



Study on Kaishochi Changes Before and After the War-Damage-Recovery Land Readjustment Programs of Nagoya City, Japanese Castle Town

KENJIRO MATSUURA*

* Associate Prof., Graduate School of Science and Engineering, Chiba Univ., Dr. Eng., matsuura@chiba-u.jp

In this paper, focusing on open temple-type *kaishochi* (open areas ensconced in the design of urban blocks) located in the district of Nagoya City in Japan's Aichi Prefecture, we will review the effects of the war-damage-recovery land readjustment programs, through which the city has experienced a number of major transformation. Specifically, we will elucidate the actual state of such *kaishochi* before and after the project by examining residual trends of temple-type structures by using maps produced before and after the project implementation. Targeting 66 Edo-period *kaishochi* blocks in the Nagoya Castle district, we first analyzed the differences between the land usage decrease rate for the whole district and that for the targeted *kaishochis*. Next, we analyzed transformations of usage and form using the maps produced before and after the project implementation. As a result of our analysis, the following three points were clarified. First, even though the number of temple-type *kaishochis* is decreasing, there has been little change in the area they occupy. Second, there has been little change in *kaishochi* usage before and after the project implementation. Third, looking at the *kaishochi* forms, we can find changes from Flagpole type (large inner area with narrow outside access), no-contact type (large inner area with no public access to outside roads), and integrated type (large access to outside road).

Keywords: *kaishochi*, the war-damage-recovery land readjustment programs, Nagoya, Japanese Castle town

Introduction

In the grid blocks that make up major cities, high-rise buildings commonly compete for space and parking lots are often scattered about randomly. In such districts, blocks are primarily developed on a per-site availability basis and no planning is performed for each city block. In contrast, in the planned grid block districts of Edo-period Japanese castle towns, there are numerous examples of open spaces called *kaishochi* that were deliberately and systematically arranged in the central parts of the city blocks. According to S. Ibaraki (1994), such *kaishochi* were incorporated into the planned districts of numerous Japanese cities including Tokyo, Shizuoka, Nagoya, and Kumamoto. As a result, when urban planners engage in redevelopment projects, they are often tasked with examining such historical *kaishochi* to ensure that they are incorporated into modern central urban areas in attractive and innovative ways⁽¹⁾.

Focusing on the numerous temple *kaishochi* in Nagoya City, Aichi Prefecture, this paper explores the work of the war-damage-recovery land readjustment programs, through which the city underwent a number of major transformations. Herein, we aim to elucidate the actual state of changes to *kaishochi* before and after the project completion. In the Nagoya City Edo-period castle town, many of the original *kaishochi* incorporated into the city blocks included temples, but there were also other types, including those hosting mansions, public facilities, and shrines.

The center of Nagoya City forms a grid with block sizes primarily based on three archetypes. Previous research, established that two of these had outer dimensions of 50×50 Ken (90×90 m), but in one portion of the town, the block sizes were set at 50×70 Ken (90×127 m). From an examination of Fig. 1 (Nagoya City (1999)), it appears that the first type occupies 60% of the total land. In addition, although *kaishochi* in Nagoya were most commonly the site of temples, they also hosted mansions or government facilities such as prisons, fire-watch towers, and **restaurants**. Therefore, it can be said that there were rather few *kaishochi* open to the general public (Hayashi T. (2007)).

