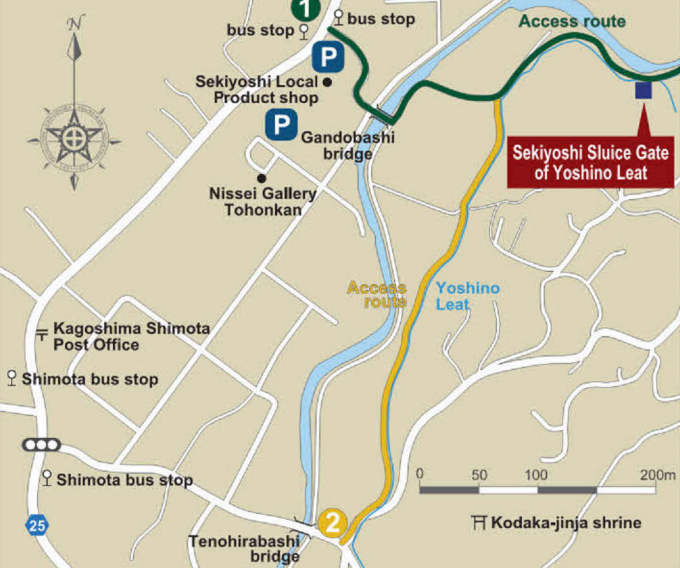


## Walking map around Sekiyoshi Sluice Gate of Yoshino Leat



**Site of a dam constructed at the ravine**  
The long furrow remaining on the rock is considered to be part of the dam.



**Former sluice gate**  
The sluice gate was moved from time to time. The present one was constructed in the Taisho period (1912-1926). The one used earlier is on the left of the cut in the bedrock of the former dam and covered with stones.



**Yoshino Leat**  
Excellent construction technology was required to build a constantly inclined leat over the selected land, because there was little difference in elevation. The 7km leat ending with a steep chute represents a brilliant feat and is testament to the high levels of construction technology at the time.

## Sekiyoshi Sluice Gate of Yoshino Leat



Until steam engines were fully introduced, Shuseikan factories relied on waterwheels to drive large machines. As there was no large river nearby in the Iso area, it was decided to make a chute and let water fall with great force from the Yoshino Plateau. Yoshino Leat—built to supply water to Sengan-en villa of the Shimadzu family—was renovated and a new leat was added in 1852 in order to supply water constantly to Shuseikan factories. The upstream of Inari River is called Abeki River, and the river narrows near Sekiyoshi. The water was blocked and then directed into the Leat through the sluice gate.

**ACCESS**

- Route from Point ① (from Gandobashi bridge entrance through the farm road)
  - \*About a 8 minute walk, 450m each way.
  - \*Parking space for 10 cars at Sekiyoshi Local Product shop and 5 cars next to Nissei Gallery Tohonkan is available.
- Walking route from Point ② (from Tenohirabashi bridge to the walking trail along the leat)
  - \*About a 12 minute walk, 700m each way.
  - \*The path along the leat is for pedestrians only. Car entry is not permitted.
  - \*No parking spaces are available.

**[Points of Attention]**

- \*Be cautious of falling near the river or waterway, especially for children.

**[Information]** Please call 099-227-1940, Cultural Assets Division, Management Department, Board of Education, Kagoshima City

## Terayama Charcoal Kiln



Shuseikan factories produced cast-iron cannons, artillery shells and glass products. Extremely high temperatures of about 1500°C were necessary to melt iron and glass, but Satsuma Clan did not produce coals and relied on charcoal for high heat. Terayama is blessed with an abundant supply of trees of hardwood such as Castanopsis and oak that produce high quality charcoal. Satsuma Clan built charcoal kilns and used charcoal as fuel at the Shuseikan factories in the Iso area. The kilns produced 'white charcoal' known for its strong heating power.

**ACCESS**

- \*No entry due to landslide.
- Route from Point ① (eastern walking trail entrance)
  - \*About a 15 minute walk, 800m each way.
  - \*Parking spaces are available at Terayama Fureai Park.
  - \*Sightseeing spots on the way include the "Monument Commemorating the Land Cultivation by Saigo Takamori" and a water source.
- Route from Point ② (western walking trail entrance)
  - \*About a 3 minute walk, 200m each way.
  - \*Parking space for six cars is available near the walking trail entrance.
  - \*The ruins of the charcoal kiln can be viewed from above.

**[Points of Attention]**

- \*Please watch your step. The walking trail is unpaved and part of it is rather steeply sloped.

