

# The Repository of Cultural Heritage Research Information: "E-Connect to Cultural Heritage Knowledge" (Archives of Cultural Heritage Research Information)

# Introduction Background and Purpose

Cultural heritage research information across fields such as archeology, art, conservation, restoration, nature, safety, and disaster preservation are not only essential for the preservation and conservation of cultural heritage but are also gradually gaining importance as a critical link connecting the past with the present. The use of such information is expanding beyond research of related areas and education to the content industry and commercial use.

In fact, the number of downloads from the research information archive provided by the National Research Institute of Cultural Heritage (NRICH) exceeds over 200 thousand every year. The downloaded material is used for a wide range of purposes including academic papers, education, exhibitions, commercial publications, broadcasting, and the development of cultural products. User satisfaction has also been on the rise every year.

**Table 1.** Number of Downloads from E-Connect to Cultural Heritage Knowledge for the Past3 Years and Goal for 2023

	2020	2021	2022	2023 (estimated)*
Number of Downloads	211,967	241,651	227,869	243,064

\* The estimated figure for 2023 is based on the performance for the past 3 years.

The explosive increase in the amount of research information data as well as the diversification of the type of data has made new information available to the general public as well as researchers. This has led to an increased interest and efforts to swiftly provide accurate information amid the deluge of data and

satisfy the various demands of the users.

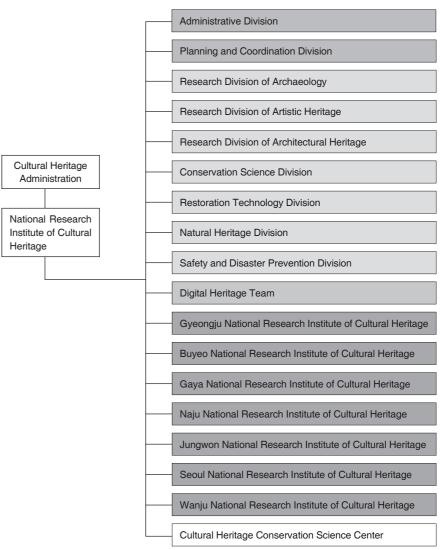
In this article, I begin by reviewing the structure, context, and contents of the information stored in "E-Connect to Cultural Heritage Knowledge" (Archives of Cultural Heritage Research Information), an accumulation of 50 years of research provided by NRICH. In the next section, I look at the design and service system of the archives, and in the final section, I consider plans for further development in the future.

#### The NRICH: Overview and Role

The NRICH<sup>1</sup> belongs to the Cultural Heritage Administration<sup>2</sup> and is the only comprehensive state research institute related to cultural heritage that studies the preservation and use of various areas of cultural heritage including archaeology, art history, architecture, conservation science, natural heritage, and safety and disaster prevention. The institute consists of 2 divisions, 7 research divisions, 1 team, 7 local research institutes at Gyeongju, Buyeo, Gaya, Naju, Jungwon, Seoul, and Wanju, and 1 conservation science center.

The development of the internet in the 2000s led to the explosive increase in the demand for detailed, specialized information on cultural heritage and the subsequent creation of the NRICH website<sup>3</sup> (NRICH 2002). In step with this overall trend, the Cultural Heritage Academic Research Information Knowledge Portal was created in 2007 to provide research information separately from the website that mainly promoted the administrative aspects of the agency. This service was renamed the Cultural Heritage Research Knowledge Portal and continued to provide information for the next 10 years. Finally, in February 2023, "E-Connect to Cultural Heritage Knowledge," the current name, was selected through a contest and vote held among the employees as the new, original, significant, and concise name for the service.





The digital archives of research information are the storage of records overseeing cultural heritage research information data as well as their digital repository. The archives produce and collect various records and information related to the excavation, restoration, preservation, and maintenance of cultural heritage and build and operate the research database. "E-Connect to Cultural Heritage Knowledge"<sup>4</sup> provides these records and information as

The official Korean name of the National Research Institute of Cultural Heritage was changed from Gungnip munhwajae yeonguso (1995–2022) to Gungnip munhwajae yeonguwon on February 22, 2022.

<sup>2</sup> In 1961, the Cultural Heritage Maintenance Department was created under the Ministry of Culture, Sports, and Tourism to oversee work related to the management, protection, designation, and restoration of cultural heritage. After the amendment of the Government Organization Act, this department was elevated to the Cultural Heritage Administration, and as of 2021, houses 1 director general, 2 bureaus, 19 divisions, 1 team, and 19 agencies.