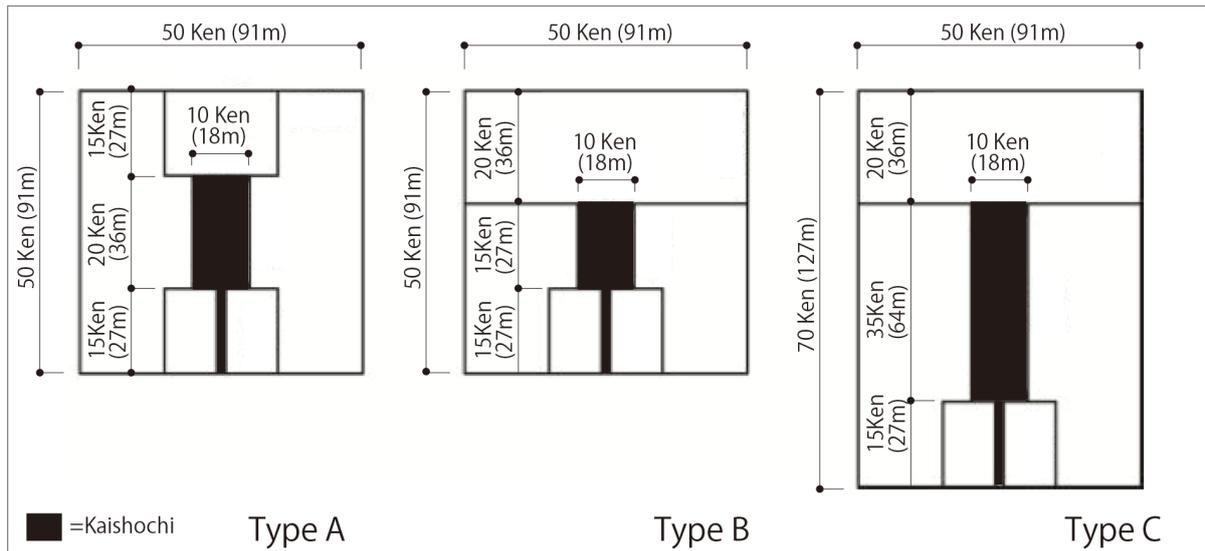


Figure 1: Archetypes of Nagoya's Kaishochi¹⁰⁾

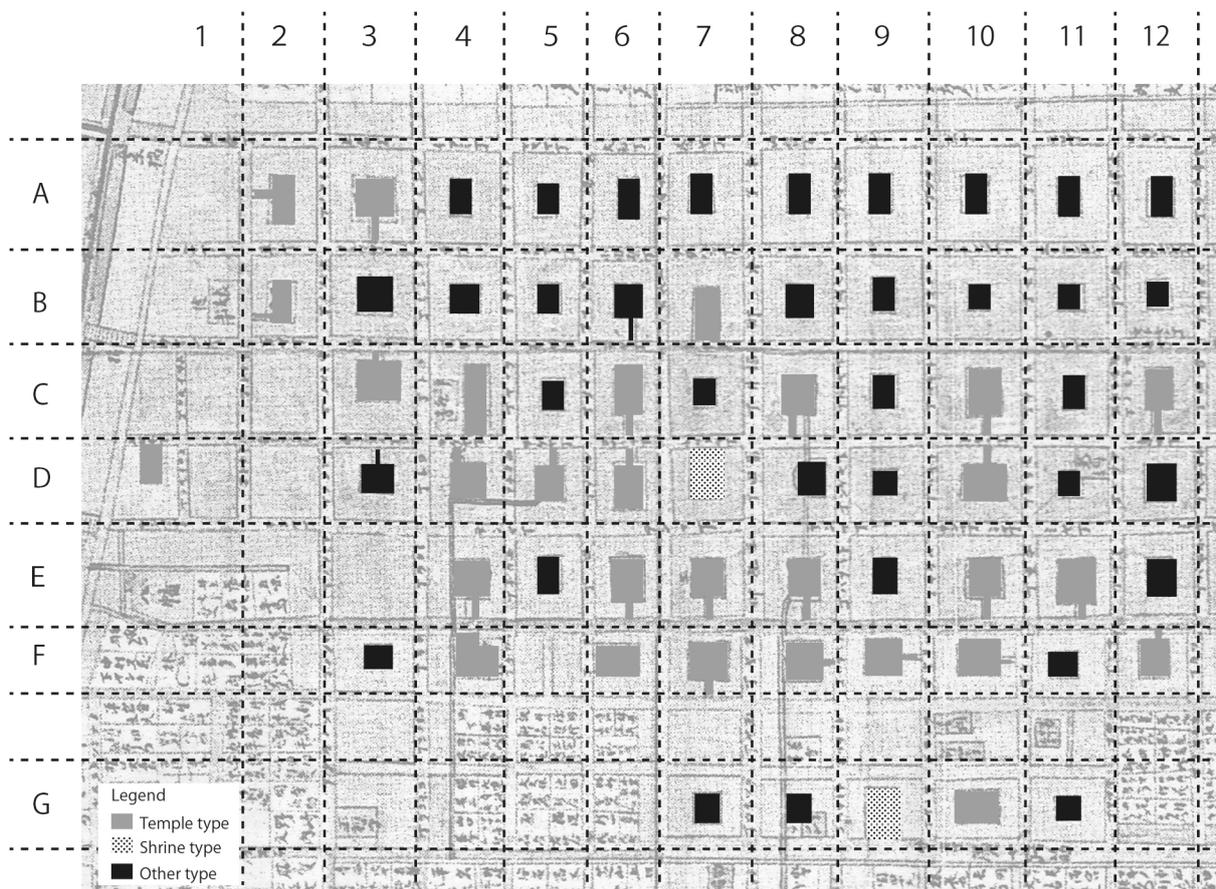


Figure 2: The location of Kaishochi to study (Categorized in Nagoya Castle Map (1746))

This research examines 66 *kaishochi* blocks that could be confirmed to exist in the “Nagoya Castle Map” created in Enpo 3 of the Edo Period (1746), as shown in Fig. 2. Note here that, in this paper, we define *kaishochi* as sites where a line drawn diagonally across a block will intersect the free space making up the center of the block, and the shortest distance between the intersection and the site boundary line is 4 m or more. Furthermore, this study designates



kaishochi based on three primary usages: temple, shrine, and other. The latter category includes office buildings, commercial buildings, residences, and multi-level parking lots.

Looking at past *kaishochi* studies focusing on the Edo period, we find that Tetsuo Tamai (1986) analyzed block sizes while Lee Soeong (2007, 2008) analyzed changes in land ownership, bankruptcies, and alleyways, and S. Ibaragi (1994) analyzed *kaishochi* by districts. As for Nagoya City *kaishochi*, Toshiji Terashima et al. (2009) analyzed their transformations and their related factors.

The differences between Terashima's research and this study can be broken down into the following six points:

1) Terashima analyzed transformations in 61 street blocks that were confirmed in 1884 cadastral register figures, while this article examines *kaishochi* from 1746, which was near the end of the Edo period.

2) This study focused on events occurring before and after land readjustment project renovations.

3) This study makes a point of analyzing the transitions to the size of the sites examined.

4) We divide *kaishochi* into types (temple, shrine, and other).

5) We point focus on site integration with connection sites.

6) *Kaishochi* archetypes are examined.

