
Sites of Japan's Meiji Industrial Revolution (Japan) No 1484

Official name as proposed by the State Party

Sites of Japan's Meiji Industrial Revolution: Iron and Steel, Shipbuilding and Coal Mining

Location

Fukuoka Prefecture, Saga Prefecture
Nagasaki Prefecture, Kumamoto Prefecture
Kagoshima Prefecture, Yamaguchi Prefecture
Iwate Prefecture, Shizuoka Prefecture
Japan

Brief description

A series of industrial heritage sites, focused mainly on the south-west of Japan, is seen to represent the first successful transfer of industrialization from the West to a non-Western nation.

The rapid industrialization that Japan achieved from the middle of the 19th century to the early 20th century was founded on iron and steel, shipbuilding and coal mining, particularly to meet defence needs.

The sites in the series reflect the three phases of this rapid industrialisation achieved over a short space of fifty years. The initial phase in the pre-Meiji Era was one of experimentation in iron making and shipbuilding, sponsored by local clans and based mostly on Western textbooks, and copying Western examples; the second phase brought in with the new Meiji Era, involved the importation of Western technology and the expertise to operate it; while the third and final phase in the late Meiji period, was full-blown local industrialization achieved through the active adaptation of Western technology to best suit Japanese needs and social traditions, on Japan's own terms.

Category of property

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a serial nomination of 23 components in 11 *sites* and 8 areas.

1 Basic data

Included in the Tentative List

5 January 2009

International Assistance from the World Heritage Fund for preparing the Nomination

None

Date received by the World Heritage Centre

14 January 2014

Background

This is a new nomination.

Consultations

ICOMOS consulted TICCIH and several independent experts.

Technical Evaluation Mission

An ICOMOS technical evaluation mission visited the property from 24 September to 7 October 2014.

Additional information requested and received from the State Party

On 4 October 2014, ICOMOS requested further information from the State Party on the following aspects:

- Outstanding Universal Value (OUV) and the attributes of OUV;
- Timeframe and selection of sites, particularly in relation to the exclusion of sites reflecting the industrialisation of textiles.

The State Party responded on 10 November 2014 and the further documentation provided is reflected in this report.

On 22 December 2014, ICOMOS requested further information on:

- How individual sites convey innovation;
- Changing the name of the series;
- Minor adjustments to the boundaries of four sites.

The State Party responded on 27 February 2015 and the further documentation provided is reflected in this report.

Date of ICOMOS approval of this report

12 March 2015

2 The property

Description

Although the title refers to 'Sites of the Meiji Industrial Revolution', the nominated sites cover not only the Meiji Period or Era (1868 – 1912) but also the Bakumatsu Period (1853 – 1867) which immediately preceded it. There is fundamental difference between the two periods in relation to Western technology.

In the Bakumatsu period, at the end of Shogun era in the 1850s and early 1860s, prompted by the need to improve the defences of the nation and particularly its sea-going defences, in response to foreign threats, industrialisation was developed through second hand knowledge, from such sources as Dutch text books, and combined with traditional craft skills. This was not the introduction of western technology on a large scale that prompted rapid industrialisation – rather it is its precursor

when development was rooted in feudal traditions and what can be called the 'closed system'.

Sites in five of the eight nominated areas are confined to this period and show proto-industrial sites, some of which were unsuccessful.

By contrast, the Meiji Period reflects a new 'open system' when there was direct introduction of Western technology, first in the two decades from 1860 through buying Western know-how and equipment with implementation by Western engineers, and then from the early 1890s to early 1910s, with the successful introduction of Western techniques by Japanese who had studied in the west, and their implementation by industrial capitalists who engaged directly with British and Dutch companies, all of which led to industrial autonomy in a distinctive national style. Sites in three of the eight areas reflect this Period.

The 23 nominated components are in 11 sites within 8 discrete areas. 6 of the 8 areas are in the south-west of the country, with one in the central part and one in the northern part of the south island.

The eight areas are as follows:

Bakumatsu Period Areas 1-5

1 Hagi

- Hagi Reverberatory Furnace
- Remains of Ebisugahana Shipyard
- Remains of Ohitayama Tatara Iron Works
- Hagi Castle Town
- Shokasonjuku Academy

2 Kagoshima

- Shuseikan
- Terayama Charcoal Kiln
- Sekiyoshi Sluice Gate of Yoshino Leat

3 Nirayama

- Nirayama Reverberatory Furnaces

4 Kamaishi

- Hashino Iron Mining and Smelting site

5 Saga

- Mietsu Naval Dock

Meiji Period Areas 6-8:

6 Nagasaki

- Kosuge Slip Dock
- Mitsubishi No.3 Dry Dock
- Mitsubishi Giant Cantilever Crane
- Mitsubishi Former Pattern Shop
- Mitsubishi Senshokaku Guesthouse
- Takashima Coal Mine
- Hashima Coal Mine
- Glover House and Office

7 Miike

- Miike Coal Mine & Port

- Misumi West Port

8 Yawata

- The Imperial Steel Works
- Onga River Pumping Station

These 8 Areas are presented in more or less chronological order with sites in Areas 1-5 reflecting early attempts to copy western industrial practices in the Bakumatsu Period, and sites in Areas 6-8 reflecting Japan's fully developed industrial processes in the Meiji Period – although only in heavy industry and shipbuilding, as textile manufacturing, and particularly cotton spinning and weaving, a large component of the overall industrialisation process, are not covered (see discussion below).

The sites include not only industrial prototypes, and fully fledged industrial complexes, some of which are still in operation, or are part of operational sites, but also associated buildings such as offices and a guesthouse as well as an urban area that is seen to reflect the context for the proto-industrialisation process.

The two groups of Areas are discussed in turn.

Bakumatsu Period Eleven components in five Areas

1 Hagi

- Hagi Reverberatory Furnace
- Remains of Ebisugahana Shipyard
- Remains of Ohitayama Tatara Iron Works
- Hagi Castle Town
- Shokasonjuku Academy

The Hagi area is associated with one of the mid-19th century progressive feudal clans. In response to calls to mobilise for the defence of the nation (see History), and to try and improve iron making processes for shipbuilding, the clan gleaned information on industrial processes from Dutch textbooks.

A Reverberatory Furnace was built in imitation of an earlier one constructed by the Saga Clan (and no longer extant). The structure of the furnace still survives and at its base demonstrate local adaptations to resolve on-going moisture problems. Although a failure, it paved the way for further developments.

The Ebisugahana Shipyard was constructed to build Western style naval vessels. Its large breakwater (the only part to survive) incorporated a deep-wharf platform which appears not to have been copied from Western designs, but rather to have been a local innovation.

The Hagi Castle town is nominated to provide a context for these new ideas. However its structure reflects a much earlier period of prosperity in the 17th century. Although the castle was lived in by the last Mori feudal lord, who was associated with proto-industrial trials, it was demolished in 1874 shortly after his death. The merchants' houses are seen to reflect the craft basis for the early industrialisation process.

The slight upstanding remains of the small Ebisugahana Shipyard (mostly a breakwater) testify to experiments in building western style wooden and iron ships. As the Reverberatory Furnace had not worked, the iron for the ships was made in the traditional way at the already existing bellows-blown furnace of the Ohitayana Tataro Iron Works. The site has been partially excavated to show the layout of the furnace.

The Shokasonjuku Academy was one of the bases of the respected royalist teacher, Shoin Yoshida, who aspired to progressive ideas based on Western education, science and industry but with respect to Japanese traditions.

2 Kagoshima

- Shuseikan
- Terayama Charcoal Kiln
- Sekiyoshi Sluice Gate of Yoshino Leat

The industrial complex of Kagoshima is located in a garden at Shuseikan created in 1658. Its aim was to manufacture iron for cannons and shipbuilding. There are surface remains of a reverberatory furnace and its water channel, a charcoal kiln, the foundations of a spinning mill, and a sluice gate. There are also two standing buildings: a former machinery factory, 1864-5, the earliest surviving in Japan, and a house for foreign engineers involved in the spinning mill, built in 1866-7.