<sup>3</sup> Available at https://www.nrich.go.kr.

<sup>4</sup> Available at https://portal.nrich.go.kr.



Figure 1. Homepage of NRICH

Figure 2. Homepage of "E-Connect to

Cultural Heritage Knowledge"

well as research knowledge on cultural heritage as academic research contents and seeks to maximize the use and application of these contents by the related search function connecting the comprehensive service of the archives of cultural heritage.

Since "E-Connect to Cultural Heritage Knowledge" provides specialized information, the contents that are archived and who the service targets, which decides the theme and depth of the contents, should be clearly defined. While the general public can freely access the website, most of the people that utilize the information are researchers, students, and personnel working at educational institutions or institutions related to the archives. The service seeks to share and provide archival material that is not easy to access normally and thus improve the accessibility of the NRICH and usage of cultural heritage research information.

Currently, "E-Connect to Cultural Heritage Knowledge" provides close to 370 thousand items of cultural heritage research information (Cultural Heritage Administration 2023b) as various multimedia content including images, videos, and 3-dimensional material. The service plans to further strengthen the system to combine and manage the database of cultural heritage research information and provide a more comprehensive system as well as provide more useful and up-to-date information.

### Current Status of Archive and Contents

"E-Connect to Cultural Heritage Knowledge" is a digital archive database that stores research information and digitalized source material and retains the unique and special properties of the stored information. In particular, the research achievements of archaeology, art, preservation/reparation, North Korean cultural heritage, and studies of the period under Japanese colonial rule are provided in various data formats.

### Integrated service providing original text information

The page under the menu Original Text Information provides 1,942 viewable and downloadable original texts published by the institute from 1973 up to the present. The list and abstract are provided by theme, and the user can search by title, year of publication, or research area. Supplementary material provided within the original text such as images, drawings, or videos can be accessed in accordance with the copyright policy of the NRICH. Users should check in advance before they use the material since they may be restricted in the use and distribution of copyrighted material depending on the Korea Open Government License (Type 1 to Type 4)<sup>5</sup> attached to each item following whether the NRICH entirely or partially owns the copyright. Regardless of type of license, however, the source of the material (for instance, NRICH, page URL, name of author if provided) must be indicated.

### Professional research information open to public

The specific categories of "E-Connect to Cultural Heritage Knowledge" are Archaeology, Art, Architecture, Preservation/Restoration, Cultural Heritage of North Korea, and Japanese Colonial Period.

Under the Archaeology menu are the subcategories Dictionary of Korean Archaeology, Journal of Korean Archaeology, Archaeological Research of Northern Eurasia, Historical Remains of Iron Manufacturing in Korea,

<sup>5</sup> Korea Open Government License is a system through which the government, local governments, and public institutions mark open copyrighted material by using one out of 4 types to specify its usage. The institution should make the material with an appropriately sized and placed symbol depending on the type of material and ensure that the user can confirm its type before freely using the material. The 4 types of licenses and their scope are as follows. Type 1: the user must indicate the source and can freely use the material for both commercial and noncommercial purposes. The work can be modified to create secondary work. Type 2: the user must indicate the source and can freely use the material purposes only. The work can be modified to create secondary work. Type 3: the user must indicate the source. The work can be used for both commercial purposes, but the contents cannot be modified. Type 4: the user must indicate the source. The material can only be used for noncommercial purposes and cannot be modified (Korea Culture Information Service Agency, https://www.kogl.or.kr).

Dolmens of Korea, Large Jar Coffins around the Yeongsan River, Historical Sites of Silla, and Historical Sites of Baekje.

One of the qualities that makes a good digital archive is that it does not waste the user's time. Users can experience this efficiency when looking up words in the Dictionary of Korean Archaeology. All 13,120 terms and names of the remains are consistently listed following the Korean alphabetical order, proving extremely useful when the user is obtaining knowledge from the archives. The category Archaeological Research of Northern Eurasia introduces the achievements and reports of the investigation and research of Russia, Kazakhstan, Mongolia, and China. Researchers find the achievements and reports of the professional academic investigation and research of the historical ruins of iron manufacturing, dolmens, and large jar coffins currently ongoing both at the Jungwon and Naju National Research Institute of Cultural Heritage very helpful.

