

**A study on the Conversion of Modernism Buildings in Kitakyushu City, Japan**

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**Abstract:** This study is research on the preservation and utilization of modernism architecture since world war II in the city of Kitakyushu. Currently, the architectural community in Japan is discussing the survival of postwar Modernism architecture. Kitakyushu City in Fukuoka Prefecture, located in the Kyushu region of southern Japan, is an area where a variety of architectural styles can be seen, including neoclassical, Modernism, Art Nouveau, Art Deco, and postmodern architecture, and these buildings are being preserved and utilized. This study aims to clarify the method of renovation of modernism architecture in Kitakyushu City by surveying and analyzing the status and renovation history of facilities. Questionnaire survey of 49 modernism buildings. As a result of the survey, it was found that about half of the facilities studied had undergone renovation with a change of use, and that the renovation was categorized into large-scale renovation and small-scale renovation. A comparison of the uses before and after the change of use revealed that many of the buildings were converted to multi-functional complexes that can accommodate multiple functions. Those facilities that have not undergone a change of use were found to be commercial facilities and gymnasiums that can accommodate changing times and multi-functional uses. It was found that the modern architecture in Kitakyushu City has been transformed into facilities that can flexibly accommodate multiple functions, and that several large-scale renovations have been mainly implemented.

**Keywords:** Modernism architecture; Conservation; Renovation; Kitakyushu city; Conversion of architectural facility

**1 Historical buildings in Kitakyushu City, Fukuoka Prefecture, Japan**

In Japan, there is currently a debate over the survival of postwar modernist architecture. Some of these historical buildings are being demolished because their value has not been appreciated, and there is a debate over how to preserve and utilize them. In Kitakyushu City, Fukuoka Prefecture, various styles of modern architecture from the prewar and postwar periods still exist.

Kitakyushu City in Fukuoka Prefecture belongs to the Kyushu area, the southern area of Japan, and is located in the northernmost part of the country. Kitakyushu was an industrial city that prospered from coal-related industries from the Meiji era to the Showa era. Originally, Kitakyushu City was created in 1963 through the merger of five cities, Moji, Kokura, Wakamatsu, Yawata, and Tobata, on an equal footing, a process that is rare in the world. Today, Kitakyushu City consists of seven wards: Moji, Kokura Kita, Kokura Minami, Wakamatsu, Yahata-Higashi, Yahatanishi, and Tobata. Each ward has its own uniqueness and modern architecture built in various periods. These modern buildings are being renovated, and citizens and businesses are utilizing the space.

**2 Research overview****2.1 Previous research about historical buildings**

There are three main types of transition research related to the preservation and utilization of modern architecture. The first is research on renovation methods based on renovation case studies.(KITAGAWA et al., 2013; NAKANISHI et al., 2014; ISHIHARA et al., 2017) The second type of research focuses on the effectiveness of the discourse on conservation activities, such as pamphlets and request forms for buildings.(NAITOU et al., 2019, 2020; KONDOU et al., 2019) The third is a study of the value and evaluation of buildings through surveys such as questionnaires.(FUJII et al., 2019; NISHIKAWA et al., 2008) In this study, we will focus on a case study of the renovation of an excellent modern building in Kitakyushu City, which has already received recognition as an architectural work before and after World War II.

## 2.2 Research method

A questionnaire survey was conducted on 49 modernist buildings in Kitakyushu City. The selection of modern buildings to be studied was based on the following three criteria. First, the buildings must have been completed in the 1900s, second, they must be located in Kitakyushu City, and third, they must have won architectural awards, been involved in preservation activities, or be the work of a prominent architect. Buildings completed in the 1900s have both “historicism” and “functionalism” in their architectural design, while those located in Kitakyushu City are located in a unique area with a wide range of modern buildings, which is rare in Japan. The architectural works that have been awarded or have been involved in preservation activities or are the works of famous architects were selected to ensure that they are excellent works that will be handed down to the next generation. Table1 shows Survey overview. It shows term, respondent, contents, how many cases and response rate. Table2 shows research objects list.

