

Component Part No.4 of the “Sites of Japan’s Meiji Industrial Revolution” Conservation, Restoration, Presentation and Public Utilization Plan for the Hashino Iron Mining and Smelting Site (Area 4 Kamaishi) (Abstract)

Kamaishi City drew up a Conservation, Restoration, Presentation and Public Utilization Plan for the Hashino Iron Mining and Smelting Site (hereinafter referred to as “Plan”) in FY 2016 and 2017, which became a source of “Conservation Work Programme” pursuant to Recommendation b) in Decision: 39 COM 8B. 14 as adopted by the World Heritage Committee at its 39th session in 2015. The Plan comprises detailed measures for the conservation, restoration, presentation and public utilization of the component part of the “Sites of Japan’s Meiji Industrial Revolution: Iron and Steel, Shipbuilding and Coal Mining” (hereinafter referred to as “Sites of Japan’s Meiji Industrial Revolution”). This document provides an abstract of the Plan.

1. Vision

Stably maintain remains in the birthplace of modern steelmaking, and disseminate information regarding the entire system of mining, transportation, and steelmaking.

Hashino Iron Mining and Smelting Site is important in that the following three elements¹ all remain as a consistent system from the dawn of Japan’s industrial revolution (1850s–): (i) the Smelting Site, which shows the introduction of blast furnace iron-making (including the river which served as the water source to turn the waterwheel that was the power source for the furnace facility), (ii) the Transportation Site used to carry the iron ore, and (iii) the Iron Mining Site, which carried on traditional techniques from early modern times (Figure 1).

In Area 4 Kamaishi of the World Heritage property, Kamaishi City will undertake conservation, restoration, presentation and public utilization of the remains focusing on their functions and linkages so that the process of historical changes and developments of iron manufacturing through to the present can be understood. The Hashino Iron Mining and Smelting Site is positioned as a resource where the history of the iron manufacturing industry can be experienced, and while focusing on the time from the late Edo period when with the introduction of Western technology and the initiation of iron-making through to the middle of the Meiji period when operations were shut down, sufficient consideration will also be given to the site’s history after the operations ceased as a symbolic presence telling the history of iron manufacturing in Kamaishi which has been loved by city residents. In addition, due account will be taken of the links with other early modern remains within the city which show the subsequent history of how Kamaishi further developed since Hashino Iron Mine period (1858–1894) as a modern “City of Iron” and proactive efforts will be made to provide and utilize information so the symbolic significance that the Hashino Iron Mining and Smelting Site has retained can be shared.

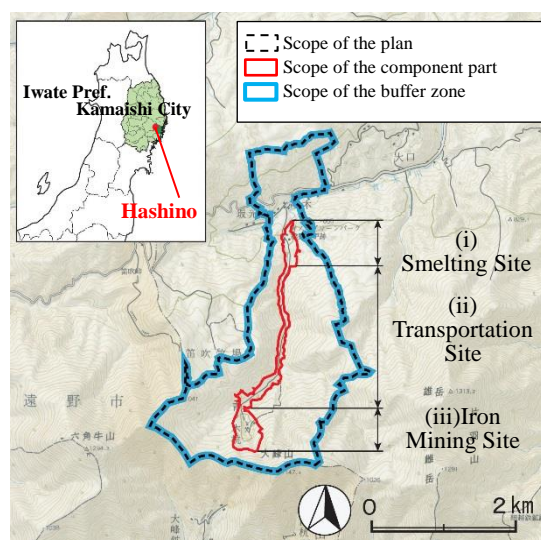


Figure 1 Scope of the Plan

¹ Considering the steelmaking process, the order should be the Iron Mining Site, Transportation Site, and Smelting Site, but because the Smelting Site are the main subject of the conservation works for the time being, under this plan these are written in the order of (i) Smelting Site, (ii) Transportation Site, and (iii) Iron Mining Site.

(1) Conservation and restoration – maintaining and enhancing a stable environment for the remains

Kamaishi City conserve the conditions of the remains of the surface mine workings, the stone structures of the blast furnaces, and other facilities of the time that still exist in fragments in a stable condition. While implementing follow-up observations using monitoring charts, the city will conduct repairs or restoration particularly on the stone walls that were the foundation of the construction at that time, the stone structures of the blast furnaces, and other areas where swelling, loosening and falling-off is advancing, while minimizing the impact on the remains, and work to maintain and enhance the stable environment for the remains.

Because much of the underground archaeological remains have not been surveyed, the excavation surveys will be conducted within the minimal range.

(2) Presentation and public utilization – providing information and explanations of the value of the sites using diverse methods

Kamaishi City will provide information and explanations to fully convey how the multiple remains were mutually related and together constituted an integrated system of mining, transportation and iron-making in the early modern era using explanatory boards, videos and digital contents. In particular, the city will focus on providing information and explanations of how the (i) Smelting Site, (ii) Transportation Site, and (iii) Mining Site changed from the time of the Hashino Iron Mine period through to today so that the process of historical changes and developments can be understood. In addition, the city is striving for the conservation and management of the environment of the valley where the remains are located and of the forest that was the source of charcoal, and devising measures to recreate the type of forest that existed when the mine was operating so visitors to the Hashino Iron Mining and Smelting Site can experience a realistic sense of early modern iron manufacturing.

(3) Clarification of the position of the “Hashino Iron Mining and Smelting Site” in the World Cultural Heritage “Sites of Japan’s Meiji Industrial Revolution”

Hashino Iron Mining and Smelting Site is an industrial remains representing the initial period of Japan’s industrial revolution in the field of iron and steel manufacturing, and it contributes to the Outstanding Universal Value of “Sites of Japan’s Meiji Industrial Revolution” as a specific example of the fusion of Western technology and Japanese indigenous traditional techniques. To advance the conservation, restoration, presentation and public utilization of the constituent elements themselves which contribute to the Outstanding Universal Value, and to grasp for deeper relations with other component parts of the property, Kamaishi City will disseminate the findings of the ongoing investigative surveys implemented by each of the cities and other bodies concerned in all Areas.

