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OUTLINE OF THE INSTITUTE OF TURKISH CULTURE STUDIES

PREFACE

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The following activities were conducted in the 2016 academic year (April 2016 – March 2017). Here, I would like to thank those who supported these activities.

Dr. Burhan Koroglu and Mr. M. Agah Karliaga of Turkey's Bahcesehir University (BAU) Civilization Studies Center visited Mukogawa Women's University (MWU) on April 23, 2016 (Friday) to make a courtesy call on Chancellor Okawara and President Itoigawa and to discuss the prospects of further exchanges between the two universities in the years ahead.

MWU has been hosting the *Silk Road Culture and Architecture* lecture series at the Industry Club of Japan Hall in front of Tokyo Station since 2015. The fourth and fifth lectures were both held in 2016.

　The fourth lecture, *Encounter with Other Cultures Along the Silk Road*, was held on June 4, 2016 (Saturday). Speakers at the event were Dr. Kiyohide Saito, a specially appointed professor of Nara Women's University and technical advisor to the Archaeological Institute of Kashihara, Nara Prefecture, who presented on "World Heritage in the Eastern Mediterranean: Past and Present World Heritage Sites in Syria"; Abbot Emeritus Kosei Morimoto of Todaiji Temple in Nara, who lectured on "Ali al-Tanukhi's Anthology 'Night Stories of the Islamic Empire': Bringing Early Islamic Society to Life"; and FUJI (Yoshiyuki Fujii), who gave a

2016 年度（2016 年 4 月～2017 年 3 月）には、以下のような活動が行われた。活動を支えていただいた多くの方々に感謝を申し上げる次第である。

トルコ・バフチェシヒル大学文明研究センターのブルハン・キョロール先生とアガー・カーラアー先生が 2016 年 4 月 23 日（金）に来学した。学院長、学長を表敬訪問し、武庫川女子大学とバフチェシヒル大学の今後の更なる交流の可能性等について話がなされた。

武庫川女子大学は 2015 年から、講演会シリーズ「シルクロードの文化と建築」を東京駅前の日本工業倶楽部で開催している。2016 年度は同シリーズの第 4 回と第 5 回を開催した。
　第 4 回は、2016 年 6 月 4 日（土）に「シルクロードにおける異文化の出会い」というタイトルで開催された。西藤清秀氏（奈良女子大学特任教授、奈良県立橿原考古学研究所技術アドバイザー）による講演「東地中海の世界遺産－シリアの世界遺産今昔－」、そして森本公誠氏（東大寺長老）による講演「タヌーヒー撰『イスラム帝国夜話』－初期イスラム社会の世相を生々しく－」、さらには FUJI（藤井良行）氏（トルコの伝統的弦楽器・サズ奏者）によるトルコの伝統音楽の演奏が行われた。
　第 5 回は、2017 年 2 月 4 日（土）に「シルクロードのキリスト教文化」というタイトルで開催された。篠野志郎氏（東京工業大学名誉教授）による講演「生き延びた祈り、或いは石の箱船－東アナトリアのキリスト教建築－」、そして杉本智

riveting live performance on the saz, a traditional Turkish stringed instrument.

The fifth lecture, *Christian Culture Along the Silk Road*, was held on February 4, 2017 (Saturday). This program featured presentations by Dr. Shiro Sasano, Professor Emeritus at the Tokyo Institute of Technology, who delivered a presentation entitled "Survived Prayer or a Stone Ark: Christian Architecture in Eastern Anatolia"; a talk by Dr. Tomotoshi Sugimoto, professor at Keio University, on the "Byzantine Church in the Holy Land Israel: Based on Recent Archaeological Surveys"; and a performance of classical Arabic music on the *oud* by Mr. Yuji Tsunemi.

As in years past, ICSA in Japan was hosted in 2016. Ten students from Bahcesehir University's (BAU) Faculty of Architecture and Design arrived in Japan on June 25, 2016 (Saturday) accompanied by Associate Professor and Vice-Dean of the Department Murat Dundar and Instructor Belinda Torus. The BAU students collaborated with second-, third-, and fourth-year MWU architecture students and devoted themselves to design exercises and field work.

The International Association of Silk Road Universities (iaSU) and Mukogawa Women's University together with Bahcesehir University (Istanbul, Turkey) cohosted the 4th International Conference on Archi-Cultural Interactions through the Silk Road at MWU Kami-Koshien Campus from July 16 (Saturday) to July 18 (Monday), 2016. The conference drew 82 participants from nine countries, including researchers, designers, and engineers engaged in research on architecture, cities, and landscapes in the Silk Road regions. The program included three keynote lectures and other invited talks, student poster sessions, general research presentations (52 from eight countries), and a one-day bus tour of Nara. The conference proved to be enormously successful and stirred lively discussion among the participants about the lives, technologies, and cultures centered on the architecture of the countries along the Silk Road.

Due to the political turmoil in Turkey, ICSA in Istanbul was suspended for the second year in a

俊氏（慶応義塾大学文学部教授）による講演「聖地イスラエルのビザンツ教会－最近の考古学的調査をもとに－」、さらには常味裕司氏（ウード奏者）によるアラブの古典音楽の演奏が行われた。

例年の通り ICSA in Japan 2016 を開催した。トルコ・バフチェシヒル大学建築デザイン学部の学生 10 人とムラト副学部長、ベリンダ先生が 2016 年 6 月 25 日（土）に来日した。2、3、4 年生のスタジオで武庫川女子大学建築学科の学生と机を並べて設計演習やフィールドワークに励んだ。

2016 年 7 月 16 日（土）～18 日（月）に、iaSU ならびに武庫川女子大学主催、バフチェシヒル大学（トルコ・イスタンブール）共催により、第 4 回「シルクロードを通して見た建築と文化」国際会議が武庫川女子大学上甲子園キャンパスにおいて開催された。シルクロード地域諸国において建築、都市、ランドスケープなどの分野の研究に取り組む研究者、デザイナー、技術者など世界 9 カ国から 82 名の参加者があった。3 回に渡る基調講演をはじめとして、招待講演、学生ポスターセッション、一般研究発表（世界 8 カ国 52 本）、そして奈良 1 日ツアー等があり、シルクロード地域諸国の建築を中心とする生活、技術、文化等について活発な議論が交わされた。

ICSA in Istanbul は、トルコの政治情勢により、昨年度に続いて実施が見送られた。その代わり、バ

row. As an alternative, ICSA was held at BAU's branch campus in Rome from February 18 (Saturday) to March 2 (Thursday), 2017, with two professors and ten second-year master's students from MWU participating.

The Institute of Turkish Culture Studies hosts annual seminars at Koshien Hall dedicated to the cultures, history, and architecture of the Silk Road and of the various countries along the Silk Road corridor. This year, as in years past, three seminars were held.

The first seminar convened on April 20, 2016 (Wednesday) and featured Dr. Shiro Sasano, Professor Emeritus at the Tokyo Institute of Technology, who gave a talk on " Localism that Transgresses Borders: Christian Architecture of Eastern Anatolia with a Focus on Armenian Architecture."

The second seminar on March 6, 2017 (Monday) was led by Mr. Hiroshi Kiguchi, affiliated with the Cultural Heritage Division, Ciba City Board of Education, Special Historical Promotion Section. The title of Mr. Kiguchi's presentation was "Technologies for Measuring Cultural Assets, and the Utilization of the Outcomes of Such."

Finally, the third seminar was held on March 14, 2017 (Tuesday), led by Dr. Masaya Masui, Professor at Kyoto University Graduate School of Human and Environmental Studies, who discussed "Architectural History, Preservation, and Maintenance of a Gandhara Site in Pakistan."

This year, three students from Turkey enrolled at MWU's master's program in architecture. One of these students, who was admitted in April 2015, has already completed her coursework and dissertation and was awarded her degree on March 19, 2017 (Sunday). Not one to rest on her laurels, she now plans to pursue a doctorate at MWU.

フチェシヒル大学の分校が設置されているローマにおいて、ICSA in Rome が 2017 年 2 月 18 日（土）〜3 月 2 日（木）に実施された。教員 2 名と修士 2 年生 10 名が参加した。

トルコ文化研究センターは、甲子園会館で、毎年研究会を主催する。そのテーマはシルクロードとそれを取り巻く国々の文化や歴史や建築に関するものである。今年度も 3 回の研究会を開催した。
　第 1 回は、2016 年 4 月 20 日（水）に、講師：篠野志郎 氏（東京工業大学名誉教授）による「越境するローカリズムーアルメニア建築を機軸とした東アナトリアのキリスト教建築一」であった。
　第 2 回は 2017 年 3 月 6 日（月）に、講師：木口裕史 氏（千葉市教育委員会文化財課特別史跡推進班）による「文化財を計測する技術と成果の活用」であった。
　第 3 回は 2017 年 3 月 14 日（火）に、講師：増井正哉 氏（京都大学大学院人間・環境学研究科　教授）による「パキスタン・ガンダーラ遺跡の保存整備と建築史研究」であった。

今年度、大学院建築学専攻修士課程にはトルコからの留学生が 3 名在籍した。4 月入学生が 1 名、9 月入学生が 2 名である。その中の 4 月入学生 1 名が、必要単位を満足し且つ修士論文を書き上げて、2017 年 3 月 19 日（日）に無事修了式を迎えることができた。修了後は博士後期課程に進む予定である。

City Center and Coastline Relations in Terms of Public Spaces through Black Sea Highway: Rize

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Abstract: Industrial Revolution has numerous effects on not only big cities but also developing cities' transformation processes. In Rize, process has been started with Karadeniz Sahil Yolu (Black Sea Seaside Highway), which proposes an infill project in coastline of the city for an international route, in 1990's. It aims to design an international connection point between cities throughout Black sea and Istanbul. As both national and international route, has affected Rize regarding historical, cultural and architectural identity. After the project a new borderline has been defined by this route that broke off the relationship between sea and center. On the seaside, public spaces such as pedestrian roads and bike-roads, cafes and picnic areas are taken places while city center is housed in the other side (the old city border). This study aims to examine the relationship between the city center and sea regarding public spaces before and after the construction route.

1. Introduction

Regarding the geographical location, Turkey has been placed very specific point in the world that connects East and West as a bridge (Figure 1).

Figure 1. The location of Turkey

It has housed several civilizations like Byzantine Empire, Ottoman Empire and Turkish Republic and reflected their footprints in a harmony throughout centuries. However, like all of the other countries in the world, Industrial Revolution has several effects on Turkey. Within this context, economy has become a significant issue that is mostly based on construction sector. Especially, with approximately 14 million of population Istanbul is the center of this sector with a great number of projects. After 1999 Istanbul Earthquake, damages of the earthquake and renewal of the city have been discussed and architectural solutions have been proposed. Consequently, urban transformation projects have been determined as solutions and numbers of them have increased starting from Istanbul and spreading to the whole Turkey. Rize has been one of the significant cities in the northern part of Turkey to discuss urban transformation process since the beginning of 90's.

Turkey includes 7 geographical regions (Marmara, Black Sea, Aegean, Central Anatolia, Eastern Anatolia, Mediterranean and Southeastern Anatolia) that have different geographical, social and economic characteristics (Figure 2).

Figure 2. 7 Regions of Turkey (Source: http://www.allaboutturkey.com)

Black Sea Region has a crucial role to connect East with Marmara Region where Istanbul is taken place as a connection point with West. In that case; economic, social and geographical features of Black Sea Region have been focal points for developing process of Turkey. Exclusively, Black Sea Seaside Highway Project is a milestone of developing projects started in the beginning of 90's and continued till today. Urban transformation projects and Rize-Artvin Airport project are two significant factors of this progress for economic, social and cultural improvements. Considering all these components, this study focuses on Black Sea Seaside Highway project effects on the coastline. The aim of this paper is to analyze city center and

coastline relations in terms of public spaces during the period.

1.1. METHOD

This paper is a part of a comprehensive study that has two parts. The first session is based on theoretical research about the theme and the second chapter includes the analysis about theoretical study and case study. In this paper, the first chapter is presented. As a future study, it is planned to make surveys and simulations to determine exact situation.

This part of the research is based on literature review, collecting data from maps, photos, observations onsite and analysis of the collected information. The method adopts for this paper consists of two main parts. In the first part, economic, social and architectural evolutions are investigated in historical duration. The effects of Black Sea Highway on city are considered regarding the centre and coastline relations focusing on public spaces. The second part includes comparing of city centre and coastline relationships before and after Black Sea Seaside Highway. The comparisons are realized by examining from maps and photos in historical periods and observation onsite. The second part also covers the evaluation of the process by analyzing the changes of public spaces between the centre and sea.

2. Black Sea Highway Project in Rize

Rize, a city, is placed in the northern part of Turkey, Eastern Black Sea. It is one of the specific cities in this region with its location. It is housed in a very sloppy area that the mountains are parallel to Black Sea (Figure 3).
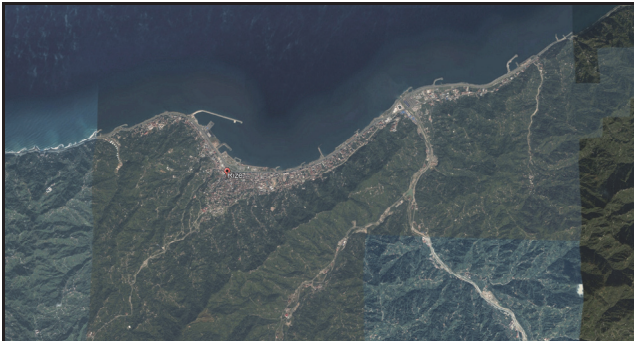

Figure 3. A satellite image of Rize

These geographical features have dominant effects on the settlement characteristics of city. First of all, there is a climatic difference between the coastline and the inner side of Rize. Whether temperate climate characteristics are observed generally, amount of rainfall and temperature differences may be specifically diversified. As the result of these geographical characteristics, the city has composed of two parts (Figure 4).

Figure 4. The settlement in 1935 (Source: Rize Municipality)

Through the coastline, city centre has taken place and fishing is one the most important economic factor. In the second part, the mountainside, domestic settlement is located. And tea is the homegrown agricultural product of this region that the economy of Rize is based on (Figure 5).

Figure 5. A view from tea gardens in Rize

First zoning plan of Rize was designed by Pertev Taner in 1946. This plan proposed sport centers, central offices, hospital in Eminettin Neighbourhood and dwelling settlements in Eminettin and Tophane Neighbourhoods for 14000 inhabitants. In 1969, the second zoning plan of Rize is designed by Fahri Yetman using the first plan as a template. In 1969, the population of city has increased after improvements on tea farming, construction works, port and highway constructions. This main decision of the plan was to fill the coastline through 12 km and build new trade centre in this area. In 1971, a revised zoning map was come into force including proposals about this fill area. Fahri Yetman designed a new zoning plan for Rize in 1974 that aimed to response the developments of the city. The density of centre was increased; the west part of centre was determined as first degree settlement area and the east part-mountainside- was planned as second degree settlement area according to this plan decisions. The decisions about industry and healthcare facilities areas in 1969 were conserved (Rize Municipality, 2010). The changes of 1986 and 1989 about zoning plan offered increasement of numbers of floors in city center and coastline.

Since 1960's there have been numerous development projects about 7 regions of Turkey considering their social, cultural, economic and geographical properties. GAP (Southern east Anatolia Project) is one of the substantial attempts of this approach that aims to develop this region in all areas by focusing on improving its extensive agricultural lands. Related with this attitude; according to the results of "The Socio-economic Development Index of the 7 Region of Turkey in 1996" showing that Eastern Black Sea is on the 5th rank in terms of level of development in Turkey, a development projects about Eastern Black Sea has been started (Bakırcı, 2002). The project named as "Doğu Karadeniz Bölgesel Gelişme Planı, DOKAP, (Eastern Black Sea Regional Development Plan)" has been controlled, coordinated by State Planning Commission and has been conducted by Japan International Cooperation Agency, JICA. The main goal of this project is to improve small scale farming in selected cities -Artvin, Rize, Trabzon, Gumushane, Giresun and Ordu- with proposed model for economic growth of the district as well as its contribution to Turkey's economy (Japan International Cooperation Agency, 2007). Furthermore, it is a fundamental concern to create an international economic corridor from these cities to West and East for enhancing trade relations. To achieve this purpose approximately 450 million Dollars were fund for road construction named Yeşil Yol "Green Road" in 600 kilometer between 2013-2015 (DOKAP, 2016). Here, this road project is also aimed to connect Eastern Black Sea with South Anatolian Region to economic, social and cultural development in all around the country. Black Sea Seaside Highway is one part of this road that has role of supplying continuation of Eastern Black Sea Cities through the coastline. Officially, the highway was opened in 2007. Because of the geographical characteristics of Eastern Black Sea, mountains are parallel to the sea, an artificial construction are adopted as land for road. In that case, old city is not included physically. However, this project has affected Rize both building and city scale in economic, social and cultural aspects.

Before the highway construction, borders of the city center were drawn through the sea and the settlements were taken place from the coastline to the inner parts of the city (Figure 6).
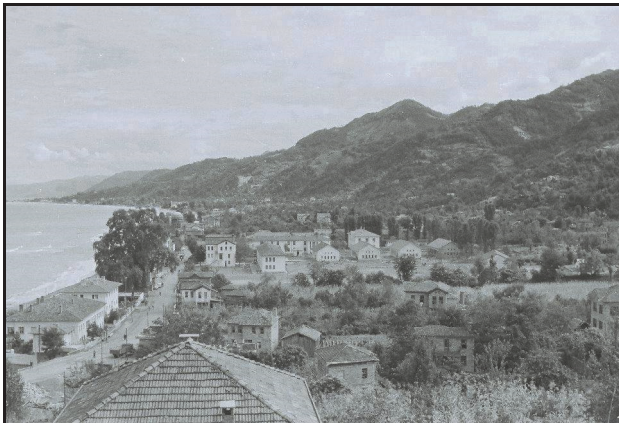

Figure 6. Before the highway construction (Source: Rize Municipality)

As it is seen in the figure, the city was housed between the sea and the mountainside. Generally, there are low-rise building functioned as dwelling and cultivated areas were dominated the city that defined by the mountains. In the city center, limited market place including such as grocer, green grocer, butcher and some stores was taken place since this project beginning in the 90's. However, both considering the city and country development it has been an obligation to work on development projects in economic, social and cultural concerns. Here, the

most specific issues are to improve agricultural productions regarding context and transport them to the other cities in Turkey and all over the world (Ataman 2010). As the part of the development project of Rize, DOKAP, Black Sea Seaside Highway was constructed in 2007. Considering building an international trade connection point; this road proposes an infill project on the sea that contains highway, coastline and some construction area throughout the Black Sea. Within the purpose of this paper, the focus point is to examine public space regarding sea and city centre relations.

Due to the limits and purpose of this study, for case study analysis city centre and its surroundings are focused. However, Black Sea Highway is continued through the cities in the Black Sea Region. In the figure, the red line shows the old city border and the upper part of this line is filled area adapted to the city (Figure 7).

Figure 7. The borders of Rize after Black Sea Highway

As it is seen, with this new border a large amount of space was involved in Rize. The three parts: dwelling settlement, Black Sea Highway and public spaces are housed within this filled area.

3. Discussion

In the paper, it is aimed to analyze what types of changes have been realized considering city centre and sea relation. Before urban development projects in Rize, there was not demand on public space. Citizens spent their time in working their gardens to produce tea and sell them to factory and resting. However, with developments in the city the population has increased and they have demanded on recreation spaces for relaxing, resting etc. Madanipour (1999) expresses that basically a public space, supplied by the authorities, responses people's all requirements as open and/or accessible space for all members of society. Regarding this explanation, this filled area has potential to design public spaces on the coastline. On the other side, this filled area is placed between city centre and sea. In that case, physically and visually there is a kind of buffer zone that separate these two areas from each other (Figure 8).

Figure 8. The highway as a buffer zone between the city centre and the sea (Source: http://www.geziko.com)

As it is seen in the figure, the city was housed between the sea and the mountainside. Here, it is important to understand what happened after this project was applied. This question is tried to be responded in the discussion session.

Firstly, with this project a connection line through Black Sea Region's cities that continued from East to West. It supplies easy access from one city to another for the citizens. For instance, an inhabitant of Rize, who was asked about what is the most positive effects of this project, explained that Black Sea Highway makes our distance closer than before: it takes 3 hours to reach Samsun that is 2 hours less than the previous. Furthermore, the road is an international trade line that connects East to West. Also, the highway has divided part for transit vehicles. That design decision save the time and does not affect traffic in the city negatively. In the Figure 9, the transit part is located in the middle and left and right side of the highway is designed for traffic route within Rize.

Figure 9. The route of highway (Source: Rize Municipality)

Secondly, it gives chance to design public spaces such as pedestrian roads, bicycle roads, cafes, urban furniture etc. throughout the coastline. In that case, new user requirements like gathering together, relaxing, doing sports, resting etc. are defined with these design decisions. Before this project, public spaces are taken place within the city centre and mostly market place could be determined as public space where the citizens were got together. Nevertheless, the new public spaces are located in the coastline and separated by the highway from the centre. In this circumstance, the city centre functions for trade and dwelling; the coastline is designed for public facilities. So, these two districts are separated from each other physically, functionally

and visually (Figure 10).

Figure 10. The separation of highway (Source: Rize Municipality)

Finally, it is crucial to give importance to regard natural environments and the characteristics of the city. Here, the potential of Rize in terms of natural resources, population, land area should be considered and public spaces should be designed according to these inputs.

4. Concluding Remarks

Black Sea Seaside Highway is one of the crucial elements of DOKAP that aims to increase the developments in social, economic and cultural perspectives of Rize by using its local possibilities and features. This paper is a theoretical part of a research that based on literature review and explanation of observations on site and presentations of maps and photos historically. The research aims to examine the relations between the city center and sea considering public spaces before and after the construction route. The study will be continued with analysis based on simulations, questionnaire and on site observations.

The route of Black Sea Highway purposes to design an international connection point that creates continuation between the cities throughout Black Sea and Istanbul. Both national and international route, Black Sea Seaside Highway, has affected Rize on city and building scale in terms of historical, cultural and architectural identity. Ahead of this project, the city center was defined by the coastline. On the other hand, after Black Sea Seaside Highway a new borderline has been defined by this new route that broke off the relationship between sea and city center physically, visually and functionally. On the seaside, public recreation spaces such as pedestrian roads and bicycle roads, urban furniture, cafes and picnic areas are taken places while city center is housed as trade centre and dwelling settlement in the other side (the old city border). The citizens have to walk through the overpasses that are placed in approximately every 50m. In that case, it creates problems for elder people, children and also disabled people. The municipality constructed some overpasses with ramps. However, it is required long distance routes that citizens have to walk. Therefore, it may be useful to construct driveway underground in some points for creating a continuous public space that connect the city center and coastline. Furthermore, after Black Sea Highway economy of the city has developed rapidly. Dependently, population of the city and building constructions have been increased. Though, the urban planning of Rize has not responded the demand of building construction yet. Here, the city has faced with the unplanned urban development projects. The crucial point is to conserve the unique characteristics of Rize through this process.

Due to the projects are under construction, spatial organization of public spaces through the coastline are not well

defined. It is required to design a detailed way for benefiting them effectively. In addition, the users' requirements should be response regarding the potentials of the site and contextual relationships in Rize. In that case, positive and negative influences of Black Sea Highway should be analyzed comprehensively and benefited from the potentials of the project also for the whole development process of the city.

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A Study of Kyomachiya in Comparison with Traditional Safranbolu House

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Abstract: This study aims to examine the spatial organization of *kyomachiya* in comparison with the traditional Safranbolu House in order to figure out the characteristics of *kyomachiya* and Safranbolu house through the way of living and religio-cultural norms. Two houses have been chosen from Kyoto, Japan and Safranbolu, Turkey for the case study. A comparison between *kyomachiya* and Safranbolu house has been carried out focusing on the determinated themes: influence of settlement pattern on the design of each house, function, spatial organization, religio-cultural norms, privacy, relation with the nature, social system, seasonal changes. Although their forms are different and each case are located in totally different contexts, a considerable amount of similarities, besides the differences have come out. In the conclusion part, consequences of the comparative study in respect to the way of living have been expressed.