The Art menu provides information on the Geumseokmun (stone inscribed Korean epigraphs), Old Documents of Korea, Korean Wooden Slips, Traditional Korean Patterns, Korean Buddhist Scroll Paintings for Outdoor Rituals, Korean Buddhist Bells, and Korean Cultural Heritage Located Overseas. Under the subcategory Geumseokmun, users can currently access 4,716 items, which include the 2,940 items that were transferred from the Comprehensive Imaging System of Geumseokmun. Users can view detailed information of the inscriptions, such as the period, size, and location of the item, as well as the explanation, rubbing, and interpretation of the inscription by using a comprehensive viewer interface, making it more convenient to zoom in and see the original text. Such service allows the general public to access and better understand inscriptions in addition to more academic use of the information. The information under Traditional Korean Patterns is the outcome of the Documentation of Original Traditional Korean Patterns project, which was initiated in 2006. The patterns and original forms of the tomb paintings of Goguryeo were restored, and each individual pattern is listed together with the image and the explanation. Users can easily access 2,462 items, including downloading the patterns as illustration or image files to use as cultural contents. The Gallery menu under Korean Buddhist Scroll Paintings for Outdoor Rituals provides high-quality images of 47 pieces of Korean Buddhist scroll paintings that have been designated as National Treasures and Treasures by the government. The resolution of the images ranges between 30 and 60 million

pixels, allowing the user to view detailed enlargements of the images.

The category Korean Cultural Heritage Located Overseas provides detailed information such as the date of creation, name, and use of Korean cultural assets located overseas. These include items housed by museums and libraries in the United States, the United Kingdom, Japan, France, and Russia. The service not only provides images of all the items stored at each location but also the explanation of the items in both Korean and the language of the country housing the items, proving useful for researchers inside and outside Korea.

The Architecture menu includes the subcategories Repair of Cultural Heritage, Maintenance of Stone Pagodas, Mireuksa Temple, Hwangnyongsa Temple, Architectural Cultural Heritage in 3D, and Architecture of Public County Schools. The database consists of 1,342 items mainly of projects that published repair reports from around the Japanese colonial period to the present. The items are organized by name of cultural asset, name of repair project, type of work involved, duration, agency overseeing the repair work, and the company that carried out the work. 3D data of 36 stone pagodas and 7 stupas based on actual measurements are provided, while material after 2014 can be accessed via the Cultural Heritage Administration website.

The Preservation/Restoration menu provides information on the Maintenance of Stone Cultural Heritage, Analysis Database, and Traditional Material of Old Documents. In particular, the Traditional Material of Old Documents lists 2,098 items with information of the pigment, document title, publication year, and translation of original text. Sharing the findings of analyses of traditional material, a key element in the restoration of cultural heritage, instead of new material aims to heighten user satisfaction.

The Cultural Heritage of North Korea menu provides information, such as the name of the historical site, address, and explanation of the site, resulting from studies of the tomb paintings of Goguryeo (65 items), historical sites of Gaeseong (16 items), and historical sites of Pyeongyang (258 items). The site continues to provide basic research material on North Korean cultural heritage for both the general public as well as academic circles, and North Korean Archeology Periodicals including *Cultural Artifacts, Cultural Heritage*, *Archaeological Study of Korea*, and *History Science* reflect current research status and trends.

The Japanese Colonial Period menu is a database of 15 books of *Illustrated Archeological Survey of Korea*, a study of historical remains of the Korean

peninsula during the period under Japanese colonial rule. The database provides bibliographical information such as the issue and publication year of each book as well as high-resolution images of the photographs featured in the books. Users can freely download the original text and images of the books.

The Open Data menu discloses the responsibility and list of open data<sup>6</sup> that is being provided in accordance with the Act on the Promotion of the Provision and Use of Public Data. Users can submit requests for any open data that is not included in the list. Open API (Application Programming Interface) programs and standardizes data so that they can be shared with outside software programmers or users and allows them to develop various platforms. "E-Connect to Cultural Heritage Knowledge" currently provides open APIs for 41 items including the Journal of Korean Archaeology and Personal Diaries from the Joseon Dynasty. The data uses the JSON and XML format and provides the

 Table 3. Example of Information Provided by Open API for 3D Contents of Stone Cultural

 Heritage

XML Column Name	Data Column Name	Korean Column Name
md_data1	ROW_NUM	Order
md_data2	D_ROWID	Material Identification Number
md_data3	D_NAME	Name of Cultural Heritage
md_data4	D_SELECT1	Designation
md_data5	D_SELECT_DATE	Date of Designation
md_data6	D_SELECT2	Туре
md_data7	D_AGE	Period
md_data8	D_AREA	Location
md_data9	DATA_LINK	Link to Data
Variables		

<Information of Provided Data>

#### <Information of Common Variables>

Name of Variable	Description of Variable
firstindex	First Page of Entire Data
recordcountperpage	Number of Data Shown

input and output information.