**Table 1** Survey overview

<b>Survey term</b>	2022.6.16~7.15
<b>Respondent</b>	Facility owners, operators, managers, directors
<b>Survey contents</b>	<ul style="list-style-type: none"> <li>• About the current situation, whether there is a change in use, structure type, and various areas</li> <li>• Whether there is a history of repairs, the period of repairs, and the number of times repairs have been carried out</li> <li>• Reason for implementation of renovation, details of implementation of renovation</li> </ul>
<b>Total case</b>	50 cases
<b>Questionnaire case</b>	49 cases (Only 1 literature search)
<b>Answered case</b>	34 cases
<b>Not answered case</b>	7 cases
<b>Destination unknown</b>	4 cases
<b>N/A</b>	4 cases
<b>Response rate</b>	69.4%

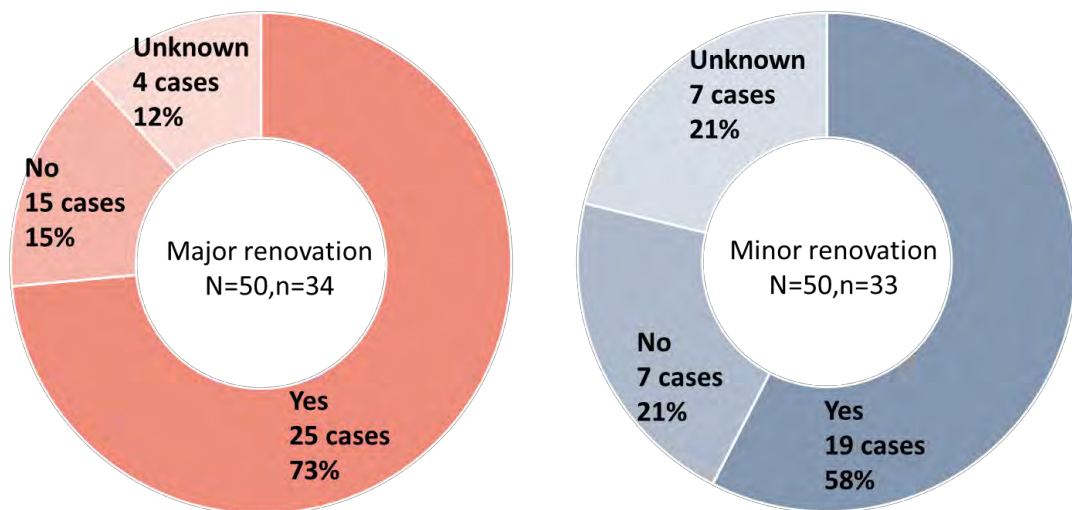
**Table 2** Research objects

<b>Building name</b>	<b>District</b>	<b>Structure</b>	<b>Year</b>
Coal Hall	Wakamatsu	Wooden	1905
Kyushu Institute of Technology Main Gate Guardhouse	Tobata	Wooden	1909
Orio Aishin Gakuen Memorial Hall	Yahatanishi	Wooden	1909
West Japan Industrial Club	Tobata	Wooden	1912
Former Yasukawa Residence	Tobata	Mixed	1912
Former Moji Customs	Moji	Brick	1912
Ueno Building	Wakamatsu	Brick	1913
Former Sapporo Beer Kyushu Factory	Moji	Brick	1913
JR Mojiko Station	Moji	Wooden	1914
Former One Hundred and Thirty Bank Gallery	Yahatahigashi	RC	1915
Warehouse of Nikka Whisky Moji Factory	Moji	Brick	1916
Ryotei Kinabe Honten	Wakamatsu	Wooden	1917
Former Osaka Merchant Marine	Moji	Mixed	1917
Former Furukawa Mining Wakamatsu Building	Wakamatsu	Brick	1919
Tochiki Building	Wakamatsu	RC	1920
Former Moji Mitsui Club	Moji	Mixed	1921
Moji Telecommunications Retro Museum	Moji	RC	1924
Mojiko Ryozen Residence	Moji	Wooden	1925~
Mojiko Yusen Building	Moji	RC	1927
Kyushu Institute of Technology Student Support Plaza	Tobata	RC	1927
Former Dalian Passage Shed	Moji	RC	1929
Moji Ward Office	Moji	RC	1930
Sankirou	Moji	Wooden	1931
Tobata Library	Tobata	RC	1933
Kitakyushu Bank Moji Branch	Moji	RC	1934
Nissui Pioneer Pavilion	Tobata	RC	1936
Former JR Kyushu Head Office Building	Moji	RC	1937