It is noted that the usage and form of *kaishochi* changes according to the era in which they were constructed. In connection with the relocation of temple cemeteries that occurred during the war-damage-recovery land readjustment programs, it was also determined that temple-type meeting places have undergone area changes that are different from the other *kaishochi* types. Based on the above, we will conduct our analysis by focusing on *kaishochi* 1) usage transformations, 2) form transformations, and 3) temple-type area transformations. We will begin our research by analyzing the influence of temple-type *kaishochi* resulting from temple cemetery relocations that were carried out as one phase of the war-damage-recovery land readjustment programs.

Because it has recently become commonplace to relocate inner-city cemeteries to suburban locations, the temple-type *kaishochi* affected by such relocations obviously experience more radical use transformations than other types. Specifically, we will examine the relics and traces of temple-type *kaishochi* using maps produced before and after the implementation of the war-damage-recovery land readjustment programs, and then analyze reduction rate differences between the entire district and the *kaishochi*. Next, after dividing *kaishochi* by type, we will analyze changes in their usage and form by using maps created before and after the project implementation.

Temple-type area transformation by cemetery relocation

Because the presence of cemeteries within the central city target blocks was considered environmentally and aesthetically unfavorable, a plan to relocate those memorial areas to a concentrated location called Nagoya *Heiwa Koen* (Peace Park), which is located on the outskirts of the western part of the city, was undertaken during the reconstruction phase of the war-damage-recovery land readjustment programs. In all, 279 temple cemeteries that were originally located within the central city project area were relocated.