The User Information menu shows users how to look up the material provided by the website, provides an overview of the entire menu, informs users of the web browsers and user environment the website supports, and lets users know how to report errors or their opinions easily through e-mail or phone.

In sum, the simplified menu structure of the diverse and somewhat complicated categories allows users to access research information easily and conveniently through "E-Connect to Cultural Heritage Knowledge." The development of mobile web service for smartphones lets users access and utilize the information anytime, anywhere. Digitalization projects are ongoing to further improve the service and data quality.

Table 4 below summarizes the menu structure of the digital archives at "E-Connect to Cultural Heritage Knowledge."

Table 4. Menu Structure of E-Connect to Cultural Heritage	e Knowledge
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Division			Subdivision	
Original Text Information	Original Text Information			
	Dictionary of Korean Archaeology	Journal of Korean Archaeology	Archaeological Research of Northern Eurasia	Historical Remains of Iron Manufacturing in Korea
Archaeology			Introduction     Status of Each     Institution's Excavation     and Research Activities     Investigation and     Research of Russia     Investigation     and Research of     Kazakhstan     Investigation and     Research of Mongolia     Investigation and     Research of China	<ul> <li>Introduction</li> <li>Scientific Analysis and Investigation</li> <li>Remains in the Jungwon Area</li> <li>Remains in the Gyeongsang Area</li> <li>Academic material</li> </ul>
	Dolmens of Korea	Large Jar Coffin around the Yeongsan River	Historical Sites of Silla	Historical Sites of Baekje
	·Dolmens around the Yeongsan River	·Introduction ·Creation Process of Large Jar Coffin ·Jar Coffins of South Jeolla Province	·Sites in Namsan Mountain, Gyeongju ·Sites of Wolseong Palace, Gyeongju	<ul> <li>·Sites in Wanggung-ri,</li> <li>Iksan</li> <li>·Jeseoksa Temple Site,</li> <li>Iksan</li> <li>·Wangheungsa Temple</li> <li>Site, Buyeo</li> </ul>

<sup>6</sup> Open data refers to all material or information created by public institutions as well as public information intended to encourage communication and cooperation among all citizens (https://www. data.go.kr).

Division			Subdivision		
Art	Geumseokmun (stone inscribed Korean epigraphs)	Old Documents of Korea	Korean Wooden Slips	Traditional Korean Patterns	
	·Introduction ·Search	•Old Documents •Personal Diaries from the Joseon Dynasty	<ul> <li>Introduction</li> <li>Status of Research in Korea</li> <li>Status of Research outside of Korea</li> <li>List of Wooden Slips by Site</li> <li>Search</li> <li>Bibliographical Information</li> </ul>	·Introduction ·Status of Research in Korea	
	Korean Buddhist Scroll Paintings for Outdoor Rituals	Korean Buddhist Bells	Korean Cultural Heritage	Located Overseas	
	·Introduction ·Gallery ·Government- designated List ·Reports	·Introduction ·List ·Reports	·Introduction ·Search ·Visual Material ·Reports		
	Repair of Cultural Heritage	Maintenance of Stone Pagodas	Mireuksa Temple	Hwangnyongsa Temple	
Architecture	•Chronological Table of Repair Projects •Material for Each Repair Project (2010–2014)	•Stone Pagodas of Gyeongju •Four Lion Three- story Stone Pagodas of Hwaeomsa Temple, Gurye	<ul> <li>Introduction</li> <li>Introduction of Stone</li> <li>Pagodas of Mireuksa</li> <li>Temple Site</li> <li>Investigation and</li> <li>Research of Stone</li> <li>Pagodas of Mireuksa</li> <li>Tempe Site</li> <li>Academic Material on</li> <li>Mireuksa</li> </ul>	·Introduction ·Reports	
	Architectural Cultural Heritage in 3D	Architecture of Public County Schools			
	·Overview ·3D Data ·3D Simulation of Construction				
Preservation/	Maintenance of S Heritage	tone Cultural	Analysis Database	Traditional Material of Old Documents	
Restoration	·Analysis Materia ·Maintenance Ma				