**[Information]** Please call 099-227-1940, Cultural Assets Division, Management Department, Board of Education, Kagoshima City

## Walking map around Terayama Charcoal Kiln



**Kiln wall built of tuff blocks**  
The arch-shaped opening and the inner surface of a huge charcoal kiln dome were built tightly with thick blocks of tuff. The structure was sturdy enough to sustain extremely high heat and the weight of a domed ceiling made of clay.



**Monument of Honor with a dedication by Hatta Tomonori**  
The Satsuma clansman, Hatta Tomonori, served at the official Satsuma residence in Kyoto. He learned tanka poetry and later became the officer of tanka poetry at the Imperial Household Department. The stone inscription tells us what Shimadzu Nariakira achieved, how the kiln was constructed and how intensely the poet wished for eternal prosperity.

**Text of the inscription**  
Shimadzu Nariakira is a great lord who has developed a wide knowledge from both domestic and overseas sources. His greatness is also evident in the construction of charcoal kilns. The first and second kilns are completed and the masons are busily at work on the third one. The lord says, "Cut down big trees and leave small ones, and they will become good materials for charcoal in one hundred years' time. Then, the kiln will keep working and the charcoal industry will prosper eternally." These words deserve being inscribed in stone and passed on to future generations.

## Sites of Japan's Meiji Industrial Revolution

**Iron and Steel, Shipbuilding and Coal Mining**

- YAWATA**
  - The Imperial Steel Works, Japan (Frat Head Office) (Repair Shop) (Former Forge Shop)
  - Onga River Pumping Station
- HAGI**
  - Hagi Reverberatory Furnace
  - Ebisugahama Shipyard
  - Ohiyayama Tatara Iron Works
  - Hagi Castle Town
  - Shokasanzoku Academy
- KAMAISHI**
  - Hashino Iron Mining
- NIRAYAMA**
  - Nirayama Reverberatory Furnaces
- MIIKE**
  - MIKE Coal Mine (MIKE PIT) (Coal Railway) (MIKE Port)
- KAGOSHIMA**
  - Shuseikan
  - Terayama Charcoal Kiln
  - Sekiyoshi Sluice Gate of Yoshino Leat
- SAGA**
  - Mitsui Naval Dock
- NAGASAKI**
  - Kosuge Slip Dock
  - Mitsubishi No.3 Dry Dock
  - Mitsubishi Genshi Cantilever Crane
  - Mitsubishi Former Pattern Shop
  - Mitsubishi Senshokaku Guest House
  - Takashima Coal Mine
  - Hashima Coal Mine
  - Glover House and Office
- HISATSUGI**
  - Mitsumi West Port

**Historical Sites**

- Shuseikan (Site of the reverberatory furnace, etc.)
- Former Shuseikan Machinery Factory
- Former Shuseikan Main Building
- Former Kagoshima Foreign Engineer's Residence (Current Itohan)

**Planning/Partnership Council for Modern Industrial Heritage Sites in Kagoshima**  
(Chairman) Kagoshima City World Heritage and Tourism Promotion Office  
H-1, Yemashiro-cho, Kagoshima City 892-8677 TEL: +81-99-216-1504  
Design, Editing/OFFICE FIELDNOTE + Koki Sunada  
In Cooperation with SHINOSHUSEIKAN, NPO Kagoshima Tanken-no-kai

Produced/March, 2020

## ACCESS

**Shuseikan**

**[By Public Transportation]** From JR Kagoshima Chuo Station  
Approx. 50 minutes by Kagoshima City View bus or about 90 minutes by Machi-meguri bus. Embark at East Boarding Point No.4 and disembark at Sengan-en bus stop. The Shuseikan is near the bus stop.

**[By Car]** From JR Kagoshima Chuo Station (Approx. 6.0km, 20 minutes)  
Drive north-east from the station. Pass the Terukuni Shrine on National Route 10, then go to Inari-cho. After passing through Torjue Tunnel, you will reach the Shuseikan area. Parking is available in the Sengan-en and Inrikan visitor lots.

**Sekiyoshi Sluice Gate of Yoshino Leat**

**[By Public Transportation]** From JR Kagoshima Chuo Station  
Approx. 30 minutes by Nangoku Kotaru bus (Ishiki-danchi, Midorigaoka-danchi or Honjo line). Embark at East Boarding Point No.11, disembark at Sekiyoshi-no-susuki-iriguchi bus stop, and walk approx. 6 minutes.

**[By Car]** From JR Kagoshima Chuo Station (Approx. 10km, 30 minutes)  
Drive north-east from the station. Pass the Terukuni Shrine on National Route 10, then turn left at Kamihonmachi intersection and go to Pref. Road No.25. Drive about 400m and turn left at the Sakamoto Iriguchi intersection. Drive about 6km and pass the Shimoda Post Office. The entrance is on the right. Parking is nearby.