After giving thoroughgoing consideration to the petitions of temples officials, the city authorities who decided on the site of the new tomb gardens established policies calling for not only the meticulous handling of the cemetery monuments being relocated but also the groundbreaking policies for the sanctuary areas located inside the temple complexes, as follows: 1) The rate of land decrease is calculated by adding 1/2 of the transferred cemetery area to the area before land readjustment. 2) The temple has a guaranteed minimum site area, the temple type is maintained despite the relocation of the cemetery to the suburbs, temple types were replaced by these incentives.

Next, an analysis of the remnants located at temple-type *kaishochi* that have existed since the Edo period (Table 1), before and after the relocation phase, was conducted. In the Edo period, when these *kaishochi* first appeared, 28 were temple-type. However, that number decreased to 14 before the project implementation, and then to eight afterwards. Furthermore, although they were not located on a *kaishochi*, we confirmed the existence of six temples within the survey area before the project implementation and two afterwards.

Changes in the number of Edo period temple-type *kaishochi* before the project implementation are considered to be caused by the fact that some temples were driven into disuse by the the anti-Buddhist movement at the beginning of the Meiji era. Additional factors related to the change in the before and after project number of temple-type *kaishochi* included: 1) temple destruction due to war damage, 2) the loss of the patronage that had economically supported the temple, and 3) the relocation of temples to *Heiwa Koen* that accompanied the project implementation.

Next, the block areas where temple remains could be found, even after the project implementation (Table 1), were examined. Looking at the increase and decrease of temple-types before and after the project implementation, we can see an increase of four and a decrease of six temple-type *kaishochis*. As a result, despite a decline in the war-damage-recovery land readjustment programs, land area was reduced, even though things increased in some areas. After conducting an interview survey with Nagoya City officials, it was clarified that some sites were changed due to relocation work difficulties involving war damaged sites and buildings that had had not been refurbished since the war. In addition, regarding areas where the number of temples decreased, when comparing the reduction rate of the block areas with the reduction of the prefecture as a whole, it became clear that the reduction rate of temples in the prefecture was lower than the reduction rate within the block areas. More specifically, at 39%, the reduction rate was particularly large in the E-11 block districts compared to just 7% for other prefectural areas. From this result, it was confirmed that the temple-type *kaishochi* were given preferential treatment over the other-type *kaishochis* when land substitution work.

***Kaishochi* use transformation before and after the project**

As mentioned above, *kaishochis* can be divided into three types: temple, shrine, and other. For each era, the use type of each *kaishochi* examined was incorporated into a survey sheet and changes in the land use pattern were determined based on the investigation sheet.

The total number of *kaishochis* decreased year by year from 66 in the Edo period, to 50 before the project implementation, and then 40 after project implementation. By use type, temple-type *kaishochis* decreased from 28 in the Edo period to 14 before the project implementation and eight after the project implementation. As for shrine-type *kaishochis*, the number decreased from three in the Edo period, to two before the project implementation, down to one after the project implementation. In contrast, the number of other-type *kaishochis*, which was 35 in the Edo period, decreased by just one to 34 before the project implementation, and then to 31 after project implementation. This change was moderate when compared to other two types (Figure 3).

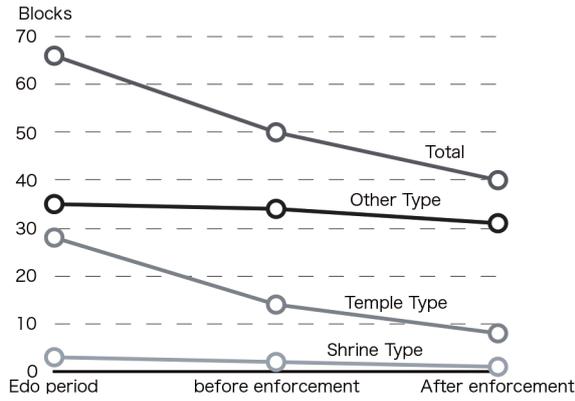


Figure 3: Transition of the usage of "Kaishochi"

