been published in the supplementary readers of elementary schools.

Location map at that time

Current Tanzansosui (Ougo River, Yamada River sosui)


Ougo head works


Misaka siphon


Misaka Siphon (two-arched bridge)


Keshigoyama tunnel


Confluence trunk line


Ougo trunk line tunnel


Neribeya diversion station


Oinokuchi diversion station

Tanzansosui (Ougo River, Yamada River sosui) previously


Water source of the Ougogawasosui


Water source stone dam of the Ougogawasosui


Steel pipe entrance of the Ougogawasosui No. 20 (Keshiyama) Tunnel


Ougogawasosui Neribeya drainage lock

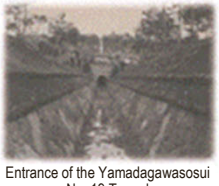

Laying the Ougogawasosui Misaka Fountain Pipe


Shijimigawa River Arched Stone Bridge with mounted the Ougogawasosui Misaka Fountain Pipe


Full view of Yamadagawasosui water source dam


Yamadagawasosui No. 1 Water Gate


Yamadagawasosui No. 2 Tunnel


Entrance of the Yamadagawasosui No. 19 Tunnel


Iwaoka branch line Steel pipe siphon, Yamadagawasosui


Yamada Reservoir Dam, Yamadagawasosui

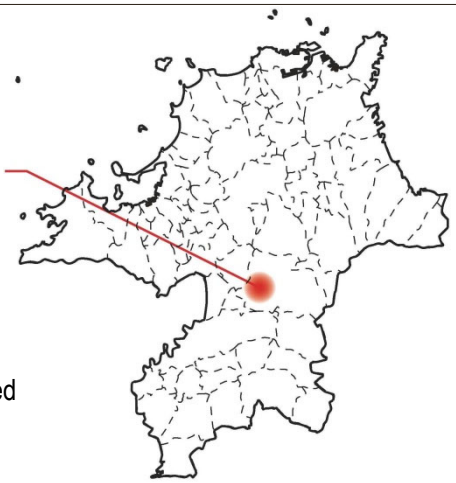
Contacts: Toban Irrigation Land Improvement District: TEL. 0794-87-0545

World Heritage Irrigation Structures

Yamadazeki Barrage System

[Fukuoka Prefecture / Asakura City]

Yamadazeki Barrage System

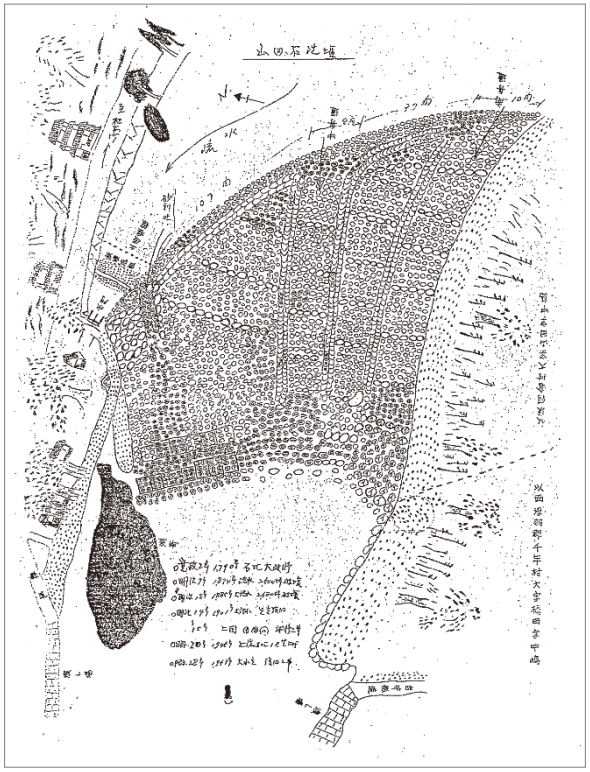


The irrigation facility, where the wisdom of ancestors is bequeathed through ages and places

- Yamadazeki has an elaborate and robust structure called the only "sloping weir bed-type stone weir" in Japan capable of withstanding the water pressure and torrents of the Chikugo River, which is also known as one of the three violent rivers in Japan.
- The water does not suffice for manual pumping. Accordingly, the amount of pumped water is secured by the Asakura triple water turbine that rotates using the running water in Horikawayousui.
- The water turbine technology, in use for 224 years, has long been applied nationwide in Afghanistan to realize a stable food supply to the local people.

Full view of Yamadazeki (currently)

Drawing of Yamadazeki in around 1900



Horikawayousui (currently)

Asakura triple water turbines (illuminated)

Contacts: Yamadazeki Land Improvement District: TEL. 0946-52-0531

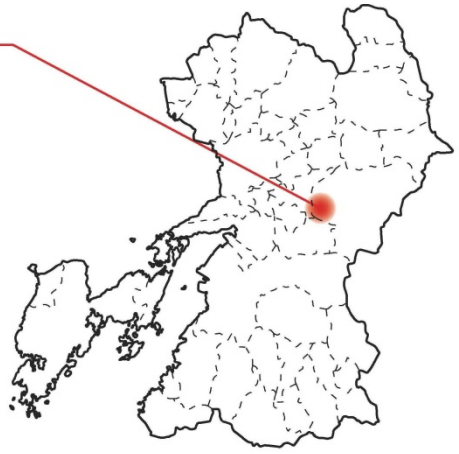
World Heritage Irrigation Structures

Tsujunyousui Irrigation System

[Kumamoto Prefecture / Yamato-cho]

Tsujunyousui Irrigation System

Moisten the plateau with the largest stone arch waterway bridge in Japan



- Tsujunyousui was constructed in 1855 to irrigate the Shiraito Plateau, which was suffering from water shortages and surrounded by lowland rivers on all sides. As a result, the paddy field area has tripled.
- A compilation of technologies unique to Japan have been employed, such as the largest stone arch waterway bridge "Tsujun Bridge (National Important Cultural Property)", diversion work to prevent excessive water intake, and repeated use of water through upper and lower two-tiered canals.
- As well as fair water distribution practices such as "day and night drawing (the upstream and downstream beneficiaries alternately take in water day and night respectively)" that is carried out when there is a canal water shortage, an optimally maintained environment and landscape and the spectacular water discharge of the Tsujun bridge attract many tourists.

Current Tsujun Bridge
(Photo: Yamato Board of Education)

The whole picture of Tsujun bridge
Fukiage Gutter at past

Inside the waterway tunnel

Circular shape water diversion (Photo: Yamato Board of Education)

Contacts: Agriculture and Forestry Promotion Division, Yamato-cho: TEL. 0967-72-1136