1. Introduction

1.1. OBJECTIVES OF THE RESEARCH

This study aims to examine the spatial organization of traditional *machiya* in comparison with the traditional Safranbolu house in order to figure out the characteristics of *machiya* and Safranbolu house through the way of living and religio-cultural norms. Two houses have been chosen from Kyoto, Japan and Safranbolu, Turkey for the case study. The chapter 2 focuses on the spatial organization of *Machiya* in terms of architecture and life. In the subsections of chapter 2, spatial organization, how the living activities were performed in *machiya*' s spatial context, the relation of working space with private space, festivals and religious observances, seasonal changes and relation to nature have been discussed. In chapter 3, the spatial organization of Safranbolu house in terms of life has been studied in the subsections. The usage of each floor, unique spaces such as room, *hayat* and their relation to each other are explained respectively. Then, the seasonal changes of Safranbolu house occupants have been discussed. In the last section of chapter 3, the influence of religious and cultic beliefs on the Safranbolu house has been discussed. In chapter 4 of the study, a comparison between *Machiya* and Safranbolu house has been carried out focusing on the influence of settlement pattern on the design of each house, function, spatial organization, standardization, flexibility, seasonal changes, storage, floor usage, social system, privacy, religio-cultural norms, relation to nature and seasonal changes. Although their forms and each of them are located in totally different contexts, a considerable amount of similarities, besides the differences has come out. In the conclusion part, consequences of the comparative study in respect to the way of living has been expressed.

1.2. LITERATURE REVIEW

During the literature review, finding out sources about *kyomachiya* town house and Safranbolu house which give information about the spatial organization of each related with the lifestyles and life attitudes of their occupants has become important source for the author. From this point of view, the book "Kyomachiya's Environmental Technology, Residents' Norm of Behavior and Their Cultural Formation" by Shigeyuki Okazaki (2012) has become the most fundamental source to comprehend the *machiya*'s occupants way of living related with spatial composition. In addition to that in the doctoral thesis of Löfgren, K., "Machiya – History and Architecture of the Kyoto Town House" (2003) were focused on the spatial organization of *machiya* and its historical development.

In order to understand the Turkish house and especially the spatial organization of Safranbolu house, its context, history and more importantly the occupants' way of life and habits, "Tradition of the Turkish House and Safranbolu Houses" (1998) by Günay, R. was referred.

The two theses have been consulted for the comparative study of Japanese and Turkish House. Dündar, M., (2011)'s article "A Comparative Study on Conceptual Similarity and Differences between Traditional Houses of Japan and Turkey" examines the comparison of simplicity and privacy concepts in way of life. Addition to that he also argues each culture's reflections on climatic factors. Another comparative study is by Matsushita S.'s thesis on the "Comparative Study of the Structure of Traditional Timber Housing in Turkey and Japan." (2004)

1.3. METHODOLOGY

The research has been started with the literature review of brief

information on the architecture of traditional *kyomachiya* town houses and its spatial organization. During the researches, it has showed that the occupants' way of living in machiya has a background related with the Zen thought. The research has been followed with the Zen thought and monks living in the temple.

The author has realized that traditional Japanese way of living and her own culture, traditional Turkish way of living have remarkable similarities and it has been decided to examine the spatial structure of the houses through the religio-cultural norms. For the case study, a well preserved Hatake house from Kyoto has been selected as an example to *machiya* town house.

For the Turkish house, Kaymakamlar house from Safranbolu town located in Turkey has been chosen. The text materials and plan drawings have been obtained from the written sources.

While making comparison, rather than choosing examples from the similar context, it has been important for the samples representing occupants' the way of life. For the author, it was important for each house having a workplace within the house. However, in Turkish culture, dwelling and commercial activities could not be interlocked together as we see in Japanese culture.

Literature research is followed by on site visit to Hatake house in Kyoto. An interview was conducted with the owner of the *machiya*. Spatial structure, and changing of space usage according to generation to generation in the history has been understood well. Further all the answers to these unanswered questions has been made clear during the interview.

For a definite understanding and comparison, 3D materials as such study models of Hatake house and Kaymakamlar house and visual materials such as comparison sketches have been prepared. Main purpose of these study models and sketches is to define the spatial organization of the houses, to define the each house's usage by the occupants in three-dimensional approach.

For the further study, it has been aimed to continue the comparative study choosing the examples from the countryside of each country.

2. Kyomachiya In Terms Of Architecture and Life

In this chapter, Hatake house located in Shimogyo Ward of Kyoto was discussed to intensify the understanding about work and household activities formed the architectural space of the house. During the research, an interview was made with the owner of Hatake house.

2.1. SPATIAL ORGANIZATION OF KYOMACHIYA

In Kyoto city, the land was divided systematically into identical blocks and roads were laid out according to a symmetrical grid pattern. (Stavros, 2014)

Kyomachiya (Kyoto town house) is an individual dwelling built in rows and belonged to the commoners in the city. Each façade of the house faces the street and each house line up next to each other along the street parallelly. A kyomachiya consists both commercial and living functions in it. While *mise-omote* (workplace) facing the street is used for commercial facilities, the other rooms line up to the back of the block are used for living functions or supporting the workplace. That part of the house has elevated wooden floor and covered with tatami mats. The room which faces with the inner garden is called *zashiki* (parlor room). *Zashiki* is the most formal room in the house used for important guests. As it is seen from the usage of the rooms, the formality degree increases from the street to the inner part of the house.

Daidoko, hashiriniwa and *tsuginoma* are the rooms located around the cooking place.

In the (Fig.1) *tooriniwa-doma* (passageway) passes along the elevated wooden floor of rooms. It has an earthen floor and have the different characters of the room which it passes. (Löfgren, 2003) Starting from the *iriguchi* (entrance), it turns to *misenoma* (store area), *genkanniwa* (formal entry), *hashiriniwa* (cooking space) respectively. At the end of the *tooriniwa,* the rear work garden is located.

In the rear part of the block, *kura (storehouse), toilet, bath and hanare* (detached building) are added to the main building. These detached buildings are built considering for the old members of the family after they turned over the business to the new generation.

Depending on the size of the land and the house, an enclosed garden called *tsuboniwa* is considered. This garden is not just considered for aesthetic reasons but also it provides light, ventilation to the interior spaces in that narrow land and solves the rainwater drainage of the roof. The designed main garden is located in front of the *zashiki.* (Löfgren, 2003)

The second floor of the houses was built for different reasons. In the past, second floor was used to store something and that is why the floor height was lower. Today's *machiya,* the second floor has a full height where the second *zashiki* was situated.

The houses are built in wood and clay. The roofs are covered with black tile. As a result of row house construction, only the front façade can be seen. The plots are very deep and narrow. In the past, the tax for the estate was estimated according to the span of the façade. A common size of a *machiya* façade is 5-8 meters and the depth is 20-40 meters. (Löfgren, 2003)

2.2. KYOMACHIYA AND LIFE

At the present time, the daughter and mother has been living and taking care of the house. In daughter's childhood, totally eight people of three generations lived together. (1.Grandfather, 2.Grandmother, 3.Father, 4.Mother, 5. Father's sister, 6.Daughter, 7.Son and 8.Clerk) She stated that in earlier times, the family might have included servants, apprentices, shopkeepers, clerks, maids and various other helpers.

2.2.1. Living

Before the World War Second, father (head of the family) used *zashiki* as living room. He was eating his food and spending time in eight tatami-mat room. *Zashiki* was the most special room facing to the *wafu* (Japanese style) garden. The guests (male and female guests) were hosted in *zashiki* and the brothers of the father were also allowed to use *zashiki*. (Fig. 3)

The common size of a parlor was between six or eight tatami mats. If the house was wide enough, there would be a place along one wall where *toka* (alcove) was built. (Löfgren, 2003)

While the father was passing his time in *zashiki*, the mother and children used *kamidaidoko* for their daily activities.

When the male family head transferred the business to the son, they (grandparents) moved to *hanare* (detached building) located next to the *kura* (storage).

2.2.2. Sleeping

The second floor of the house was used for sleeping activity. The father and the mother of the family shared their room with their daughter and the son when they were infant. When children grew
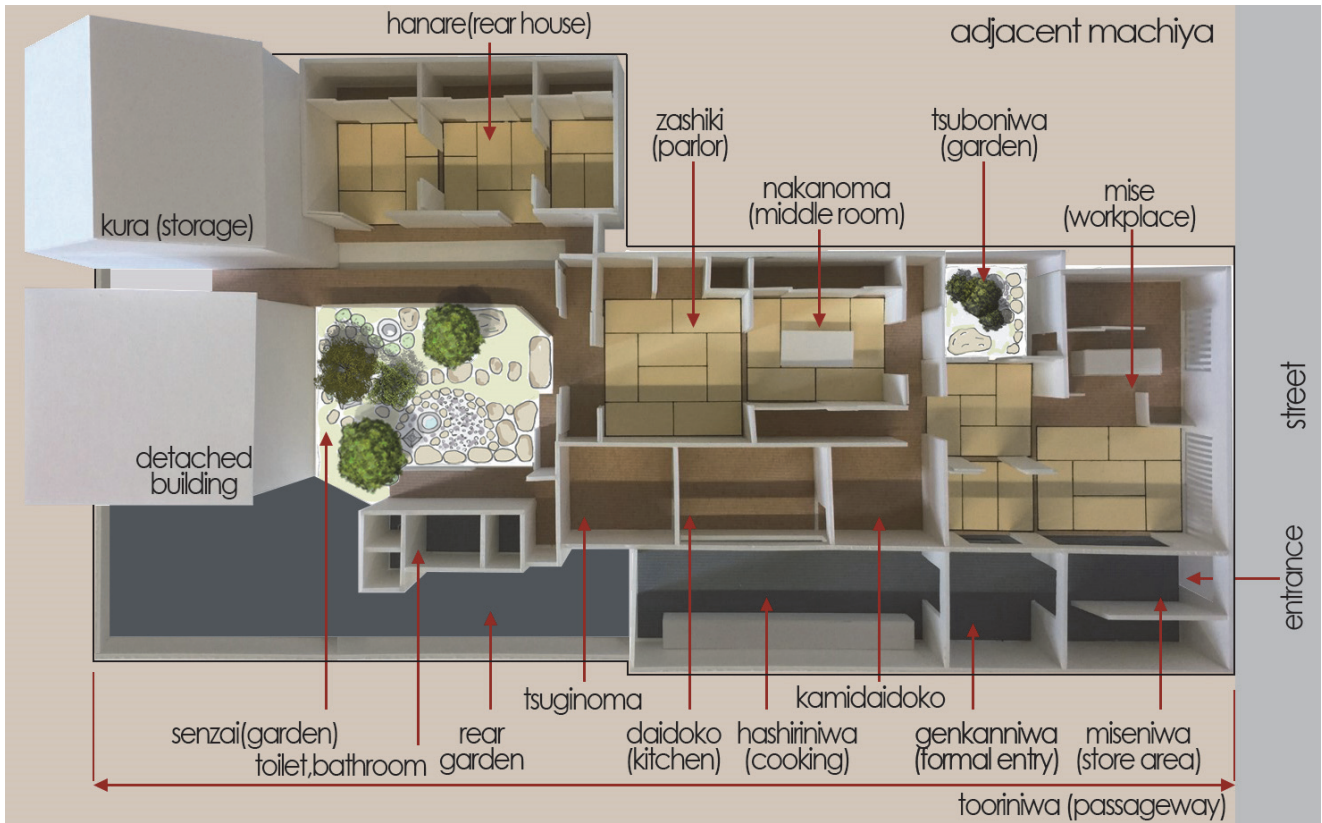
Figure 1. First floor study model of Hatake house. (Source: Author)

up they moved to the next room where the parlor of the second floor. When the children arrived adolescence period, their room was separated again and the son moved to another room. (Fig. 2)

In the case of guests' (the relatives) staying overnight, they stayed in the parlor room.
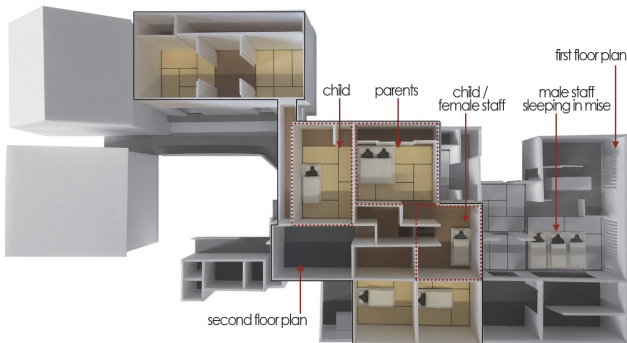
Figure 2. Second floor study model of Hatake House depicting the sleeping order. (Source: Author)

2.2.3. Eating

As it was stated, father ate his food in *zashiki* and the mother and the children ate in the *kamidaidoko*. After the period of World War Second, they used *nakanoma* both for living and eating activities. They gathered around one large table including the elder members of the family. It was seen that there was a sitting arrangement. The clerk also ate with the family sharing the same room and the same food but he was bringing his own tray called *ozen* and tableware.

2.3. WORKING SPACE AND PRIVATE SPACE

The 18th century *machiya* of a middle class merchant in Kyoto

incorporates elements that relate to the business of the family. The two functions living and business were inherited in the *machiya* and it is not always clearly definable and definite in the plan. (Löfgren, 2003)

The scheme was in general to display the function closest to the street. Hatake House's family business was pharmacy and the business started from 1700 and the same business continued around 300 years and reached until the 12th generation.

Figure 3. While father of the family eating with his guest in *zashiki*. (Source: Author)

Most of the business relations took place in the *zashiki* which was located at the rear of the house. In the Fig. 3, the head of the family is eating with his guest. The family head's squatting place is decided as the front of the *tokonoma*. The rooms between the *zashiki* and *mise* were subordinate rooms for

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communication, preparation or support of the main activities. The *genkan* (formal entry) and beside this one room connected with the *daidoko*. That plan was a common scheme for the family business engaged in selling or producing things that do not demand a specially equipped space. Then the parts of the house that was not occupied by the business were the *kamidaidoko*, the areas around the kitchen and the backyard where bath, toilet and outdoor service spaces were located.

The second floor of the *mise* was used as a space for storage and utensils to prepare medicines. During the nighttime, laying the mattress the tatami floor of the shop turned into the sleeping space for the male staffs.

2.4. THE MACHIYA, FESTIVALS AND CEREMONIES

During the ceremonies, *zashiki* was used as a main room. In case of a funeral, the relatives from hometown visited *machiya* to do their best to make easier the departure of the soul of the deceased. To enlargen the *zashiki*, *fusuma* (sliding doors) between *zashiki* and *nakanoma* were removed and the two spaces were united. The deceased was kept in the house for some days. As for the celebrations such as childbirth, wife's relatives came from her hometown to celebrate. For *okuizome* (child's weaning ceremony) when he/she was 100 days old, the food was prepared from the vegetable harvested in the *machiya*'s garden.

In the *machiya*, there is a sturdy pillar called as *daikoku-bashira*. It has a symbolic meaning for the support of the roof, family, history and future of the family. If somehow *daikoku-bashira* collapsed, business of the family would also be miserable. (Löfgren, 2003) Mitsuo Inoue (1985) emphasizes the importance of the pillar in Japanese architecture in his book Space in Japanese Architecture quoting a Shinto manuscript from Ise Shrine: "… *the sacred centre column is the origin and basis of all things, it is the life of the emperor, the foundation of the state, the source of the wealth, and is forever immovable.*"

The Shintoist shelves were called *kamidana* and a house could have several different kinds. In Hatake House, there were different preparations for each shelf of the god during *shogatsu* (new year) according to Shinto belief. The common offerings on these *kamidana* were flowers, leaves of Sakaki or sprays of Pine, candles, fresh water, salt or Sake and raw food. (Jeremy and Robinson, 1989)

A family often payed attention to both Shinto and Buddhism gods. *Butsudan* (Buddhist altar) is located in the *zashiki*. It is a closet containing the sculpture of *Buddha*, ancestral mortuary tablets of the household and *mitsugusoku* (a flower vase, an incense burner and candle lights).

In *machiya*, there was a normal setting for the daily life, but for the special days, the space was changed. There were several important traditional festivals took place in the *machiya*s and whole Kyoto. The house could be dressed for the festivals and additional layers were added to facades or removing the glass on the façade, public access was provided and the interior was able to be seen from the outside.

According to the occasion, the *toko* (alcove) has been used for varied artistic calligraphy displays emphasizing each occasion.

2.5. SEASONAL CHANGES

The households of *machiya* knew how to adapt the *machiya* to the seasonal changes and matters of climate. Except for refurnishing the *machiya* for festivals, they also refurnished it to cope with climatic factors. They had two reason for changing the furnishments. The first reason was for providing comfort for the inhabitants and for the *machiya* itself. The second one was for the aesthetics. (Löfgren, 2003)

Around early June, rainy season called *tsuyu* starts in Kyoto. The city is enclosed with mountains from all directions and during the summer, the weather is quite hot and humid. If the things and the house were not paid attention carefully, they tended to rust and mould easily. For instance during summer if a *zabuton* (cushion) was placed on the same spot on *tatami* mat more than one day, mould would grow under it. That is why inhabitants had to clean all the surfaces with dry clothes to remove mould and dust. Likewise the enclosed spaces such as *kura* (storage), closet and cupboards had to be aired regularly to prevent the moisture.

In Hatake House, displays and fixtures were changed around late June. The *shoji* screens and *fusuma* were removed and they were exchanged with much more lighter variation of bamboo door or screens made of fine bamboo strips called *sudo*, allowing air to pass through. *Sudare* screening mats were hung from the eaves to protect the inside from the excessive sunlight. When the moisture disappeared and the true summer came, a woven mat made of rattan called *tomushiro* was spread on top of the *tatami* mats. That material made the surface cooler.

Except from change of fixtures, inhabitants prepared their minds psychologically. In the Hatake house, tableware of everyday usage was changed for the summer such as drinking the same water from a cup of glass instead of drinking from a ceramic cup. It was a message to the mind like a breeze. Summer typhoons and storms were seldomly seen in Kyoto. In this case, it was important for the inhabitants to use the sliding storm shutters called *amado* and close the openings.

When the autumn season starts in Japan, it was time to change the furnishment again. Change of fixtures started in the late September in Hatake House. Summer furnishings such as *sudare, tomushiro* were packed into the *kura* (storage) again and they were changed with the winter dress of the house, *fusuma, shoji* and *tatami*. The autumn was the best season for required repairments and drying up because the humidity was already gone and it was not so hot but warm.

2.6. RELATION TO NATURE

In Hatake House, there were two garden. One was called *senzai*. That terminology was used for the garden located in front of the *zashiki*. There were four views facing to the rear garden. The view from *zashiki*, the view from *hanare and* other detached building, the view from toilet-bathroom and the view from second floor.

Another garden was called *tsuboniwa*. The *tsuboniwa* was a garden enclosed by buildings on four sides. Those kind of gardens were almost never entered. A stone lantern, some plants and carefully placed stones were the components of *tsuboniwa*. When it was stood facing the *genkan* (formal entry hall), *tsuboniwa* was seen.

There was another type of rear garden used for domestic works at the end of *tooriniwa*. That working garden where the laundries were dried was invisible from *zashiki* where the guests were hosted.

2.7. RELIGION AND CULTIC BELIEFS (ZEN THOUGHT-BUDDHISM)

The Zen sect has not only influenced the human from the religious aspect but also influenced him with all phases of life such as in art, painting, poetry, sculpture, theatre, music and architecture. Furthermore, according to the way of Zen thought, the beauty inherent in conscious simplicity and in Japanese space

the Zen simplicity is resulted with reduction of form, space, motif, construction and material to the barest minimum necessity. The tea cult offers the most basic essentials of life, shelter and drink. (Engel, 1964)

In *machiya*s, the life attitude was closely related with *Zen* thought. According to *Zen* practice, *one tatami* was offered to each monk. One sat, ate, meditated and slept on the same *tatami* laying out mattress. In a similar way, in *machiya*s during the daytime inhabitants sat and ate in the same room. When the night time, they changed the function of the room laying out a mattress to sleep. "The *tatami* mat takes the place of several articles of furniture deemed necessary to houses in other lands. It is a carpet, chair, and table by day, and a bed at night." (Houghton, 1877) It offers multifunctional and modular usage to the inhabitants. Outside shoes were left in the *genkanniwa* (entry hall) to keep the *tatami* clean.

In Zen practice, monks' belongings were limited with one piece of robe, one piece of clothing, some books, a razor and bowl and that was all. They did not even had pillows to use while sleeping. It was important not to possess extra things. (Okazaki, 2012) The idea of doing with less and avoiding to waste were adopted in the daily life of *kyomachiya*. Similar to it, the teachings of Zen were adopted in daily life of *kyomachiya*. The smallest unit was *tatami* in Japanese house. Modularity of units made maintenance of the *machiya*s easier and provided functional usage to the users as the units were removable and reusable in a different place. Apart from *machiya* and fixtures, a clothing was worn for generations or a tea bowl was used for a long time. As it was believed that soul dwells in things, the things were more appreciated when they were used and became older.

According to Japanese thought, Gods live around rocks in the mountains. Recluse monks climb to the mountains to focus and meditate isolating themselves from the outer world. Similarly, in *tsuboniwa* and *senzai* of *kyomachiya*, living mountain image was described. Bringing the mountain image to the city and each house was aimed.

3. Safranbolu House In Terms Of Architecture and Life

In this chapter, Kaymakamlar house was analyzed from Safranbolu town of Turkey. From now on, Kaymakamlar house will be mentioned as Safranbolu house.

Safranbolu is a town of Karabük Province located in the Black Sea Region of Turkey. The behavior of having summer and winter way of life in Turkish culture resulted with two separate settlements in Safranbolu.

The streets in both winter and summer settlement have a natural pattern. The streets were quite narrow and have curvilinear shape and covered with stone. To have a more wide way, the corners of the houses are chamfered.

Both of the houses in winter and summer settlement have gardens. In the summer settlement, gardens are very large. The garden walls divided the street and the house from each other. The garden of a house is the most fundamental area for the production divided into vegetable gardens, fruit orchards and vineyards. (Günay, 2005)

3.1. SPATIAL ORGANIZATION OF SAFRANBOLU HOUSE AND LIVING

The ground floor is base of the house. It functions as a service space for the house. The ground floor has masonry structure and has thick loadbearing walls. The first space entered is called *hayat* (entrance hall) and it has an earthen floor. (Fig. 4) Preparation of large quantity food was made in that place. A large storage chest for granary and a stable are located.