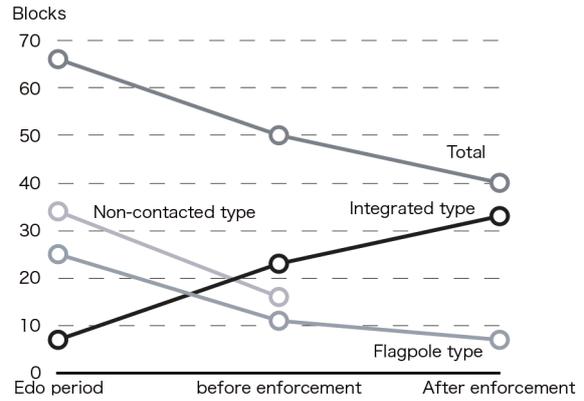


Figure 4: Transition of form of "Kaishochi"

Next, we analyzed blocks with "Kaishochi" in either or both before and after eNext, blocks were analyzed from the combination of the presence of kaishochis before and after the project implementation. Before and after the project implementation: presence, there are 33 blocks, before the project implementation: presences, after the project implementation: absence, are 17 blocks, before the project implementation: absence, after treatment: presence, are seven blocks, and Before and after the project implementation: absence are nine blocks. Before and after the project implementation: absence, it is understood that a kaishochi has completely disappeared from a block. Next, we analyzed kaishochi blocks where before or after the project implementation: presence, focusing on use transformations. Comparing before and after the project implementation, six blocks stayed temples, six blocks changes from temple to other, one block change from other to temple, 19 blocks stayed other, and one

Table 1: Residual trend and reduction rate of Temple type "Kaishochi"

Block number	Presence or absence of Temple Type			Block area before enforcement (㎡)	Block area after enforcement (㎡)	Breakthrough rate of block (%)	"Kaishochi" area before enforcement (㎡)	"Kaishochi" area after enforcement (㎡)	Breakthrough rate of "Kaishochi" (%)
	Edo Period	Before enforcement	after enforcement						
A-2	○	×	×	11,649	10,621	9			
A-3	○	○	○	16,017	10,560	34	1,466	1,279	12
B-2	○	×	×	8,296	6,747	19			
B-7	○	×	×	10,667	7,033	34	683		
C-3	○	○	×	11,694	6,830	42	1,265		
C-4	○	×	×	11,058	6,408	42			
C-6	○	○	×	11,257	6,980	38			
C-8	○	×	×	10,582	6,900	35			
C-10	○	○	○	10,570	6,858	35	745	627	15
C-12	○	○	○	10,135	7,007	30	1,490	1,176	21
D-4	○	×	×	10,362	6,078	41			
D-5	○	○	×	9,997	6,732	33	615		
D-6	○	×	×	10,424	7,007	33			
D-10	○	○	×	10,084	6,914	31	739		
E-4	○	×	○	10,488	6,394	39		932	
E-6	○	×	×	10,403	7,447	28			
E-7	○	○	○	9,800	7,351	25	719	815	-13
E-8	○	×	○	9,937	7,620	23		977	
E-10	○	○	×	9,885	7,286	26	1,372		
E-11	○	○	×	10,127	6,142	39	682		
F-4	○	○	○	11,475	6,513	43	526	623	-18
F-6	○	×	×	11,601	7,563	35			
F-7	○	○	○	11,009	7,441	32	1,008	904	10
F-8	○	○	×	10,524	7,675	27	3,125		
F-9	○	×	×	10,755	7,327	32			
F-10	○	×	×	10,398	7,185	31			
F-12	○	○	×	10,201	7,052	31	804		
H-10	○	×	×	8,297	6,707	19			
Number of presence	28	14	8						



blocked changed from shrine to shrine. Thus, it is found that many blocks maintained their previous uses: 26 blocks compared to seven blocks changing their uses.