Kahakuryou, former residence of Ashihei Hino	Wakamatsu	Wooden	1940
Yaskawa Electric History Museum	Yahatanishi	RC	1954
Former Kitakyushu Municipal Hachiman Citizen's Hall	Yahatahigashi	RC	1958
World Peace Pagoda	Moji	RC	1958
Moji Golf Club	Moji	Mixed	1960
Kyushu Institute of Technology Memorial Auditorium	Tobata	RC	1960
Kyushu Institute of Technology Phoenix Hall	Tobata	RC	1961
Home Lingua Store	Moji	N/A	1962
Fukuoka Hibiki Shinkin Bank Head Office	Yahatahigashi	N/A	1971
Kitakyushu Central Library	Kokurakita	Mixed	1974
Kitakyushu Municipal Museum of Art, Main Building	Tobata	Mixed	1974
West Japan General Exhibition Center	Kokurakita	Mixed	1977
Irahara House	Kokurakita	SRC	1980
Kitakyushu Soleil Hall	Kokurakita	N/A	1984
Kitakyushu Municipal Museum of Art Annex	Tobata	N/A	1986
Hotel Crown Palace Kitakyushu	Yahatahigashi	N/A	1989
Kitakyushu International Conference Center	Kokurakita	N/A	1990
Kyushu Golf Club	Yahatahigashi	N/A	1992
Kitakyushu City University Main Building	Kokuraminami	N/A	1995
Kitakyushu Media Dome	Kokurakita	Mixed	1998
Premium Hotel Mojiko	Moji	RC	1998
Seicho Matsumoto Memorial Hall	Kokurakita	RC	1998
Mojiko Retro High Mart	Moji	N/A	1999

**3 Result of experience about major renovation or minor renovation**

Figure 1 shows the results of the survey on the renovation history from the questionnaire survey. Large-scale renovations were defined as "large-scale renovations that take place every few years or so," and small-scale renovations were defined as "regularly conducted renovations." The survey asked whether or not these renovations were conducted, the institutions that collected them, and a breakdown of the reasons and details. Figure 1 shows that 25 cases of large-scale renovation and 19 cases of small-scale renovation were implemented or not. Among the facilities that responded that the reason for small-scale renovation was "unknown," there was one facility that responded that the number of times the renovation was performed was "too large. This is a reflection of the fact that the definition of small-scale renovation was unclear in this survey, and there was a need to clearly define the scale of renovation in terms of budget and other numerical values. Table 3 shows the definitions of renovation as revealed by the survey results.



**Figure1** The survey on the renovation history about major and minor

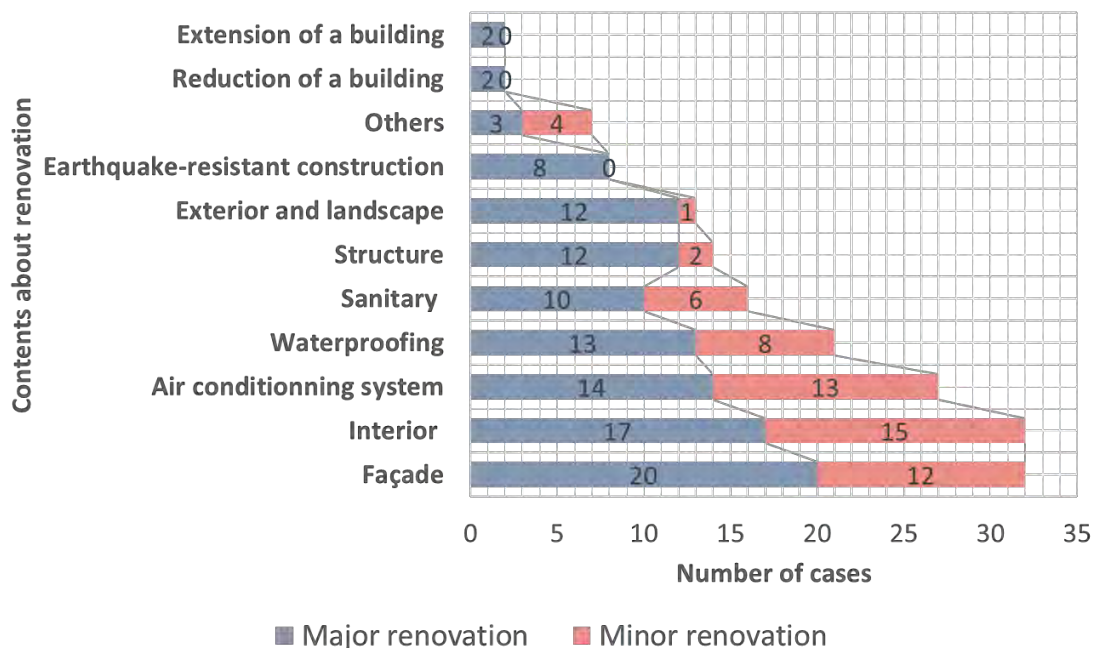
**Table 3** Definition of renovation

	Major renovation	Minor renovation
Definition	Infrequent renovations to be done over several years	Regularly scheduled renovations
Number of times conducted	1~2	Varies by facility
Average number of times conducted	15 years and 1 month	9 years and 9 months