(4) Clarification of the position of the “Hashino Iron Mining and Smelting Site” in the process of historical changes and developments of iron manufacturing in Kamaishi

By grasping the process of historical changes and developments of iron manufacturing in Kamaishi from ‘Tatara’ iron making prior to the modern era through the time of the Hashino Iron Mine period at the end of the Edo period up until today, Kamaishi City will clarify the position of the Hashino Iron Mining and Smelting Site in the history of iron-making so that visitors can tour the site and other industrial remains within the city as if to follow one consistent “Story of Iron-making.”

(5) Clarification of the position of the “Hashino Iron Mining and Smelting Site” as a base for urban development toward the future

Wide-ranging industrial and economic activities have spread in the urban areas of Kamaishi, and the traditions, spirit, arts and culture as a “City of Iron” have become rooted in the lives of the residents. From the perspective of encouraging these activities, Kamaishi City and related companies and organizations concerned will actively disseminate the identity of Kamaishi centered on the Hashino Iron Mining and Smelting Site.

2. Policy

The policy consisting of following six items has been set toward realizing the Vision.

(1) Promoting research and study

With the purposes of reconfirming and further understanding of the Outstanding Universal Value and public utilization of the Hashino Iron Mining and Smelting Site as a resource for study and regional promotion, Kamaishi City is systematically implementing surveys for distribution of remains, measurement of topography, excavation of underground remains and other field surveys, as well as historical document surveys to clarify the mining, transportation and iron-making system.

Regular monitoring is conducted to grasp the state of the component part and buffer zone, applying annual report and monitoring charts. Visitor surveys are also carried out to understand visitor state and their impact on the component part.

(2) Maintaining, reinforcing, and stabilizing the materials, substance, and structure of the installations and historical and archaeological remains and objects

Kamaishi City will work on daily management of the remains while monitoring them with the basic aim of improving the conservation environment so that the historical and archaeological remains and objects are maintained in a stable condition. At the same time, while making comprehensive judgments on the role and state of deterioration of each remains, the city will implement repair or restoration works for reinforcement, stabilization, etc. in a phased manner in order of priorities. In particular, records are being documented and restorations implemented on an urgent, priority basis for those areas that suffered damages from Typhoon No. 10 in August, 2016.

(3) Presenting and explaining of the mining, transportation, and iron-making system in the component part

The characteristics of each constituent elements in the mining, transportation, and iron-making system must emerge based on the differences in the history, location, and how the historical and archaeological remains and objects remain at each of the three sections ((i) Smelting Site, (ii) Transportation Site, and (iii) Iron Mining Site). To those ends, Kamaishi City provides information through explanation boards at the Hashino Iron Mining and Smelting Site Information Center, explanation boards inside the sites, pamphlets and other means so that visitors can gain an appropriate understanding of the process of mining (iii) => transportation (ii) => iron-making (i). Furthermore, the city provides information on the entire mining, transportation, and iron-making system including the river which served as the water source to turn the waterwheel that was the power source for the blast furnace and the surrounding forest that was the source of the charcoal.

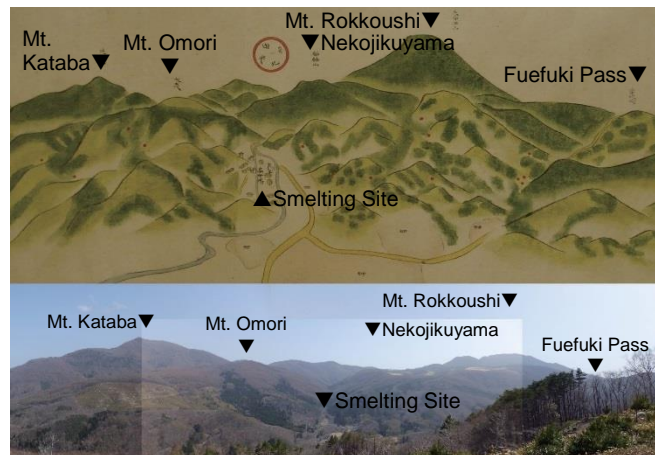


Figure 2: Comparison of Historical drawing and Present Landscape

(4) Arranging and improving the environment from a landscape perspective

Hashino Iron Mining and Smelting Site is important in that the landscape pertaining to modern iron manufacturing still exists today, surrounded forest which was the source of the reducing agent and of the charcoal used as fuel for iron manufacturing. Because the present view toward the Hashino Iron Mining and Smelting Site including the Smelting Site from the prefectural road on the northern side of the

component part has a strong resemblance to “Picture map of full view of the Hashino” (Figure 2) in “Picture scroll of the Hashino Iron Mine” (published in the 1860s), while maintaining the present landscape, Kamaishi City is devising improvement measures to approach the past landscape shown on the picture. The City will also take measures to set up a scenic viewpoint so that visitors can compare the present landscape with the historical drawings.

(5) Utilizing the component part as cultural resource and a base for information dissemination

Hashino Iron Mining and Smelting Site is positioned as a “core facility” in the “Kamaishi Field Museum Concept” (2011) put forth by Kamaishi City, and it is expected to serve as a hub that promotes visits around the nearby early modern remains positioned as “satellite facilities.” In collaboration with Kamaishi City Iron and Steel History Museum, Kamaishi Historical Materials Display, and the Former Kamaishi Mine's Office Building, which are positioned as “core facilities” like the Hashino Iron Mining and Smelting Site, the city is promoting tours by visitors using information boards, collecting series of stamps at each facilities and other methods to promote understanding of the iron manufacturing industry.

(6) Implementing projects

To ensure the phased and steady execution of the Plan, Kamaishi City sets a project execution schedule and incorporates it into this Plan, including project periods, implementation methods, project implementation items in each year, necessary expenses, etc.