The Shuseikin reverberatory furnace demonstrate variants from Dutch plans in terms of size and the way local traditional such as cylindrical firebricks were used for the furnace instead of Western technology. This illustrates local experimentation and adaptation of Western prototypes. Like the Hagi furnace it was ultimately unsuccessful.

3 Nirayama

- Nirayama Reverberatory Furnaces

The reverberatory furnace with twin towers of brick, each with two furnaces, built between 1854-7, survives almost intact. Its design was based on Dutch drawings. The furnace was the centre of a cannon manufactory which has not survived. The towers were braced with iron in 1957.

4 Kamaishi

The Hashino iron mining and smelting site produced pig iron from local iron ore. It was constructed in 1858 copying Dutch plans, but fusing western and Japanese traditions and building on the experience of experimental furnaces. In particular it adapted Dutch technology to cope with indigenous mineralogy – magnetite iron ore rather than haematite iron oxide. Hashino is seen as the birthplace of the modern iron and steel industry in Japan. It consists of the remains of a stone blast furnace and a mining site.

5 Saga

- Mietsu Naval Dock

The dock was constructed in 1861 to repair western steam ships that the local clan had acquired to help defend Nagasaki. Its remains have been excavated.

Meiji Period Twelve components in three Areas

6 Nagasaki

- Kosuge Slip Dock
- Mitsubishi No.3 Dry Dock
- Mitsubishi Giant Cantilever Crane
- Mitsubishi Former Pattern Shop
- Mitsubishi Senshokaku Guesthouse
- Takashima Coal Mine
- Hashima Coal Mine
- Glover House and Office

6 of these 8 sites are clustered around Nagasaki harbour, at the mouth of the Urakami River while the two coal mines are on offshore islands out in the bay. Nagasaki was a focus for industrial development and its sites, dating from 1869 to 1910, relate to building and repair of steamships and coal mining – both needed to defend Nagasaki.

Nagasaki was the only authorised entry point for foreign powers. The dock sites reflect early collaboration with the West. The Slip Dock for repairing ships was built with British expertise and its main components imported from Scotland, while the Giant Cantilever Crane was also exported from Scotland and is now the oldest working example.

Within Takashima Coal Mine, the Hokkei Pit is all that survives intact of Japan's first Western-style mine shaft on what is now one island and was originally three. The mine was the first to adopt Western-style mechanization (1868) and became Japan's leading coal producer until the late-1880s. The Hashima Coal Mine, now ruined, is on an artificial reclaimed island and was the site of Japan's first major undersea coal exploitation in 1895.

Now used as a museum, the former pattern shop building was originally use for making patterns for iron castings.

The Guesthouse, Glover house and Office all reflect a mixture of Japanese and European architectural styles.

The Dry Dock, Slip Dock Giant Crane, Pattern Shop, Guesthouse all lie within the modern working Mitsubishi Nagasaki Shipyard.

7 Miike

- Miike Coal Mine & Port
- Misumi West Port

Experience gained during the operation of the Takashima Coalfield laid the foundation of modern coal mining in Japan and this was subsequently diffused to Miike. The coal mine, whose construction started in 1901, retains a head frame and winding gear imported from England.

The port of 1908, connected to the mine by railway, was the largest Western-style coal export facility constructed in Japan during the Meiji period. The design of the port fused traditional Japanese techniques with then modern Western ones. Of particular note is the coal loading system based on a combination of an inner harbour that allowed coal loading irrespective of tides, and protected an outer harbour to allow movement to deeper water. This was quite different from European and American systems and an innovation that contributed to the development of international marine engineering. The masonry elements reflect local techniques.

The port retains equipment and buildings, such as the British steam powered hydraulic Lock-gates (1908) and operating building, and the customs house (1908).

The success of Miike Port, prompted the foundation (from 1912) of the Mitsui chemicals and electro-chemicals industries in and around the Port. The port is still in use today for industrial purposes.

The earlier Misumi West Port was constructed to the design of Dutch engineers to export coal from the Miike mine. One of three large port construction projects during the Meiji period, it opened in 1887 but was abandoned by 1903.

As well as the quays, a number of port-related buildings survive. It, too, demonstrates Japanese masonry techniques blended with Western designs.

8 Yawata

- The Imperial Steel Works, Japan
- Onga River Pumping Station

Within the modern Yawata steel works, are remains of the Imperial steel works constructed around 1900. These consist of a German built Repair Shop, a Former Forge Shop, and the Onga River Pumping Station that supplied water for the works. The Western-Japanese style, two-storey brick-built, central bureau or head office (1899) contained the Director General's and foreign engineers' offices.

The Imperial steel works used imported German steelmaking technology that was modified over a ten-year period to allow it to cope with local raw materials of ore and coke, with production needs and with local management approaches. These modifications included the re-design of the chimney, blast furnace and coke making processes. The outcome was a rapid increase in steel production.

History and development

The essential context for the industrialisation of Japan was the need for national protection. Since the 1600s, Japan had been closed to foreigners, and Christianity outlawed. A prohibition of the construction of large ships had been put in place in 1635, and Japanese citizens banned from sailing offshore or travelling abroad. And in 1639 a strict policy of maritime restrictions and controls

on foreign trade was established. Thus began the period of national seclusion.

This isolation began to change after 1853, when the United States sent Commodore Matthew C. Perry to Japan with a letter to the Emperor from President Millard Fillmore requesting a treaty. The Americans wanted to profit from the lucrative China trade in tea, silk and porcelain, and in order to do so they needed a refuelling port for coal-powered, steam ships. Japan had coal. The arrival of Perry's huge steamship terrified the Shoguns, the hereditary military commanders. Over the next few years Japan was pressed into various unequal treaties with America, Britain, France and Russia and soon begun to realise that it was in danger of losing control in the face of competing foreign influence. Many also realised that until Japan caught up with the west technologically, they would not have the strength to repel foreign advances, especially from the sea. The quest for industrial strengths was thus directly linked to national security.

In the 1850s, Japan's shipbuilding technology was pre-modern and substantially behind that of the West. Alarmed by foreign threats, the Tokugawa Shogunate and its feudal clans sought to develop a strong defensive navy and efficient merchant fleet. In 1853, as a direct response of Perry's visit, the Shogunate abolished its Prohibition of the Construction of Large Ships and instigated an emergency policy to construct a navy. They requested the Dutch navy to establish the Nagasaki Naval Training Institute in 1855 and started the construction of the Nagasaki Foundry in 1857, Japan's first Western-style marine engine repair facility. This marked the beginnings of heavy industry in Japan.

From 1851, Nariakira Shimadzu, the feudal lord of Satsuma, studied Western-style shipbuilding, and constructed or expanded four shipyards around Kagoshima Bay.

In 1861 one of Japan's oldest surviving dry docks was built for the repair of a Western-style ship - the steam-powered *Denryu-Maru*. Its construction used a traditional Japanese wooden design that accommodated the dimensions of the steamer. The yard also served as the base for other Western-style ships bought by the clan. In 1865 the second Japanese-built steamship, the *Ryofu-Maru*, was completed here.

Between 1863 and 1865 the Dutch *Nederlandsche Stoomboot Maatschappij (NSBM)* Company, of Rotterdam, delivered a range of machine tools to the feudal lord of Satsuma. In 1865 the Shuseikan Machinery Factory was completed, modelled on that built by Hardes in the Nagasaki Ironworks. There were also various attempts to construct Western style warships. It was around this time and also at Shuseikan, that Japan's first mechanized spinning mill was completed, with machines supplied by Platt Brothers in Manchester, UK.

In parallel with these shipbuilding initiatives were many other incentives to copy western technologies such as blast furnaces and kilns – as illustrated by the sites.