**4 Survey on the reasons for and contents of renovations**

It was surveyed the reasons for large-scale and small-scale renovations, allowing multiple responses, and compared the results. Figure 2 shows the contents about renovation. Figure 3 shows the reason for renovation. After "deterioration and restoration," "restoration work" was the second most common reason for large-scale renovation, and "sustainable use" was the second most common reason for small-scale renovation. From this, it is clear that in large-scale renovation, repair work is carried out to revive the good old architectural appearance, while in small-scale renovation, day-to-day repair work is carried out on the assumption that the building will be used for a long time, with small-scale renovation being carried out in the context of repair and large-scale renovation being carried out in the context of renovation. The definition of "repair" and "renovation" is as follows: "repair" is work to maintain performance and restore the building to its condition at the time of completion, and "renovation" is work to obtain higher functionality than at the time of completion in response to social changes and technological improvements, while respecting the existing conditions. In addition, the percentage of reasons for implementing "seismic retrofitting" is higher for large-scale renovations than for small-scale renovations, indicating that retrofitting is carried out when seismic deficiencies occur.

In the case of modern architectural renovation in Kitakyushu City, there were few cases of renovation due to "urban development," indicating that when urban development takes place, there are no cases that lead to architectural preservation.



**Figure 2** The contents about renovation

Figure 2 shows the results of a survey of facilities that have undergone renovations, in which multiple responses were allowed. The largest number of respondents 20 indicated facade for large-scale renovations, and 15 respondents 15 indicated interior work for small-scale renovations. It was found that the small-scale renovations were mainly for renewal of interior and exterior walls and facilities in deteriorated parts of the building, while the large-scale renovations were for exterior work including gardens, structure work, and structural work such as extension and reduction of the building.

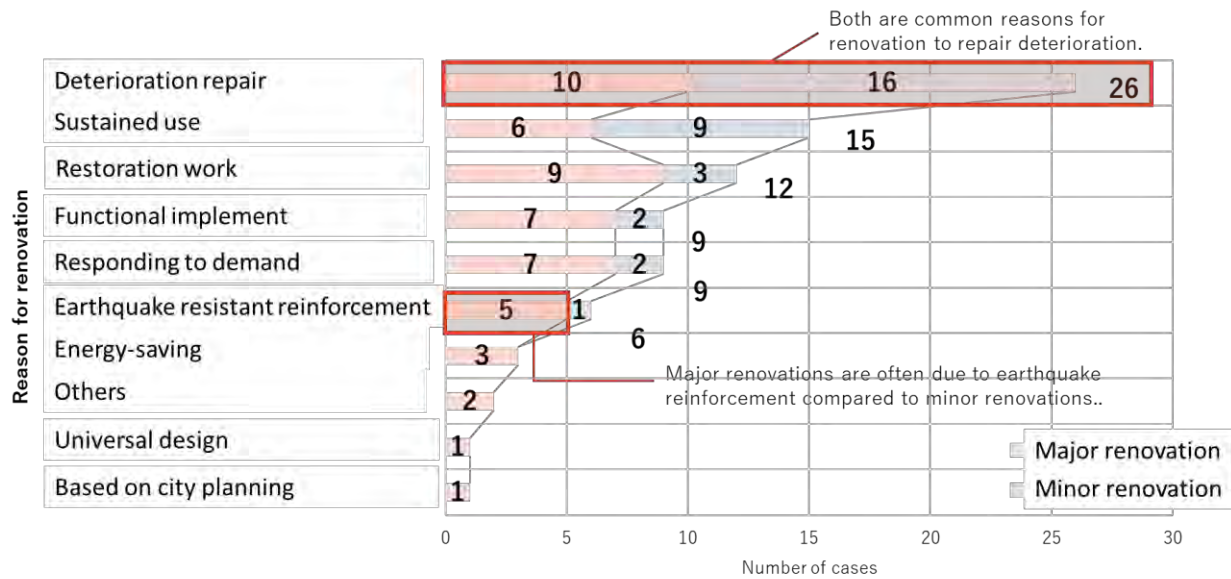


Figure 3 The reason for renovation

### 5 Conclusion

Modern architecture in Kitakyushu City is mainly located in the Moji and Tobata districts, where industry and trade flourished. In addition, some modern buildings in the Yahata area were found to be closed due to renovation. At the present stage, the buildings have undergone several major renovations, and it was found that they are being reused for facilities that can respond to flexible functions. On the other hand, it was found that periodic small-scale renovations are needed rather than large-scale renovations that are carried out when seismic performance fails. The basic survey also revealed that there are still few examples of large-scale renovations of postwar modernist buildings in Kitakyushu City. Continuous renovation will be necessary to ensure that the building is preserved and utilized in the future. This study investigates the methods and reasons for renovation based on modern architecture in Kitakyushu City that has been used sustainably.

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