Also, projects listed in the Plan are clearly stated in the city's comprehensive plan (presently, “Kamaishi City Reconstruction and Development Master Plan/Implementation Plan”), and sustainable projects are being advanced with the certain securing of budgets, giving consideration to the city's financial state and the running costs after projects completion.

Moreover, the policies for managing and operating projects for the component part are shared relevant information among the owners and managers, and the sustainable management of the projects shared with the members of the community is being enhanced in collaboration with the Hashino Town Promotion Association, which is normally responsible for management of the projects open to the public and of the Hashino Iron Mining and Smelting Site Information Center. In addition, Kamaishi City is promoting mutual ties among the responsible departments such as department of world heritage, cultural properties, and tourism, making improvements as a functional system, and implementing projects for training guides and capacity building of human resources engaged in conservation and restorations, surveys, etc.

3. Methods

(1) Research and study

(a) Field surveys (distribution surveys, measurement surveys, excavation surveys)

While conducting excavation surveys to clarify the functions and mutual relations of each of the remains of the Smelting Site, Kamaishi City is implementing distribution for surveys of remains on a priority basis to grasp the conditions of the transportation Site and Iron Mining Site. Excavation surveys are conducted within the minimum range to conserve the remains best, and remains maps are documented using three-dimensional measurements. Unless otherwise required for restoration from disaster, the excavation surveys are being implemented in the order No. 2 Blast Furnace area => No. 3 Blast Furnace area => No. 1 Blast Furnace area => Iron Mining Site.

(b) Historical documents surveys

Kamaishi City is confirming the locations and state of conservation of the original copies (historical documents) of texts published in “Hashino Blast Furnace Remains Investigation Report” (Kamaishi City, 1956) and “Kamaishi City Magazine Historical Materials Volume 4” (Kamaishi City Magazine Editorial Board, 1963), and preparing a register. After that, the city will also conduct interpretative surveys to clarify the process of historical changes and developments of iron manufacturing in

Kamaishi including the history of the Hashino Iron Mining and Smelting Site, as well as the mining, transportation, and iron-making system at that time. The survey subjects include historical documents not only within Kamaishi City, but outside the city as well.

(c) Survey on visitor numbers, behaviors and opinions

To verify project effects, grasp the impact of tourism pressure on conservation, and reflect findings in better ways of public utilizing World Heritage Component Part, Kamaishi City sets a questionnaire response box at the Hashino Iron Mining and Smelting Site Information Center and carries out surveys on visitor numbers, their behaviors, and their understandings and opinions.

(d) Monitoring

In December 2016, Kamaishi City documented monitoring charts that comprehensively and systematically cover the constituent elements included in the component part. From now on, these will be used as the starting point for regularly grasping the conditions of the component sites and buffer zone. The monitoring results are reported to the Kamaishi Conservation Council for their opinion. In cases where a negative impact on the component part is confirmed, the cause is removed or countermeasures are implemented to mitigate the impact, with subsequent inspections and verifications of the effects.

(2) Conservations and restorations

(a) Subjects

The subjects of the conservations and restorations are the constituent elements of the Hashino Iron Mining and Smelting Site that contribute to the Outstanding Universal Value.

(b) Basic concept and methods

(i) Smelting Sites

a. First Blast Furnace

Regarding the multiple stone materials that have fallen and become buried at the northern and western perimeter of the stone works of the First Blast Furnace, because prior surveys have been able to specify the original positions, in the future Kamaishi City will conduct detailed examinations through additional surveys, carry out restoration with dismantling, and work to stabilize the structure of the stone works by restoring the stone materials to their original positions.

b. Second Blast Furnace

The stone materials that were formerly used for the stone works of the Second Blast Furnace were re-used as foundation stone for the management office after the blast furnace operations ended, so Kamaishi City is stably maintaining their present condition by periodic monitoring and daily maintenance management, without pursuing restoration works.

c. Third Blast Furnace

The stone materials of the Third Blast Furnace show cracking and chipping, but the structure is presently stable, and does not require an urgent response. Consequently, while implementing periodic monitoring and daily maintenance management, Kamaishi City is conducting detailed investigations on the necessity of dismantling and restoration, in parallel with systematic excavation surveys and display of the surrounding remains.

d. Watercourse, etc.

The stone walls of the watercourse at the (i) Smelting Site have not been repaired since operations were suspended, so a lot of swelling, loosening and falling of stone materials is visible, but based on visual observations over the past ten years, the conditions do not demand immediate restoration. For that reason, for the time being, Kamaishi City will conduct monitoring through visual inspections in parallel with daily maintenance and management, and grasp the movement of the stone material

through fixed point measurement surveys at locations where swelling and loosening is recognized. If the amount of movement increases and a judgment is reached that restoration with dismantling is necessary, trees that are causing harm will be removed and excavation surveys and restoration implemented.

Regarding the stone walls of the watercourse around the Second Blast Furnace where swelling, loosening and falling of stone materials is evident, excavation surveys will be conducted together with the display of the remains around the Second Blast Furnace and detailed examinations carried out on the necessity of restoration with dismantling.

(ii) Transportation Site and Iron Mining Site

a. Stone Walls

Kamaishi City will urgently prepare a record of the current conditions (conduct measurement surveys), and continue monitoring. Stone walls in unstable conditions will be reinforced using sandbags, gabions and other means, and stable conditions maintained. While the parts of the stone walls of the Iron Mining Site that fell from Typhoon No. 10 in August 2016 are presently maintaining stable conditions using sandbags as a temporary measure, survey and restoration works will be implemented in phases after the restoration of forest road and forest maintenance road are completed. Detailed investigations considering the precipitous terrain at the site will also be conducted on the possibility of constructing a new road for management, which would be used to bring in heavy machinery and transport materials for restoration.

b. Remains of Transportation Road and Surface Mine Workings

Kamaishi City is conducting periodic monitoring and daily maintenance and management, and maintaining the stable conditions of these remains. Kamaishi City is removing vegetation that impact on the remains following consultation with the owners (Forestry Agency, Nittetsu Mining Co., Ltd.).