What radically changed the approach to industrialisation was the Meiji Accession in 1867. The Tokugawa Shogunate was overthrown and new emperor ascended the throne, in no small part as a result of the unequal treaties. The power in the new Era lay with a small group of men known as the Meiji oligarchs who set about transforming the country between 1867 and 1912 in the name of the Emperor.

Transformation meant reforms and modernisation. The old class system of Japan was abandoned and warrior Samurai were forbidden to carry their traditional swords. New universities and transport systems were rapidly established. This was achieved by 'borrowing technologies from the West', together with social systems, infrastructural systems and educational methods, and adapting them to Japanese needs and culture.

To help with this process, in 1871 the Meiji dispatched a delegation to the United States, England and Europe, to study everything they encountered, bring back what might work. Several students, who were a part of the delegation stayed for longer periods. Foreigners were also invited to serve Japan in an advisory capacity.

This contact heralded the first phase of industrialisation in the Meiji period when western ideas and practices were imported and adapted. The Meiji Government started a state-controlled shipping company *Kaiso Kaisha*, largely funded by Mitsui Gumi (the predecessor of Mitsui Trading company) to start international shipping operations. Foreign vessels were purchased and foreign captains and engineers were hired. Soon private companies were formed and eventually superseded the state company.

Other state controlled initiatives included the Meiji Government in 1869 purchasing the Kosuge Shipyard from the Scottish merchant Thomas Glover in 1869, making large scale steamship repair possible. The Meiji Government also opened the new Tategami Dock in 1879, a move that marked the starting point of greater ship maintenance capability. The opening of the biggest dry dock in Japan attracted a growing number of foreign vessels due to its advantageous capacity and location. In particular, naval ships from the Russian Vladivostok Fleet were regularly maintained here because, at the time, there was a lack of ice-free ports that possessed docks. Private initiatives also flourished such as the development of the Nagasaki shipyard.

Gradually this phase of importation of western knowledge metamorphosed into a further phase when local innovation and industrial development took over and a mature and distinctive industrialisation emerged in which the initiatives came from within.

One of the key factors in this third technological acculturation period from 1890s until 1901, which might be called, the most innovative, outstanding facet of Japanese industrialisation, was the national framework set by the government such as the *Zosen Shorei Ho* (Shipbuilding Encouragement Law) in 1896 the Meiji Government provided to boost shipping production. This allowed the Mitsubishi Nagasaki Shipyard, for instance, to virtually dispense with on-site Western engineers and supervisors.

After 1910, the cut-off date for this nomination, Japanese industrial development continued to grow, relying more and more on imported raw materials, but its concentrated period of technological innovation associated with the blending of western and Japanese technologies had come to an end: the Japanese industrial system was established.

3 Justification for inscription, integrity and authenticity

Comparative analysis

Although comparisons are made with industrial sites already inscribed on the World Heritage List, many in Europe, ICOMOS considers that this comparative analysis is seen to be of limited value as the case is well made for Japan being seen as the first non-Western country to industrialise. It is thus unique in Asia and needs to be seen in that context.

Japan's industrialisation began in the second half of the 19th century and by the early-20th century it had become an industrial nation alongside those of the West. Industrialisation elsewhere in Asia is much later, such as Russia in the 1920s, Taiwan, Singapore, South Korea and Hong Kong during the 1960s-1990s, and more recently China, India, the Philippines, Malaysia and Thailand. Worldwide newly industrialised countries include Brazil, Mexico and South Africa. The historical, social and economic context for Japan's emergence as an industrial nation are therefore completely different from elsewhere in Asia, and in comparison to countries worldwide.

Nevertheless comparisons are looked for within the early industrial iron making in India in the mid-19th century which was based on long established traditions of iron smelting, ship building and coal mining. The conclusion is that this development took place under a British colonial model. Similarly comparisons are made with China and the conclusion drawn is that early industrialisation in that country was very different from that in Japan in that it was pursued during a period of considerable colonial influence by the great powers.

ICOMOS notes that within Japan, a comparative analysis was undertaken of relevant industrial heritage sites to justify the selection of sites for the series. Comparisons were made between properties that shared the principal heavy industrial typologies of iron and steel,

shipbuilding and coal mining that characterised the emergence of industry during the period 1850-1910. Each site was considered with reference to a range of criteria that included relationship to the potential Outstanding Universal Value, relationship to innovation and the transfer of Western technology and its impacts both domestically and globally.

In many cases the remains were not found, were very slight and insufficient for nomination, or were less representative than the chosen sites. The detailed analysis confirmed the selection of sites as representing the heavy industries in the Meiji Period.

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

Justification of Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- The series spans the range of chronological developments in technology that characterise Japan's Meiji industrialisation, demonstrating the rapid evolution from proto-industrial sites of the clans and Shogunate during the 1850s, to transplanted, fully-fledged, large-scale Western industrial ensembles at the beginning of the 20th century;
- The series reflects Japan's unique and major achievement, which eluded all other non-Western countries until much later, to progress from being Asia's first industrialised nation to become one of the world's leading industrial nations;
- This industrial transformation from the mid-19th century, in the space of a mere two generations, is unparalleled in history;
- The component parts of the series are all linked, historically, to the Kyushu-Yamaguchi region of southwest Japan where many of the events that initiated industrialisation took place, and where some of the most significant centres of heavy industry first developed;
- The series reflects the strategic decision within Japan to industrialize on its own terms and the decisions taken to implement this during three phases:
 - The first trial and error approach during the Bakumatsu period when Japanese clans and the Shogunate initially believed that they could replicate successfully Western technology by copying from translated text books and Western ships; and its varying successes that marked a substantial move from the isolationism of the Edo period, and in part prompted the Meiji Restoration;
 - The second phase in the 1870s marked by the importation of Western technology and the expertise to operate it;

- The third phase in the early 20th century when full-blown industrialisation was achieved with newly-acquired Japanese expertise, with the adaptation of Western technology and with the development of distinctly Japanese company structures to suit Japanese raw materials, economic needs, and social traditions.

Japan is undoubtedly the first non-European country to industrialize. The first phase reflects the emergency response by the Japanese Government after four "black ships of the US Marine commanded by Commodore Perry arrived in Edo Bay in June 1853" when the shoguns, the country's feudal authorities, negotiate a unique cooperation agreement with some of the European countries, at a time when the latter was imposing colonization on other kingdoms and empires. Japan's first industrialization stands as a model in terms of diplomacy that was subsequently copied elsewhere in the world.

The Japanese industrialization process is also unique in terms of economics: it was preceded by and successfully achieved through the exploitation of resources in the interest of national security and it managed to a degree to reconcile modernity and tradition. The subsequent long technological training missions undertaken by young Japanese in Europe do stand as pioneers.

This overall story of the three phases of industrial development is coherent. ICOMOS considers that there are two issues with this justification. These relate to how far the nominated sites can convey this narrative in a clear and readily accessible way, and whether the series can be seen to represent the overall industrial revolution given that it is restricted to heavy industry (coal, iron and steel and the needs for defence).

The nominated monuments – reverberatory furnace stacks, ship maintenance, coal mines – and the equipment – turbines, cranes, and furnaces – are extraordinary survivals many of which cannot be paralleled elsewhere in the world in purely technological terms.

For these sites to fully reflect the three stages that led to industrial autonomy, there is a need for more context to be provided in the way each of the sites is interpreted. For the early sites to reflect innovation rooted in feudal traditions, and for the Meiji sites in order to allow a better understanding of how and why certain pieces of imported equipment such as Nagasaki, for example, led on to the final stage of national industrial autonomy.