Division	Subdivision			
	North Korean Cultural Heritage	North Korean Archaeology Periodicals		
Cultural Heritage of North Korea	Remains of Tomb Paintings of Goguryeo Historical Sites of Gaeseong Historical Sites of Pyeongyang			
Japanese Colonial Period	Illustrated Archeological Survey of Korea	List of Documents		
Open Data	Current Status	List of Open API	Information for Developers	Data Sets
User Information	How To Use Notices	Copyright Policy	Read-only Program	Report Website Errors

## Design of Archive and Service System

"E-Connect to Cultural Heritage Knowledge" was designed to facilitate the link between data accumulation and content production and application. The system was strategically designed from the beginning to take into account and make use of the uniqueness and particularity of the source material.<sup>7</sup> The operation and management of the system was also designed to be flexible enough to accommodate the addition of supplementary images and related information for each historical site as well as the update of new metadata.

## User Environment and Optimization of Service

While commercial sites must design user-oriented interfaces that lead to

<sup>7 &</sup>quot;Strategic Plan for the Usage and Sharing of Cultural Heritage Research Information" (2013), "The 2014 Project to Combine and Restructure the Cultural Heritage Research Knowledge Portal" (2014), "The 2015 Project to Advance the Cultural Heritage Research Knowledge Portal" (2015), "The 2016 Project to Expand and Improve the Cultural Heritage Research Information Service (2016), and "The 2017 Research Project to Utilize and Facilitate the Knowledge Resource of Cultural Heritage Research Information."

purchase, websites of government organizations or digital archives must follow the policy to remove plugins of public institution websites and comply with the content guidelines. The websites should also adopt web standards so that they are not dependent on a certain software, which allows the user to utilize the service by using the internet browser without having to additionally install new software.

"E-Connect to Cultural Heritage Knowledge" supports Internet Explorer 11 or higher, Chrome, Mozilla, Firefox, and Safari. The website may cause some errors when opened in versions of Internet Explorer lower than 11. The contents of the web pages use responsive web design and automatically adapt to the resolution of the device. The site also uses the eGovernment Standard Framework to maintain a stable user environment system as well as the Common Standard Terms for the Government as specified by the Ministry of the Interior and Safety.

### **Related Sites**

"E-Connect to Cultural Heritage Knowledge" is linked to the National Cultural Heritage Portal run by the Cultural Heritage Administration and the Digital Archive of Intangible Heritage. Links to outside agencies such as the Public Data Portal and the Korea Creative Content Agency is provided under the Open Data menu in the form of openAPIs (XML) and DATA sets (EXCEL).

## Future Plans and Prospects for Development

The life span of any digital archive depends on its continuous utilization and provision of quality contents. Efforts need to be made to identify areas that should continue to be developed and further supplemented. Although the digital archives of "E-Connect to Cultural Heritage Knowledge" facilitates and contributes to the usage of cultural heritage research information by quickly and conveniently providing relevant data to its users, there are still issues that need to be addressed from multiple angles.

## Appropriate Standard Data Naming Rule for Research Information Archive

To produce and efficiently manage the increasing number of diverse digital archives, a file, or data, naming rule appropriate for the specific characteristics of research information should be adopted. This is because a consistent file should be accumulated and managed when uploading the production to results of the data. Although there were efforts such as the Guidelines for Producing Standard Data for the Cultural Heritage Documentation Project (2010), which applies to national treasures, treasures, tangible and intangible heritage, and natural heritage, they do not encompass all research information being produced at the present. Creating a combined archival platform and developing and applying a Data Naming Rule optimal for this platform will increase the compatibility of digital data and all the unification of the management and service of internal material.

## Consolidation and Application of Website Menu

The website of the NRICH was created in 2002 to introduce the institute to the public, provide information on the organization and facilities of the institute, and inform people of administrative information. In addition to information on events, hiring, and other material, the website allows users to look up donated records and excavated cultural artifacts currently owned by the institute. In particular, the material donated by Han Seok-hong consists of downloadable photographic material of the Seokguram Grotto in Gyeongju, a site inscribed on the UNESCO World Heritage List, such as high-resolution digital images of black-and-white negatives and color slide films (35mm, 120mm, 4x5 inch). The material was open to the public starting from 2021 and has been downloaded approximately 29,785 times to be used freely for both commercial and noncommercial purposes. This kind of donated material should be available via "E-Connect to Cultural Heritage Knowledge" for users to better access and use.