(iii) Underground archaeological Remains (entire area of the component part)

The underground archaeological remains detected in excavation surveys are reinforced with river sand and other materials, and reburied. Thereafter, periodic visual monitoring is conducted so there is no adverse impact on the underground archaeological remains from subsidence of the protective earth layer, etc.

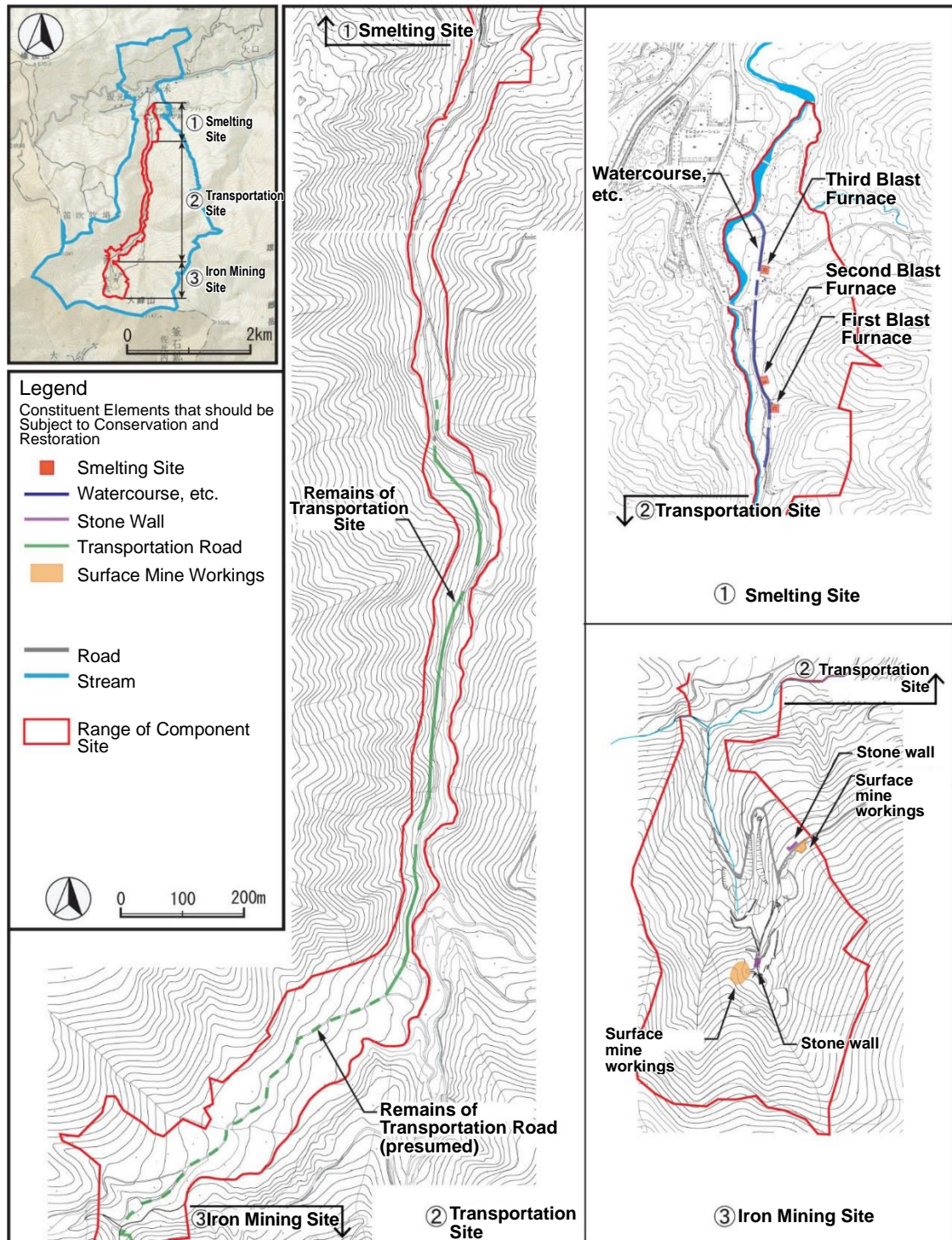


Figure 3: Constituent Elements that Should be Subject to Conservation and Restoration

(3) Presentation and public utilization considering the iron ore mining, transportation, and iron-making system

The sections (i) Smelting Site, (ii) Transportation Site and (iii) Iron Mining Site are set as the Smelting Site zone, Transportation Site zone, and Iron Mining Site zone, respectively, and each zone is divided into multiple blocs based on the policies for survey, conservation, restoration, presentation and public