In other words how did Japan, having borrowed the best of the West in terms of technology, mould it to fit Japan's needs? This crucial aspect of the narrative remains less clear than it should, in relation to what the sites convey, both in the nomination dossier and in the way they are interpreted. (see recommendation below on improved interpretation)

There is a further issue as to whether the chosen sites can be seen to reflect adequately the scope of what exists. There is to a degree an imbalance between the early industrialization process, which is well represented, and that of the Meiji period during which the full industrial transition took place: more sites reflect the former rather than the latter. Nevertheless the comparative analysis of remaining sites has shown that it would be difficult to redress this balance.

In relation to whether the series can be seen to represent the overall industrial revolution given that it is restricted to heavy industry, ICOMOS notes that the State Party has stated that it has already inscribed aspects of silk spinning and weaving and wishes in the future to explore the nomination of other aspects of the industrial revolution in a similar way to how the UK has reflected its industrial legacy through several properties.

ICOMOS considers that the vast legacy of Japanese industrialisation does indeed appear to have the potential to be recognised in a broader way. If that is to be the case, the name of the current nomination presents a difficulty in its aim to represent the whole of the Meiji's Industrial Revolution. There are many other aspects of that revolution, separate from heavy industry and its focus on defence, such as spinning industries (at the end of the Meiji period, more than a third of the world's supply of silk came from Japan and the spinning industries in general provided the resources necessary for defence), gas works, paper mills, canning factories, etc. that could be reflected and linked to local enterprise and initiative, as well as elements in the landscape that speak to the enormous social upheavals that the industrial revolution initiated when workers moved away from agricultural societies to work in the rapidly expanding towns and cities.

ICOMOS considers that the current series demonstrates well the technology associated with the Meiji's industrial revolution and the main sponsors of change, but covers less well other aspects such as the impact on, and contribution from ordinary people, and the transformation of urban and rural landscapes. During this period, Japan did not just borrow or import technology or technological ideas, and mould them for their own purposes, they also introduced social systems, educational methods and governance structures and similarly shaped them to local requirements, in ways that irreversibly altered the structure of society.

The phrase, *Industrial Revolution*, adopted by British and historians was meant to celebrate the development of industrial processes in the hundred and fifty years from the mid-18th century in Great Britain, France, and the Netherlands that led to the development of huge industrial towns and the massive re-structuring of society. The meaning of the term as now widely used goes beyond technology to embrace educational and social change and the negative, as well as positive consequences of industrialisation.

The nominated series reflect only technological progress, related to some industries in a specifically Japanese context. It does not address the wider transformation to society brought about by that technology. Nor does it address the complex, sweeping social and political changes that were the pre-requisites for industrial progress and which were undertaken with astonishing speed such the abandonment of the old class system, the opening of universities, the construction of telegraph and railway lines, and the development of shipping lines.

In these circumstances, ICOMOS does not consider that the series reflects the full scope of the Industrial Revolution. To do that the emphasis would need to be broadened to cover more social aspects, such as workers' housing, schools, hospitals, etc., other industries, and the impact of industrialisation on both rural and urban landscapes and their societies.

Given that the State Party has indicated that it wishes to explore further industrial nominations, it would seem preferable if each of such nominations could be focused on certain aspect of the overall industrial revolution, whether historical, geographical, social or technical.

Integrity and authenticity

Integrity

The selection of the component parts of the series adequately encompasses all the necessary attributes of outstanding Universal Value.

In terms of the integrity of individual sites, though the level of intactness of the components is variable, they demonstrate the necessary attributes to convey OUV. The archaeological evidence appears to be extensive and merits detail recording research and vigilant protection. It contributes significantly to the integrity of the nominated property.

A few of the attributes are vulnerable or highly vulnerable in terms of their state of conservation. These are:

Hashima Coal Mine: the state of deterioration at the mine presents substantial conservation challenges which are detailed under Conservation below.

Miike Coal Mine and Miike Port: some of the physical fabric is in poor condition.

Imperial Steel Works: the physical fabric of the Repair shop is in poor condition but temporary measures have been put in place.

In a few sites there are vulnerabilities in terms of the impact of development, particularly in visual terms.

These are as follows:

Shokasonjuku Academy

The visual integrity of the setting is impacted by the subsequent development of the place as a public historic site and experience. However, this development does not adversely compromise its overall integrity.

Takashima Coal Mine: the visual integrity is compromised by small scale domestic and commercial development.

Shuseikan

The Foreign Engineer's Residence has been relocated twice and is now located in the proximity of its original location. The residence is surrounded by small scale urban development that adversely impacts on its setting. The setting can only be enhanced if and when the surrounding buildings are demolished and any further development is controlled through the legislative process and the implementation of the conservation management plan.

Authenticity

In terms of the authenticity of individual sites, though some of the components' attributes are fragmentary or are archaeological remains, they are recognisably authentic evidence of the industrial facilities. They possess a high level of authenticity as a primary source of information, supported by detailed and documented archaeological reports and surveys and a large repository of historical sources held in both public and private archives that were provided to the mission expert, as requested.

Overall the series adequately conveys the way in which feudal Japan sought technology transfer from Western Europe and America from the middle of the 19th century. And adapted it to satisfy specific domestic needs and social traditions.

ICOMOS considers that the conditions of integrity and authenticity have been met.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (ii), (iii) and (iv).

Criterion (ii): *exhibit and important interchange of human values over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;*

This criterion is justified by the State Party on the grounds that the series of heritage sites, together, uniquely illustrate the process by which feudal Japan sought technology transfer from Western Europe and America from the middle of the 19th century. This technology was adopted and progressively adapted to satisfy specific domestic needs and social traditions, thus enabling Japan to become a world-ranking industrial nation by the early 20th century.

ICOMOS considers that subject to the suggested emphasis on technical aspects of the industrial revolution, the series could be seen to represent an exceptional interchange of industrial ideas, know-how and equipment, that resulted within a short space of time, in Japan in an unprecedented emergence of autonomous industrial development in the field of heavy industry which had profound impact on East Asia.

ICOMOS considers that this criterion has been fully justified.

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared;*

This criterion is justified by the State Party on the grounds that the series of sites is an exceptional affirmation of the strength and durability of a local cultural tradition that underpinned the pioneer period of Japanese industrialization from the 1850s to the early 20th century. In the course of this industrialization a distinct form of 'industrial culture' developed and survives to this day. The moulding of the industrialization of a nation by a cultural tradition, and the survival of that tradition after modernization, adds to the human experience of a major phase in world history. Companies founded in this period still retain the industrial cultural traditions that echo those of Japan itself, an exceptional testimony to the strength of a cultural tradition in the face of unprecedented social, technological and economic change.

ICOMOS considers that the justification puts forward the idea of already existing cultural traditions leading on to a distinctive industrial culture. What has not been clearly described in the dossier are the characteristics of those cultural traditions, either the Shogun culture or the new industrial culture, as conveyed by the sites.

Even if this were done, ICOMOS considers that the 'cultural traditions' as defined, although important could not be seen be a primary driver of the industrial development.

ICOMOS considers that this criterion has not been justified.

Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

This criterion is justified by the State Party on the grounds that the technological ensemble of key industrial sites of iron and steel, shipbuilding, and coal mining is testimony to Japan's unique achievement in world history as the first non-Western country to successfully industrialize. Viewed as an Asian cultural response to Western industrial values, the ensemble has no counterpart elsewhere in the world.

ICOMOS considers that the series could be seen to be an outstanding technological ensemble of industrial sites related to iron, steel, ship-building and coal that reflected the rapid and distinctive industrialisation of Japan based on local innovation and adaptation of Western technology.

ICOMOS considers that this criterion has been fully justified.

ICOMOS considers that the serial approach can be justified.

ICOMOS consider that criteria (ii) and (iv) and Outstanding Universal Value have been justified.

4 Factors affecting the property

ICOMOS notes that the key developments within the nominated properties are two road construction projects at Shuseikan and Mietsu Naval Dock and a new anchorage facility at Miike Port. There are also five proposals for the upgrade or development of visitor facilities in four of the Areas. The forum in which these and future developments will be discussed and assessed for their impact on OUV will be the Local Conservation Councils and this will be done before legislative approval is sought.