Figure 3. Images of Donated Material on Seokguram Grotto in Gyeongju

# Development and Expansion of Archive Through Information and Communications Technology

Cultural heritage research using Information and Communications Technology (ICT) has increased recently together with the development of various programs allowing the preservation and restoration, as well as prediction, and prevention of damage to cultural heritage. Material using advanced technology and visual information provided in diverse forms such as 3D, flash animation, videos, and other multimedia allow users without expertise in this area to better understand cultural heritage and access exhibitions, educational contents, and various experiences. Continuing to develop and structure the digital archive using advanced digital fusion technology and ICT will make it more useful as a professional archive of cultural heritage research information. Instead of simply providing the images as data, technical accommodations should be made to reflect the users' demands to manipulate the image including rotating and zooming in and out.

### **Conclusion and Recommendations**

Many agencies and organizations inside and outside Korea are attempting various forms of archives that provide a wide range of contents and utilize new technologies. This reflects the proactive response to the rapidly changing environment and user demands. "E-Connect to Cultural Heritage Knowledge" provides a searchable digital archive of cultural heritage open to the public to enable the use of research information in areas of archaeology, art, architecture, preservation/restoration, natural heritage, and safety and prevention of disasters. By applying the Standard Data Naming Rule suited for the archival features, consolidating currently separate archives, and additionally developing the archive using advanced ICT in the future, the archive will be able to further maximize user experience and satisfaction.

While this article has reviewed the current state of the archive of the NRICH, the archives of the 7 local institutes (the Gyeongju, Buyeo, Gaya, Naju, Jungwon, Seoul, and Wanju National Research Institutes of Cultural Heritage) as well as the Cultural Heritage Conservation Science Center were not covered and shall soon be.

On May 16, 2023, the National Heritage Act was enacted and will come into effect on May 17, 2024. This act is set to replace the Cultural Heritage Act, which has until now served as the basic law for all institutions related to cultural heritage and will accordingly take on out the role as the highest basic law overseeing the new national cultural heritage system. Starting from May 17, 2024, the cultural heritage system will transition into the national heritage system, and the Cultural Heritage Administration will be renamed National Heritage Administration (tentative).<sup>8</sup>

With the amendment and the shift from the cultural heritage system to the national heritage system, the names of relevant institutions, specific roles and work, and the websites are expected to undergo an overall reorganization. The cultural heritage administration will go through changes on a large scale with the replacement of the word cultural heritage, which has been widely used as the legal and administrative term for over 60 years since the enactment of the Cultural Heritage Act, by the term national heritage.

The enactment of the National Heritage Act will bring about many changes in the contents, categories, structure, and information provided by the digital archives of the NRICH. This opportunity to reorganize the contents and system will hopefully bring about improvements in the digital archives of national heritage research information.

<sup>8</sup> According to the Cultural Heritage Administration (2023b), the term cultural heritage, which implies asset or commodity in Korean, shall be changed and expanded to the umbrella term national heritage, which will encompass cultural heritage, natural heritage, and intangible heritage, thereby satisfying international standard of the UNESCO system. The cultural heritage system shall transition into the national heritage system accordingly.

## References

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# **Appendix**<sup>9</sup>

Current Status of Digital Archives of the Institutions under the Cultural Heritage Administration

#### 1. Cultural Heritage Administration

Name	National Cultural Heritage Portal		
Website	https://www.heritage.go.kr/heri/idx/index.do		
Managed by	Cultural Heritage Administration		
Address	8 <sup>th</sup> -11 <sup>th</sup> floors of Building 1, 14 <sup>th</sup> floor of Building 2, Government Complex-Daejeon, 189, Cheongsa-ro, Seo-gu, Daejeon		
Description	Provides information of designated and registered cultural heritage of Korea		
Main contents	Introduces palaces, Jongmyo Shrine, the royal tombs of Joseon, documents, inscriptions and wooden slips, cultural heritage inscribed on the UNESCO World Heritage List, 3D cultural heritage, etc.		
Main features	The National Cultural Heritage Portal is a comprehensive information system storing a vast amount of digital contents for over 2.5 million cultural heritage items including major designated cultural heritage such as national treasures and treasures as well as cultural artifacts housed in museums across Korea. The menu is divided into Heritage Search, Royal Palaces, Jongmyo Shrine, Royal Tombs of Joseon, Documents, UNESCO Heritage, 3D Cultural Heritage (from press release by Cultural Heritage Administration on April 6, 2020). Information of the cultural heritage of Korea is highly accessible and can be searched by item (designation), location (city, province, country, district) and other terms. Anyone can apply to access the over 650 items of 3D data (printing, modeling, scanning, scanned video) created to reproduce the original in the case of damage to or loss of the cultural heritage. The portal is available in Korean, English, Chinese, and Japanese.		
Images			