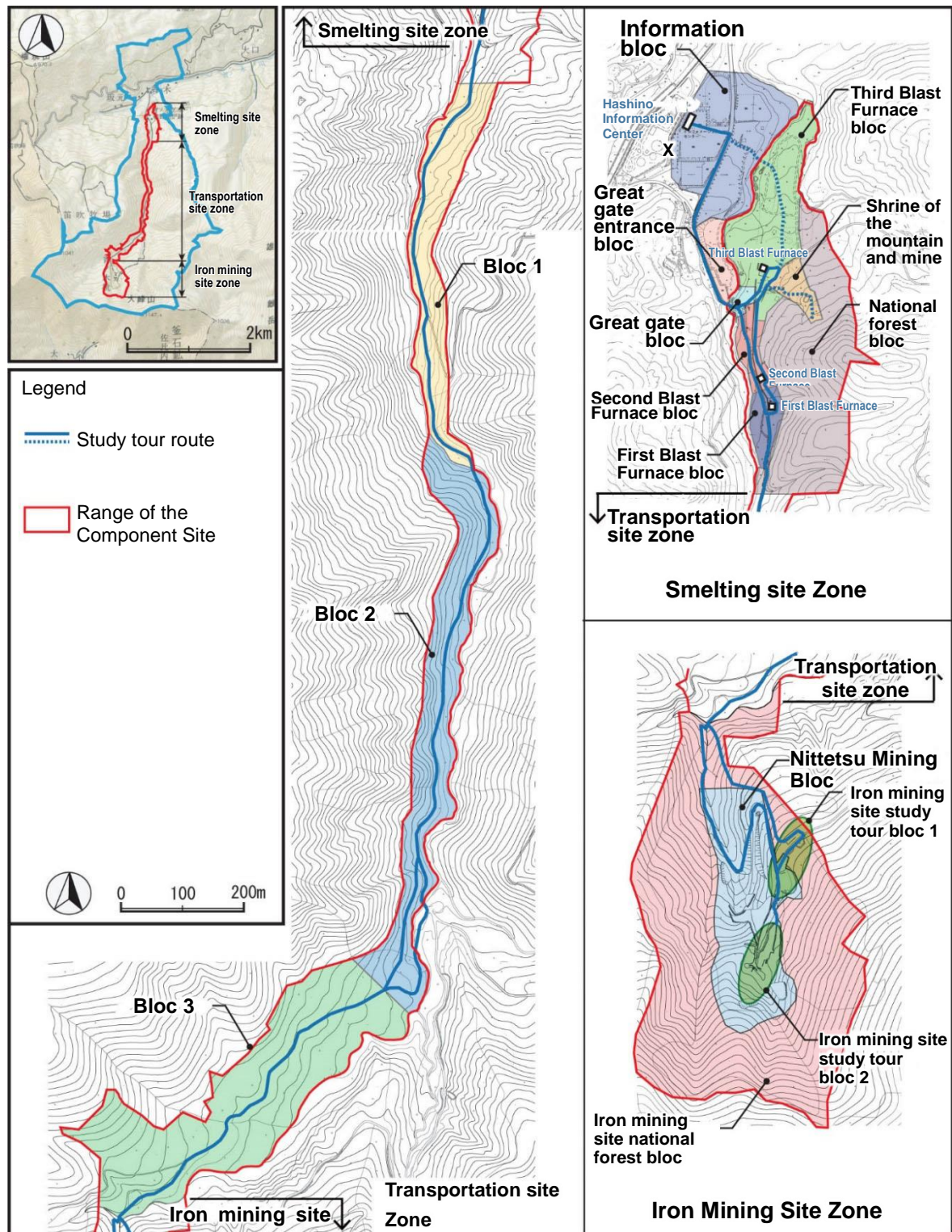


Figure 4: Bloc Divisions and Tour Route in Each Zone

utilization for each zone (Figure 4). These blocs are divided by following; in smelting site zone, blocs are divided by the state of land utilization and efficient explanation method for iron making; in the transportation site zone, they are divided by the state of detection of remains; and in the iron mining site zone, they are divided by the state of land utilization (National forest/ Nittetsu Mining). In addition, in iron mining site zone, units are set where utilized publicly by the study tour approximately twice in a year.

Kamaishi City is installing information and explanation facilities, centered on the smelting site zone

which is normally open to the public, so that visitors can make study tours comfortably after understanding the iron ore mining, transportation, and iron-making system, and utilizing these as a venue for school education and social education and as a resource for regional revitalization and tourism.

Regarding the transportation site zone and iron mining site zone, which are not usually open to the public, study tours will be resumed, about twice a year, following the restoration from the damages caused by Typhoon No. 10 in 2016.

In particular, methods of installing facilities for public use in the smelting site zone being advanced by Kamaishi City are as follows.

(a) Study tour routes

Study tour routes are set so that the iron ore mining, transportation, and iron-making system at Hashino Iron Mining and Smelting Site can normally be understood in the area from the Hashino Iron Mining and Smelting Site Information Center to the Smelting Site (Figure 4).

Among the study tour routes, Kamaishi City will pave the road that was formerly a forest road after devising drainage methods, considering that the vehicles for management of the component part will pass and to prevent road surface damage from a disaster of the same scale as Typhoon No. 10 of August 2016. A car stop and signs that vehicles are prohibited from entering will be installed near the entrance to prevent entrance by public vehicles. Other study tour routes will be paved using earth-based paving materials, considering the landscape.

(b) Remains display and environment improvements

The smelting site zone is divided into areas where the remains presently exposed are maintained in their present condition, and where they are reburied underground for being preserved.

Regarding the underground archaeological remains that were discovered by excavation surveys, Kamaishi City will display these using other materials on the ground surface so their planar scale in two dimensions can be grasped. Kamaishi City will also refer to old illustrations and documents, and transmit digital contents including AR and VR images to visitors via smart phones, tablets, and other devices so they can visually understand the form of the blast furnaces when it was being operated, as well as the shed and other building structures right at the site (Figure 7).

In particular, the digitization for Second Blast Furnace will be started on a priority basis because the shed and earthen floor are drawn in detail in the “Picture Scroll of the Hashino Iron Mine” and after the excavation survey the planar scale of the surrounded remains will be displayed on the ground surface (Figure 7).

(c) Arranging and improving landscape and planting vegetation

Kamaishi City will cut and remove trees that have a adverse impact on both above-ground and underground remains of component part and other trees that affect the ecology such as parasitic plants (mistletoe), as well as trees that are dense and overgrown and have a negative effect on the landscape, using methods that do not impact on the underground archaeological remains. Also, to prevent the apperance of large animals that could harm visitors, mulberry and other trees that provide feed for such animals will be removed if they are nearby study tour routes.

(d) Information and explanation facilities

Kamaishi City installs information boards and explanation boards with a consistent design and scale at locations selected considering the landscape. Because the size of the boards is limited, audio guides and smart phone applications are used to provide information in multiple languages.

The latest information is added to the explanation movies and panels at the Hashino Iron Mining and Smelting Site Information Center along with the progress of excavation surveys, etc.

(e) Management utility facilities

The parking lots near the Hashino Iron Mining and Smelting Site Information Center provide sufficient scale and functions as it is at present, so Kamaishi City will maintain the existing parking lots, without expansion. The using of the adjacent vacant land (former tennis court, former skating rink, etc.) will be determined after future surveys on the number of visitors (Figure 5).