Proposed road at Shuseikan

Japan's National Route 10 currently runs just outside the boundary and is within the buffer zone. There is a proposal to bypass the road through the nearby mountain. The agency responsible for the development of bypass is required to undertake its design and development in accordance with the Japanese Government's Cabinet Decision for the protection of World Heritage, and with conservation management plan and all relevant legislation. This project is currently in the planning phase. There is no date yet for construction to commence. This proposal provides the opportunity to enhance the component's setting with the removal of some modern small-scale commercial buildings and provide opportunities to enable more archaeological surveys to enhance understanding of the site.

Proposed road at Mietsu Naval Dock

Consultation locally, nationally and internationally has been undertaken to modify the original design for the construction of a road and bridge just outside the north east side of the buffer zone. As a result, the original bridge design has been modified to try and avoid impact on the site or on the visual setting with its distant views across the river. This development is still in the planning phase and a date for the commencement of construction is yet to be set. As this is a comparatively major project, further details should be submitted for review.

Proposed development at Miike Port

There is a proposal for the development of a new small anchorage facility for the local fishing fleet to provide safer access between the fishing fleet and much larger shipping vessels and to protect the fishing fleet from tidal surges. Planning for this development commenced prior to the development of the nomination but construction is not due to commence until the 2020s. However, subsequent to the nomination's development, the original design has been amended to minimise its physical and visual impact. The new facility is to be located at the western tip of the port and will 'cut into' the existing dock. Further details should be provided for review.

Proposals for new Visitor Centres/Facilities

There are proposals to develop new visitor facilities in the buffer zones to accommodate the anticipated visitor increase at:

- Hagi: new facility planned (construction from 2015 and open in 2017);
- Nirayama: new facility planned (construction from 2015 and open in 2016);
- Miike: new facility for Miike Port planned (construction from 2016 or later);
- Yawata: new facilities planned (new or extension at Kitakyushu, and new construction in Nakama from 2016 or later).

The facilities' design and development will be managed through the Local Conservation Councils in accordance with the relevant conservation management plans and legislative protection.

Natural disasters

Japan is located in a part of the globe, where earthquakes, typhoons, tsunamis, volcanic eruptions, localised heavy rainfalls and flooding and other natural disasters are highly likely to occur and could have a major impact on the nominated sites.

The Japanese Government has established a national Basic Disaster Prevention Plan (2012) based on Japan's recent disaster history. The plan sets out the roles of the national, local and public organisations, businesses and residents in disaster prevention and management. In addition, the regions have in place a regional disaster prevention plan that aims to reinforce each region's ability to manage disasters.

ICOMOS considers that measures to strengthen buildings and structures to mitigate the impacts of earthquakes could have the potential to impact adversely on their value. Safety, particularly in places with public access, is the first priority in determining whether or not such measures are required. Any measures are guided by the Agency for Cultural Affairs' manual for the seismic diagnosis and strengthening for Important Cultural Property.

ICOMOS observed a number of different strengthening treatments during the technical evaluation mission. In the case of the Imperial Steel Works, these had had an adverse visual impact on the original fabric, yet a minimal impact on the fabric and design features. At Miike Coal Mine, the interventions had a minimal visual and physical impact on the fabric and design features.

ICOMOS considers that any such works required in the future should be assessed and designed in consultation with both heritage and engineering specialists and in accordance with the conservation management plans to minimise impacts both visually and in terms of historic fabric.

Visitor pressure

The number of visitors at component sites is likely to increase based on the trend for previously inscribed properties in Japan. The level of increase will vary at each component due to their geographical location, ease of access and the number of hours they are open for public access. Monitoring measures will be put in place to record the level of visitation if the nominated property is inscribed.

ICOMOS considers that a strategy needs to be developed to assess and determine the acceptable carrying capacity at each component site to ensure that there are no adverse impacts on the fabric particularly at such sites as the Shokasonjuku Academy and Glover House. Glover House is a key tourist destination in Nagasaki with a high level of visitor numbers. The local government is actively pursuing an increase in tourism to the city, especially to build capacity to accommodate large cruise ships.

ICOMOS recommends that the State Party defines acceptable visitor threshold levels at each component site to mitigate any potential adverse impacts, commencing with those most likely to be at risk.

ICOMOS considers that the main potential threats to the property are unregulated visitors and infrastructural development together with the lack of conservation of some components – see below.

5 Protection, conservation and management

Boundaries of the nominated property and buffer zone

The boundaries for the components of the nomination and the proposed buffer zones are clearly delineated on the maps supplied with the nomination dossier.

The boundary for each component has been drawn to include the essential features that overall contribute to the potential OUV. The boundaries have been defined by historical records and site boundaries, legal

protection, integrity and authenticity and advice from subject experts.

In most cases the boundaries include all the necessary attributes as well as areas that in light of future research might have the potential to contribute and enhance the understanding of the site. Minor modifications to the boundaries at four of the areas were undertaken following discussions during the ICOMOS mission.

In Area 1 at Hagi Castle town there is a residential block located in the “District of the Merchant Class” which is excluded from the boundary. The reason for this exclusion is that the owner did not agree to it being included in this site listed under the *Law for the Protection of Cultural Properties* and subsequently put forward as part of this nomination (owners’ agreement is essential for listing places under this law). However ICOMOS was satisfied that there is adequate enforceable legal protection under the local city’s planning ordinances to protect this block from adverse development and change.

Each component site of the nomination is provided with an adequate buffer zone that is clearly delineated and takes account of important views, topographical features such as mountain ranges, and areas that are functionally important such as rivers and seas.

The buffer zones provide protection for the nominated components through the existing enforceable legal protection mechanisms and the conservation management plans that have been developed for each of the eight Areas.

ICOMOS considers that the boundaries of the nominated property and of its buffer zone are adequate.

Ownership

For the overall series there is a mixture of public and private ownership. This mixture is also seen in some of the component parts where the owner of a road or river within the boundaries might be different from the major owner of the industrial component. A detailed list is provided in the nomination dossier.

Protection

There are a number of existing legislative protection instruments, both national and regional, that provide a high level of protection for the nominated sites and associated buffer zones. Details are provided in the nomination document. The relationship between the different types of legislation is provided in the conservation management plans for each area.

The most important of these with respect to protecting the nominated property are:

- *Law for the Protection of Cultural Properties* that is applied to the non-operational sites.

- *Landscape Act* that applies to the privately owned and still operational sites that are protected as Structures of Landscape Importance. This applies to the four components owned and operated by Mitsubishi Heavy Industries at Nagasaki Shipyard, and the two components owned and operated by Nippon at Imperial Steel Works.

The *Law for the Protection of Cultural Properties* is the primary mechanism for regulating any development and change of the existing state of a designated place and under this law permission must be granted by the national government. Similarly, under the *Landscape Act* permission must be sought to change any Structure of Landscape Importance and owners of such structures must conserve and manage them appropriately.

The control of development and actions within the buffer zones is largely controlled by city landscape ordinances that limit the height and density of any proposed development.

Further to the legislative measures, the Japan's Government Cabinet decision of May 2012 requires that all relevant Government ministries must now participate in World Heritage protection. This now encompasses not only the ministries of Education, Culture, Sports, Science and Technology and the Environment, as well as such agencies for responsible for roads, tourism and ports.

The legislative and regulatory measures at the national and local levels provide adequate protection of the nominated property.

ICOMOS considers that the legal protection in place is adequate.