Introduction of main web pages

Homepage of National Cultural Heritage Portal

<sup>9</sup> The appendix introduces the digital archives of cultural heritage provided by the five institutions (Korea National University of Cultural Heritage, National Palace Museum of Korea, National Intangible Heritage Center, National Research Institute of Maritime Cultural Heritage, and the Royal Palaces and Tombs Center) under the Cultural Heritage Administration.

## 2. Korea National University of Cultural Heritage

Name	Korea National University of Cultural Heritage		
Website	https://www.nuch.ac.kr/main.do		
Managed by	Korea National University of Cultural Herit	tage, Cultural Heritage Administration	
Address	367, Baekjemun-ro, Gyuam-myeon, Buye	o-gun, Chungcheongnam-do	
Description	Provides general information related to tr and research achievements	aining future experts of traditional culture	
Main contents	Introduces admissions, academics, and other features of campus life, as well as the affiliated institutions including the Traditional Culture Training Institute and Traditional Cultural Product Development Center		
Main features	The Korea National University of Cultural university in Korea that educates stud heritage. Founded in 2000 under the Cult provides information needed for nurtur details on academics, admissions, res Product Development Center, researc trends. The website also provides information o support, facilities, education, and researcl such as Cultural Properties Manageme Landscape Architecture, and Archaeolog school newspaper, and online exhibitions donated material. In particular, the website does not simp of publicity but stores diverse and sophi of affiliated institutions, such as the T Academic Information Center, Informati and Entrepreneurship Center, Traditiona Industry-Academy Cooperation Found Education Center, and the World Heritage	lents in traditional culture and cultural tural Heritage Administration, the website ing traditional culture experts including earch support, the Traditional Cultural h achievements, and current research in the academic calendar, administrative h for nurturing talent in professional areas ent, Traditional Architecture, Traditional gy, as well as information on events, the including special exhibits and exhibits of bly function as an administrative means sticated digital contents including details fraditional Culture Research Institute, tion & Computing Center, Employment al Cultural Product Development Center, dation, International Cultural Heritage	
Images		Control (1)         Control (1) <thcontrol (1)<="" th=""> <thcontrol (1)<="" th=""></thcontrol></thcontrol>	
		-         -	

## 3. National Palace Museum of Korea

Name	National Palace Museum of Korea		
Website	https://www.gogung.go.kr		
Managed by	National Palace Museum of Korea, Cultur	ral Heritage Administration	
Address	Hyoja-ro 12 (Sejong-ro 1-57), Jongno-gu,	Seoul	
Description	Provides information on relics and artifa- the royal court of Korea	cts, culture, and research information on	
Main contents	Introduces items housed by the muser events, old documents, related academic	um, permanent and special exhibitions, information, and online museum	
Main features	artifacts and relics of the royal court of K educational programs, exhibitions and e culture of the royal court of Korea. The online museum is created by tal exhibitions held by the National Palace Joseon Palaces, Royal Court Life, Kore Joseon Royal Court, Royal Rituals of the of the Joseon Dynasty) from various and (VR). Over 800 artifacts of the royal c narrated guides (MP3), videos (MP4), ar easily download high-resolution photogra The website also provides bibliographic	al information including the number and ated catalogues that explain the contents	
Images		● Minima 	
	Homepage	Guide to the 360-degree VR museum exhibition	