The gazebo which is an existing rest facility inside the component part has deteriorated with age, so it will be removed. Rather than building a gazebo as a new rest facility, benches will be installed along study tour routes of the smelting site zone. Also, for the utility of visitors, toilets will be installed in the “Great gate Entrance Bloc” (Figure 4; smelting site zone), with the consent of the landowners.

(4) Improvement of the environment in the buffer zone

In the National forest that makes up the majority of the buffer zone, the Sanriku-Chubu District Forest Office of Forestry Agency is working to recreate, as much as possible, the type of broadleaf (oak) and Japanese red pine forest believed to have been present at the time the Hashino Iron Mining and Smelting Site was operating through systematic forest projects under the “Conservation, Management and Utilization Plan for Hometown Forest of the Hashino Iron Mining and Smelting Site” prepared based on “The Kyodo-no-mori (Hometown Forest) Preservation Agreement of the Hashino Iron Mining and Smelting Site” between the Director of Tohoku Regional Forest Office and the Mayor of Kamaishi City.

In the lands owned by the city that extend to the north of the component part, Kamaishi City will install toilets, benches and other utility facilities, while considering the landscape, and create a space where visitors can safely and comfortably rest (Figure 5). Land for a scenic viewpoint will be set along the prefectural road on the north side, and a plaza opened with explanation boards so visitors can readily compare the landscape today and when the site was operating (see Figure 2).

Kamaishi City is promoting understanding of the importance of conserving the landscape in the buffer

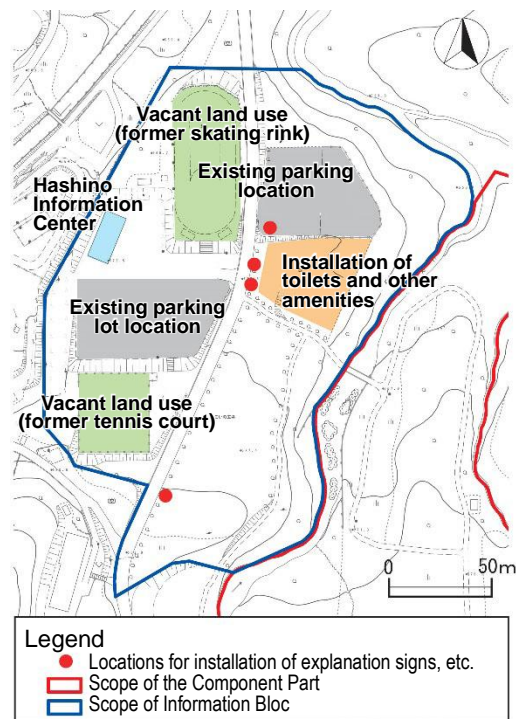


Figure 5: Information Bloc Public Use

zone to the private owners of the land to the north of the component part, and encouraging maintenance of the present land use and buildings. In particular, when owners rebuild their houses, etc., or divert agricultural land to other uses, intervention will be made to maintain the relict industrial landscape of the component part.

(5) Presentation and utilization of the component part as a cultural resource and information dissemination base

(a) As a cultural resource and information dissemination base

Kamaishi City provides information on how the Hashino Iron Mining and Smelting Site contributes to the Outstanding Universal Value as one of the component parts of the “Sites of Japan’s Meiji Industrial Revolution” in the field of iron and steel manufacturing, in relation with the other 22 component parts. The city is also deepening investigative research on the Hashino Iron Mining and Smelting Site as the starting point of “City of Iron” Kamaishi, and working to complement information that should be provided in a network with Kamaishi City Iron and Steel History Museum and other information dissemination facilities, and with the Former Kamaishi Mine’s Office Building and other early modern remains. Moreover, as a “core facility” of the “Kamaishi Field Museum Concept,” Hashino Iron Mining and Smelting Site provides information to visitors not only about the site, but also as a hub for touring the related facilities in Kamaishi City.

(b) Utilization considering the process of changes and developments of “City of Iron” Kamaishi

Kamaishi City invites visitors to the tours to the Kamaishi Steel Works wire rod plant and the Kamaishi Iron Mine shaft that are presently operating for visitors experiencing the present iron manufacturing system, as well as the mining, transportation, and iron-making system of iron manufacturing in the early stages of industrial revolution, at the Hashino Iron Mining and Smelting Site, by strengthening ties with companies (Nippon Steel & Sumitomo Metal Corporation; Nittetsu Mining Co., Ltd.). In addition to the study tours of these facilities, Kamaishi City holds a program to experience the iron manufacturing and casting to deepen the understanding of visitors.

4. Projects implementation

The projects implementation schedule is as shown in Table 1. The division of periods for the projects and priority of the execution items is as follows.

(1) Projects implementation based on short-term, mid-term, and long-term projects periods

Kamaishi City has prepared a 20-year projects implementation schedule starting from 2018 (Table 1). The works will be implemented in stages, with a five-year period for short-term and mid-term period and a 10-year period for long-term period. Restorations deemed urgent based on the future surveys and monitoring results will be implemented on an ongoing basis.

(2) Priority of implementation items

Regarding the damages from Typhoon No. 10 of FY2016, Kamaishi City made a document in FY2017 and is implementing full-scale restorations in stages from FY2017. A restoration report on (i) Smelting Site (smelting site zone) will be prepared in FY2018.² Regarding (ii) Transportation Site (transportation site zone) and (iii) Iron Mining Site (iron mining site zone), restorations will be conducted together with the restoration of the forest road and forest maintenance road, and a report prepared by FY2022.

In particular, in the short term Kamaishi City is giving high priority to projects that effectively combine restorations and the provision of information regarding the mining, transportation, and iron-making system. The city is making a planar display of the Second Blast Furnace and the underground archaeological remains in its surrounding area on the ground surface, and conducting restoration of the watercourses’

² The response to “ICOMOS Technical Review regarding Typhoon Damage to the Hashino Iron Mining and Smelting Site” sent from the UNESCO World Heritage Center dated June 1, 2017 is attached as an appendix to this summary.

stone walls with dismantling. Measurement surveys will also be conducted in the short term to belatedly grasp the current conditions of the Transportation Site and the Iron Mining Site, and precedence will be given in particular to measurement surveys of areas damaged by the October 2016 typhoon.