**Terayama Charcoal Kiln**

\*No entry due to landslide.

**[By Public Transportation]** From JR Kagoshima Chuo Station  
Approx. 35 minutes by Nangoku Kotaru bus (Miyayouku no-susuki-iriguchi line). Embark at East Boarding Point No.3, disembark at Sanshubara gakuen-mae bus stop, and walk approx. 20 minutes.

**[By Car]** From JR Kagoshima Chuo Station (Approx. 14km, 45 minutes)  
Drive north-east from the station. Pass Terukuni Shrine on National Route 10, then go to Inari-cho. Before Torjue Tunnel, take Pref. Road No.16 to the left in the direction of Kamou and Yoshida IC. You can take either of the following two routes. Access to the world heritage sites:

- To the Terayama Fureai Park parking lot (near the eastern walking trail entrance)  
Turn right at the Yoshino-shisho Iriguchi intersection and take Pref. Road No.215. The Terayama Fureai Park parking lot is approx. 6km away on the left.
- To the temporary parking space (near the western walking trail entrance)  
Turn right at the Yoshino-cho Obashi intersection. Drive about 2.5km and take Pref. Road No.228. The temporary parking space is about 1.5km away, near the nature walking trail entrance on the right.

**KAGOSHIMA WORLD HERITAGE WALK**

Sites of Japan's Meiji Industrial Revolution  
Walk along the Shuseikan Heritage Sites





# Walking map around the Shuseikan area Iso Area



## Yoshino Leat (Shuseikan side)

The water taken in from the Sekiyoshi Sluice Gate ran the 7km leat on the plateau and fell right down to the water-wheel with great force, supplying water and power to the Shuseikan factories.

## Site of the blast furnace

Built here was a western-style blast furnace to produce iron from which cast iron cannons were made.



Satsuma Museum collection, Takeo Nabeshima's clan documents owned by Takeo City



## Former Shuseikan Machinery Factory (Current Shokoshuseikan)

The factory repaired and maintained different types of machines and steam engines used at Shuseikan. This oldest western-style stone building in Japan was turned into a museum.

## Former office of Serigano Shimadzu Gold Mine Co. (Current Starbucks shop)

Foreign Engineer's Residence (Current Ijinkan)mae

New management office of Ijinkan

Foreign Engineer's Residence (Current Ijinkan)mae

Foreign Engineer's Residence (Current Ijinkan)

To: Kagoshima Chuo Station Shiroayama

Former Kagoshima Foreign Engineer's Residence (Current Ijinkan)

To: JR Kagoshima Station, Sakurajima Pier

To: JR Kagoshima Station, Sakurajima Pier

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## Kagoshima World Cultural Heritage Orientation Centre



## Site of the reverberatory furnace

There was once a furnace here that was used to melt iron with extremely high heat to produce cast iron cannons. Recognizable here are the lower section of the tuff furnace and the base of the stone works of the reverberatory furnace.

## Filtration bed Kyokusui Garden

## Water reservoir for hydroelectric power generation

## Residence

## Tin-roofed gate

## Place of Scenic Beauty Sengan-en

## To: Kirishima area, Kagoshima Airport

## Bogakuro Pavilion

## Crane-shaped lantern

## Former main gate Gable wall of Suitenbuchi Power-Generating Station

## Kagoshima City View bus Machimeguri bus Taxi stand

## Kagoshima Bay (Kinko Bay)



## Site of Kagoshima Spinning Mill

In 1865, a group of Satsuma students left Satsuma illegally for England to study there. Accompanying them was a mission whose responsibility was to buy spinning machines and steam engines to be installed at Shuseikan. The imported ginning and spinning machines were installed at the spinning mill. One hundred weaving machines produced textiles that were known for high quality.



Owned by Manuscript Library, Historical Records Section, Museum attached to Kyushu University Library

## Former Kagoshima Foreign Engineer's Residence (Current Ijinkan)

Engineers were invited from England to launch Kagoshima Spinning Mill. They lived in a western style house made of wood and roofed with traditional Japanese tiles. They taught how to make high quality textiles. As a result, the project succeeded and the mill became Japan's first machine-driven spinning mill.