The reason one designation switched from temple- to other-type *kaishochi* is that some temples were fully transferred to the suburbs along with their affiliated cemeteries during the relocation phase of the project. There was also one example of an other-type *kaishochi* that changed to a temple-type *kaishochi*. In this case, a temple that was present in the block before the project implementation was expanded to include a position within the *kaishochi* during the implementation phase. There were also cases where part of the land that was not initially part of the *kaishochi* became part of a *kaishochi* due to the implementation phase, even though the use remained the same. As for cases in which *kaishochi* disappeared due to the project, two were temple-type *kaishochis*, one was a shrine-type *kaishochi*, and 14 were other-type *kaishochis*. This indicates that a number of *kaishochi* in the city center disappeared as a result of the implementation phase.

The shrine-type *kaishochi* disappeared because the shrine itself burned down before the project implementation and the site was converted to another use. As for cases in which *kaishochis* were renewed after the project implementation, one was a temple-type *kaishochi* and six were other-type *kaishochis*. In the case of the temple-type *kaishochi*, a temple was located on the site before the project implementation and the block size remained small after the project implementation. Since the proportion of the temple in relation to the block went up, it was revived as a *kaishochi*. As for the features of the other-type *kaishochi*, although it was a temple-type *kaishochi* in the Edo period, it lost *kaishochi* status because the temple disappeared and it is thought that the land, which was originally residential, had been transformed into a *kaishochi* due to section changes imposed by the project implementation.

Changes in the *kaishochi* form before and after the project

Using survey sheets, we assembled and categorized *kaishochi* groups with similar transformations. First, we divided the meeting place form into three types: flagpole type (large inner area with narrow outside access), no-contact (large inner area with no public access to outside roads), and integrated type (large access to outside road). (See Fig. 5.)

In the Edo period, about 40% of the blocks were the flagpole type (25 blocks), about 10% were the integrated type (seven blocks), and the no-contact type comprised about 50% (34 blocks). However, prior to the project implementation, the number of integrated type blocks had increased and accounted for about 50% (23 blocks), after which the no-contact type disappeared and the integrated type accounted for about 80% (33 blocks) (Fig. 4). From this, we can see that the integrated type of *kaishochi* had become the dominant form.

Next, we analyzed the morphological change of *kaishochi* for each combination of *kaishochi* presence before and after the project implementation (Fig. 5). Comparing before and after the project implementation, three stayed flagpole type, four changed from flagpole type to integrated type, 15 stayed integrated type, three changed from no-contact type to flagpole type, and eight changed from no-contact type to integrated type, confirming five pattern of change did it. Thus, 18 blocks kept the same form, and 15 blocks changed.

As for *kaishochi* that were flagpole type both before and after the project, there was an accessway transformation in the A-3 block, and one side of the F-7 block came into contact with two renovated paths. Prior to the project implementation, the A-3 block had access to the road along the south side of the *kaishochi*, but afterwards, the main road passed along the east side, thereby requiring an accessway transformation. Before the project implementation, the F-7 block only had one corridor road, but afterwards it came to have two roads. From these two examples, we can see that changes in the contact direction and number of accessways were made during the project implementation while maintaining the flagpole type (Fig. 5).

There were numerous cases where *kaishochi* retained their integrated form after the project implementation. For example, Asahi Shrine has been present on block H-9 from the Edo period to the present day. As in B-4 and H-11, there are blocks where there are two or more accessways with an adjacent road, even though they were integrated before the project implementation. In those cases, they were transformed during the project implementation to eliminate an approach road or to make an accessway in another section. Additionally, there are blocks with different sections before and after the project implementation. In those cases, the *kaishochi* section before the project implementation was reduced in size during the arrangement adjustment, so the original site was no longer in the central part of the block, thus causing another section to become the *kaishochi* instead (Fig. 5).