From *hayat* space, the staircase leads households to the upperfloors. Outside shoes are left on the first steps of the staircase. The ground floor of Turkish house is closed to the outer world for privacy concern but the latticed screen wall looking to the garden view provides illumination and ventilate the interior. *Hayat* also provided access to the garden of the house.
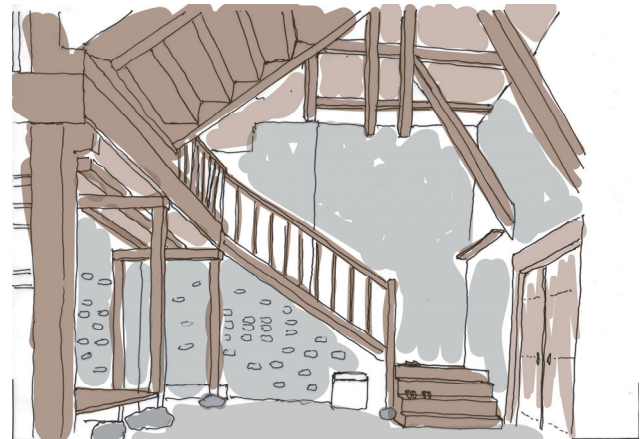
Figure 4. A view from hayat space of Safranbolu house.
(Source: Sketch was drawn referring the visual from Gunay, 2005)

In Turkish house, the room called *oda* is the smallest and repeated unit contains all the functions in it: sitting, sleeping, praying, washing, eating. (Fig. 5) The room in Turkish house is the continuation of the Turkish tent called *otağ* from nomadic culture both with their word root in Turkish and offering multifunctional usage. (Cansever, 2002)
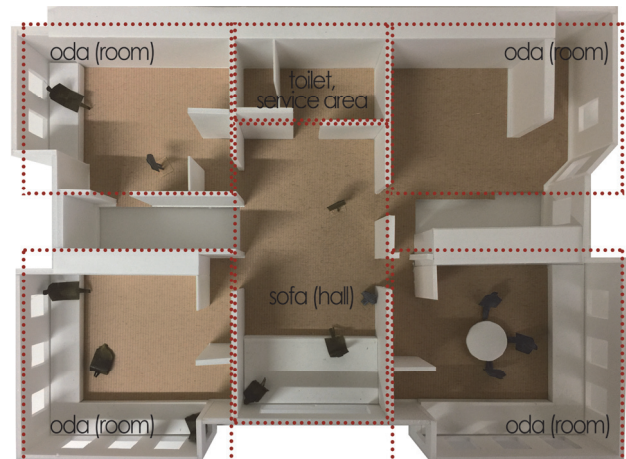
Figure 5. Second floor study model of Safranbolu house.
(Source: Author)

Even though the design principles of each room are arranged almost same, according to the necessity of the house and households, each room can be arranged or functioned in a different way. For instance in a house, a room is arranged to serve as a kitchen. While the rooms on the middle floor serves as day rooms or work rooms, the rooms of upper floor are arranged as bedrooms. (Günay, 2005) The privacy notion is very recognizable from the ground floor to the top floor.

As it is explained that the house is closed to the outer world for privacy concerns, the privacy was considered in the interior of the house between the rooms. Basically, one room is arranged to serve to one couple of household. If there are elderly and

widowed members, they shared the same room. From the planning of a room as a one living unit, it is seen that when it is entered to the room first, it is neither directly entered nor the interior of the room is directly visible from the *sofa* (hall). The interior of the room is designed in a quite simple way. The floor of the interior is left free for various functions. Sitting furniture called divan was arranged around walls and the floor area is used as follows: the low circular tray was arranged on the floor during the meal time, mattresses are laid out when it is time to sleep and the users sit on the floor when it is preferred. (Günay, 2005)

The hall called *sofa* is another unique space of the Turkish house. The rooms are opened to the *sofa* and it integrates all the rooms and the service spaces such as washrooms, toilet and staircases to each other. (Fig.6)

A *sofa* can be used for various different functions such as gathering for large crowds during festive occasions, weddings, funerals, sitting, eating, sleeping. (Fig.6)

Figure 6. Sofa integrates the rooms in Safranbolu house.
(Source: Sketch was drawn referring the visual from Gunay, 2005)

3.1.1. Living

A Turk can be sit anywhere clean. In the house one can sit on the ground directly on wooden flooring, or carpets or rugs laid out on the floor. Günay (2005) thinks sitting on the ground shows that Turkish culture is in a close relationship with the nature.

Special to Turkish house, *divan* (sitting platform) is seen in each room and in the sofa. It is a built-in furniture considered around the walls of the room beneath the windows except the entrance wall. The divan has provided a very wide space to sit. The 75-105 cm width of the divan let the inhabitants to sit, rest, have a break, conversation with a friend while having coffee or to do some work. (Fig.7)

3.1.2. Eating

The food was eaten anywhere in the house that is possible to sit. In everyday life, inhabitants used kitchen to have their meal. The guests were served in the guests room (*selamlik*-men's quarter or *haremlik*-women's quarter). (Fig. 8) According to the occasions, women and men had their food separately. In such occasions such as crowded family gatherings, the room was not wide enough and the food was served in *sofa* (hall).

Figure 7. Women having conversation sitting either on the ground or on divan.
(Source: Sketch was drawn referring the visual from Gunay, 2005)

Figure 8. While head of the family eating in *selamlik with his male guest*.
(Source: Sketch was drawn referring the visual from Gunay, 2005)

3.1.3. Sleeping

When the sleeping time came, the matresses are laid out on the floor. The matresses are stored in the closets of the rooms. As each room is very simple and there is no furnishing in it, each room can be used for sleeping. Even when the house is crowded, the kitchen and *sofa* gives possibility to sleep in. Next morning, when the households wakes up, each room is reverted back in the previous order and the room is ready again to be used for the other function. (Fig. 9)

3.2. SEASONAL CHANGES

For the Turks, living close to the nature was fundamental necessity in their lives. They like to enjoy the open air and live in the harmony with the nature. In Safranbolu and in the other regions of Turkey, the Turkish people changed their winter settlement to the more highlands when the summer arrived. This way of having a summer and winter settlement in other words seasonal migration is a characteristic of Turks adopted from the nomadic periods.

In Safranbolu, the winter and summer settlements differ than each other. The winter settlement is surrounded in the valley and houses are located close to each other against the severe

winter conditions. When the spring arrives, moving to the summer settlement generally starts around May. Before the moving, preparations starts, such as bundling mattresses, packing the crockery and other necessary items that they need in the summer resort.
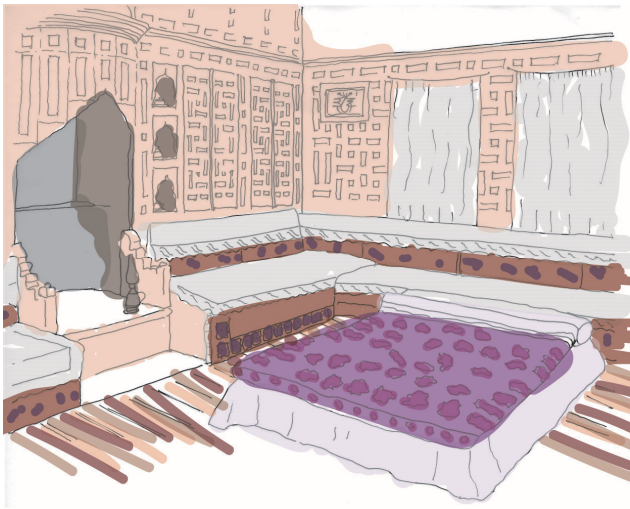
Figure 9. Bedding is spread out on the floor for sleeping.
(Source: Sketch was drawn referring the visual from Gunay, 2005)

When the all family moves to summer resort, men of the family have to commute to their daily work which is located in the winter settlement.

In the summer houses, winter food preparations started in the summer and autumn season. Generally these preparations took place in the garden and *hayat* place of the house. The garden was the essential part of the house. While men were working at the outside of the house, food preparations and gardening were the responsibility of the women of the house and helpers.

When the summer is about to finish, preparations to move back to the winter settlement starts. Moving back to the winter settlement is decided according to the weather but generally it starts at the end of the October. Even though their houses are double, they bring back their utensils such as bedding and crockery to use in the winter house again.

3.3. RELIGION AND CULTIC BELIEFS

In Turkish culture, traditions, customs and religions have a great impact on life attitude to content with very little. Inhabitants of Safranbolu houses chose to have a simple and low-key life. It was almost impossible to distinguish a rich man's house from a poor man's house. Inhabitants sit and work on the floor, as they had almost no furniture in the house, laying out mattress they slept on the floor and eat on low tables.

According to Cansever (2002), In Turkish house, instead of using a room with just one function it gives possibility to be used with different functions. This multifunctional usage and flexibility of room are related with the idea of life keeps formation in Islamic metaphysics.

The tradition is influenced from religion in Turkish culture. The house is separated from outside world with high walls. The masonry wall with no openings concealed the inside from the eyes of outsider.

Inside of the house, *haremlik* (women's quarter) and *selamlik* (men's quarter) were divided. Women were not preferred to look upon by men came as guests. Between *haremlik* and *selamlik*, an arrangement of a built-in revolving cupboard

provided service of the meal without being seen from women's quarter to men's quarter. The prepared meals were placed into that special cupboard's shelves and when the mechanism was turned manually, the other side of the cupboard could reach the food. (Günay, 1998)

The faith of Islam requires five times of prayer in a day and before prayer, one should perform ablution and purify himself. Therefore, an ablution and washroom closet were placed in each room. It is believed that a prayer can be performed anywhere clean enough so outside shoes are left outside to keep the inside clean.

According to Islam, there is a belief of afterlife. The Islamic concept of paradise Jannah is the place where the loyal and pious people will go. The paradise is described in Quran chapter 56, as: *"...lote trees, and clustered acacia with spreading shade, constantly flowing water, abundant fruits..."* Paradise was described in Turkish house as the gardens of the house. One of the important component of the paradise, water is sometimes placed in the special rooms or *sofa* of the Safranbolu house.

4. Comparative Analysis of Kyomachiya and Safranbolu House
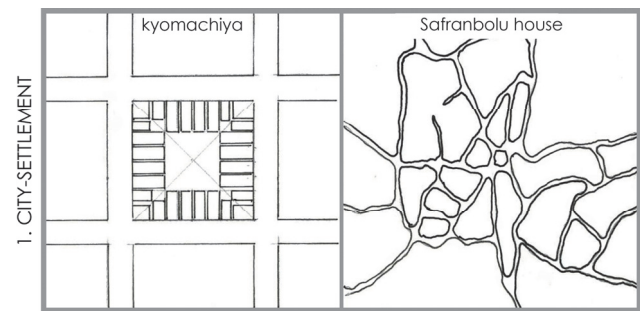
Figure 10. **City-Settlement** In Kyoto city the land was divided into a grid pattern forming blocks and roads systematically. Each block was also divided into grids and land sharing was made. In contrast to Kyoto example, Safranbolu town conforms and adapts itself to the nature. The streets and settlement have an organic and curvilinear pattern.
(Source: Author)
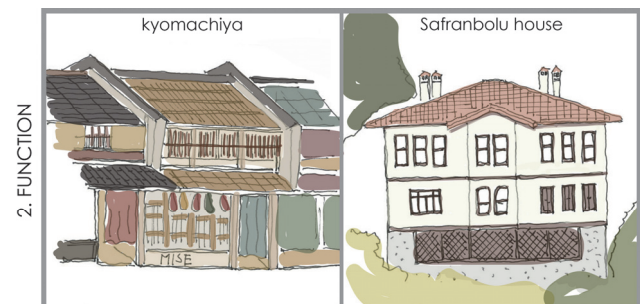
Figure 11. **Function** A *machiya* embodies two function in it: mercantile and living. In the case of Safranbolu house, the house itself is used for living and agriculture. In Turkish house, mercantile and living functions are separated from each other. (Source: Author)
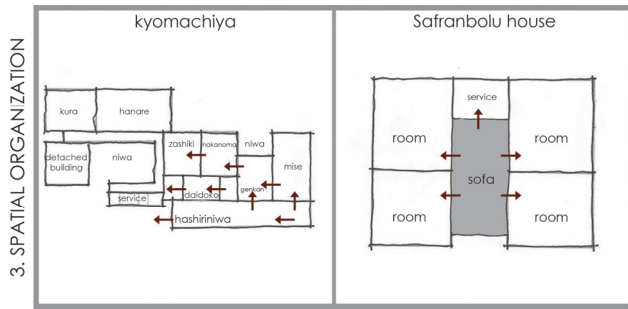
Figure 12. **Spatial Organization** In *machiya*, there is not additional space integrating each space to each other. Instead, a Japanese space is transitional space itself. In Safranbolu example, the rooms are opened to *sofa* and it integrates all the other units to each other. (Source: Author)
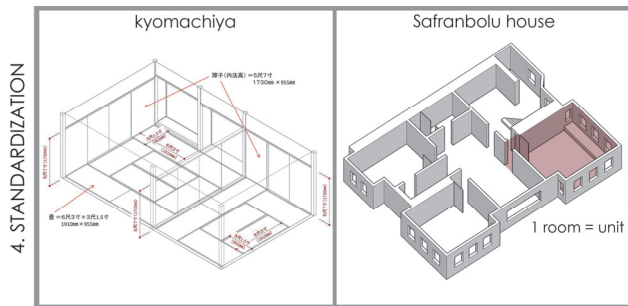
Figure 13. **Standardization** The idea of doing with less and avoiding to waste is adopted in the *kyomachiya* from Zen practice. It was resulted with standardization of *tatami, shoji and fusuma*. In Safranbolu house, the smallest unit is *oda* (room). The room contains all the living functions in it and the room is considered to be continuation of the Turkish tent from nomadic times. (Source: Kyomachiya perspective(Okazaki, 2012), Safranbolu perspective: Author)
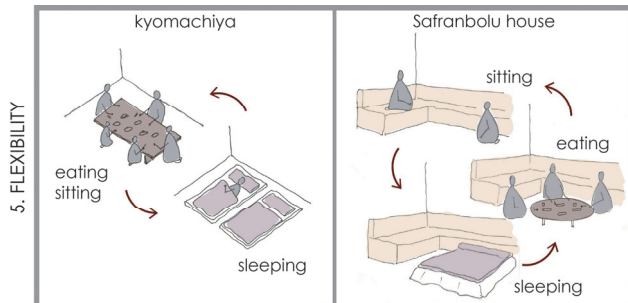
Figure 14. **Flexibility** Japanese and Turkish traditional space show similarity about the flexible usage of floor. In *kyomachiya*, one *tatami* allows user to eat, sit and sleep on the same tatami related with Zen belief and daily life of the monks showing the attitude of avoiding wastage. Room in Turkish house is the independent unit that capable of providing all requirements about living. As the center of the room does not have any furnishings, the room hosted different functions such as sitting on the floor, eating on the low rise tray and sleeping on the mattress that is laid out on the floor. Similar with *kyomachiya* and Zen relation, multifunctional usage in the Turkish house are related with the idea of Islamic metaphysics that life keeps formation and reflection of the nomadic culture. (Source: Author)
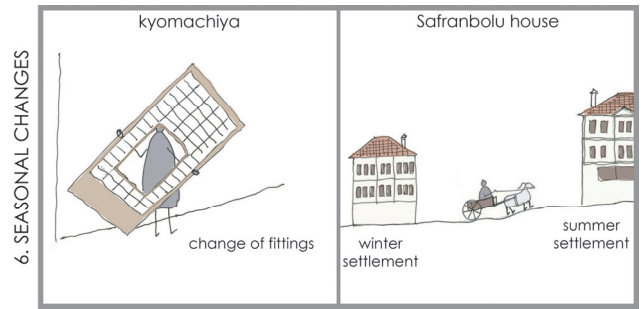
Figure 15. **Seasonal Changes** In case of seasonal changes, households of the each country know how to adapt themselves and their houses to difficulties of the weather. In *machiya*, when the season changes, displays and fixtures are changed. In contrast to *machiya*, Safranbolu people move from their winter settlement to the highlands taking away their beddings and crockery with them. That way of seasonal migration has become characteristics of the Turks since nomadic periods. (Source: Author)
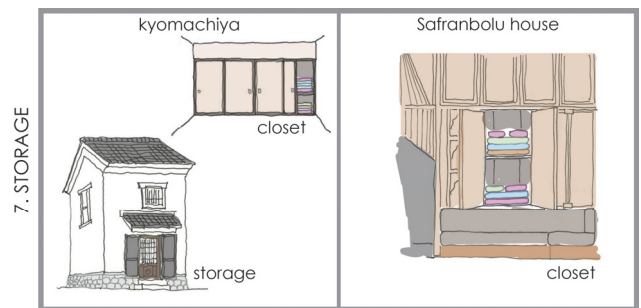
Figure 16. **Storage** As both the two culture have no furnishing in the room, they need extra space to store and organize their belongings. In both cultures, the rooms are considered with built-in closets and cupboards. Addition to that, *kura* (storehouse) is used for keeping safe the fixtures in *machiya*. (Source: Author)
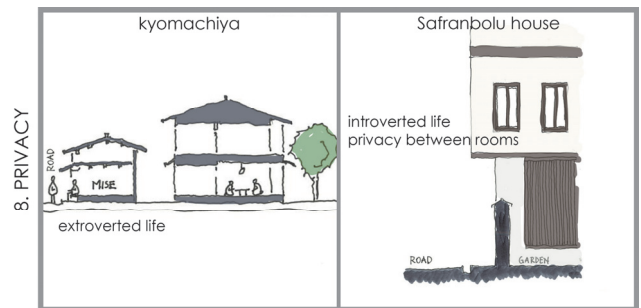
Figure 17. **Privacy** Privacy is a changeable notion in *machiya*. In everyday life, *mise* is opened to public. In festive occasions, *machiya* becomes more transparent to outside world. Contrary to *machiya*, the Safranbolu house is separated from the outside world to conceal the inside of the house from the eyes of outsider. (Source:Author)
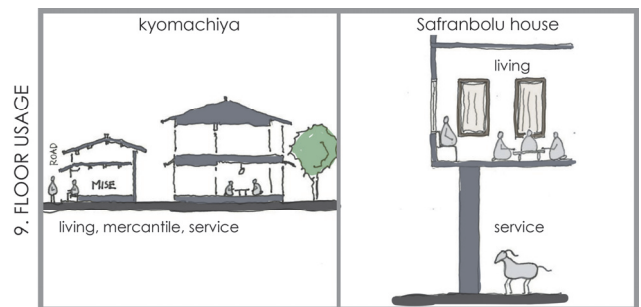
Figure 18. **Floor Usage** On the ground floor of *machiya*, living,

commerce and service activities are held. Further to the middle of the block and to the upper floor, the living areas gain importance. In Safranbolu house, the ground floor is used as a service area where the stable and production works are held with the garden. The living activities start on the upper floor. Both *doma* of *machiya* and *hayat* of Safranbolu house are functioned as entrance hall and work area of house, have an earthen floor. (Source: Author)
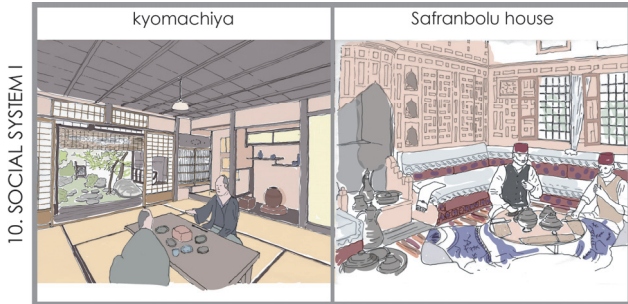
Figure 19. **Social System I** Patriarchal family structure is the other common feature of *machiya* and Safranbolu house. That social system effected the architecture of the house and men (father) of the family used the most important rooms in the house. In *machiya, zashiki* is the formal room of the house having a view of main garden and special decorations located through its wall such as *tokonama, butsudan*. In the case of Safranbolu, *selamlik* is the most important room in the house. It has best location and brightest room in the house (Günay, 1998). The ceiling and the built-in cupboards are all decorated and it has a heart place which is the characteristics of the special room in the Turkish house. (Source: Author)
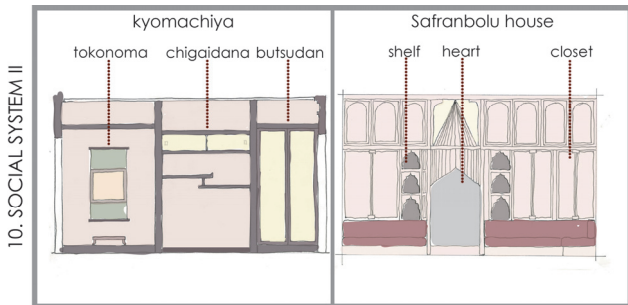
Figure 20. **Social System II** Visual showing characteristic walls of *zashiki* and *selamlik.* (Source: Author)
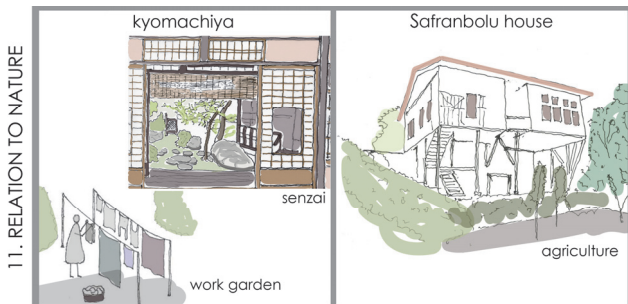
Figure 21. **Relation to Nature** Another common feature of *machiya* and Safranbolu house is their garden. However, they were differed in terms of function and location. In Kyoto case, the gardens of each *machiya* are located in the middle of the block parallel to each other. *Tsuboniwa* and *senzai* gardens were designed for aesthetics and to provide light and ventilation. Addition to them, work garden was located at the end of *doma*. In Safranbolu, the houses are surrounded with very large gardens. The garden of a house is the most fundamental area for the production vegetables and fruits. Turkish people like to enjoy the open air in the garden and live in the harmony with the nature. (Source:Author)
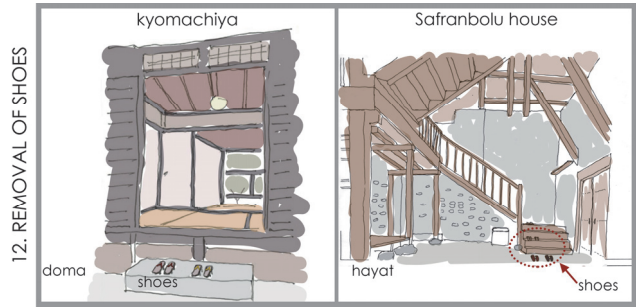
Figure 22. **Removal of Shoes** Since all the activities are held on the floor in the both cases of *machiya* and Safranbolu house, it is important to keep the floor, tatami, rug or carpet clean. For this reason, outside shoes are left in *doma* and *hayat* space before entering the house. (Source: Author)
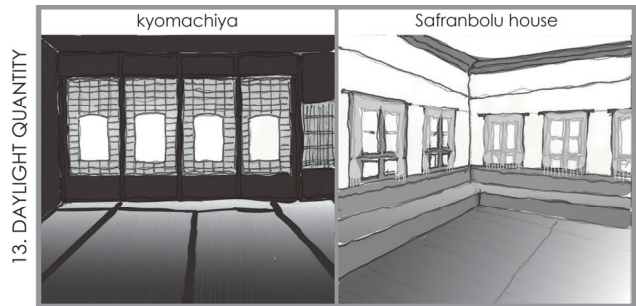
Figure 23. **Daylight Quantity** Daylight quantity is another difference in *machiya* and Safranbolu house. Tanizaki (1977) says, "...the beauty of a Japanese room depends on a variation of shadows, heavy shadows against light shadows. It has nothing else." This idea has deep roots in the cultural and religious characteristics of Japanese society. On the contrary, it is preferred to get daylight as much as possible in the Turkish room. The room is preferable and appreciated when it has daylight in the Turkish society. (Source: Author)
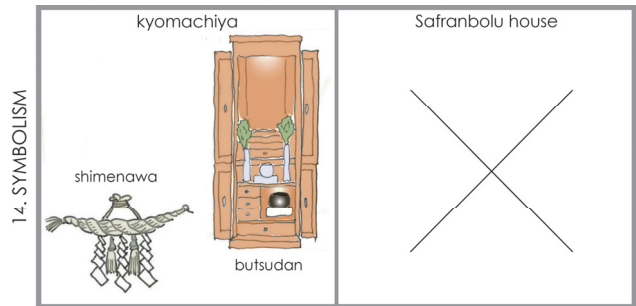
Figure 24. **Symbolism** In *kyomachiya*, there are various symbolic elements such as *butsudan*, shintoist shelves called kamidana and other decorative elements special to different festivals and different preparations and they all have symbolic meaning. In contrast to *kyomachiya*, there is not any symbolic elements in Safranbolu house related with religious belief of the society When praying time comes, users face the direction of Mecca and they pray. (Source: Author)

5. Conclusion

Both houses chosen from Kyoto, Japan and Safranbolu, Turkey has strong relation with its settlement. Each settlement has its own unique planning language. While a *kyomachiya* was planned in a long and narrow gridal plot, Safranbolu house was conformed and adapted to the topography. Thus, settlement decision played important role on the characteristics of each houses.