Conservation

The nomination dossier provides a list of the condition of the each of the nominated component sites ranging from poor to good. ICOMOS mission visually checked the condition of each component within the time available. From this cursory assessment, ICOMOS considers that that the condition of some of the components may need to be reassessed, particularly:

- Hashima Coal Mine – although the condition stated for this component is poor, fair and good condition, the overall site was observed to be in a poor condition.
- Glover House and Office – although the condition stated for this component is good, the site was observed to be in fair condition.
- Miyanohara Pit – although the condition stated for this component is poor, fair and good condition, the site was observed to be in poor and fair condition.
- Manda Pit – although the condition stated for this component is fair and good condition, the site was observed to be in poor and fair condition.
- Repair Shop – although the condition stated for this component is poor, fair and good condition. The place was observed to be in poor and fair condition.
- Onga River Pumping Station – the condition stated for this component is fair and good condition. The place was observed to be in fair condition.

The State Party provided documentary evidence at each of the archaeological components, which have all been conserved and protected since they were investigated, to support that they are in good condition.

Conservation management plans for each of the components have been developed that detail how each component contributes to the OUV of the nominated series.

"Basic Policies" in the plans provide an overarching consistent conservation approach though there are variations in the level of detail provided for the implementation of work in each component.

For example the Miike Coal Mine and the Imperial Steel Works conservation management plans provide detailed policies and strategies for the ongoing conservation and maintenance of the attributes of these components, appropriate for sustaining OUV. In contrast, the plan for Niryama Reveratory Furnaces provides less detailed guidance. In general, the more detailed plans have been developed for the privately owned and managed sites.

ICOMOS considers that the plan for the Hashima Coal Mine needs to be more detailed. The state of conservation of this site is poor and requires urgent conservation work on a large scale. The conservation management plan provides general policies to prevent further deterioration of the attributes related to the Meiji era. There is currently not a prioritised program of works based on its overall state of conservation, nor a time frame for works to commence. However immediate action is required particularly for the revetment to retain not only the wall but also the whole island. It was confirmed to ICOMOS that ¥200M/year will be made available over the next five financial years to undertake works.

ICOMOS recommends that the State Party develop a detailed conservation works programme for Hashima Island as a priority and submit details for review.

In general, ICOMOS notes that ongoing routine conservation programmes are being developed and implemented in accordance with the conservation management plans and it appears that there are adequate resources. It is unclear how more major conservation works are to be prioritised across the nominated property and when they will be undertaken. It is recommended that the State Party develop a prioritised conservation programme for the nominated property as a whole and for each of its component sites.

ICOMOS considers that the state of conservation is satisfactory for most sites, but urgent conservation work and a long term conservation strategy are needed at Hashima Coal Mine and there is also a need for a prioritised conservation programme for the overall property and each of the sites.

Management

Management structures and processes, including traditional management processes

The Japanese Government has established a new partnership-based framework for the conservation and management of the nominated property and its components including the operational sites. This is known as the *General Principles and Strategic Framework for the Conservation and Management of the Sites of Japan's Meiji Industrial Revolution: Kyushu-Yamaguchi and Related Areas*. Japan's Cabinet Secretariat has the overall responsibility for the implementation of the framework.

Under this strategic framework a wide range of stakeholders, including relevant national and local government agencies and private companies, will develop a close partnership to protect and manage the nominated property. The framework details 13 basic principles for the conservation and management of the nominated property.

1. Partnership-based approach
2. Clarifying the role of the stakeholders
3. Holistic approach
4. Global approach
5. Flexible design of conservation methods
6. Precautionary risk analysis
7. Integration with regional and local plans
8. Sustainable conservation and management
9. Involvement of local communities
10. Handing over the associated knowledge to the next generation
11. Feedback cycle for better conservation
12. Capacity building
13. Transparency and accountability

The governance structure established by the Cabinet Secretariat to oversee the implementation of the strategic framework consists of:

- A National Committee of Conservation and Management with representatives from relevant national and local government agencies who will provide advice and make decisions regarding issues related to the overall nominated property.
- Local Conservation Councils with representatives, including heritage experts, from relevant national and local government agencies and private companies. The Councils' role is to ensure that the components are conserved and managed in accordance with the conservation management plans. They shall also be the fora by which any

proposals for development and change as well as other issues are discussed and/or resolved prior to seeking the relevant legislative approval. The Councils shall also undertake a monitoring role for the nominated property that will be coordinated by the National Committee of Conservation and Management. The Councils are currently scheduled to meet once each year.

An Industrial Heritage Expert Committee has also been established to provide additional conservation and management advice.

In addition to these mechanisms, the private companies Mitsubishi, Nippon and Miike Port Logistics Corporation have entered into agreements with the Cabinet Secretariat to protect, conserve and manage their relevant components. This will largely be achieved with the implementation of the relevant conservation management plans and in accordance with relevant legislation. The legislation provides a clear process to manage any potential developments or activities that may lead to an adverse impact on OUV. It appears to be unlikely that there will be a change in ownership of these components. However, in the event that ownership is changed and the new owner does not enter into an agreement with Cabinet Secretariat, the existing legislation appears adequate to protect OUV.

Policy framework: management plans and arrangements, including visitor management and presentation

Though the conservation management plans provide consistency on the overall policies for the components conservation and management, there are variations between the plans as mentioned above. In order to ensure consistency across each of the components, ongoing regular training and capacity building is needed on the appropriate conservation and management methods.

ICOMOS recommends that the State Party monitor the effectiveness of the new partnership-based framework for the conservation and management of the nominated property and its components on an annual basis. It is also recommended that the State Party monitors the implementation of the conservation management plans.

The components are currently largely interpreted and presented by means of on-site signage, self-guided and guided tours, and in some cases educational programmes. The presentation of the components is mainly place specific and does not present the OUV or indicate how each component relates to each other or to the whole property.

ICOMOS considers that what was not demonstrated is how all the 23 components are to be interpreted to relate them to the overall OUV of the nominated property. What is urgently needed is clear interpretation to show how each site or component relates to the overall series,

particularly in terms of the way they reflect the one or more phases of Japan's industrialisation and convey their contribution to OUV.

The State Party is responding by setting up a Committee to address the issue that is to include interpretation, marketing and education experts.

ICOMOS recommends that the State Party prepare an interpretive strategy for the presentation of the nominated property.

Details of the staffing levels at each Area are provided in the nomination dossier. However this does not include the staff at Meitsu Port Logistics Corporation, Mitsubishi Heavy Industries and Nippon Steel though it is claimed that they *"staffs fully in house and affiliate to conservation and management of the component parts they own"*.

Under the Strategic Framework, an Industrial Heritage Expert Committee has been established whose role is to provide advice on technical conservation measures. The Committee consists of domestic expertise including industrial archaeology, history of industry, architecture, city development and heritage conservation. It also includes international experts on industrial archaeology and world heritage.

Relevant expertise, such as archaeologists and engineers, are readily available at the local and national government levels. The Local Conservation Councils aim to provide the day-to-day managers with access to relevant expertise and to develop tailored and targeted approaches for the ongoing conservation and management of a component.

ICOMOS considers that capacity building through training needs to be better articulated, particularly to ensure a consistent conservation and management approach across all components of the nominated property.

It has not demonstrated that the private companies have internal heritage expertise. It is essential that the relevant managers and staff within the private companies undergo training to understand OUV and how each of the sites contributes. It is also important that the companies engage/consult with relevant heritage experts as required, particularly with regard to balancing the need for routine maintenance with the need for conservation.

ICOMOS recommends that the State Party establishes and implements an on ongoing training program for all staff and stakeholders responsible for the day-to-day management of each component to build capacity and ensure a consistent approach to the nominated property's ongoing conservation, management and presentation.

ICOMOS notes that there is adequate funding and/or access funding for the conservation and management of the nominated property.

In general, the local government is responsible for funding the day-to-day conservation and maintenance of the components across the nominated property. If substantial funding is required (approximately ¥2M), applications for funding can be made to the national government which, in general, provides a 50% contribution. The Japanese Government has established a tax incentive scheme to encourage private companies to fund the conservation and management of component parts. In the case of Nippon Steel for the components at the Imperial Steel Works (Area 8) it is estimated that it will receive approximately ¥100K/year.