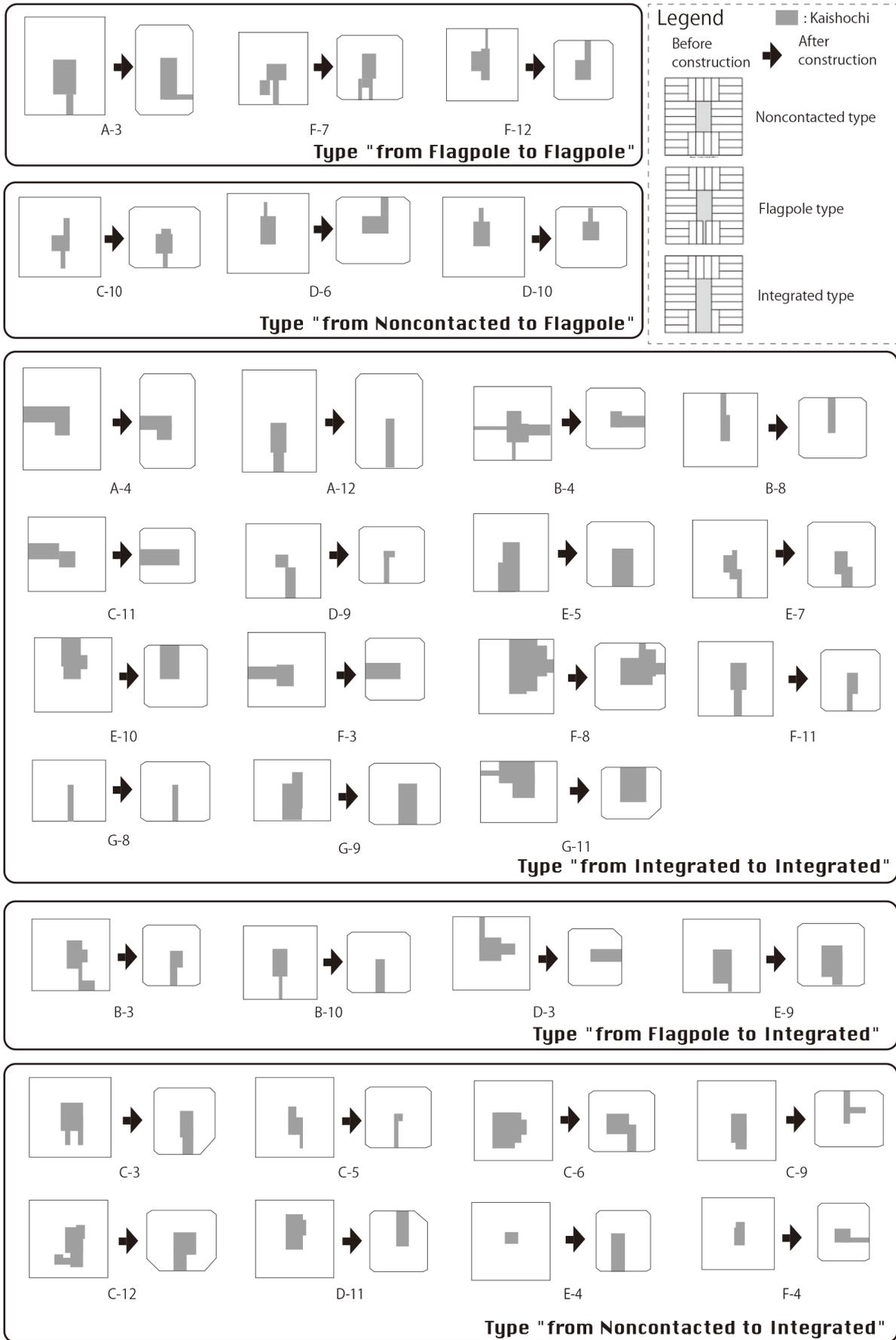


Figure 5: Transfiguration pattern of Kaishochi



As for flagpole to integrated type transformation, as seen in B-10 and E-9, the conversions were produced by expanding the approach roads that existed before the project implementation. In those cases, amplification was achieved by integrating land around the *kaishochi*. Additionally, at D-3, a main road was created on the east side, thereby changing the contact path. In that case as well, the morphology was transformed by integrating it with the sections surrounding the *kaishochi* (Fig. 5).

As for no-contact to flagpole type transformations, in cases where no accessway was seen before the project implementation, the original section was similar to the flagpole type and there was little change in the size of *kaishochi* after the project implementation. However, it became possible to access the city block, which became smaller (Fig. 5).