While *machiya* house offers an extroverted life in terms of

spatial organization and functioning as a private space and work place together, Safranbolu house offers an introverted life. While both cultures concern about privacy, their spatial reactions act differently on the same topic because of religio-cultural values.

When the season changes, the two culture's attitude showed the reflection of settled life and nomadic life. The fixtures and decorations were changed in *machiya* and the seasonal fixtures were kept in the storehouse. In Safranbolu example, the occupants have winter and summer settlement and they carried their necessary utensils with them.

According to Japanese thought, Gods live around mountains. Recluse monks climbs to the mountain for meditation. In *machiya* too, it is aimed to be unit with the nature and living mountain image is created in the garden. In Turkish house, the garden is used for production and to be close and enjoy with the nature and it showed their relation with the nature.

While the darkness and shadow are appreciated in the Japanese culture, it is preferred to get daylight as much as possible in the Turkish house.

Both of two cultures have a simple life, content with the little and avoid wastage resulted with standardization in Japanese architecture and repetitive unit of room notion in the Turkish architecture. While in Japanese architecture, this attitude derives from Zen teaching, in Turkish architecture, it has been based on nomadic cultural background. In both cultures, the usage of floor played an important role in daily life. The occupants sit, eat (on a low tray) and sleep (spreading out a mattress) on the floor in the same way. Built-in cupboards and closets have been used to organize the furnishings. In that way, the rooms remained with less furniture. In both cultures, the shoes were removed before entering the house to keep the floor clean.

The patriarchy concept in the two culture resulted with the reservation of the best place for the man (father of the family).In *machiya*, man's place was *zashiki* and in Safranbolu house, selamlik belonged to the man.

In summary, *kyomachiya* from traditional Japanese architecture and Safranbolu house from traditional Turkish architecture shows remarkable similarities as well as the differences. Each architecture and occupants' way of life have been related and originated from their culture, religion and tradition that pass down.

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A Comparative Analytical Study of the Conversion Form of Minaret in Contemporary Mosque Architecture

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Abstract: Every year many mosques are built around the world which imitate the traditional elements of historical mosque that are repeated everywhere without considering the time and place. The minaret has a specific role in mosque architecture which continues to be built around the world especially in modern times despite of the loss of the main function. The selected case studies are nine mosques which won of Aga Khan Award, are the most innovative design which avoids the direct imitation of the inherited elements of traditional mosque. The aim of this research is to shed the light on the significant mosque examples in contemporary architecture by analyzing the form of minarets .Moreover, analyzing the comments of the jury on these instances in order to evaluate them, as a result, highlight the new characteristics of minaret in contemporary mosque. This paper presents a comprehensive study on the transformation of contemporary minaret.

1. Introduction

1.1. THE PROBLEM AND MOTIVATION

There are many mosques that have been built around the world which follow the traditional style without considering the evolution of construction technology, facilities and contemporary aesthetic norms. This makes them old-fashioned designs, as if coming from the middle ages.

As of 2012, there are 84684 mosques in Turkey which were increased from 75941 since 2002 and most of them are following the historical style according to TUIK (Agenda, 2013). Imitating the styles of past centuries, mostly the 16th-century mosques (Kuban, 1967), has been the general approach in mosque designs in Turkey for the last fifty years (Kalayci and Celdkc, 2014).

Many architects are still designing mosque projects in familiar and traditional frameworks, but they are inclined to use modern materials and construction methods (Farazmand & Sarbangholi, 2014). Most of the current mosques do not reflect the architectural principles of the Spirit of Time (Zeitgeist) and the Spirit of the Place (Genius Loci).

The minaret has greatly lost its main function since the invention of the loudspeakers and the other developed audio technology (Najmul Imam, 2003). In other words, the minaret has lost its original practical purpose, but it is still continued to be constructed in contemporary mosques because it has other higher purposes and symbolic meanings.

The inherited historical elements such as dome, minaret...etc. are not sacred by themselves. On the other hand, imitating and repeating them in every mosque with the same method, make them like sacred elements which have associated with mosque architecture for centuries. This opposes the Islamic regulations which concentrates on the oneness of Allah without objecting and materializing the symbols. In addition to that, the political and economic circumstances of Muslim countries caused a decline in innovative evolutionary movements in art and architecture (Yousef, 2012). This led to a nonstop process of copying, whether temporally from the past or geographically from the West, regardless of both regional and cultural identities (Yousef, 2012). Unfortunately, the most common approach is to repeat traditional forms of mosques using modern materials in all the contemporary Muslim countries (Bloom, 2013). There are uncountable instances of concrete Mamluk or Ottoman-style minarets that spread in all over the world (Bloom, 2013).

Figure 1. TOKI Mehmet Akif Ersoy mosque in Turkey, Istanbul, Kayasehir, Basaksehir. The copied mosque prototype (Photo taken By the Author).

1.2. OBJECTIVES OF THE RESEARCH

The aim of the research is to shed the light on the significant architectural practices in contemporary mosque design, which are honored by Aga Khan Award by analyzing the selected case studies of minaret in order to reinterpret, evaluate and develop mosque design in the Contemporary world. The outcome of the research, is to figure out the main characteristics of contemporary minaret through the familiar characteristic appearances of traditional minaret. These case study mosques could be considered a representative of the contemporary

mosque and the contemporary Islamic Architecture simultaneously, minaret represents the mosque itself. It is difficult to study contemporary mosques without an understanding of traditional mosque architecture and its role in the modern design (Uray, 2013). Hence, the characteristics of contemporary minaret will be compared with the characteristics of traditional minaret in order to show the similarity and differences between them.

Furthermore, the contribution of the architects in creating new concepts to the contemporary mosque design cannot be ignored (Uray, 2013). The output of the research can be utilized and considered by the architects, designers and the patrons in order to innovate mosque architecture in the contemporary age.

On the other hand, the design of the mosque is mainly an architectural matter (Buhlfaia 2000) which don't have to do with Islamic *sharia[3]* law which prevents the innovation only in rituals and worshiping. Therefore, the research is intended to encourage innovation and creativity of mosque design.

1.3. LITERATURE REVIEW

Most of the previous studies are either descriptive and documentary or historical archaeological studies focusing on the historical information of minarets. Moreover, the previous studies lack generalization and punctuation and do not follow the scientific methods for assessing minarets. Unfortunately, most of these studies are about historical minarets and it is difficult to find a study about contemporary minaret of the mosque therefore there is kind of scientific gap. Some of the important studies on similar topics are as follows:

The study of Ürey (2013) titled "Transformation of Minarets in Contemporary Mosque Architecture in Turkey". This academic article is a bold attempt to express the new phenomena, but far away from covering the problems of the contemporary mosque with its limited content and descriptive scientific approach.

This study aims to describe the conversion of minarets in contemporary mosque architecture in Turkey by analyzing the way of usage, form and function of the contemporary minaret with a comparative analysis of six outstanding selected cases. In this study, these case studies started from 1960's which are discussed in terms of their common architectural features, the function of the minaret and reinterpreting the minarets in their designs concept. Ürey compared the contemporary minaret with the traditional Ottoman minaret in terms of modification of forms and functions (Ürey, 2013).

Kasim's study (1996) titled: "Design characteristics in Islamic architecture an analytic study of minarets" (1996), is a beneficial and important study because of focusing on the historical minarets in Islamic world with a profound analytical study. Although Kasim (1996) does not study the contemporary mosque, it is still an important thesis because it proposes a scientific methodology of the research in analyzing the historical minaret. It has a general theoretical framework purposed for studying minaret through the Islamic world. In this dissertation, the minaret is studied through eight aspects: 1) etymology; 2) architectural origin, 3) the relation of the minaret with the main building, 4) parts of a minaret, 5) technical construction, 6) function, 7) symbolical meaning, and 8) provision of Islamic law. The study also suggests dealing with an architecture as a language therefore it is necessary to classify the methodology of the study in three levels; 1) pragmatic, 2) semantic and 3) syntactic. (Kasim, 1996). The study (Kasim, 1996) only covers the syntactic level, but it is applied on a wide range of specimens (485 minarets) of historical mosques from different countries and cultures.

Ismail Serageldin, (1999) is an Egyptian architect and planner who served on the Aga Khan Award for Architecture Steering Committee. James Steele (1999) is an assistant professor of architecture at the University of Southern California. Their study which documented in a book titled: "Architecture of the Contemporary Mosque" (1999), is very significant which deals with the architecture of contemporary mosques with their recent architectural approaches and describes examples of contemporary mosque design. This book provides a respected new vision into design theory of the contemporary mosque. The book analyzes the case study mosques from different Muslim countries with comparative study and architect's approaches. The book does not diagnose the problem of the contemporary mosque architecture, but it is important to understand the notion of the contemporary mosque with their approaches.

2. The Mosque of the Prophet and Minaret with Historical Background

2.1. THE MOSQUE AND MINARET

The concept of the mosque was derived from the Prophet[5] Muhamad Mosque in Medina[2] in Saudi Arabia which has been the typical prototype for all mosques in the world (Johns, 1999). Unfortunately, the Prophet mosque does not exist nowadays, but some descriptions from the history and tradition. The mosque or the house of the prophet was a simple, flat-roofed and practical building (Omer, 2010).

The minaret was not known during the time of Prophet so that the prayers were called from the flat-roof of the houses or directly from public space in Medina[2] (Imdat, 2002).
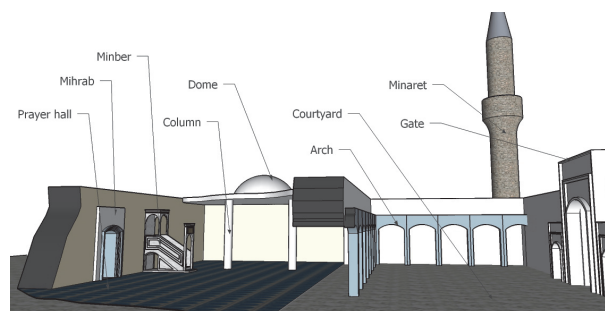
Figure 2. The inherited elements of mosque architecture (By Author)

The architecture of mosques started to progress quickly at the beginning of the Umayyad period (661-750); Some elements after the Prophet's time were added such as the minaret, dome and niche imitated from the churches (Buhlfaia, 2000) and other historical building of the old civilizations. The most characteristic element in mosque architecture, is minaret. A minaret is a tall vertical slender tower that attached to the city's mosques from which *muezzins[1]* call the faithful to prayer five times a day (Bloom, 2002).
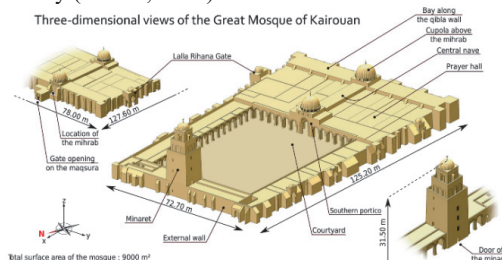
Figure 3. Rendering of the Great Mosque of Kairouan, Tunisia. One of the earliest mosque and the famous earliest minaret (graphic: Tachymètre)

2.2. CONTEMPORARY MOSQUE

Contemporary mosque architecture means any mosque which is built in modern time, which is a clean and correctly oriented space which face the *Kiblah*[1]. But in a narrower sense, the contemporaneity is embraced in expression, form, functionality, structure and materials. Neither the Qur'an nor the Prophet's tradition (hadith) gives detailed instructions in terms of design, form or content (Jahic, 2015). Thus any clean space, that provides the functional need, is suitable for prayer and worship (Serageldin & Steele, 1999). Consequently, it is not mandatory that a mosque takes a certain type or restricted to specific mosque elements that did not exist in the Prophet mosque (Hoteit, 2015).

2.3. AGA KHAN AWARD

The Aga Khan Award for Architecture (AKAA) is an architectural prize which was established by Mr. Aga Khan IV in 1977. It aims to identify and reward architectural concepts that successfully address the needs and aspirations of the Islamic societies in the fields of contemporary design, social housing, and improvement of the environment …etc. It presents monetary prizes totaling one million US dollar in three-year cycles for multiple projects (Aga Khan, 2016).

2.3.1. Sherefudin's White Mosque

Figure 4. Sherefudin's Mosque (AKDN Sh).

The Sherefudin's Mosque is located in Visoko, Bosnia-Herzegovina, which designed by the architect Zlatko Ugljen, honored at the 1981-1983 cycle. It has a geometrically simple plan that surrounds a complex, sloped-ceiling, skylight volume, pure, abstract, and sparsely ornamented and white painted. The impact of the conflict is between the elementary plan and the complicated hierarchy of the roof cones. The principals of the symbolic elements of the mosque have a fresh folk art characters subtly enriched by the avant-garde geometries forms of their background (AKDN Sh).

The jury commends the mosque for its confidence, ground-breaking and intelligence," and "full of uniqueness and innovation (In spite of a doubtless imitation from the Ronchamp church), burdened with the architect's notion and spirit which are related widely with the community, and linking the future with the past" (AKDN Sh).

The mosque represents a significant attempt to create an abstracted forms and spaces in which the connection with the past is greatly weakened and almost disappears. The minaret expresses through the proportions of this cylindrical element and the articulation of its cap with green metal pipes. Moreover, there is a steel mesh elements separate its form from any specific historical prototype (Al Asad, 1999).

2.3.2. Bait Ur Rouf Mosque

The Bait Ur Rouf Mosque is situated in Dhaka, Bangladesh, which was designed by Marina Tabassum, honored at the 2014-

2016 Cycle. The Mosque was raised on a plinth on a site axis creating a 13-degree angle with the *Kiblah* direction, which called for innovation in the layout. A cylindrical volume was inserted into a square, simplifying a rotation of the prayer hall, and forming light courts on four sides. Ancillary functions are located in spaces created by the outer square and the cylinder. The most distinctive characteristic of this mosque which should be noticed, is the absence of minaret. It funded and used by inhabitants, and inspired by Sultanate mosque architecture, it breathes through porous brick walls, keeping the prayer hall ventilated and cool. Natural light brought in through a skylight which is ample for the daytime (AKDN BAR).

Figure 5. Bait Ur Rouf Mosque (AKDN BAR).

2.3.3. Bhong Mosque

The Bhong Mosque (awarded at the Cycle 1984-1986) is situated in Rahimyar Khan, Pakistan; which was designed by the local master builders and craftsmen. The mosque design is a collection of different sources which come from Muslim and Western countries which called a hybrid design. The multiple minarets in this mosque are transformed into decorated elements which cannot be climbed up. The jury stated: Bhong mosque preserves and embodies the popular taste in Pakistan with all its vigor, pride, tension and sentiment. Furthermore, its use, and misuse, of signs and symbols expresses appropriate growing pains of an architecture in transition (AKDN Bh).
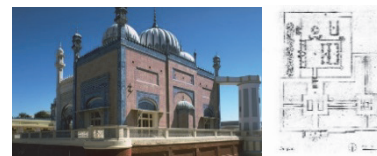
Figure 6. Bhong Mosque (AKDN Bh)

2.3.4. Corniche Mosque

The Corniche Mosque located in Jeddah, Saudi Arabia, which was designed by Abdel-Wahed El-Wakil and; was granted the Aga Khan Award in the 1987-1989 Cycle. The mosque's minaret has a square-based shape with an octagonal shaft. The jury praised the architect for his effort to combine the formal elements in ways that signify the present and simultaneously reflect the shining history of the Islamic societies (AKDN Cor).

Figure 7. Corniche Mosque (AKDN Cor).

2.3.5. Great Mosque of Riyadh

The Great Mosque of Riyadh is positioned in Riyadh, Saudi

Arabia, which was designed by Rasem Badran, and was awarded in the 1993-1995 Cycle. Badran has re-formed and converted a specific character of the indigenous Najdi architectural vocabulary without exact copying it. The mosque has two square minarets that indicate the *Kiblah* direction which break the skyline of the city. The jury summarizes that the mosque has already got received interest in the intellectual elite because of its fundamental design methodologies that may influence the mosque designs for the better advancement in the future (AKDN GMR).
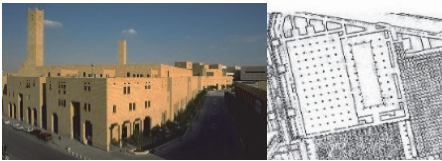
Figure 8. Great Mosque of Riyadh (AKDN GMR).

2.3.6. Great Mosque of Niono

The Great Mosque of Niono is situated in Niono, Mali, which was designed by Lassina Minta, and conferred in the 1981-1983 Cycle. This mud brick mosque is the work of an indigenous master mason who conceived and constructed it almost exclusively with local materials, utilizing only craftsmanship from Niono's people. The jury noted that: "The ongoing presence of the traditional forms (both complicated and primitive) is one of our most powerful allies in retaining architectural character and cultural identity as a large-scale in modern industry and building models world-wide which emphasize on their existence. Therefore, the wish and the conscious intention to preservation and continuation of the tradition should be praised and stimulated (AKDN Nino). This mosque has four minaret tower-like which have huge scale.
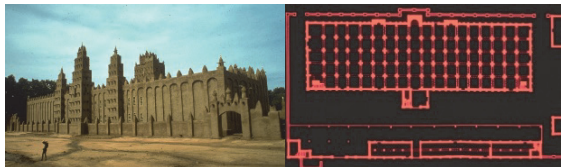
Figure 9. Great Mosque of Niono (AKDN Nino).

2.3.7. Saïd Naum Mosque

The Saïd Naum Mosque is positioned in Jakarta, Indonesia, which was designed by the Architects Atelier Enam Architects and Planners / Adhi Moersid, which was awarded in the 1984-1986 Cycle. The mosque is designed in the Indonesian Hindu-Javanese architectural tradition. In this mosque, traditional Javanese idioms have been skillfully re-interpreted to produce a modern regional architecture compatible with the best indigenous work (AKDN Said). This mosque does not have the inherited element such as minaret and dome.
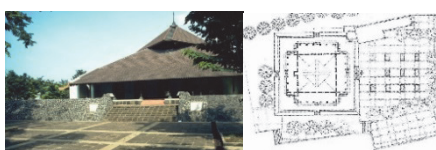
Figure 10. Saïd Naum Mosque (AKDN Said).

2.3.8. Mosque of the Grand National Assembly

The Mosque of the Grand National Assembly is located in Ankara, Turkey, that was designed by Behruz & and Can Cinici, also it was bestowed in the 1993-1995 Cycle . The mosque has a low structure, with a stepped pyramidal roof, and a fully glazed *mihrab*[6] (AKDN Nation). The minaret was transformed into a small balcony. (Dogan, 1999). There is a tree on the roof of the pyramid, which also participates in the expression of the vertical direction, and was implanted in order to be the reminder of the form of the minaret (Uray, 2010).

The designer disposes of the usual inherited architectural vocabularies which recognize the building as a mosque (AKDN Nation). Therefore the jury commended the mosque for its innovative character and its challenge on getting rid of the traditional mosque vocabulary. (Dogan, 1999)
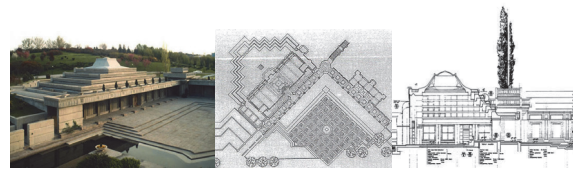
Figure 11. Mosque of the Grand National Assembly (AKDN Nation)

2.3.9. Yaama Mosque

The Yaama Mosque is situated in Tahoua, Niger, which was constructed by Master Mason Falké Barmou, and won in the 1984-1986 cycle. Each of the four corner minarets towers-like of the mosque which each of them is an individual sculpture with banded, tapering walls that become gradually more elaborated toward its pinnacle. The construction process of it depends on the community collaboration with primitive construction methods using simple materials like local mud brick. The jury celebrated the traditional techniques which used in a creative manner, to experiment with them and to achieve results that induce a new awareness of their possibilities (AKDN Y).

Figure 12. Yaama Mosque (AKDN Y).

3. Methodology, Result and Discussion

This study began with a literature review of the mosque design in general and the role of the minaret in particular. During the research, it has been realized that "The work can be dealt with architecture as a language because it needs a vision with the total point of view as Kasim categorized in pragmatic level, semantic level and syntactic levels (Kasim, 1996).

3.1. METHODOLOGY OF RESEARCH

The study base on a comparative analysis of several case studies in terms of the following criteria:

3.1.1. The typology of mosque design approach.

The mosque design approach can be recognized according to its design attributes such as experimented approach, postmodern approach, vernacular approach, conservative approach and adaptive approach (Serageldin & Steele, 1999). These approaches depend on the architect and patrons' who choose the design approach of the mosque or can be submitted to the context of the mosque.

3.1.2. The main parts (elements) of minaret (Kasim, 1996).

It can be made a comparison between traditional minaret's elements such as 1) Base 2) Shaft 3) Balconies 4) Neck 5) Spire and the contemporary elements in order to know if the contemporary minaret has the same traditional element.
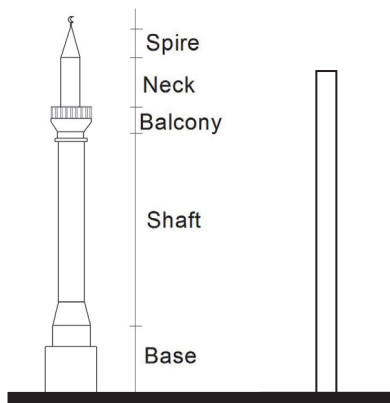
Figure 13: The main elements of minaret in traditional mosque and the contemporary minaret (By Author)

3.1.3. The shape grammar of the sections design of minaret (Kasim, 1996).

The sections of the minaret can be analyzed from the base to the peak. The gradation of minaret can be observed for the purpose of study the method of generating the form of the minaret. Omary is a professor of Islamic architecture speculate that the gradation in the minaret has been disappeared in the contemporary mosques that agree with the current study (Omary, 1988). If the section of the minaret does not change, it would be continued with the same section to the spire which is one of the characteristics of the contemporary minaret.

3.1.4. The emphasize of minaret in mosque's composition

It represents the influence of minaret or how much the minaret is powerful within the whole composition of mosque. So if there are more than one minaret, it would be stronger emphasize than just one minaret. If the minaret dominate over the whole mosque therefore, it would be the strongest emphasize. If there is no minaret, it would be zero emphasize. If the mosque has a small minaret or very thin minaret, the representation would be weak emphasize (Ardalan, 1980).

3.1.5. The location of minaret with relation of the main hall prayer (Kasim, 1996).

It can be assessed by the existence of minaret, if the location refers to the direction of *Kiblah*, if the minaret located on the corner, minaret attached to the main hall prayer and the number of minaret**.**

3.1.6. The abstraction and the secondary elements of the minaret (Kasim, 1996).

The abstraction can be assessed by evaluation of minaret whether it is simple minaret or complex with secondary elements. The secondary elements which means the traditional details of minaret such as ornamentation, Arabic calligraphy, symbols and crescent *(Kasim, 1996)*. If the minaret has a huge scale, it is considered as edifice scale. It can be observed that generally the contemporary minaret tends to be simpler and more abstracted than traditional one.

3.2. THE RESULT AND DISCUSSION

Table 1. The typology of mosque design approach are analyzed in the following table.