Involvement of the local communities

Extensive community consultation was undertaken in 2012 and 2013 during the development of the nomination. These fora included meetings, lectures, tours and seminars held at each Area.

The Local Conservation Councils are the mechanism for the ongoing community engagement for the nominated property's conservation, management and presentation.

ICOMOS considers that the overall management system for the property is adequate but that attention should be given to monitoring the effectiveness of the new partnership-based framework, and to putting in place an on-going capacity building programme for staff. There is also a need to ensure that appropriate heritage advice is routinely available for privately owned sites.

6 Monitoring

The nominated property's component sites have been inventoried, described and documented in the preparation of the nomination dossier and the accompanying conservation plans.

This inventory was based on the Japanese Government's two research reports developed in 2007 and 2008 that researched, described and documented heritage places significant to its industrial modernisation. In addition, the National Committee for Utilising Industrial Heritage, chaired by the President of ICOMOS Japan, was established to provide expert assessment of significant places of industrial heritage.

ICOMOS considers that monitoring processes are adequate.

7 Conclusions

ICOMOS considers that the current series demonstrates well the technology associated with the Meiji's industrial

revolution and the main sponsors of change, but covers less well other aspects such as the impact on, and contribution from ordinary people, and the transformation of urban and rural landscapes. During this period, Japan did not just borrow or import technology or technological ideas, and mould them for their own purposes, they also introduced new social systems, educational methods and governance structures and similarly shaped them to local requirements.

The phrase, *Industrial Revolution*, as now widely used goes beyond technology to embrace educational and social change and the negative, as well as positive consequences of industrialisation. The nominated series reflect only technological progress, related to some industries in a specifically Japanese context. It does not address the wider transformation to society brought about by that technology. Nor does it address the complex, sweeping social and political changes that were the pre-requisites for industrial progress, and which were undertaken with astonishing speed, such as the abandonment of the old class system, the opening of universities, the construction of telegraph and railway lines, and the development of shipping lines.

In these circumstances, ICOMOS does not consider that the series reflects the full scope of the Industrial Revolution. Given that the State Party has indicated that it wishes to explore further industrial nominations, it would seem preferable if each of such nominations could be focused on certain aspect of the overall industrial revolution, whether historical, geographical, social or technical. ICOMOS thus supports the name change suggested by the State Party to reflect the fact that this nomination covers certain specific technical aspects of the industrial revolution.

The nominated series presents challenges in terms of interpreting the way component sites each contributes to the Outstanding Universal Value of the property as a whole. More needs to be done to present not only the technical aspects of each site but also how each relates in a readily understood manner to one of the three phases of industrialisation. It would also be appropriate to allow understanding of the full history of each of the sites.

Even greater challenges relate to the conservation of the large, complex and in some cases extremely fragile sites. ICOMOS considers that more work is needed to strengthen the conservation approaches and to set out clear long term plans and how they will be implemented. In the short term, a detailed programme of conservation work needs to be put in place for Hashima Island as a matter of urgency.

8 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the Sites of Japan's Meiji Industrial Revolution: Iron and Steel, Shipbuilding and Coal Mining, Japan, be inscribed on the basis of **criteria (ii) and (iv)**.

Recommended Statement of Outstanding Universal Value

Brief synthesis

A series of industrial heritage sites, focused mainly on the Kyushu-Yamaguchi region of south-west of Japan, represent the first successful transfer of industrialization from the West to a non-Western nation. The rapid industrialization that Japan achieved from the middle of the 19th century to the early 20th century was founded on iron and steel, shipbuilding and coal mining, particularly to meet defence needs. The sites in the series reflect the three phases of this rapid industrialisation achieved over a short space of just over fifty years between 1853 and 1910.

The first phase in the pre-Meiji Bakumatsu period, at the end of Shogun era in the 1850s and early 1860s, was a period of experimentation in iron making and shipbuilding. Prompted by the need to improve the defences of the nation and particularly its sea-going defences in response to foreign threats, industrialisation was developed by local clans through second hand knowledge, based mostly on Western textbooks, and copying Western examples, combined with traditional craft skills. Ultimately most were unsuccessful. Nevertheless this approach marked a substantial move from the isolationism of the Edo period, and in part prompted the Meiji Restoration.

The second phase in the early 1870s brought in with the new Meiji Era, involved the importation of Western technology and the expertise to operate it; while the third and final phase in the late Meiji period (between 1890 to 1910), was full-blown local industrialization achieved with newly-acquired Japanese expertise and through the active adaptation of Western technology to best suit Japanese needs and social traditions, on Japan's own terms. Western technology was adapted to local needs and local materials and organised by local engineers and supervisors.

The 23 nominated components are in 11 sites within 8 discrete areas. Six of the eight areas are in the south-west of the country, with one in the central part and one in the northern part of the south island. Collectively the sites are an outstanding reflection of the way Japan moved from a clan based society to a major industrial society with innovative approaches to adapting western technology in response to local needs and profoundly influenced the wider development of East Asia.

After 1910, many sites later became fully fledged industrial complexes, some of which are still in operation or are part of operational sites.

Criterion (ii): The Sites of Japan's Meiji Industrial Revolution illustrate the process by which feudal Japan sought technology transfer from Western Europe and America from the middle of the 19th century and how this technology was adopted and progressively adapted to satisfy specific domestic needs and social traditions, thus enabling Japan to become a world-ranking industrial nation by the early 20th century. The sites collectively represents an exceptional interchange of industrial ideas, know-how and equipment, that resulted, within a short space of time, in an unprecedented emergence of autonomous industrial development in the field of heavy industry which had profound impact on East Asia.

Criterion (iv): The technological ensemble of key industrial sites of iron and steel, shipbuilding and coal mining is testimony to Japan's unique achievement in world history as the first non-Western country to successfully industrialize. Viewed as an Asian cultural response to Western industrial values, the ensemble is an outstanding technological ensemble of industrial sites that reflected the rapid and distinctive industrialisation of Japan based on local innovation and adaptation of Western technology.

Integrity

The component sites of the series adequately encompass all the necessary attributes of Outstanding Universal Value.

In terms of the integrity of individual sites, though the level of intactness of the components is variable, they demonstrate the necessary attributes to convey OUV. The archaeological evidence appears to be extensive and merits detail recording research and vigilant protection. It contributes significantly to the integrity of the nominated property.

A few of the attributes are vulnerable or highly vulnerable in terms of their state of conservation. The Hashima Coal Mine is in a state of deterioration and presents substantial conservation challenges. At the Miike Coal Mine and Miike Port some of the physical fabric is in poor condition. The physical fabric of the Repair shop at the Imperial Steel Works is in poor condition although temporary measures have been put in place.

In a few sites there are vulnerabilities in terms of the impact of development, particularly in visual terms. At the Shokasonjuku Academy, the visual integrity of the setting is impacted by the subsequent development of the place as a public historic site and experience. However, this development does not adversely compromise its overall integrity.

The visual integrity of the Takashima Coal Mine is compromised by small scale domestic and commercial development, while at Shuseikan, the Foreign Engineer's Residence has been relocated twice and is now located in the proximity of its original location. The residence is surrounded by small scale urban development that adversely impacts on its setting. The setting can only be enhanced if and when the surrounding buildings are demolished and any further development is controlled through the legislative process and the implementation of the conservation management plan.

Authenticity

In terms of the authenticity of individual sites, though some of the components' attributes are fragmentary or are archaeological remains, they are recognisably authentic evidence of the industrial facilities. They possess a high level of authenticity as a primary source of information, supported by detailed and documented archaeological reports and surveys and a large repository of historical sources held in both public and private archives.

Overall the series adequately conveys the way in which feudal Japan sought technology transfer from Western Europe and America from the middle of the 19th century. And adapted it to satisfy specific domestic needs and social traditions.