(3) Implementation schedule revisions

With the passage of the mid-term scheduled for FY2027, the implementation schedule will be revised based on the state of projects progress. In cases where new responses become necessary, revisions will be considered without waiting for FY2027.

(4) Other

Kamaishi City has carried out conservation and restoration work, etc. for the Hashino Iron Mining and Smelting Site by securing necessary funds* making use of various subsidy programs available in FY2016 and FY2017, the first two years following inscription of the property on the World Heritage List. To ensure the smooth implementation of the project, it plans to continue such efforts to secure necessary funds in partnership with relevant institutions.

* Approximately 142 million yen was spent in FY2016 and 123 million yen has been budgeted for FY2017, both including costs incurred or earmarked for the restoration from Typhoon No.10 disaster and for establishment of related facilities for promoting public understanding, but excluding the cost for day-to-day maintenance.

Category	Project	Short-term (2018-2022)						Mid-term (2023-2027)			Mid-term (2028-2037)	
		2017	2018	2019	2020	2021	2022					
Survey and Research	Measurement surveys		Transportation Site		3			Iron Mining Site 3				
	Excavation surveys	Typhoon related			Second Blast Furnace			Third Blast Furnace			First Blast Furnace	Introduce area of the site
	Survey on restoration of stone walls				Second Blast Furnace			Third Blast Furnace			First Blast Furnace	Introduce area of the site
	Documents survey											
	Visitor survey											
	Monitoring (including survey on amount of movement)											
Restoration	Typhoon No. 10 damages restoration (Smelting Site)	Restoration of	Revetment, etc.									
	Typhoon No. 10 damages restoration (Transportation Site)		Transportation Site									
	Typhoon No. 10 damages restoration (Iron Mining Site)					Central stone walls						
	Typhoon No. 10 damages restoration written record preparation (including measurements)	Smelting Site			Transportation Site, Iron Mining Site							
	Restoration of blast furnaces and surrounding stone walls				Second Blast Furnace			Third Blast Furnace			First Blast Furnace	
Presentation and Utilization considering the mining, transportation, and iron-making system	Remains display						Second Blast Furnace		Third Blast Furnace		First Blast Furnace	
	Remains explanation via digital contents				Second Blast Furnace			No. 3 Blast Furnace			No. 1 Blast Furnace	
	Tree removal in public areas											
	Installation of study tour route, etc.	Typhoon related					Second Blast Furnace		Third Blast Furnace		First Blast Furnace	
	Installation of information boards, etc.						Second Blast Furnace		Third Blast Furnace		First Blast Furnace	
	Installation of amenities and rest facilities		dismantling of shed				Second Blast Furnace (bench)		Third Blast Furnace (bench)			
	Restoration of national forest											
	Upgrading of Information Center			Completion of common exhibits of Sites of Japan's Meiji Industrial Revolution				Exhibit revision (reflecting results of short-term adjustments)			Exhibit revision	
Buffer zone environment improvement	Installation of utility facilities, etc.	Replacement of play equipment						Installation of Toilets				
	Securing observation points											
	Restoration of national forest											
Utilization as cultural resource and information dissemination base	Visiting lectures, forums, events											
	Publicity via pamphlets, homepage											

Table 1: Project Execution Schedule³

³ The measurement surveys of the Transportation Site and Iron Mining Site referred at the top of the “Investigative Research” category does not include the urgent measurement survey of the Transportation Site and Iron Mining Site related to recovery