Mosque	Adaptive approach	Conservative approach	Vernacular approach	Populist approach	Postmodern approach	Experimented approach
Great Mosque of Niono			●			
Yaama Mosque			●			
Saïd Naum Mosque			●			
Bhong Mosque			●	●		
Corniche Mosque		●			●	
Great mosque of Riyadh	●					
The Grand National Assemble	●					●
Sherefudin's White Mosque						●
Bait Ur Rouf Mosque			●			●

1- There are two case studies which follow the vernacular design approach.
2- There is only one case study which follows the populist approach
3- There are three case studies which follow the experimented mosque design approach
4- There are three case studies which follow the adaptive mosque design approach.
5- There is one case study which follows the conservative design approach.

Table 2. The main elements of minaret are analyzed comparatively.

Mosque	Base	Shaft	Balcony	Neck	Spire
Great Mosque of Niono	●	●	●	●	●
Yaama Mosque	●	●	●	●	●
Saïd Naum Mosque					
Bhong Mosque	●	●	●	●	●
Corniche Mosque	●	●	●	●	●
Great mosque of Riyadh	●	●			
The Grand National Assemble					
Sherefudin's White Mosque	●	●			
Bait Ur Rouf Mosque					

1- There are four case studies out of nine which have all the main element of the traditional minaret of the mosque.
2- There are two case studies out of nine which have only two elements of minaret. These minarets have only base and shaft of the elements.
3- Most of the mosques which follow the traditional and conservative mosque design approach, have all the main parts of the minaret.
4- The experimented approaches have no minaret or only one unfamiliar minaret which have two elements of minaret.

Table 3. The shape grammar of the design sections of the minaret.

Mosque	Base	Shaft	Balcony	Neck	Peak	The result
Great Mosque of Niono	□	□	□	□	○	Graduation
Yaama Mosque	□	□	□	□	○	Graduation
Bhong Mosque	○	○	○	○	○	Graduation
Corniche Mosque	□	⬡	○	○	○	Graduation
Great mosque of Riyadh	□	□				No change
Sherefudin's White Mosque	○	○				No change

1- It is obvious that the mosques which follow the experimented design approach (Two cases) have minaret with one section without gradation because it is easier and cheaper in construction.
2- There are four case studies that follow the traditionalist and vernacular approach, have diversity of sections.

Table 4. The Minaret case studies are compared.

Mosque	Weak emphasize	Normal emphasize	Strong emphasize	Very Strong emphasize
Great Mosque of Niono				●
Yaama Mosque				●
Saïd Naum Mosque				●
Bhong Mosque			●	
Corniche Mosque		●		
Great mosque of Riyadh				●
The Grand National Assemble	●			
Sherefudin's White Mosque			●	
Bait Ur Rouf Mosque				

1- Most of the case studies (five cases) have very strong emphasize on the minaret.
2- There is only one case which has normal emphasize that Corniche mosque has only one minaret with fair height.
3- There is only one case study which has very weak emphasize which is TBMM mosque that minaret was transformed into a tree (Uray, 2013).

Table 5. The location of minaret is analyzed

Mosque	The existence of minaret	Attached to the main hall prayer	Minaret on the corner	referring to direction of *Kiblah*	The number of minaret	The form
Great Mosque of Niono	●	●		●	Four	
Yaama Mosque	●	●	●	●	Four	
Bhong Mosque	●	●	●	●	Ten	
Corniche Mosque	●	●	●		One	
Great mosque of Riyadh	●	●		●	Two	
Sherefudin's White Mosque	●				One	

● The minaret

— The line by the minaret and the mihrab refer to the direction of *Kiblah*

⇧ The entrance gate

⌒ The mihrab

1- There are four cases which have minaret which oriented to the direction of *Kiblah.*
2- There are five cases which have a minaret attached to the main hall prayer.
3- There is only one case which has a minaret that separated from the hall prayer.
4- The average number of the minaret in the case study mosques is two.
5- There are three case studies have the minaret in the corner of the mosque which follow the minaret in traditional mosque.
6- In the most of the contemporary praised mosque architecture, the minaret goes beyond of the practical usage and classical forms by means of abstraction as it shown in the previous table.

Table 6. The abstraction and the secondary elements of minaret

Mosque	The absence of minaret	Simple minaret	Ornamentation	Arabic calligraphy	The edifice scale
Great Mosque of Niono		●			●
Yaama Mosque		●			●
Saïd Naum Mosque	●				
Bhong Mosque			●	●	
Corniche Mosque					
Great mosque of Riyadh		●			●
The Grand National Assemble	●				
Sherefudin's White Mosque		●		●	●
Bait Ur Rouf Mosque	●				

1- There are three case studies which do not have a minaret for some reason.
2- Most of the minaret cases (Four cases) have simple style which do not have Arabic calligraphy, ornamentation and complex forms.
3- Most of the minarets in case studies have edifice scale (Five cases).

Overall, through the close comparative examinations of the case studies, characteristics of the contemporary minaret can be summarized as follows:

1- Generally, the contemporary minarets tend to be simple and without traditional details especially the experimented design approach. Advanced technologies in methods and materials of construction and economic advantages of these technologies led designers to be freed from constructional constraints in building minaret.
2- The balcony of the contemporary minaret is unlike the traditional minaret because the balcony is not in the form of the cantilever. The contemporary minaret may have a window or opening instead of the balcony which may not use to climb up, but it is used as a decoration. The number of balconies in the most cases is one since there is no need for more than one balcony.
3- The contemporary minaret tends to be abstracted without ornamentations and Arabic calligraphy.

4- Some of the case studies have lost the gradation to the spire because the gradation that was a need for building a high minaret with the old construction methods. There is currently no need for gradation because of the advancement of construction methods and materials which make it easier and more economical.
5- In a contemporary mosque, the minaret is not a mandatory element in designing a mosque that is submitted to the need and context. Therefore, there are some mosques that do not contain minaret for some reason, but it is still considered as a main symbolic element of mosque architecture. Therefore, the minaret is continued to be constructed in the most of the mosques to the present time because it is considered as a symbol of the mosque's presence and a symbol of Islam, too (Bloom, 2013).Thus, the minaret is the most powerful symbolic element of mosque architecture.
6- The number of the minaret is one or two in most cases, depending on the mosques design approach and construction methods.
7- The contemporary minaret tends to use modern materials and modern forms in order to rethink the concept of a tower that attached to a mosque (Bloom, 2013).
8- There is a minaret which is absent and transformed into a tree (Uray, 2013) in order to be the reminder of minaret's existence. It serves as a complementary element because there is no need for the minaret in the TMMB mosque because there is no population and urban fabric near to the mosque, which is located within the complex of the national assembly.

Figure 14. The vertical impression of the tree which indicates to the absent minaret (AKDN Nation).

9- In most of the case studies, the minarets are attached to the main hall prayer.
10- In most of the case studies, the minarets have a strong emphasis with all composition of the design.
11- It can be noticed that there are some of the minarets which are not using for climbing up, but as decorated element such as the Bhong mosque in Pakistan.
12- Nowadays, the contemporary minaret, which follows the experimented approach, do not have a specific form because it is transformed into a decorated complementary element of mosque. This kinds of minaret is subjected to the personal experience of the designer.

Figure 15 .Case study minarets (By Author).

Figure 16. The unlimited forms of contemporary minaret in different contemporary mosques which follow the experienced approach (By the Authors).

Endnotes

1- *Kiblah*: The direction of the Kaaba shrine in Mecca toward which all Muslims turn in ritual prayer.

2- *Medina:* The first Islamic city which is and the second sacred city for Muslims which the prophet Muhamad was lived in it.

3- *Muezzin*: a Muslim who calls for the hour of daily prayers.

4- *Sharia*: Islamic law based on the Koran.

5- The prophet: Used as another name for the prophet Muhammad, the founder of Islam.

6- *Mihrab:* a niche in the *kiblah* wall of a mosque which indicate to direction of *Kiblah.*

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The Analysis of the Characteristic of Composition Elements for the Traditional Townscape by Inductive Logic Programming: Focusing on Bamboo Blinds in the Gionshinbashi District

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Abstract: The purpose of this study is to analyze the characteristics of each facade of all buildings on both sides considering having bamboo blinds or not along the Shinbashi-dori Street in the Gionshinbashi district. Composition elements are described in 4 attributes; types, position on the facade, color, and form, which is expressed in first order logic. The rules of the elements were extracted in whole facade on each side by ILP. Followings findings has been made about the characteristics of the rules on both sides: [1] the facade on the north side are composed with various types of composition elements, in contrast to it, the facade on the south side are composed with architectural composition elements having the horizontal regularity of the size for the entire frontages of buildings with their uniform color with bamboo blinds, and [2] on the north side with their characteristic variety of form, in contrast to it, on the south side with their uniform color without bamboo blinds.

1. Introduction

The Gionshinbashi district represents a historically valuable townscape and has long been designated a traditional architecture preservation district (Figure 1). There are many traditional tea houses built from the late Edo period to the early Meiji era frequently, the townscape of Gionshinbashi district were highly refined in terms of architectural design. For the preservation and revitalization of the traditional townscape, we need to grasp how the characteristics of the townscape is formed by architectural composition elements such as roofs and windows, and arrangements such as bamboo blinds comparing to other districts or in the same district. Furthermore, to grasp the characteristic of the building original appearance which took off a bamboo blind as well as such a facade of the bamboo blind is considered to connected for the acquisition of the knowledge about the preservation of the building in Gionshinbashi district. Therefore, the purpose of this study is to analyze the characteristics of facades of buildings to clarify the differences between the both of characteristics on both sides of Shinbashi-dori Street in Gionshinbashi district considering having bamboo blinds or not.

Figure 1. View of the Shinbashi-dori Street

In this study, we use Inductive Logic Programming[1] (ILP) for analysis. ILP is machine learning system based on expressive first-order logic that executes inductive reasoning and generalizes of results from a large quantity of examples with various and complicated attribute information to generate new concepts comparing the two groups of examples. We regarded characteristics of the townscape are ascertained referring to roofs, openings, and all other architectural composition elements making up existing townscape, as well as arrangements of plants and decorations, as individual "composition elements," and deconstructed buildings into basic units of these elements.

Many past studies have dealt with the townscape of Kyoto, including the Gionshinbashi district. In a study by Monnai, symbols marking the townscapes were systematized from elevations of the traditional townscape of Kyoto, and then a database was built describing how they were related. Furthermore, this database was used to quantitatively analyze similarity and diversity in the distribution of symbols in the townscape. In addition, in a study by Saito, ILP was used in a similar to this study to establish the method for deriving the configuration rules of form elements in traditional facades after landscaping, in the Sanneizaka district to compare elevations of facades before and after landscaping was analyzed. These studies attempted to ascertain the characteristics of elements in elevations, and the premise that the townscapes were ones in which bamboo blinds had been hung. Consequently, the elements of facades in the overall facade did not include a concept of depth.

However, actual townscapes are formed in three dimensions by such as the overhanging of eaves and lattice windows on the street side. Thus, to ascertain the characteristics of townscapes spatially is important, accounting for the actual appearance of buildings hidden behind bamboo blinds. Based on the previous studies, the distinctive feature of this study is approaching all

"composition elements" incorporated into townscapes on both sides of Shinbashi-dori Street, with a focus on whether or not there are bamboo blinds. Attribute information including depth, is described based upon first order logic. Furthermore, the descriptions are analyzed using ILP in order to grasp the characteristics of traditional townscapes using extracted rules.

2. Methods

2.1. ON FIELD SURVEY AND DRAFTING OF ELEVATIONS

The subject of this study is the 32 buildings (north side: 16 buildings, south side: 16 buildings) on Shinbashi−dori Street (Figure 2). The facades of all buildings on both sides were photographed and a measurement survey conducted on field survey. Furthermore, these photographs were composed of elevation images with some photos (Figure 3). The buildings in Gionshinbashi district represent a mixture of various building styles with different frontage sizes between the different buildings. Based upon the on field survey, the basic townhouse eave frontage size was approximately 3.3 m, and building numbers were assigned to each analyzed building based on these sizes. However, more than one building number was assigned to buildings with frontage of 3.3 m or greater using 3.3 m as a basis (building numbers on north side: g1 to g20, building numbers on south side: o1 to o19).

Figure 2. Satellite image of Gionshinbashi district
Google Earth (2017) ©2017 Google, Building image ©2008 ZENRIN, Image land set Data SIO, NOAA, U.S. Navy, NGA GEBCO

2.2. DEFINITIONS OF ATTRIBUTES

Four attributes are defined for "composition elements": types (57 types), position on the facade (number of levels: 4 types, horizontal arrangements: 3 types), color (28 types), form (shape: 49 types, material: 21 types, height: 3 types).

[Type] All visible composition elements on building walls of architectural composition elements such as roofs and openings, plants and furniture were defined as composition elements. These elements peculiar to the Gionshinbashi district are named referencing district preservation plans by the Kyoto City Government Urban Planning Bureau[2] (Figure 4).

[Position on the facade] Types of position on the facade are established as follows on elevation for each building: Vertical arrangements consist of 4 types for number of levels 1 to 4; horizontal arrangements consist of 3 types divided into left side, middle, and right side (Figure 5).

[Color] The Photoshop color sampling tool is used to retrieve the color of each element in building photographs in RGB values, which are then converted to the Munsell color system to define colors. Colorless transparencies among them indicate glass. In addition, different types of combinations of multiple colors are also defined, such as when a post passes through color backing a wall, a wall with exposed timbers, for example (Figure 6).

[Form] Types of form are defined by three attributes: shape, material, and height. Types of shape are defined as two-dimensional basic figures and three-dimensional solid graphic

Figure 3. Elevation of the both sides of facade of Gionshinbashi district
(a) elevations with bamboo blinds (north side: hg1 to hg20, south side: ho1 to ho19),
(b) elevations without bamboo blinds (north side: ng1 to ng20, south side: no1 to no19)

including whether has lattices, patterns or not. Three-dimensional type defines a type based upon numerical values obtained from measurement surveys of height, width, and depth. In addition, composition elements that are very small in size and forms that are difficult to ascertain are defined as aggregates of multiple composition elements. In addition, materials are defined referencing district preservation plans by the Kyoto City Government[3]. Three types of height are used, broadly dividing height into 450 mm or less, 450 mm to 900 mm, and 900 mm or more based on actual measurements (Figure 7).
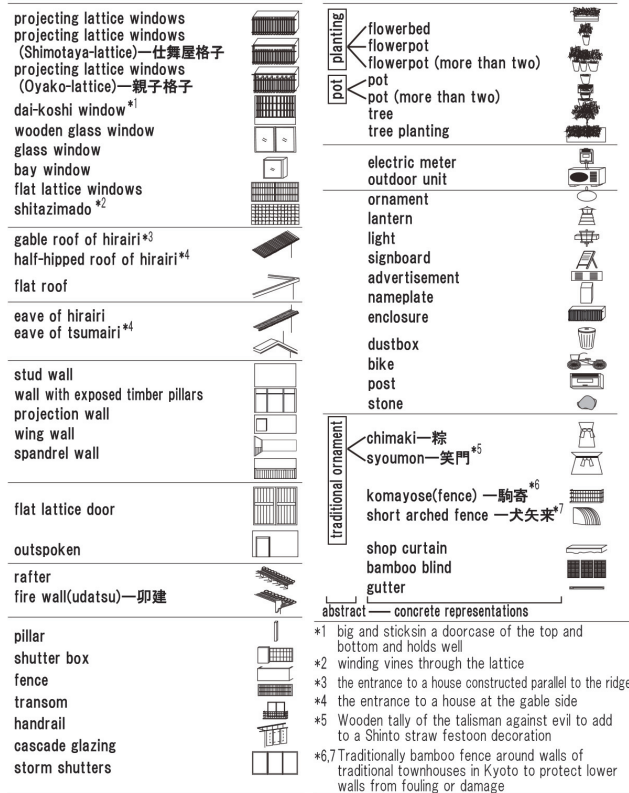
Figure 4. Types of composition elements of facade (57 types)
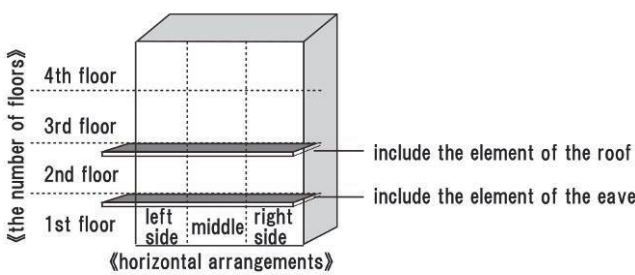
Figure 5. Types of position on the facade
(Number of levels: 4 types, Horizontal arrangements: 3 types)
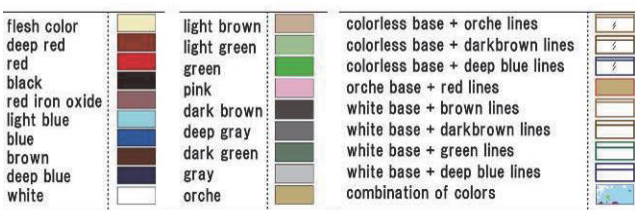
Figure 6. Types of colors of composition elements (28 types)
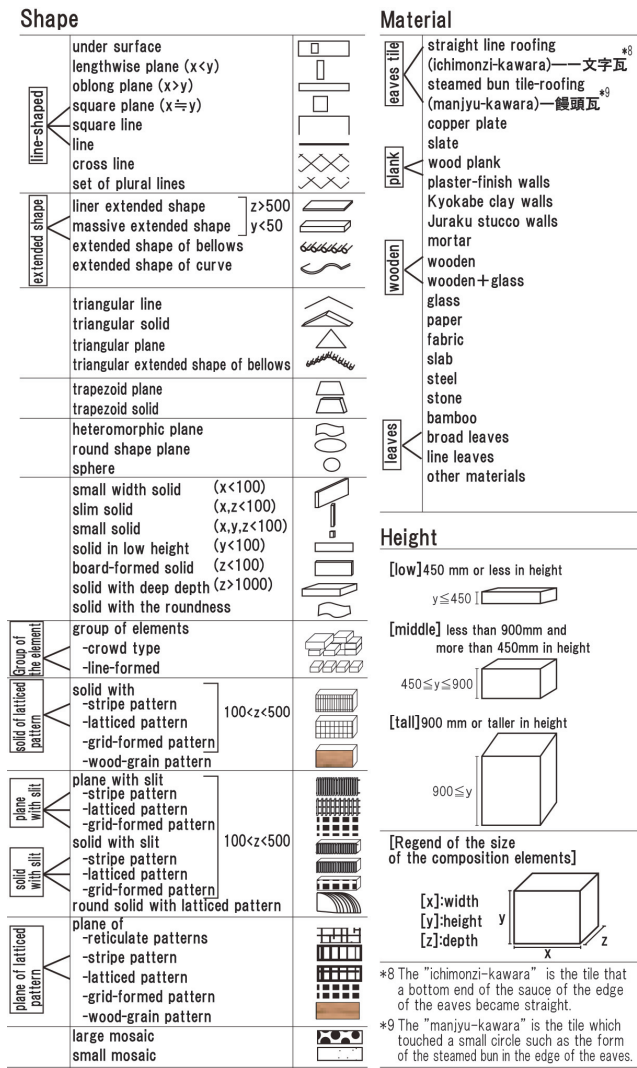
Figure 7. Types of form of composition elements
(Shape: 49 types, Material: 21 types, Height: 3 types)

2.3. INPUT DATA TO PROGOL

Progol, which is one ILP system created by Muggleton (1995), allows arbitrary Prolog Programs as background knowledge and arbitrary definite clauses as examples. Input data to Progol consists of a set of positive examples, a set of negative examples and background knowledge. In this study, each composition element is regarded as an example. However, large roofs and walls extending across entire frontages, as well as very small exterior elements such as plants, represent large differences in surface area on elevations. Hence, buildings are divided into different levels vertically and are divided horizontally into three sections: a left side, middle, and a right side. Thus a composition element represents one example belonging to one of these sections. Each four attributes (type, position on the facade, color, and form) described as background knowledge. In addition, "is-a hierarchies" were defined. The hierarchies of the attributes based on inclusion relation are known in advance. In order for the examples and background knowledge to be inputted into Progol, they are described in Prolog description based on first order logic. The description for examples and background knowledge are as follows: Descriptions of examples are made using the predicate "townscape." The IDs of composition elements are substituted into examples. The attributes of the four composition elements are described using the respective predicates of "type",

"position", "color", and "form". In addition, the "is-a hierarchies[4]" are described as a Horn clause with an implication symbol ": -[5]" attached. The formats for these descriptions for examples and background knowledge are shown in Figure 8. Descriptions of the attributes for the four composition elements above are inputted into Progol (ALEPH ver. 5[6]), which is one ILP system, and then rules for composition elements are extracted for the overall of facade.

3. Analysis

Examples of descriptions for composition elements inputted into Progol are shown in Figure 8 based upon the formats for descriptions defined in the preceding section. Each set of composition elements for the facade on each side of at constitute one group. By considering one set of composition elements as positive example and another set of composition elements as negative example, classification rules are extracted applying to the positive example. Based on the above, two analyses are performed, "Case-A" of comparing facades on both sides with bamboo blinds and "Case-B" of comparing facades on both sides without bamboo blinds. The characteristics of the respective

facade are discussed according to the extracted rules for the composition elements of the overall of facade on both sides.

In Case-A, 105 rules for composition elements are extracted from the groups of north side, and 92 rules are extracted from the groups of south side. In analysis Case-B, 104 rules are extracted from the groups of north side, and 81 rules are extracted the groups of south side. In this study, "coverage" is used as the main evaluation criteria for rules executed from both sides of facade in two cases if analysis using ILP. Coverage is the total number of positive examples explained by rules for the total number of positive examples and is regarded as a significant rule as long as the coverage value is large[7]. In this study, rules marked the coverage more than 1.15% are considered representative rules often appearing in both analyses, and are subject to discussion. The rules extracted from analyses of Case-A and Case-B are categorized into the following three patterns:

[Result-1] Same descriptions of rules extracted from Case-A and B, and also with the same coverage marked (Figure 9)

[Result-2] Same descriptions of rules extracted from Case-A and B, but with higher coverage marked in Case-B (Figure 9)

[Result-3] Rules each extracted from Case-A or B with no commonalities (Figure 10)

Figure 8. Description of examples, background knowledge, and rules extracted by comparing both sides of facades in Case-A and B

The result of the rules extracted from analyses Case-A (with bamboo blinds) and Case-B (without bamboo blinds) described same discription and same coverage of north side

No	Pos	Cov	Description of rules and examples coversd by the rules
Rg1	12	1.5	form(A, under surface, plaster-finish wall, B).
Rg2	10	1.26	form(A, B, plaster-finish wall, middle height).
Rg3	11	1.38	type(A, spandrel wall), position(A, B, left side), form(A, C, wood plank, middle height).
Rg4	7	0.88	type(A, spandrel wall), position(A, B, left side), color(A, darkbrown).
Rg5	4	0.50	type(A, spandrel wall), form(A, oblong plane, wooden, B).
Rg6	3	0.37	type(A, spandrel wall). position(A, 1st or 2nd floor, B), color(A, brown), form(A, plane of wood-grain pattern, C, middle height).
Rg7	5	0.62	type(A, wall with exposed timber pillars), form(A, plane of wood-grain pattern, wood plank, B).
Rg8	7	0.88	type(A, square plane, Kyobake clay wall, B).
Rg9	3	0.37	type(A, stud wall), color(A, orche).
Rg10	6	0.75	type(A, wing wall), color(A, orche).
Rg11	5	0.62	type(A, wing wall, form(A, B, wood plank, tall height).
Rg12	4	0.50	type(A, wing wall), position(A, B, left side).
Rg13	11	1.38	type(A, planting).
Rg14	11	1.38	form(A, B, leaves, low height).
Rg15	10	1.26	form(A, large mosaic, leaves, B).
Rg16	10	1.26	form(A, B, leaves, tall height).
Rg17	7	0.88	form(A, line, leaves, B).
Rg18	5	0.62	type(A, pot).
Rg19	3	0.37	type(A, rafter).
Rg20	9	1.13	position(A, 1st or 2nd floor, B). color(A, deep blue), form(A, line, steel, C).
Rg21	9	1.13	type(A, cascade glazing), color(A, gray).
Rg22	5	0.62	type(A, cascade glazing), form(A, line, steel, B).
Rg23	4	0.50	type(A, shutter box), position(A, 1st or 2nd floor, B), position(A, C, right side), form(A, D, wooden, tall height).
Rg24	8	1.00	type(A, projecting lattice window: Oyako).
Rg25	6	0.75	type(A, projecting lattice window), form(A, solid with slit, B, middle height).
Rg26	5	0.62	type(A, projecting lattice window), color(A, darkbrown).
Rg27	4	0.50	type(A, projecting lattice window: Shimotaya), color(A, deep blue), form(A, plane with slit, wooden, B).
Rg28	3	0.37	type(A, projecting lattice window: Shimotaya), color(A, whitebase).
Rg29	4	0.50	type(A, komayose), position(A, 1st or 2nd floor, B), position(A, C, middle), color(A, darkbrown).
Rg30	8	1.00	type(A, advertisement), form(A, lengthwise plane, B, middle height).
Rg31	8	1.00	type(A, advertisement), form(A, B, paper, middle height).
Rg32	7	0.88	type(A, enclosure).
Rg33	6	0.75	type(A, nameplate).
Rg34	4	0.50	form(A, B, slab, low height).
Rg35	4	0.50	type(A, signboard), position(A, B, left side).
Rg36	3	0.37	type(A, signboard), color(A, darkbrown).