Requirements for Protection and Management

A number of existing legislative protection instruments, both national and regional, provide a high level of protection for the nominated sites and associated buffer zones. The relationship between the different types of legislation is provided in the conservation management plans for each area. The most important of these instruments are the *Law for the Protection of Cultural Properties* that is applied to the non-operational sites, and the *Landscape Act* that applies to the privately owned and still operational sites that are protected as Structures of Landscape Importance. This applies to the four components owned and operated by Mitsubishi Heavy Industries at Nagasaki Shipyard, and the two components owned and operated by Nippon at Imperial Steel Works.

The *Law for the Protection of Cultural Properties* is the primary mechanism for regulating any development and change of the existing state of a designated place and under this law permission must be granted by the national government. Similarly, under the *Landscape Act* permission must be sought to change any Structure of Landscape Importance and owners of such structures must conserve and manage them appropriately.

The control of development and actions within the buffer zones is largely controlled by city landscape ordinances that limit the height and density of any proposed development.

Conservation management plans for each of the components have been developed that detail how each component contributes to the OUV of the series. "Basic Policies" in the plans provide an overarching consistent conservation approach though there are variations in the level of detail provided for the implementation of work in each component.

The Japanese Government has established a new partnership-based framework for the conservation and management of the nominated property and its components including the operational sites. This is known as the *General Principles and Strategic Framework for the Conservation and Management of the Sites of Japan's Meiji Industrial Revolution: Kyushu-Yamaguchi and Related Areas*. Japan's Cabinet Secretariat has the overall responsibility for the implementation of the framework. Under this strategic framework a wide range of stakeholders, including relevant national and local government agencies and private companies, will develop a close partnership to protect and manage the nominated property.

In addition to these mechanisms, the private companies Mitsubishi, Nippon and Miike Port Logistics Corporation have entered into agreements with the Cabinet Secretariat to protect, conserve and manage their relevant components.

Attention should be given to monitoring the effectiveness of the new partnership-based framework, and to putting in place an on-going capacity building programme for staff. There is also a need to ensure that appropriate heritage advice is routinely available for privately owned sites.

What is urgently needed is an interpretation strategy to show how each site or component relates to the overall series, particularly in terms of the way they reflect the one or more phases of Japan's industrialisation and convey their contribution to OUV.

Additional recommendations

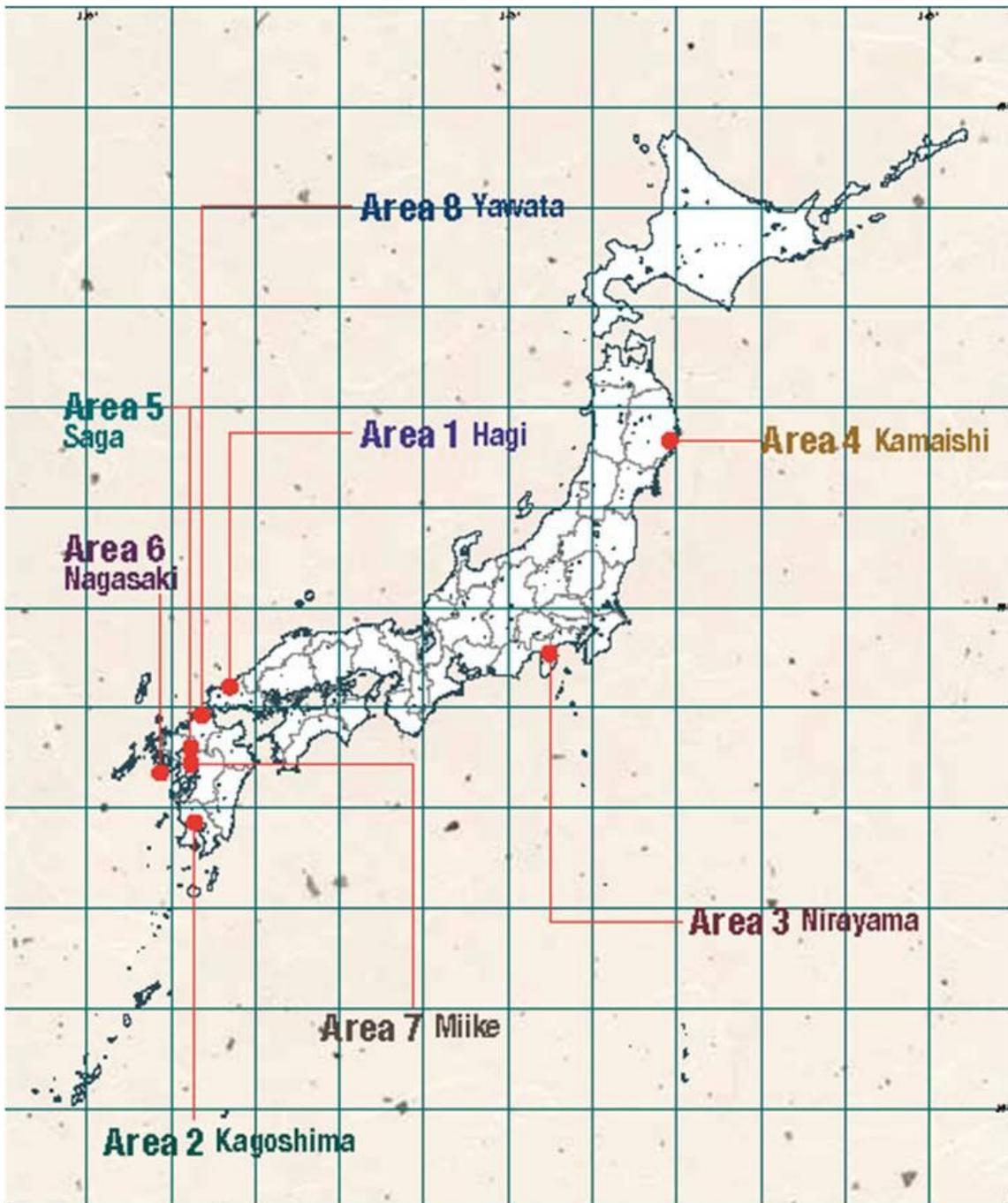
ICOMOS further recommends that the State Party give consideration to the following:

- Developing as a priority a detailed conservation work programme for Hashima Island;
- Developing a prioritised conservation work programme for the nominated property and its component sites and an implementation programme;
- Defining acceptable visitor threshold levels at each component site to mitigate any potential adverse impacts, commencing with those most likely to be at risk;
- Monitoring the effectiveness of the new partnership-based framework for the conservation and management of the nominated property and its components on an annual basis;

- Monitoring the implementation of the conservation management plans, the issues discussed and the decisions made by the Local Conservation Councils on an annual basis;
- Establishing and implementing an on ongoing training programme for all staff and stakeholders responsible for the day-to-day management of each component to build capacity and ensure a consistent approach to the nominated property's ongoing conservation, management and presentation;
- Preparing an interpretive strategy for the presentation of the nominated property, which gives particular emphasis to the way each of the sites contributes to OUV and reflects one or more of the phases of industrialisation; and also allows an understanding of the full history of each site;
- Submitting all development projects for road construction projects at Shuseikan and Mietsu Naval Dock and for new anchorage facility at Miike Port and proposals for the upgrade or development of visitor facilities to the World Heritage Committee for examination, in accordance with paragraph 172 of the *Operational Guidelines for the Implementation of the World Heritage Convention*.

ICOMOS also recommends that the State Party should submit a report outlining progress with the above to the World Heritage Centre, by 1 December 2017, for examination by the World Heritage Committee at its 42nd session in 2018.

ICOMOS would be ready and willing to offer advice if requested.



Map showing the location of the nominated properties



Archaeological excavation of Hashino blast furnace



Hagi Reverberatory furnace



Hashima Coal Mine (Gunkanjima)



Mitsubishi Giant Cantiliver Crane