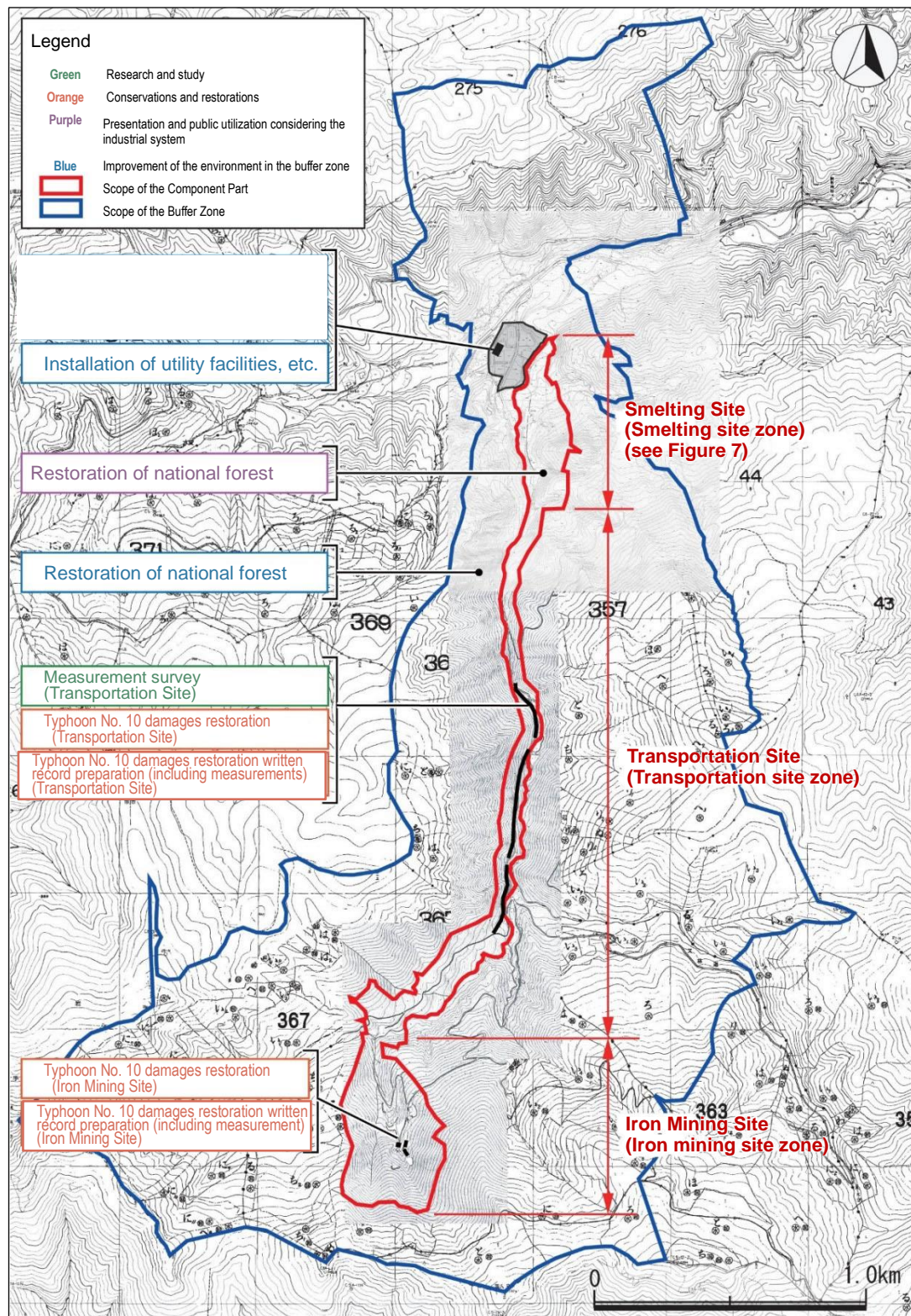


Figure 6: Hashino Iron Mining and Smelting Site Basic Plan Map (Short-term)

from damages caused by Typhoon No. 10. The measurement survey to prepare a record pertaining to recovery from damages caused by Typhoon No. 10 is included in the “Restoration” category, and both are to be executed over the short term.

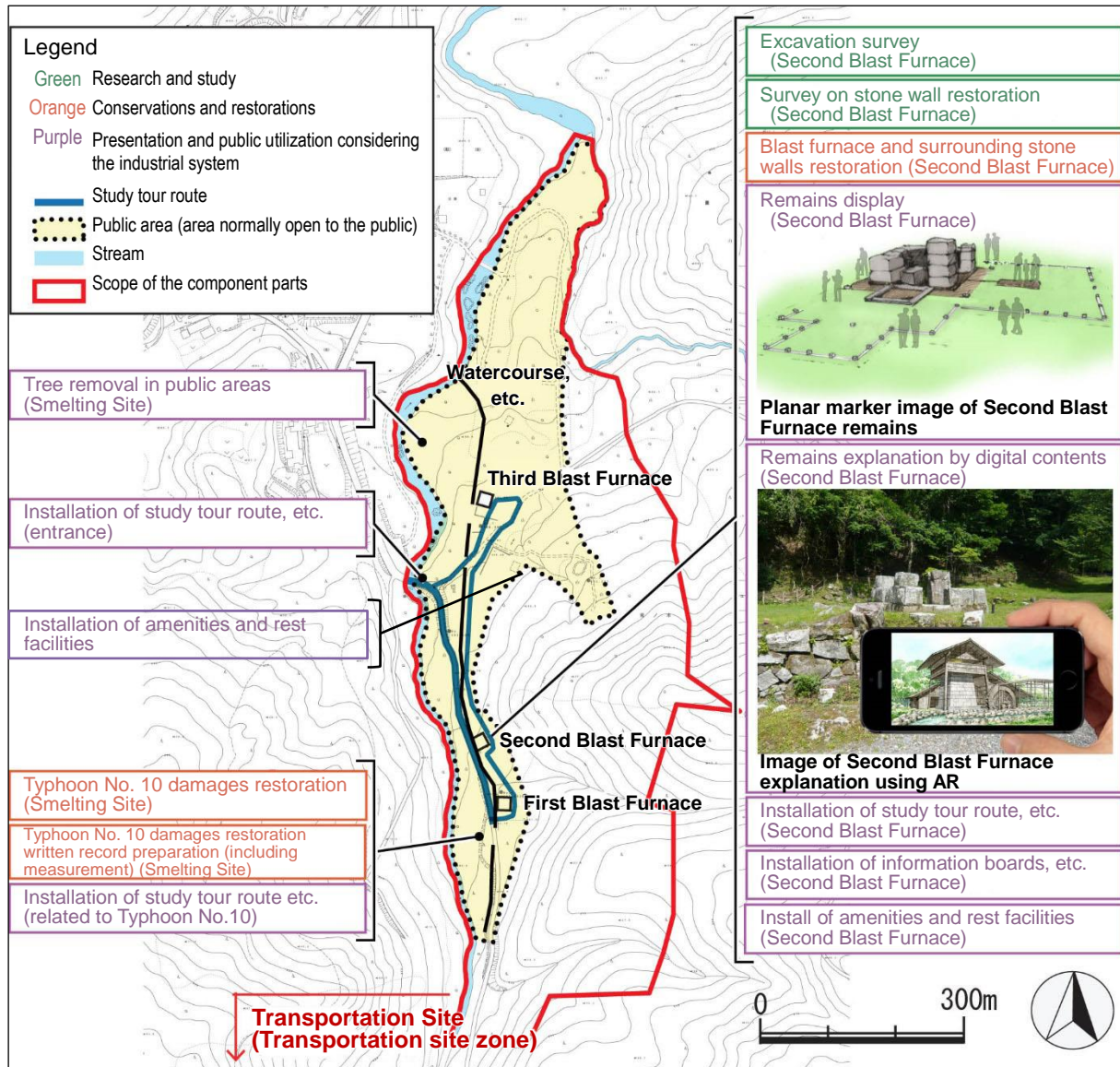


Figure 7 Hashino Iron Mine Basic Plan (Short-term) Transportation Site(Transportation site Zone) Enlarged View