No	Pos	Cov	Description of rules and examples coversd by the rules
Rg37	3	0.37	type(A, post).
Rg38	3	0.37	type(A, lantern).
Rg39	8	1.00	form(A, small width solid, wooden, B).
Rg40	5	0.62	form(A, sphere, B, low height).
Rg41	6	0.75	form(A, solid with deep depth, B, middle height).
Rg42	3	0.37	form(A, board-formed solid, B, low height).
Rg43	7	0.88	form(A, square plane, B, middle height).
Rg44	5	0.62	form(A, trapezoid plane, B, low height).
Rg45	6	0.75	position(A, 1st or 2nd floor, B), position(A, C, right side),color(A, green).
Rg46	5	0.62	position(A, 1st or 2nd floor, B), color(A, orche), form(A, C, wooden, low height).
Rg47	4	0.50	position(A, 1st or 2nd floor, B), color(A, gray), form(A, C, wooden, middle height).
Rg48	3	0.37	position(A, 1st or 2nd floor, B), color(A, C, right side), color(A, brown), form(A, D, wooden, tall height).
Rg49	4	0.50	position(A, 1st or 2nd floor, B), color(A, darkgreen), form(A, extended shape of bellows, C, low height).
Rg50	4	0.50	position(A, 1st or 2nd floor, B), color(A, darkgreen), form(A, C, eave tiles, low height).
Rg51	10	1.25	position(A, 1st or 2nd floor, B). position(A, C, right side), color(A, deep blue), form(A, plane with slit, D, tall height).
Rg52	10	1.25	form(A, plane of latticed pattern, B, middle height).
Rg53	6	0.75	position(A, 1st or 2nd floor, B), color(A, orche), form(A, C, bamboo, low height).

The result of the rules extracted from analyses Case-A and Case-B described same discription and higher coverage for analysis of Case-B.

No	Pos	Cov	Description of rules and examples coversd by the rules
r-ng1	11	1.30	form(A, cross line, wooden, B).
r-ng2	11	1.30	type(A, flat lattice window), color(A, whitebase).
r-ng3	5	0.59	type(A, shutter box), position(A, 1st or 2nd floor, B), position(A, C, left side), form(A, solid of wood-grain pattern, D, tall height).
r-ng4	5	0.59	position(A, 1st or 2nd floor, B), position(A, C, right side), color(A, darkbrown), form(A, plane of wood-grain pattern, D, middle height).
r-ng5	9	1.06	position(A, 1st or 2nd floor, B), position(A, C, right side), color(A, darkbrown), form(A, solid with slit, wooden, D).
r-ng6	8	0.95	position(A, 1st or 2nd floor, B), position(A, C, right side).color(A, flesh color).
r-ng7	6	0.71	position(A, 1st or 2nd floor, B). position(A, C, left side).color(A, flesh color).

extract the rules with same discription and same coverage

Case-A
Comparing facade of north and sourh sides with bamboo blinds

facade of north side with bamboo blinds(hg1-hg20).
Positive Example — Negative Example
Negative Example — Positive Example
facade of south side with bamboo blinds(ho1-ho19).

facade of north side without bamboo blinds(ng1-ng20)
Positive Example — Negative Example
Negative Example — Positive Example
facade of south side without bamboo blinds(no1-no19).
Case-B
Comparing facade of north and sourh sides without bamboo blinds

extract the rules with same discription and same coverage

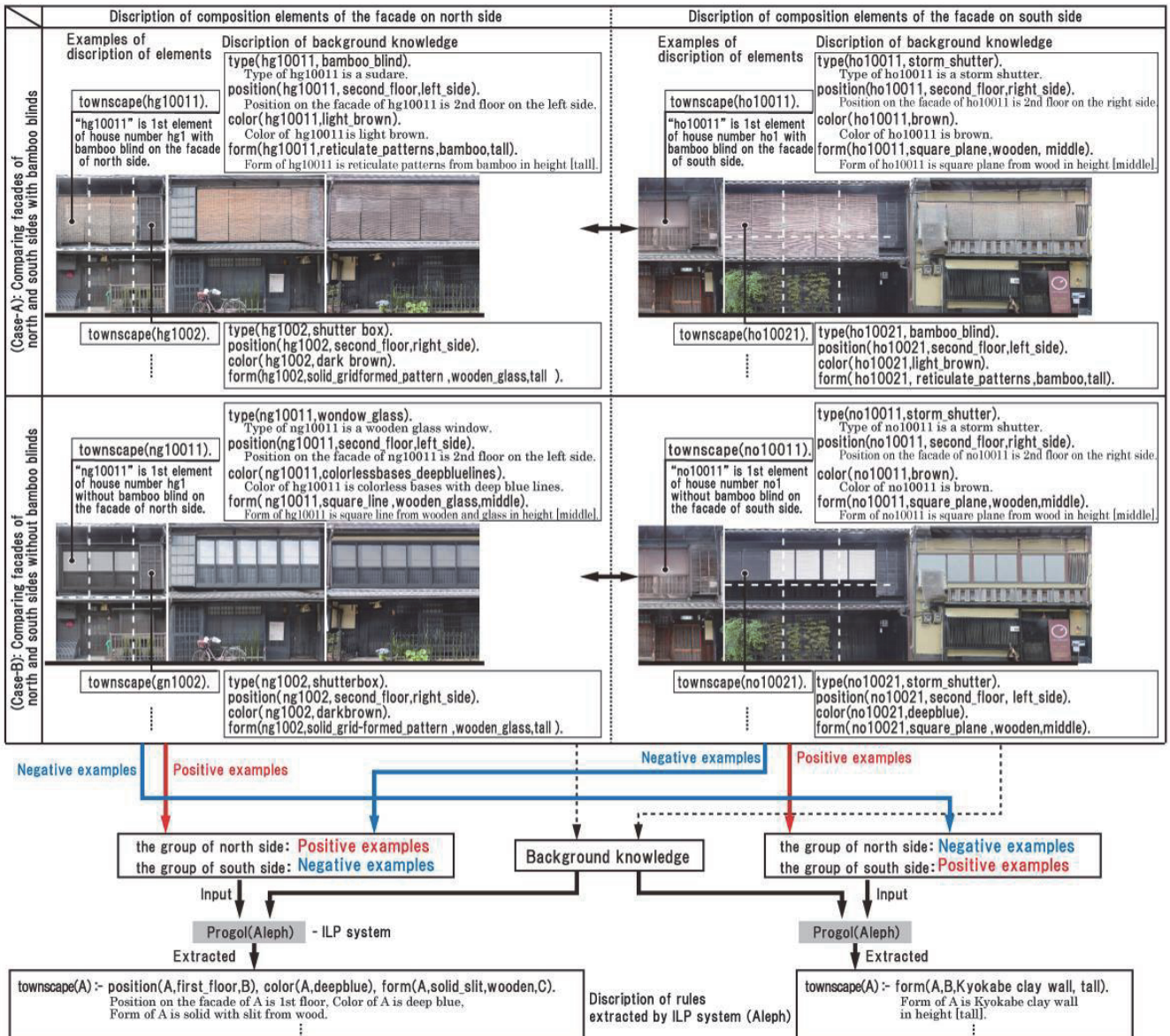**The result of the rules extracted from analyses Case-A (with bamboo blinds) and Case-B (without bamboo blinds) described same discription and same coverage of south side**

No	Pos	Cov	Description of rules and examples coversd by the rules
Ro1	7	1.01	form(A, under surface, mortar, B).
Ro2	6	0.86	position(A, B, middle).
Ro3	5	0.72	form(A, under surface, Kyobake clay wall, C), form(A, under surface, D, middle height).
Ro4	4	0.57	position(A, B, middle), form(A, under surface, C, tall height).
Ro5	3	0.43	color(A, whitebase), form(A, line, wooden, B).
Ro6	6	0.86	form(A, under surface, steel, B).
Ro7	5	0.72	type(A, spandrel wall), color(A, deep blue), form(A, B, wood plank, low height).
Ro8	4	0.57	type(A, spandrel wall), form(A, plane of wood-grain pattern, wooden, B).
Ro9	7	1.01	type(A, spandrel wall), position(A, B, middle), color(A, darkbrown), form(A, plane of wood-grain pattern, wood plank, C).
Ro10~12	6	0.86	type(A, wall with exposed timber pillars), position(A, B, right side), form(A, under surface, Kyobake clay wall, C), form(A, under surface, D, middle height).
Ro13	6	0.86	position(A, B, right side/middle/left side), form(A, C, wood plank, low height).
Ro14	4	0.57	position(A, B, left side).form(A, C, copper plate, low height).
Ro15	5	0.72	position(A, B, right side), color(A, deep blue), form(A, C, wood plank, middle height).
Ro16	4	0.57	type(A, shutter box), color(A, deep blue), form(A, B, wood plank, tall height).
Ro17	6	0.86	type(A, shutter box), position(A, 1st or 2nd floor, B), position(A, C, left side), form(A, solid of latticed pattern, D, tall height).
Ro18	6	0.86	type(A, projecting lattice window), color(A, deep blue), form(A, solid with slit, B, tall height).
Ro19	5	0.72	type(A, projecting lattice window: Shimotaya), position(A, 1st or 2nd floor, B), color(A, deep blue), form(A, solid with slit, C, tall height).
Ro20	5	0.72	type(A, projecting lattice window: Shimotaya), position(A, B, left side), form(A, solid with slit, wooden, C).
Ro21	6	0.86	type(A, projecting lattice window), position(A, 1st or 2nd floor, B), position(A, C, middle), color(A, deep blue).
Ro22	4	0.57	type(A, flat lattice door), position(A, B, middle).
Ro23	5	0.72	type(A, handrail), form(A, B, wood plank, middle height).

No	Pos	Cov	Description of rules and examples coversd by the rules
Ro23	12	1.73	type(A, transom), position(A, 1st or 2nd floor, B). color(A, whitebase), form(A, solid with slit, wooden, C).
Ro24	7	1.01	type(A, transom), position(A, 1st or 2nd floor, B). position(A, C, left side), color(A, whitebase).
Ro25	5	0.72	type(A, signboard), position(A, B, right side).
Ro26	4	0.57	type(A, signboard), color(A, white).
Ro27	3	0.43	type(A, signboard), form(A, B, other materials, middle height).
Ro28	12	1.73	form(A, extended shape, copper plate, B).
Ro29	5	0.72	type(A, eave of hirairi), position(A, B, left side), color(A, darkgreen).
Ro30	4	0.57	type(A, eave of hirairi), position(A, B, middle), form(A, C, copper plate, low height).
Ro31	13	1.88	color(A, colorless).
Ro32	4	0.57	form(A, B, steel, tall height).
Ro33	24	3.47	type(A, gutter), color(A, lightbrown).
Ro34	8	1.15	type(A, equipment), position(A, B, left side).
Ro35	6	0.86	type(A, equipment), form(A, B, steel, low height).
Ro36	27	3.91	color(A, brown), form(A, line, B, low height).
Ro37	6	0.86	position(A, B, middle), color(A, brown), form(A, C, wooden, low height).
Ro38	5	0.72	position(A, B, left side), color(A, darkbrown), form(A, C, wooden, tall height).
Ro39	4	0.57	color(A, Combination of plural colors), form(A, B, paper, low height).
Ro40	10	1.44	form(A, plane of wood-grain pattern, B, low height).
Ro41	4	0.57	color(A, white), form(A, oblong plane, B, low height).
Ro42	3	0.43	position(A, B, right side), form(A, oblong plane, paper, C).
Ro43	7	1.01	color(A, brown), form(A, solid with slit, wooden, B).
Ro44	4	0.57	color(A, lightbrown), form(A, solid with slit, wooden, B).
Ro45	4	0.57	position(A, B, right side), color(A, deep blue). position(A, C, low height).

The result of the rules extracted from analyses Case-A and Case-B described same discription and higher coverage for analysis of Case-B.

No	Pos	Cov	Description of rules and examples coversd by the rules
r-no1	15	2.08	type(A, storm shutter), form(A, B, wood plank, middle height).
r-no2	8	1.11	type(A, storm shutter).color(A, brown).
r-no3	6	0.83	position(A, B, middle).color(A, brown). form(A, plane with slit, wooden, C).
r-no4	6	0.83	form(A, oblong plane, B, middle height).

No : the rules marks the more than 1.1 perecentage(%). of coverage
Pos : coverage of rule(%).   Cov : number of positive examples covered by rule

Figure 9. The result of the rules extracted from Case-A and B, and also with the same coverage [Result-1(rule number on north side: Rg1-/ on south side: Ro1-)], and rules derived from Case-A and B, but with high coverage for Case- B [Result-2 (rule number on north side: r-ng1-/ on south side: r-no1-)]
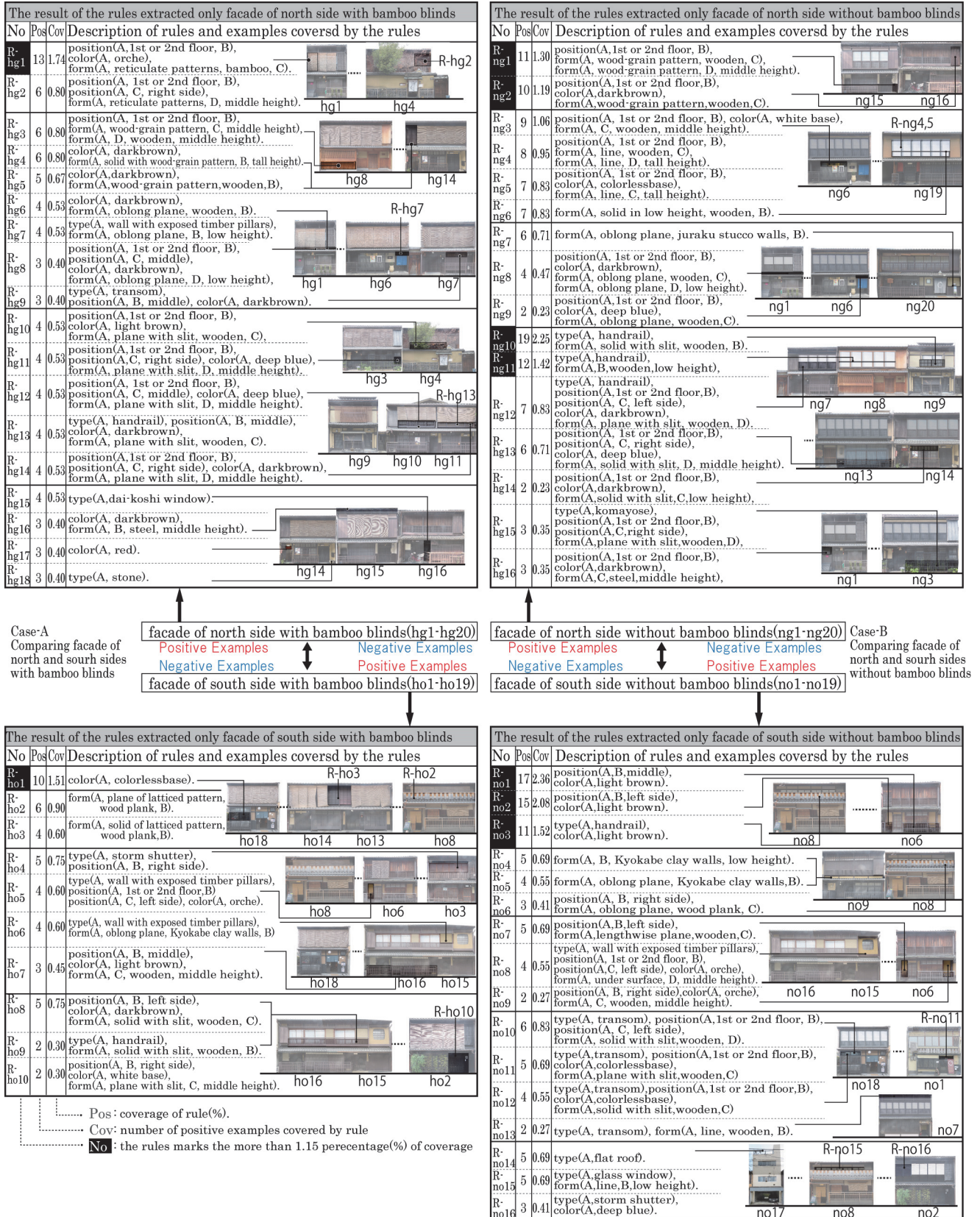
The result of the rules extracted only facade of north side with bamboo blinds

No	Pos	Cov	Description of rules and examples coversd by the rules
R-hg1	13	1.74	position(A,1st or 2nd floor, B), color(A, orche), form(A, reticulate patterns, bamboo, C).
R-hg2	6	0.80	position(A, C, right side), form(A, reticulate patterns, D, middle height).
R-hg3	6	0.80	position(A, 1st or 2nd floor, B), form(A, wood-grain pattern, C, middle height), form(A, D, wooden, middle height).
R-hg4	6	0.80	color(A, darkbrown), form(A, solid with wood-grain pattern, B, tall height).
R-hg5	5	0.67	color(A,darkbrown), form(A,wood-grain pattern,wooden,B),
R-hg6	4	0.53	color(A, darkbrown), form(A, oblong plane, wooden, B).
R-hg7	4	0.53	type(A, wall with exposed timber pillars), form(A, oblong plane, B, low height).
R-hg8	3	0.40	position(A, 1st or 2nd floor, B), position(A, C, middle), color(A, darkbrown), form(A, oblong plane, D, low height), type(A, transom).
R-hg9	3	0.40	position(A, B, middle), color(A, darkbrown).
R-hg10	4	0.53	position(A,1st or 2nd floor, B), color(A, light brown), form(A, plane with slit, wooden, C),
R-hg11	4	0.53	position(A,1st or 2nd floor, B), color(A, deep blue), form(A, plane with slit, D, middle height).
R-hg12	4	0.53	position(A, 1st or 2nd floor, B), color(A, C, middle), color(A, deep blue), form(A, plane with slit, D, middle height).
R-hg13	4	0.53	type(A, handrail), position(A, B, middle), color(A, darkbrown), form(A, plane with slit, wooden, C).
R-hg14	4	0.53	position(A,1st or 2nd floor, B), position(A, C, right side), color(A, darkbrown), form(A, plane with slit, D, middle height).
R-hg15	4	0.53	type(A,dai-koshi window).
R-hg16	3	0.40	color(A, darkbrown), form(A, B, steel, middle height).
R-hg17	3	0.40	color(A, red).
R-hg18	3	0.40	type(A, stone).

The result of the rules extracted only facade of north side without bamboo blinds

No	Pos	Cov	Description of rules and examples coversd by the rules
R-ng1	11	1.30	position(A,1st or 2nd floor, B), form(A, wood-grain pattern, wooden, C), form(A, wood-grain pattern, D, middle height).
R-ng2	10	1.19	position(A,1st or 2nd floor,B), color(A,darkbrown), form(A,wood-grain pattern,wooden,C).
R-ng3	9	1.06	position(A, 1st or 2nd floor, B), color(A, white base), form(A, C, wooden, middle height).
R-ng4	8	0.95	position(A, 1st or 2nd floor, B), form(A, line, wooden, C), form(A, line, D, tall height).
R-ng5	7	0.83	position(A, 1st or 2nd floor, B), color(A, colorlessbase), form(A, line, C, tall height).
R-ng6	7	0.83	form(A, solid in low height, wooden, B).
R-ng7	6	0.71	form(A, oblong plane, juraku stucco walls, B).
R-ng8	4	0.47	position(A, 1st or 2nd floor, B), color(A, darkbrown), form(A, oblong plane, wooden, C), form(A, oblong plane, D, low height).
R-ng9	2	0.23	position(A,1st or 2nd floor, B), color(A, deep blue), form(A, oblong plane, wooden,C).
R-ng10	19	2.25	type(A, handrail), form(A, solid with slit, wooden, B).
R-ng11	12	1.42	type(A,handrail), form(A,B,wooden,low height).
R-ng12	7	0.83	type(A, handrail), position(A,1st or 2nd floor,B), position(A, C, left side), color(A, darkbrown), form(A, plane with slit, wooden, D).
R-hg13	6	0.71	position(A, 1st or 2nd floor,B), position(A, C, right side), color(A, deep blue), form(A, solid with slit, D, middle height).
R-hg14	2	0.23	position(A, 1st or 2nd floor, B), color(A,darkbrown), form(A,solid with slit,C,low height),
R-hg15	3	0.35	type(A,komayose), position(A,1st or 2nd floor,B), position(A,C,right side), form(A,plane with slit,wooden,D),
R-hg16	3	0.35	position(A,1st or 2nd floor, B), color(A,darkbrown), form(A,C,steel,middle height),

Case-A
Comparing facade of north and sourh sides with bamboo blinds

facade of north side with bamboo blinds(hg1-hg20)
Positive Examples — Negative Examples
Negative Examples — Positive Examples
facade of south side with bamboo blinds(ho1-ho19)

facade of north side without bamboo blinds(ng1-ng20)
Positive Examples — Negative Examples
Negative Examples — Positive Examples
facade of south side without bamboo blinds(no1-no19)

Case-B
Comparing facade of north and sourh sides without bamboo blinds

The result of the rules extracted only facade of south side with bamboo blinds

No	Pos	Cov	Description of rules and examples coversd by the rules
R-ho1	10	1.51	color(A, colorlessbase).
R-ho2	6	0.90	form(A, plane of latticed pattern, wood plank, B).
R-ho3	4	0.60	form(A, solid of latticed pattern, wood plank,B).
R-ho4	5	0.75	type(A, storm shutter), position(A, B, right side).
R-ho5	4	0.60	type(A, wall with exposed timber pillars), position(A, 1st or 2nd floor,B), position(A, C, left side), color(A, orche).
R-ho6	4	0.60	type(A, wall with exposed timber pillars), form(A, oblong plane, Kyokabe clay walls, B)
R-ho7	3	0.45	position(A, B, middle), color(A, light brown), form(A, C, wooden, middle height).
R-ho8	5	0.75	position(A, B, left side), color(A, darkbrown), form(A, solid with slit, wooden, C).
R-ho9	2	0.30	type(A, handrail), form(A, solid with slit, wooden, B).
R-ho10	2	0.30	position(A, B, right side), color(A, white base), form(A, plane with slit, C, middle height).