- 1854 Japan's first western-style sailing ship, Iroha-maru, was completed at a shipyard in Ito.
- 1855 Japan's first steam-powered vessel produced by the Satsuma Clan, Unko-maru, was successfully test operated.
- 1857 The second reverberatory furnace was completed, and the casting of a cannon was successful.
- 1858 Katsu Kaishu and Kattendjike visited Kagoshima by Kanrin-maru. Charcoal kilns at Terayama were completed. Shimadzu Narakura suddenly died. The scale of the Shuseikan Project was temporarily reduced.
- 1860 The Shuseikan Project was revived by Shimadzu Tadayoshi and Shimadzu Hisamitsu.
- 1862 The Namsunagi incident occurred.
- 1863 The Shuseikan complex was burned down due to the Anglo-Satsuma War.
- 1865 The Shuseikan Machinery Factory was completed (The Shuseikan was renovated). A 19 member team, including leaders from the Satsuma Clan and several students, snaggged themselves into England.
- 1867 Kagoshima Spinning Mill was completed and started its operation. The Foreign Engineer's Residence was completed.

**Model walking route around the Shuseikan area**  
Walking route visiting major remains and buildings around Shuseikan area

**Walking routes within the paid facility**  
Walking routes visiting Sengan-en, Shokoshuseikan, Foreign Engineer's Residence (Ijinkan). Visit to the inside of the paid facilities are included.



# Shuseikan Project



Collection owned by Shokoshuseikan

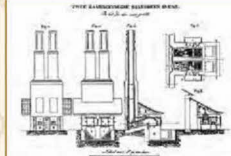
As the Edo period (1603-1868) was drawing to an end, Satsuma Clan felt threatened by the expansion of Western countries into Asia and decided to take immediate action. Shimadzu Narakura placed great emphasis on industrialization and modern military forces. The Shuseikan Project was a driving force toward modernization. The comprehensive industrialization plan covered manufacturing of iron, glass, pottery, medicine and textiles; construction of warships; production of cannons and other weaponry; and research and manufacturing of technologies such as steam engine, telegraph, photography and others. The facilities were built over a very short period of time from early 1850s to 1860s. The Shuseikan Project is one of the earliest examples of the Industrial Revolution as it was in Japan. The heritage components remaining in the area will demonstrate to coming generations the magnitude of the project that ushered in a modern age in Japan.



**Shokoshuseikan Sengan-en**  
 ■Hours: 8:30-17:30 (all year round)  
 ■Admission: ¥1,000/adults, ¥500/elementary and junior high school students  
 \*Good for both Shokoshuseikan and Sengan-en  
 ■Car park capacity: 100 cars (¥300/ordinary car)  
 ■Address: 9700-1, Yoshino-cho, Kagoshima City 892-0871  
 ■TEL: Shokoshuseikan +81-99-247-1511 Sengan-en +81-99-247-1551

**Former Kagoshima Foreign Engineer's Residence (Current Ijinkan)**  
 ■Hours: 8:30-17:30 (all year round)  
 ■Admission: ¥200/adults, ¥100/elementary and junior high school students  
 ■Car park capacity: 6 cars (free)  
 ■Address: 9685-15, Yoshino-cho, Kagoshima City 892-0871  
 ■TEL: +81-99-247-3401

## Construction of reverberatory furnace



Drawing of reverberatory furnace by Huzumaru, Seppan kajumaru, History of the naval forces of Satsuma Clan

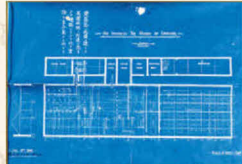
Satsuma Clan felt the need to build a battery of cannons to protect itself from Western warships and began construction of a reverberatory furnace where radiant heat was reflected and magnified by the dome structure. The radiant heat melted the iron, and the molten iron was poured into the cannon cast. The skills of stonework and pottery possessed by traditional craftsmen were very useful. Although the first attempt failed, the second furnace was successfully completed and used to produce cannons.

## Steam engine and cast iron pillars



Former Shuseikan Machinery Factory (Current Shokoshuseikan) maintains to this day the flywheels and cast iron pillars that used to be part of the Kagoshima Spinning Mill. The existence of the huge flywheels indicates that the spinning mill was driven by beam engines that were widely used in the UK at the time. The cast iron pillars had hangers to support the shaft that transmitted the steam power to individual spinning machines.

## Whole structure of Kagoshima Spinning Mill



Kagoshima Spinning Mill Machine Layout owned by Shokoshuseikan

The Remains of Kagoshima Spinning Mill are buried underground. The mill played an important role as the first machine-driven spinning mill in Japan. The existing drawing shows an orderly layout of ginning, spinning and weaving machines imported from England.

## Satsuma Cut-glass and Satsuma pottery



The Satsuma Mitorozu collection depicts the Glass Workshop and other Shuseikan factories in great detail. At first, the workshop produced small items such as medicine bottles, but began producing large items such as deck prisms. Satsuma Crystal Cut-glass was developed in order to upgrade product value. Satsuma Cut-glass and Satsuma pottery were popular souvenirs for foreign visitors and important export items.

Satsuma Mitorozu collection, Takeo Nabeshima's clan documents owned by Takeo city