For no-contact to integrated type transformations, we saw that the forms before the project implementation were already close to the integrated type and that access in numerous blocks was created by integrating them with the surrounding parcels during the project implementation. In E-4, the temple that has existed on the *kaishochi* since the Edo period had declined in size before the project implementation phase and another section had been designated as the *kaishochi*, making it a no-contact type. However, due to issues that arose during project planning, the block size was reduced, whereas the temple grounds stayed the same. As a result, the temple once again occupied the central part and the *kaishochi* was designated as an integrated type (Fig. 5).

Conclusion

As a result of the analyses conducted in this study, the following three points were clarified. First, even though the number of temple-type *kaishochis* is decreasing, the resulting area changes have been small. The total number of *kaishochis* was 50 before the project implementation but decreased to 40 afterwards. From an examination of temple-type remnant trends, we find that the decrease in the number of temple-type *kaishochis* was occurring before the war-damage-recovery land readjustment programs and has continued since the project. However, since residential areas have also been decreasing step by step, it was also found that the temples remaining area after the project implementation are being maintained .

Second, there has been little change in *kaishochi* usage before and after the project, with most that had undergone transformations changed to residential land when various temples were relocated to the *Heiwa Koen* simultaneously with their affiliated cemeteries. As for other-type *kaishochis*, there are numerous offices that disappeared during arrangement adjustments, but since there were also many uses for the newly vacant areas, the numbers were maintained. When looking at *kaishochi* usage, we can also see than many of the other-type *kaishochis* had originally been temple-type *kaishochis*. The reason here might also be related to the fact that the temples originally on that land had been moved to the vicinity of *Heiwa Koen* simultaneously with their affiliated cemeteries as part of the relocations done during the war-damage-recovery land readjustment programs.

Finally, looking at *kaishochi* forms, we can see changes from flagpole and no-contact types to integrated type. In Nagoya City, site shapes were commonly maintained because of the Land Reorganization Project made decisions based on the actual converted sites. However, we confirmed that changes from flagpole to integrated type did occur by integrating a *kaishochi* with the surrounding premises. *Kaishochi* that remains a flagpole type was also a flagpole type in the Edo period. In other words, it can be said that the *kaishochi* has been maintained in the same form as when it was first created.

Notes on contributors

This research is the result of collaborative research with Yoshinori Kato. In the interview survey, I received great cooperation from administrative officials and others. I thank you for writing here.

Endnotes

(1) For example, the Nagoya-shi Nishiki 2-chome town development communication council is examining the utilization policy of the club.



Bibliography

Hayashi T.,The world of the modern era Nagoya Genkou picture scroll,2007

Ibaragi S. ,About the people living in the Edo period in the early modern period,Architectural History No.23,pp.108-117,1994

LEE Kilhun, A STUDY ON THE LANDOWNERSHIP OF "KAISHOCHI",Transactions of AIJ. Journal of architecture, planning and environmental engineering (633), pp2527-2532,2008

LEE Kilhun, A STUDY ON THE PROCESS OF "KAISHOCHI" CHANGING TO THE HOUSING LOT,Transactions of AIJ. Journal of architecture, planning and environmental engineering (621),pp 237-242,2007

LEE Kilhun, Study on the alleys to the open space in the block ("Kaishochi") of Edo town,Summaries of technical papers of annual meeting Architectural Institute of Japan,pp.303-304,2007

Nishiki 2 chome town planning liaison meeting,Nishiki 2-chome Chouja-machi town development plan concept in the future (2011-2030),pp.28-31,2011

Nagoya city,New work Nagoya city history 3rd volume,pp.140-141,1999

Tamai T.,Edo Read the lost urban space,Heibonsha,1986

Terashima T.,A study on the shifting situation of the urban public space in the center of block,Summaries of technical papers of annual meeting Architectural Institute of Japan,pp.379-380,2009

Image sources

Figure 1 : Archetypes of Nagoya's *kaishochi*

Figure 2 : The location of *kaishochi* to study(Categorized in Nagoya Castle Map (1746))

Table 1 : Residual trend and reduction rate of Temple type *kaishochi*

Figure 3 : Transition of the use type of *kaishochi*

Figure 4 : Transition of form type of *kaishochi*

Figure 5 : Transfiguration pattern of the location of *kaishochi*