Pos: coverage of rule(%)
Cov: number of positive examples covered by rule
No: the rules marks the more than 1.15 perecentage(%) of coverage

The result of the rules extracted only facade of south side without bamboo blinds

No	Pos	Cov	Description of rules and examples coversd by the rules
R-no1	17	2.36	position(A,B,middle), color(A,light brown).
R-no2	15	2.08	position(A,B,left side), color(A, light brown).
R-no3	11	1.52	type(A,handrail), color(A,light brown).
R-no4	5	0.69	form(A, B, Kyokabe clay walls, low height).
R-no5	4	0.55	form(A, oblong plane, Kyokabe clay walls,B).
R-no6	3	0.41	position(A, B, right side), form(A, oblong plane, wood plank, C).
R-no7	5	0.69	position(A,B,left side), form(A,lengthwise plane,wooden,C).
R-no8	4	0.55	type(A, wall with exposed timber pillars), position(A, 1st or 2nd floor, B), position(A,C,left side), color(A, orche), form(A, under surface, D, middle height).
R-no9	2	0.27	position(A, B, right side),color(A, orche), form(A, C, wooden, middle height).
R-no10	6	0.83	type(A, transom), position(A,1st or 2nd floor, B), position(A, C, left side), form(A, solid with slit,wooden, D).
R-no11	5	0.69	type(A,transom), position(A,1st or 2nd floor,B), color(A,colorlessbase), form(A,plane with slit,wooden,C)
R-no12	4	0.55	type(A,transom),position(A,1st or 2nd floor,B), color(A,colorlessbase), form(A,solid with slit,wooden,C)
R-no13	2	0.27	type(A, transom), form(A, line, wooden, B).
R-no14	5	0.69	type(A,flat roof).
R-no15	5	0.69	type(A,glass window), form(A,line,B,low height).
R-no16	3	0.41	type(A,storm shutter), color(A,deep blue).

Figure 10. Rules each extracted from Case-A or B with no same descriptions of rules between two analyses [Result-3]
rule number on north side in Case-A: R-hg1-/ Rule number on south side in Case-A: R-ho1-
rule number on north side in Case-B: R-ng1-/ Rule number on south side in Case-B: R-no1-

4. Discussion

4-1. CHARACTERISTICS OF COMPOSITION ELEMENTS EXCLUDED BAMBOO BLINDS

Rules for both sides with and without bamboo blinds extracted from analyses Case-A and B with exactly the same descriptions in category of pattern [Result-1], may be said to indicate characteristics of composition elements in the facade on both sides where sections with bamboo blinds have been excluded. These rules yield the following as the main differences between composition elements on the two sides. First, in terms of form, is (1) under surface, followed by six in terms of type: (2) spandrel wall, (3) wall, (4) shutter box, (5) projecting lattice window, (6) signboard, and (7) eave for type (Figure 11).
(1)Under surface: Many walls on the north side have a plaster finish, many recently rebuilt building walls on the south side are characterized as composed of materials such as Kyokabe clay walls, steel, or mortar.
(2) Spandrel wall: Major differences in material are seen on the both sides, but spandrel walls on the north side are often found to be on the left side on the facade and colored dark brown or brown, while spandrel walls on the south side are seen with different characteristics in the middle and are dark brown or deep blue in color.
(3) Wall: Regarding differences between walls with exposed timber pillars on either side, planking with a wood-grain pattern is used on the north side, while Kyokabe clay walls with no patterns are used on the south side.
(4) Shutter box: On the north side, shutter box are often placed on the right side on the facade, on the other hand, on the south side they are placed on the left side on the facade.
(5) Projecting lattice window: Projecting lattice windows in the facades on the north side include both Oyako-lattices and Shimotaya-lattices and have deep blue and dark brown color. On the other hand, the projecting lattice windows on the south side have only Shimotaya-lattices, and a frequent rule is that they have a deep blue color.
(6) Signboard: On the north side signboards are dark brown in color and are often placed on the left side. On the other hand, on the south side, signboards are often white and placed on the right side.
(7) Eaves: A characteristic of both sides is dark green eaves. Those on the north side utilize extended shape of bellows and roof tiles, while those on the south side use massive extended shape and copper plate.

Peculiar characteristics with no differences other than those above on the north side are wing walls, plantings, cascade glazing, enclosures, posts, advertisements, and nameplates. These installations are not essential constituents of buildings. On the other hand, on the south side there are composition elements that are colorless and equipment; in other words, glass and composition elements using modern materials such as those found in steel facilities and equipment.

4-2. CHARACTERISTICS OF RULES WITH HIGHER COVERAGE WITHOUT BAMBOO BLINDS

As for rules with higher coverage in the whole facade without bamboo blinds in category of pattern [Result-2], the rules for the facades on the north side have characteristics of wooden composition elements with cross lines, composition elements that are dark brown in color and have a wood-grain pattern placed on the right side, flesh-colored composition elements placed on either the left or right (Figure 12). Composition elements with cross lines is thought to be seen in cascade glazing

in building g5 (Figure 13). Wood-grain pattern with dark brown in color is thought to be a mainly seen in second-floor storm shutters, and flesh-colored composition elements is thought to be the characteristic of plaster-finish walls.

The facade on the south side, the characteristic is storm shutters, plane with slit in brown color, oblong plane with middle height. The facade on the south side are said to frequently have these composition elements installed on the inside with bamboo blinds.

4-3. DIFFERENCES IN RULES APPLYING ONLY TO THE FACADE WITHOUT BAMBOO BLINDS

There are four differences in the characteristics of rules in category of pattern [Result-3], corresponding only to facades on both sides without bamboo blinds: (1) handrails, (2) oblong plane and (3) linear shapes in terms of form, and (4) colorless bases in terms of color (Figure 14). Discussion of differences in these rules is as follows:
(1) Handrails: The facade without bamboo blinds on the north side is often dark brown in color. In contrast, on the south side, there are only ones that are light brown in color, although they are not characterized by a focus on handrail form. The handrail in building ho8 is an example (Figure 15).
(2) Oblong plane: The facade without bamboo blinds on the north side, Juraku stucco walls are often seen, while on the south side, Kyokabe clay walls are common, so there is a clear difference in wall material.
(3) Linear shapes, (4) Colorless base: The facade without bamboo blinds on the north side characterized linear composition elements tall in height, and have flat slits and three-dimensional slits, with various depths for slit-shaped composition elements. In contrast, the facade without bamboo blinds on the south side, composition elements that are low in height, such as wooden transoms and glass windows 450 mm or shorter in height, often have linear shapes or colorless bases.

4-4. DIFFERENCES IN RULES APPLYING ONLY TO THE FACADE WITH BAMBOO BLINDS

As for differences in rules in category of pattern [Result-1, 3] applying only to the facade with bamboo blinds as follows (Figure 16):
(1) Handrails: Handrails in the facade on the north side are seen to characteristic of a flat with slit form, while handrails on the south side are seen to be different with a three-dimensional slit. Bamboo blinds on the north side are on the same plane as buildings, while on the south side, either there are bamboo blinds on the second floor, and handrails are seen to be extending out from the outer walls of buildings in building o8 (Figure 15).
(2) Patterns: A wood-grain pattern is frequently seen on the north side, while a lattice pattern is frequently seen on the south side. If there are also not bamboo blinds, the differences are arised in the patterns of composition elements, such as shutter boxes.
(3) Transoms are characterized by being dark brown and arranged in the middle of facade with bamboo blinds. In contrast, on the south side, regardless of whether or not there are bamboo blinds, if transoms have a white background (that is, if glass is not used), then the characteristics is found on the left side.
(4) Plane with slit are often placed in the right side on either facades of the north and south sides. Furthermore, they are seen on the north side on composition elements of various colors, including light brown, deep blue, and brown, and are 450 mm or taller in height. In contrast, on the south side, the characteristic of composition elements is 450 mm or less in height, when they are colored deep blue or brown.
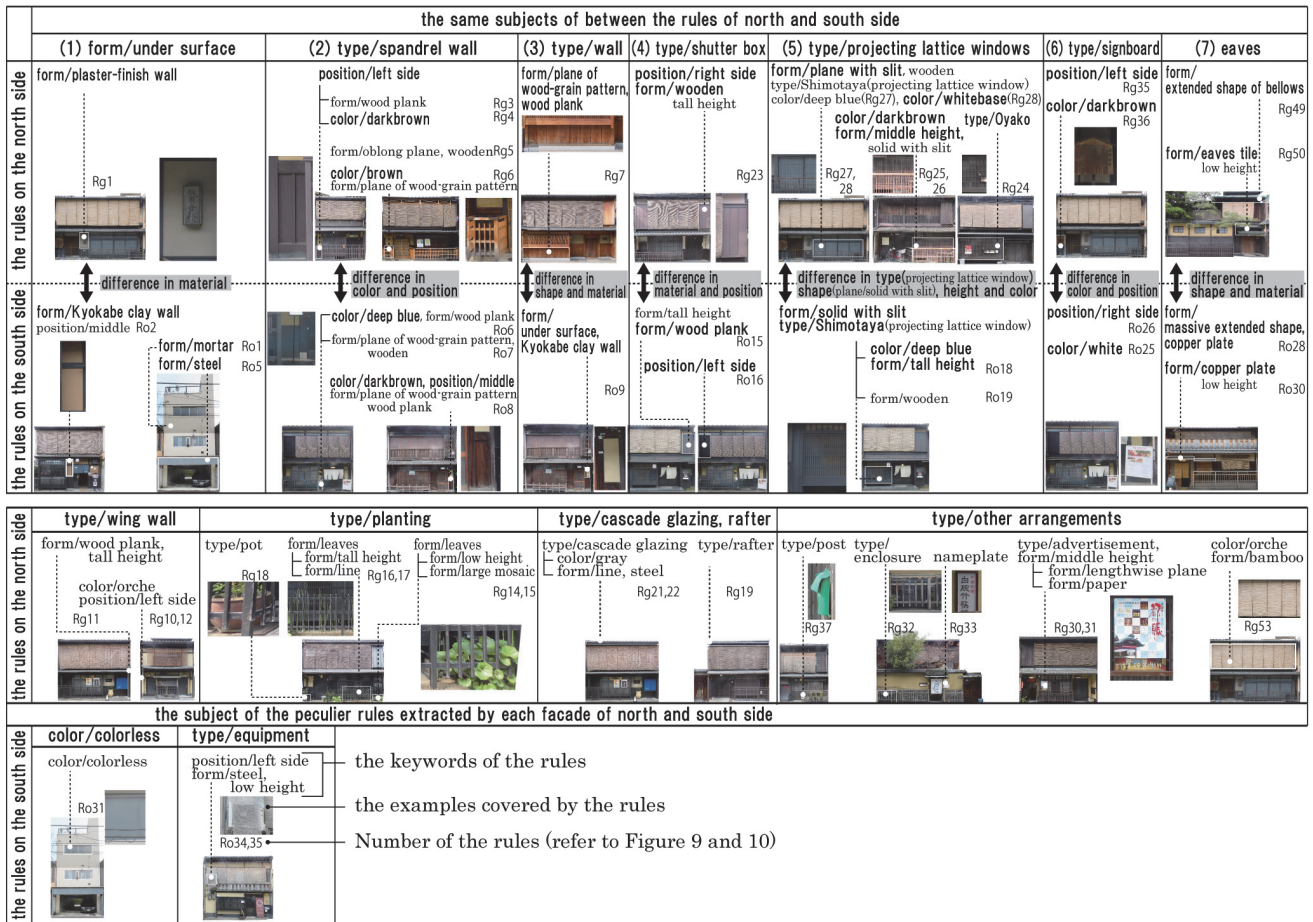
Figure 11. The characteristics of rules extracted from analyses Case-A (with bamboo blinds) and Case-B (with bamboo blinds), and also with the same coverage (Higher level: rules extracted with differences between both sides, Lower level: peculiar rules extracted from each sides of facade)
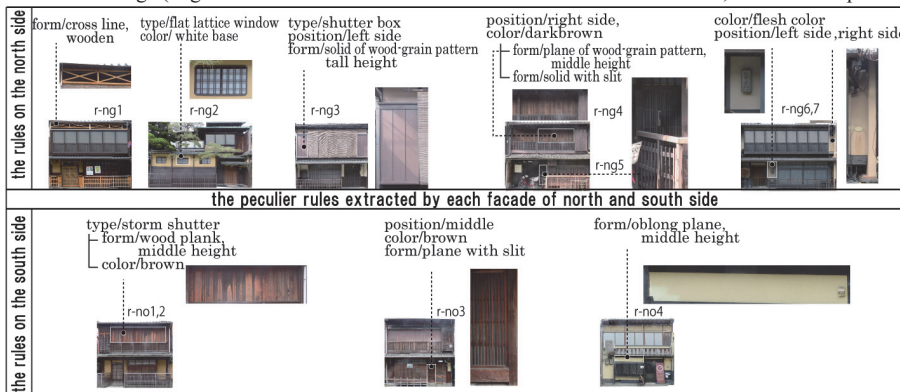

Figure 12. The characteristics of rules with higher coverage without bamboo blinds

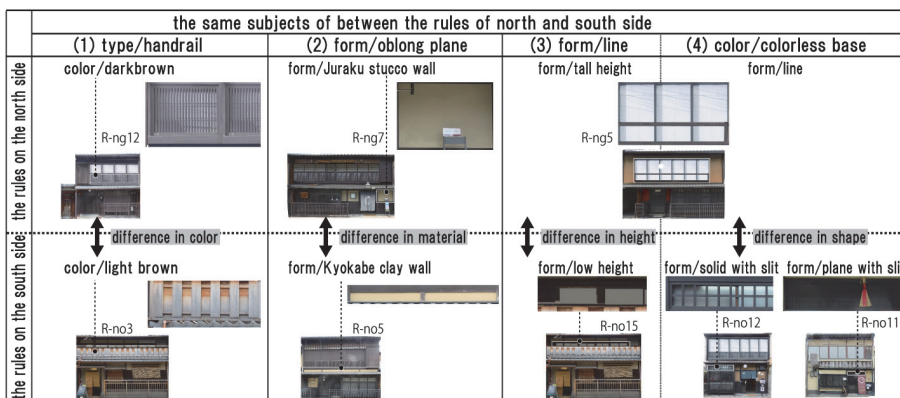Figure 13. The facade of g5 having cascade glazing with cross lines

Figure 14. Differences in the characteristics of rules without bamboo blinds

Figure 15. The facade of ho8 having a handrail colored in light brown

Figure 16. Results for rules seen only in facades on both sides with bamboo blinds
(Four differences in facade composition elements shown on both sides)

4-5. CHARACTERISTICS OF COMPOSITION ELEMENTS WITH HIGH COVERAGE

Rules extracted from the facades on both sides by analyses Case-A and B that are high in coverage may be said to be peculiar rules frequently included in all facades. Here, rules with coverage of more than 1.15% are subject to discussion (rule numbers with black background color in Figure 9, 10). Examples of composition elements corresponding to these rules are indicated in each sides of north and south of the whole facade, follows is a discussion of the characteristics of overall facade. What is a discussion of the characteristics of overall facade with

bamboo blinds (Figure 17).

Composition elements with high coverage in north side are characterized by composition elements greatly varying in type, color, and form. The characteristics of types are plaster walls, plant arrangements, and plank spandrel walls on the left side of the facade. And there are many composition elements colored in deep blue and formed by plane with slit, and formed latticed pattern. In addition, many of these composition elements show characteristics of those making up part of all buildings, as well as being found in installations. On the other hand, on the south side include composition elements belonging to architectural composition elements such as transoms colored in white base

Figure 17. Summary of the characteristics of facade on both sides with bamboo blinds

Figure 18. Summary of the characteristics of facade on both sides without bamboo blinds

and formed by solid with slit, line and plane of wood-grain pattern are present across entire frontages. In addition, colors are characterized by uniformity, whether light brown or colorless. From this, it was possible to show clear differences in facades on each side: diverse facades on the north side with a variety of composition elements scattered throughout the whole facade and uniform townscapes on the south side with architectural composition elements; horizontal elements formed by extended shape of eaves, having the horizontal regularity of the size for the entire frontages of buildings with their uniform color.

Next is a discussion on characteristics of the facade without bamboo blinds (Figure 18). On the north side, there are cross lines, flat lattice windows colored in white color based, plane of wood-grain patterns colored in dark brown, and handrails formed by solid with slit. In contrast, the south side is characterized by storm shutters with brown colors and light brown composition elements. Consequently, there are differences between the north side with their characteristic variety of form and south side with their uniform color.

The differences are found between north and south sides considering whether or not there were bamboo blinds. The facade of north side has a variety of types with bamboo blonds, in contrast, a variety of form without bamboo blonds. The facade of south side has with their uniformity and horizontal regularity, in contrast, with their uniform color without bamboo blinds.

Conclusion

In this study, we analyzed the characteristics of the facade on both sides, considering whether or not there were bamboo blinds in the Gionshinbashi district using ILP. We made the following findings: (1) the characteristics of the whole facade on both sides with bamboo blind sections excluded having individual differences among seven differences of composition elements: under surface, spandrel walls, walls with exposed timber pillars, shutter boxes, projecting lattice windows, signboards, and eaves; (2) the characteristics of rules with higher coverage without bamboo blinds are indicated the elements, such as storm shutter, installed on the inside with bamboo blinds, and no differences between both sides; (3) the characteristics of facade without bamboo blinds having differences between four composition elements: handrails, oblong plane, line shapes, and colorless bases; (4) the peculiar characteristics of facade with bamboo blinds having peculiar differences among four differences of composition elements: patterns and handrails, transoms and planes with slits.

Furthermore, based on rules with high coverage frequently appearing on the facades on both sides, it was possible to find the differences in whole facades on both sides, whether or not there were bamboo blinds: [1] the facade on the north side are composed with various types of composition elements, in contrast to it, the facade on the south side are composed with architectural composition elements having the horizontal regularity of the size for the entire frontages of buildings with their uniform color with bamboo blinds, and [2] on the north side with their characteristic variety of form, in contrast to it, on the south side with their uniform color without bamboo blinds.

Endnotes

1. ILP is a machine learning system based on first-order logic, which executes inductive reasoning.
2. Composition elements are extracted referencing "structure," "roof and eaves," "walls," "materials," and "color" per exterior style described in the "Kyoto Traditional Architecture Preservation Related Municipal Ordinance, Gionshinbashi Traditional Architecture Preservation District Preservation Plan" by the Landscape Policy Division of Kyoto City Government Urban Planning Bureau.
3. Reference was made to Table 2.1 "Standards for Building Exterior Style, Material and Color" on "Kyoto Traditional Architecture Preservation Related Municipal Ordinances, Gionshinbashi Traditional Architecture Preservation District Preservation Plan" by the Landscape Policy Division of Kyoto City Government Urban Planning Bureau.
4. An "is-a hierarchies" based on the generalized inclusion property of abstract representation is established as background knowledge beforehand.
5. In this study, an expression abstracting types of each attributes is provided to set an inclusion property for the "is-a hierarchies." Their relationship is described using an implication symbol ":-." Specific expression descriptors and values for composition elements in Figure 4 to 7 are substituted into the right side, and their abstract representations are substituted into the left side.
6. In this paper, one of the versions of Progol, ALEPH ver.5, was used. ALEPH was implemented by S.H. Muggleton and L. De Raedt in Prolog based on the Progol algorithm. Input data to Progol consist of a set of positive example, a set of negative example, a set of background knowledge, and mode declarations used by Progol to guide the prosess of constructing a generalization from its examples. From these data, hypothesis are constructed.
7. Coverage indicates what percentage of all examples is explained by a hypothesis extracted rule.

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ACTIVITY REPORTS OF THE INSTITUTE OF TURKISH CULTURE STUDIES

4th International Conference on Archi-Cultural Interactions through the Silk Road

The 4th International Conference on Archi-Cultural Interactions through the Silk Road, co-sponsored by the International Association of Silk Road Universities (iaSU) and Mukogawa Women's University with the joint sponsorship of Bahcesehir University (Istanbul, Turkey), was held at Mukogawa Women's University's Kami-Koshien Campus from July 16, 2016 (Saturday) to July 18, 2016 (Monday).

iaSU is an association of universities established for promoting exchange between universities in the various regions of the "Silk Road." It includes Mukogawa Women's University and Bahcesehir University at the two ends of the ancient trade route. The association seeks to contribute to the peace and prosperity of countries and regions along the Silk Road by promoting wide-ranging research on lifestyles, technologies, and cultures along the route, with an emphasis on architecture, elucidating the points in common, and creating mutual understanding between those countries.

The international conference drew 82 participants from nine countries, including researchers, designers, and engineers engaged in research on architecture, cities, and landscapes in the Silk Road regions. The program included three keynote lectures and other invited talks, student poster sessions, a performance of the tea ceremony, general research presentations (52 from eight countries), and a one-day bus tour of Nara. The event fostered vigorous discussions on the architecture, lifestyles, technologies, and cultures of the Silk Road countries and regions.

Conference Poster

Opening Ceremony

Conference Program

	Saturday, July 16, 2016					Sunday, July 17, 2016				Monday, July 18, 2016
	Koshien Hall		Architecture Studio			Koshien Hall		Architecture Studio		
	Lounge	West Hall	Presentation Room	East Studio		Lounge	West Hall	Presentation Room	East Studio	
9:00	Registration 9:00-9:30				9:00					Nara 1-Day Bus Tour
		Opening Ceremony 9:45-11:00								
10:00					10:00		Session W3 115-119 10:20-12:00	Session P3 206-209 10:20-11:40	Session E3 409-413 10:20-12:00	
11:00		Keynote Lecture 1 11:00-12:00 Dr. Kosei Morimoto Abbot Emeritus Todaiji Temple			11:00			Break		
12:00	Welcome Reception 12:00-13:20				12:00	Lunch 12:00-13:00				
13:00		Session W1 101-105 13:20-15:00	Session P1 111-114 13:20-14:40	Session E1 301-304 13:20-14:40	13:00			Session P4 405-408 13:00-14:20	Session E4 414-416 13:00-14:20	
14:00					14:00			Break	Break
			Break	Break				Session P5 305-308 14:40-16:00	Session E5 417-419 14:40-16:10
15:00		Break			15:00					
		Session W2 106-110 15:20-17:00	Session P2 201-205 15:20-17:00	Session E2 401-404 15:20-16:40						
16:00					16:00			Break	Break	
								Keynote Lecture 3 16:30-17:30 Dr. Hironobu Yoshida Professor Emeritus Kyoto University		
17:00		Break			17:00					
		Keynote Lecture 2 17:20-18:20 Dr. Mamoru Kawaguchi Professor Emeritus Hosei University						Closing Ceremony 17:30-18:00		
18:00					18:00		Dinner Party 18:10-19:30			
19:00					19:00					

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July 16 (Saturday)

The opening ceremony was held in the West Hall of Koshien Hall. First, a welcome chorus was performed by three students from Mukogawa Women's University's Architecture and Music Departments. These students were chorus club members of the university's affiliated junior high and high schools. Next, messages of greeting from the co-sponsors were given by Professor Shigeyuki Okazaki, Chair of the iaSU2016 JAPAN Committee (also chair of Mukogawa Women's University's Department of Architecture and Director of the university's Institute of Turkish Culture Studies), Mukogawa Women's University Chancellor, Ryo Okawara, Mukogawa Women's University President, Naosuke Itoigawa, Bahcesehir University Vice President, Ali Gungor, and Bahcesehir University Faculty of Architecture and Design Faculty Dean, Sema Soygenis. Furthermore, guest-of-honor Takeshi Imamura, the mayor of Nishinomiya City, gave a welcome message. Chair Okazaki introduced each overseas participant individually as he read out their names and asked them to stand. Finally, the mother and daughter duo of Pouri and Dalia Anavian came onstage and closed the ceremony with a musical performance of the santur, a traditional Persian hammered dulcimer.

After the performance, Dr. Kosei Morimoto, Abbot Emeritus of Todaiji Temple, gave the keynote lecture entitled "Islam and Buddhism: With a Historical Perspective." Referencing words found in the Koran and in the Buddhist texts such as Sutta Nipata and Dhammapada, Dr. Morimoto gave an overview of Islam and Buddhism through the lens of various topics such as Muhammed, justice, the afterlife, and jihad in Islam, and Siddhartha Gautama and principles of human existence in Buddhism. He then compared the features of Islam and Buddhism with diagrams, and finally commented on the modern challenge of "how to secure a peaceful space."