# 4. National Intangible Heritage Center

Name	National Intangible Heritage Center		
Website	https://www.iha.go.kr/service/index.nihc		
Managed by	National Intangible Heritage Center, Cult	ural Heritage Administration	
Address	95 Seohak-ro (896-1 Dongseohak-dong)	, Wansan-gu, Jeonju-si, Jeollabuk-do	
Description	Provides information of production, colle heritage of Korea	ection, conservation of intangible cultural	
Main contents	Introduces performances, exhibitions, e documentation material, and video conte	ducational material, academic research, nts	
Main features	and collected by the National Intangible conveniently online. A wide variety of information is provide intangible heritage documentation (reco histories, 16mm documentary films), ac (academic journals, investigation repo deceased practitioners as well as researe Users (individuals, public or private ac use the archival material for research access by visiting https://open.gdoc.go documentation distribution systems (Onr intended use of material, and duration of The website also provides themed cont Heritage Film Festival, Arirang Archives YouTube channels, and intangible herit can also use the Korea Performing A information from the archives of 6 insti Theater Company of Korea, National	gencies, and organizations) seeking to , exhibitions, or education can request .kr/doc/rcv/recvDocList.do or electronic nara Service) and specifying the material,	
Images			
	Homepage	Arirang Archives	
	1	1	

# 5. National Research Institute of Maritime Cultural Heritage

Name	National Research Institute of Maritime C	ultural Heritage	
Website	https://www.seamuse.go.kr/		
Managed by	National Research Institute of Maritime Cultural Heritage, Cultural Heritage Administration		
Address	136 Namnong-ro, Mokpo, Jeollanam-do		
Description	Provides information on maritime cultu maritime historical artifacts and 16 cases	ral heritage including 107,101 items of of shipwrecks	
Main contents	Introduces academic activities of underwater excavation, exhibition halls, items in possession, and publications		
Main features	remains in Sinan in 1975 and the sub- between 1976 and 1984. As the organiz the National Maritime Relic Gallery, four Research Institute of Maritime Cultural diverse information on maritime cultural conservation, research and investigation, The website also directs users to the Me www.seamuse.go.kr/mokpo/main) and (https://www.seamuse.go.kr/taean/main National Research Institute of Maritime C Users can access information on under ships, maritime history and culture, detail cultural heritage including the name, p download high-resolution images. In particular, a separate Goryeo Celado view the investigation reports of maritim remains, remains of Goryeo celadon ma	okpo National Maritime Museum (https:// the Taean National Maritime Museum ), which are exhibition halls run by the	
Images	▲ 2019 A 1995 RD 102 RD 102 LD 102	<page-header><image/></page-header>	
	Homepage	Goryeo Celadon DB Online Service	

Name	Royal Palaces and Tombs Center	
Website	https://royal.cha.go.kr	
Managed by	Royal Palaces and Tombs Center, Cultural Heritage Administration	
Address	15 <sup>th</sup> floor, Seoul Central Post Office, 70 Sogong-ro, Jung-gu, Seoul	
Description	Provides information on the royal palaces, Jongmyo Shrine, Sajikdan Altar, and royal tombs of the Joseon dynasty	
Main contents	Introduces Gyeongbokgung Palace, Changdeokgung Palace, Changgyeonggung Palace, Deoksugung Palace, Jongmyo Shrine, royal tombs of the Joseon dynasty (inscribed on the UNESCO World Heritage List)	
Main features	The website introduces the cultural heritage containing the history and tradition of the Joseon dynasty (1392–1897) and the Korean Empire (1987–1919). These include details and high-resolution images of the Royal Palaces (Gyeongbokgung Palace, Changdeokgung Palace, Changgyeonggung Palace, Deoksugung Palace); Jongmyo Shrine, which fulfills criterion IV for inscription on the UNESCO World Heritage List, and intangible cultural heritage such as the rituals and traditional music played during the rituals held at the Jongmyo Shrine; Sajikdan Altar; royal tombs of the Joseon dynasty, which are inscribed on the UNESCO World Heritage List; Yuksanggung Shrine (the seven shrines housing the spirit tablets of the royal concubines who gave birth to kings during the Joseon dynasty and the Korean Empire); and Sungnyemun Gate (the south gate of the city walls of Hanyang). Depending on the contents, some material can be opened by read-only programs, which do not allow users to edit the file. The website also provides information on how to obtain permission to film films or dramas at the royal palaces or royal tombs in response to the increase in inquiries. Those who wish to do so must fill out an application form to obtain permission to film following the Regulations on Visiting Royal Palaces and Tombs and can inquire at the Management Office for more information. In addition, the website guides visitors on how they can enter and visit the sites for free if dressed in Korean traditional attire ( <i>hanbok</i> ). Overall, website mainly focuses on providing visitor information and promoting the sites rather than academic information.	
Images	<text></text>	

## 6. Royal Palaces and Tombs Center

BAEK Ju-hyun (whiteju920@korea.kr) National Research Institute of Cultural Heritage

Translated by Jong Woo PARK and Boram SEO