During the lunch break, a welcome party was held in Koshien Hall. Researchers from around the world gathered and interacted with each other.

Opening: Chorus Performance by MWU Students

Speech of Prof. Dr. Shigeyuki Okazaki (iaSU2016 JAPAN Organizing Committee Chair, MWU)

Speech of Mr. Ryo Okawara (Chancellor, MWU)

Speech of Prof. Dr. Naosuke Itoigawa (President, MWU)

Speech of Prof. Dr. Ali Gungor (Vice President, Bahcesehir University)

Speech of Prof. Dr. Sema Soygenis (Dean of Faculty of Architcture and Design, Bahcesehir University)

Speech of Mr. Takeshi Imamura (Mayor, Nishinomiya City)

Musical Performance: Performance of the Santour by Ms. Pouri Anavian (Santour Performer)

Musical Performance: Explanation of the Santour by Ms. Dalia Anavian

Keynote Lecture 1 "ISLAM AND BUDDHISM—WITH A HISTORICAL PERSPECTIVE" by Dr. Kosei Morimoto (Abbot Emeritus of Todaiji Temple, Ph.D. in Literature)

Dr. Kosei Morimoto (Abbot Emeritus of Todaiji Temple, Ph.D. in Literature)

Welcome reception

In the afternoon, the conference was divided into three venues: the West Hall, the Review Room, and the East Studio. A total of 25 general research presentations were held. The themes of the presentations were "Religion, Art and Cross-cultural Interactions," "Religion, Art and Cultural Formation," "Regional Characteristics of Living Space," "Modernization, Globalization and Urbanization," and "Technology and Sustainability." Architecture students also held a poster session showcasing their works.

In the evening, Professor Emeritus Mamoru Kawaguchi of Hosei University gave the keynote lecture entitled "Rationality & Nationality in Structural Design" in the West Hall. Using actual examples of Antoni Gaudi's upside-down hanging arches, Eduardo Torroja and Felix Candela's shell structures, Robert Maillart's concrete bridges, and Heinz Isler's concrete shells, Professor Kawaguchi surveyed the rationality of structural designs of the German school, Spanish school, and Swiss school. He observed that national, regional, and individual characteristics influence the rationality of structural design. Professor Kawaguchi also showed that Yoyogi National Gymnasium and Olympic Stadium Munich both employ the rationality of tension structures. He pointed out, however, that the former evokes the impression of Japanese traditional roofing architecture ("Oyane"), whereas the latter directly expresses the mechanism of tension structures.

Session at West Hall in Koshien Hall

Session at Presentation Room in Architecture Studio

Session at East Studio in Architecture Studio

Poster Session by MWU Students

Keynote Lecture 2 "RATIONALITY & NATIONALITY IN STRUCTURAL DESIGN" by Dr. Mamoru Kawaguchi (Professor Emeritus at Hosei University, Dr.-Eng., Dr.-Ing.E.h. Past President of IASS)

Dr. Mamoru Kawaguchi (Professor Emeritus at Hosei University, Dr.-Eng., Dr.-Ing.E.h. Past President of IASS)

July 17 (Sunday)

On the second day, the conference was again split into the three venues: the West Hall, Review Room, and East Studio. A total of 27 general research presentations were given centered on the themes of "Cultural Formation along the Silk Road," "Regional Characteristics of Living Space," "Landscape and Sustainability," "Modernization, Globalization and Urbanization," "Environmental Engineering that Underpins Culture," "Structural Technology that Underpins Culture," and "Design and Fabrication of Full-scale Model."

During the "Structural Technology that Underpins Culture" session, Professor Emeritus Akira Wada of the Tokyo Institute of Technology gave a lecture entitled "More Robust Building to Protect Our Children in the Seismically Active Country, Japan."

Invited Talk "MORE ROBUST BUILDING TO PROTECT OUR CHILDREN IN THE SEISMICALLY ACTIVE COUNTRY, JAPAN" by Dr. Akira Wada (Professor Emeritus of Tokyo Institute of Technology, Past President of Architectural Institute of Japan)

Dr. Akira Wada (Professor Emeritus of Tokyo Institute of Technology, Past President of Architectural Institute of Japan)

Professor Wada discussed the damages inflicted by the 2016 Kumamoto Earthquakes. He observed that although many scientific and technological advances, including progress in research on earthquake engineering, were made in the twentieth century, the current reality is that earthquakes have not ceased in the twenty-first century. He pointed out that Japan's Building Standards Act presents the minimal legal standard in the country, and that the construction of the buildings should be stronger. Old buildings and homes should be assessed for earthquake resistance and repaired to be more earthquake-proof.

In the tea room on the campus, the third-year architecture students voluntarily performed the Japanese tea ceremony, which many overseas researchers were able to experience. A poster session of works by architectural students was also carried out. In addition, the graduate students in architecture exhibited works of architectural origami and mosaic paintings. Exhibition of design projects by Mukogawa Women's University architecture faculty members, including Naruo Station, Bamiyan Cultural Centre, Petra Museum, and the Hisham's Palace project, were also presented.

Third-year architecture students voluntarily performed the Japanese tea ceremony
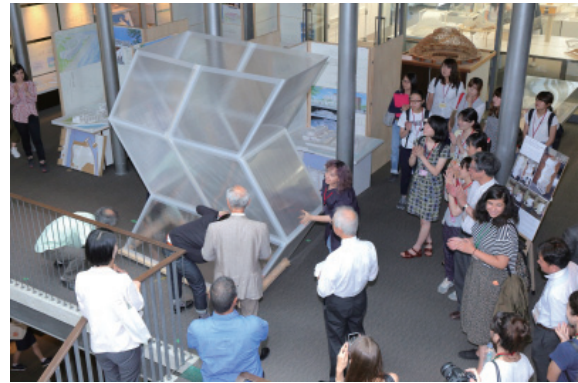
Demonstration of works of architectural origami
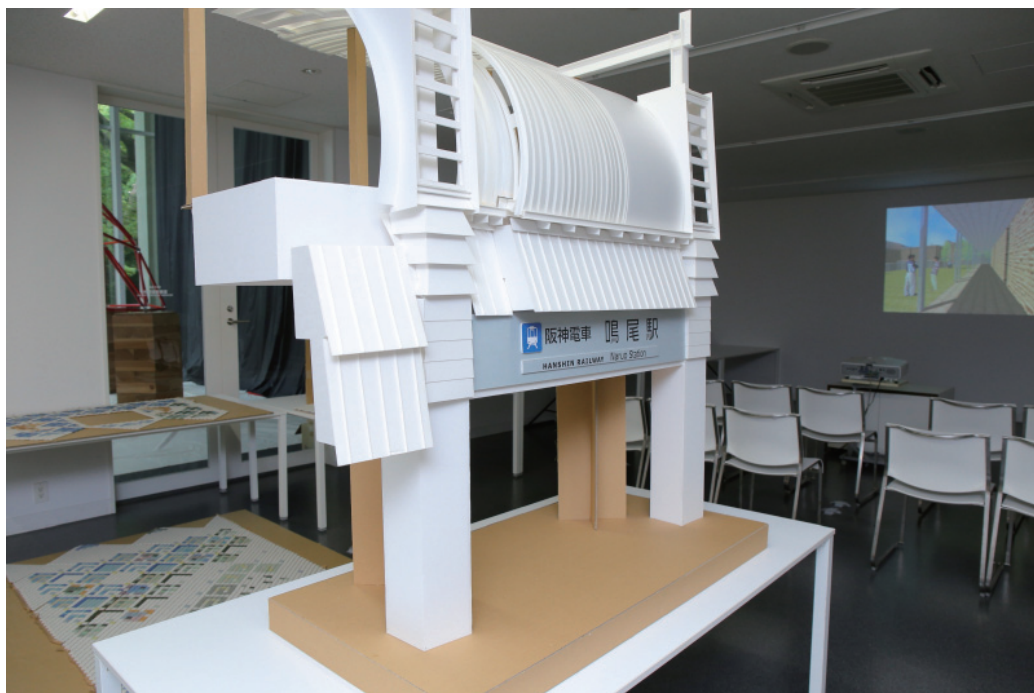
Exhibition of design projects by Mukogawa Women's University architecture faculty members

In the evening, Professor Emeritus Hironobu Yoshida of Kyoto University gave a keynote lecture entitled "The Sense of Beauty and View of Nature Found in Japanese Historical Gardens." Using a rich collection of photographs, Professor Yoshida gave an overview of the characteristics of Japanese gardens from ancient times to the present based on their historical changes. Along with presenting the diversity of Japanese garden styles, such as the Jonokoshi ruins, rock arrangements, meandering streams, Shinden-zukuri, Jodo style gardens as shown by Byodo-in, dry landscape gardens as shown by Saiho-ji temple, Shoin (drawing room), Sukiya (tea ceremony house), circuit style gardens as shown by Katsuta Imperial Villa, borrowing landscapes as shown by Entsu-ji temple, the full-scale nature seen in Murin-an, as well as the meaning of water and ponds, Professor Yoshida showed that in this undercurrent there is a consistent Japanese sense of beauty and view of nature.

Keynote Lecture 3 "THE SENSE OF BEAUTY AND VIEW OF NATURE FOUND IN JAPANESE HISTORICAL GARDENS" by Dr. Hironobu Yoshida (Professor Emeritus at Kyoto University, Dr.-Agric.)

Dr. Hironobu Yoshida (Professor Emeritus at Kyoto University, Dr.-Agric.)

Afterwards, the closing ceremony was held. Chair Okazaki expressed thanks to everyone who had contributed to the conference, and the desire to meet again at the next meeting. A commemorative photo was then taken of all the participants.

A dinner party was held in the evening. Mukogawa Women's University President Naosuke Itoigawa gave a greeting message, and Vice President Kazuyoshi Seguchi gave the toast. The gathering deepened friendship among researchers from around the world. Finally, Tsunetaka Miyoshi, Dean of the university's School of Human Environmental Sciences, gave the closing message to conclude the conference.

Commemorative Photo

Closing Speech of Prof. Dr. Shigeyuki Okazaki (iaSU2016 JAPAN Organizing Committee Chair, MWU)

Dinner Party

July 18 (Monday / Holiday)

The conference participants went on a one-day bus tour of Nara. They departed from Koshien Hall and first visited the Horyu-ji temple. There they studied the Horyu-ji Saiin Garan, Dai-Hozo-in, and Toin Garan. Next, they visited the Todai-ji temple and studied its Nandaimon (Great Southern Gate) and Daibutsuden (Great Buddha Hall) sites. The participants enjoyed the allure of Nara's architecture, which can be viewed at the eastern terminus of the Silk Road.

The three-day international conference thus successfully concluded. We sincerely thank everybody for their cooperation in making this event possible and for taking the time to attend it.

Horyu-ji temple

Horyu-ji temple

Todai-ji temple

Todai-ji temple

Todai-ji temple

Todai-ji temple

Inter Cultural Studies of Architecture (ICSA) in Japan 2016

In accordance with the general exchange agreement between Mukogawa Women's University (MWU) and Bahçeşehir University (BAU), students and professors from BAU's Faculty of Architecture and Design joined us at Koshien Hall and the Architecture Studio on MWU's Kami-Koshien Campus from June 25 to August 2, 2016.

BAU students tackled second-, third- and fourth-year MWU student design projects. By participating in this program, they gained knowledge, learned techniques, and increased their awareness of architectural design. They also joined basic design studios of first-year MWU students and had the opportunity to experience traditional Japanese culture, such as Ikebana (Japanese flower arrangement under Ryuho Sasaoka, headmaster of the Ikebana Misho-ryu Sasaoka in Kyoto) and woodwork (with Sadahide Kanda, a master carpenter in Hyogo). They also participated in fieldwork on Saturdays, exploring the cities and architecture of Japan, such as Amanohashidate or the Itsukushima Shrine.

Participants
Professors: Associate Professor Murat Dündar, Instructor Belinda Torus
Students: Gülberk Günan, Nur Çelik, Sevim Ece Güner, Serra Nakiboğlu, Maral Ilgın Çelik, Sara A. Rachdan, Özge Öztürk, Merve Yıldırım, Hatice Suludere, Betülnur Hülagu

Chorus Performance by MWU Students in the Welcome Party on June 28.

Each BAU student gave a self-introduction in Japanese in the Welcome Party on June 28.

Courtesy Call on Nishinomiya Mayor Takeshi Imamura: July 1

Courtesy Call on Chancellor Ryo Okawara and President Naosuke Itoigawa of MWU: July 12

Architectural Design Studio I: Design of Small-scale Architectural Space through Combination of Planes 'A Student Hall'

Architectural Design Studio III: Rebuilding Hanshin Koshien Station with a Membrane-Structured Roof

Architectural Design Studio III: Rebuilding Hanshin Koshien Station with a Membrane-Structured Roof

Architectural Design Studio V: Paradise along Waterfront

Architectural Design Studio V: Paradise along Waterfront

BU and MWU Students experienced Ikebana under Headmaster Ryuho Sasaoka (Ikebana Misho-ryu Sasaoka)

Master Carpenter Sadahide Kanda instructing the BAU students in using a plane.

Visiting Itsukushima Shrine and Hiroshima Peace Memorial Park, Hiroshima: July 7

Conferring of certificate of completion in the Farewell Party: July 29

Commemorative photograph in the Farewell Party: July 29

Inter Cultural Studies of Architecture (ICSA) in Rome 2016

Based on the general exchange agreement between Mukogawa Women's University (MWU) and Bahcesehir University (BAU) signed on December 8, 2008, ten Japanese second-year master's degree students of architecture major visited the BAU International Academy of Rome from February 18, 2017 until March 2, 2017.

The purpose of "the ICSA in Rome" is to gain a deeper understanding of Western architecture and art. As a country with extensive cultural heritage and architecture, on which the construction techniques of the western world are based, Italy serves as the perfect location for this program. Building upon the historic background, the students were able to investigate the structure, construction method, spatial composition, architectural style, artistic desire owing by social conditions, and design intention of architects and artists for various buildings. This year's program focused on Ancient Roman architecture and sculpture, early Christian architecture, Renaissance architecture and sculpture, and Baroque architecture and sculpture.

Before the ICSA in Rome trip, the students attended seminars in order to study about visit places, and gave a presentation about the things that they studied. Through this trip, they were able to deepen their understanding about the architecture and art, measuring the height and span of architecture, drawing sketches and giving a presentation on some visit sites. Here is the report.

Participants

Professors: Shigeyuki Okazaki, Yuuka Nakamura
Students: Chinatsu Ito, Yasue Imagawa, Komika Imaji, Aya Ozaki, Nanae Ushio, Eriko Okita,
      Momo Kinugawa, Hiromi Suzuki, Yuki Takata, Natsuki Tani

Schedule

February 18	Departure from Kansai International Airport for Rome
	Arrival at Rome, Fiumicino Airport via Helsinki-Vantaa Airport
February 19	Ancient Roman architecture tour
February 20	Visit to Bahcesehir University International Academy of Rome
	Early Christian architecture tour in Rome
February 21	Renaissance architecture and Baroque architecture tour in Rome
February 22	Ancient Roman architecture and Renaissance architecture tour in Rome
February 23	Tivoli tour and visit to Borghese Gallery in Rome
February 24	Vatican tour
February 25	Pompeii and Naples tour
February 26	Assisi and Arezzo tour
February 27	Florence tour
February 28	Continuation of Florence tour
March 1	Departure from Fiumicino Airport for Japan
March 2	Arrival at Kansai International Airport via Helsinki-Vantaa Airport

February 18

After departure from Kansai International Airport, we arrived at Fiumicino Airport in Rome via Helsinki-Vantaa Airport. We met Dr. Murat Dündar, the Vice Dean of BAU's faculty of architecture and design and Dr. Belinda Torus, the Lecture of BAU, at the airport.

Fiumicino Airport Dr. Morat & Dr. Belinda with the exchange students at Fiumicino Airport

February 19

Today, we visited the historical area of Rome, a world heritage. Students had the opportunity to see an extensive amount of the Ancient Roman architecture, including the Colosseum, Palatine Hill, Roman Forum, Forum of Trajan, Trajan's Markets, Marcello Theatre, Casa dei Crescenzi, Templum Portunus, and the Temple of Hercules Victor, which the students sketched. While at the Colosseum, Forum of Trajan and Marcello Theatre, some students gave a presentation on Roman architecture. Between the impressive works, on presentations, and sketching, the students deeply felt the greatness of Roman architecture.

Colosseum

Trajan's Markets

February 20

We visited Mrs. Francesca De Palo, Director of the BAU International Academy of Rome. She gave the students an informative lecture on Italian culture and art.

Afterward, we continued touring Rome, focusing on early Christian architecture. We had the opportunity to visit two of the four papal basilicas in Rome, the San Paolo fuori le Mura and San Giovanni in Laterano. Continuing to tour the Ancient Roman architecture, we visited Appia Antica. Built in the 4th century BC, Appia Antica is one of the most famous ancient roads in the world. Additionally, we visited Aqua Claudia, and Porta Maggiore which were Roman water bridges.

Japanese students met Mrs. Francesca De Palo, Director of BAU International Academy of Rome, and took the lecture from her.


San Paolo fuori le Mura

February 21

Today, we attended a guided tour to learn about Renaissance and Baroque architecture. We first, visited the Santa Maria Maggiore, another one of the four papal basilicas in Rome. Then we visited St. Andrew's at the Quirinal, designed by Bernini; San Carlo alle Quattoro Fontane, designed by Borromini; and Palazzo Barberini, designed by Bernini and Borromini. Japanese students were listening attentively to the guide. They measured the heights and spans of the buildings and sketched them under the instruction of Prof. Okazaki.

Afterward, we stopped by one of the most popular spots in Rome, the Trevi Fountain and Spanish Steps. We continued our tour toward the area of Piazza di Spagna. There, we visited Santa Maria dei Miracoli, the right side of the twin churches, located on Piazza dei Popolo. Here we also walked around the Santa Maria dei Popolo, facing Piazza dei Popolo. As the last stop the day, we saw the outside of Palazzo Massimo, which was designed by Michelangelo in the 16th century.
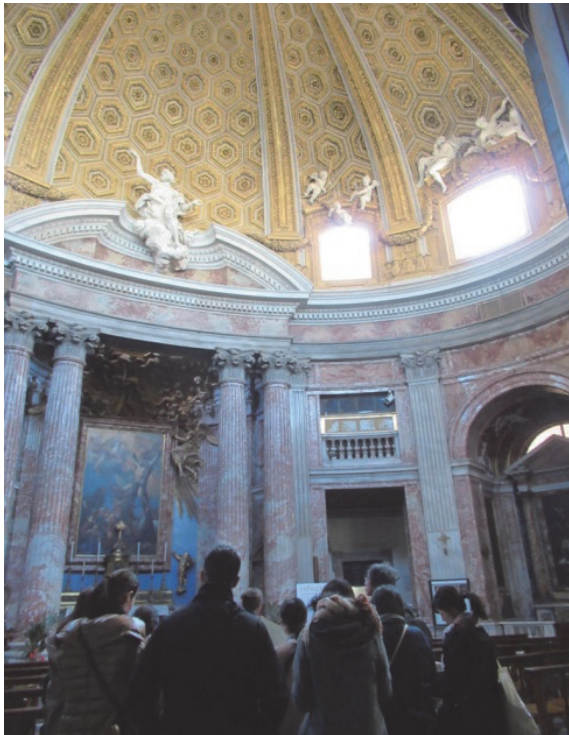
St. Andrew's at the Quirinal

Santa Maria Maggiore

Santa Maria dei Popolo

February 22

We spent today visiting Roman architecture, Renaissance architecture, and Baroque architecture. In the morning, we visited Chiesa del Gesù, or the Mother Church of the Society of Jesus, which had the first truly Baroque façade. Then we visited the Pantheon, where one student gave a presentation on the Pantheon. The students measured the heights and spans, and felt the large scale of Pantheon. Next, we stopped at the Chiesa di Sant'Ivo alla Sapienza, designed by Borromini in the 17th century. Unfortunately, we were only able to see the outside of the building because it was undergoing restoration. Then we visited Navona Square, Sant'Agnese in Agone, and Santa Maria della Pace. Borromini designed the façade, the cupola, and both sides of the bell towers of Sant'Agnese.

    After lunch, we visited the Baths of Caracalla and San Pietro in Montorio Tempietto, designed by Donato Bramante in the 16th century. Tempietto is considered one of the greatest works of High Renaissance architecture and became a template for later cupolas. In the evening, we visited Campidoglio, which was designed by Michelangelo. It is located in one of the Seven Hills of Rome. Next, we visited the much anticipated Santa Maria della Vittoria. This Roman Catholic church is known for its famous sculpture, Ecstasy of Saint Teresa, designed and completed by Bernini.

Piazza San Pietro, Vatican

Santa Maria della Vittoria

February 23

Today, we visited Tivoli, located in the eastern part of Rome, to see the Villa Adriana and Villa d'Este. Tivoli was known as a health resort in Ancient Rome. The first, stop the students made was to Villa Adriana, which was built and completed by the Roman Emperor Hadrianus in the year 133 AD. He combined the best elements of the architectural aspects of Egypt, Greece, and Rome in the form of an ideal city. The villa has over thirty buildings in a 1.2 km^2 site. Next, we visited a beautiful palace and garden, Villa d'Este. There, we toured the various magnificent fountains in the garden. After returning to Rome, we visited the Borghese Gallery. In this museum, there are important Baroque sculptures created by Berlini; David, Pluto and Persephone, and Apollo and Daphne.

Villa Adriana

Borghese Gallery

Villa d'Este

February 24

We spent today touring Vatican City. The first, stop was the Vatican Museum. There, the students appreciated the many valuable collections, such as the Last Judgment in the Sistine Chapel and Gruppo del Laocoonte in the Museo Pio-Clementino. Next, we climbed to the top of the Basilica di San Pietro to take a closer look at the cupola completed by Michelangelo. We toured the inside of the basilica and saw the Pietà, one of the most famous sculptures in the world and the altar with Bernini's canopy. After leaving the Basilica, we visited the Piazza San Pietro, located directly in front of Basilica di San Pietro. This elliptic plaza, 240m in width, was designed by Bernini.

After lunch, we visited Castel Sant'Angelo. This castle, which was originally commissioned by the Roman Emperor Hadrianus as a mausoleum for himself and his family, is now a museum. The construction of castle began in 135 and was completed in 139 AD. On the terrace of Castel Sant'Angelo, we were able to look out over the city of Rome.

Vatican Museum

Piazza San Pietro

February 25

Today, we traveled down south to take a tour of Pompeii tour. Pompeii, located in the suburbs of modern Naples, was an ancient city from the 7th century BC. The town prospered as a place for leisure during the Roman period. Pompeii's population during the Golden Age was said to be around 20,000 people, and thus, there are many ancient structures, villas, temples, forums, and theaters in the ancient town. However, Pompeii was destroyed during the volcanic eruption of Mount Vesuvius in 79 AD, which left the town buried under 4 to 6m of volcanic ash and pumice. After the Pompeii tour, we visited the Naples Museo Archeologic Nazionale, where there are many collections from Pompeii on display. Touring the museum, we were able to see many beautiful frescos and mosaics from ancient Pompeii. We also appreciated the Greek and Roman collections. The students were especially pleased to see one of famous mosaics in the world, The Alexander Mosaic, shown below.

House of Menander, Pompeii

The Alexander Mosaic, Naples Museo Archeologic Nazionale

February 26

Today, we visited Assisi, to tour the Basilica of Santa Chiara and Basilica of San Francesco. These Basilicas have been a UNESCO World Heritage Site since 2000. The Basilica of San Francesco is the mother church of the Roman Catholic Order of Friars Minor Conventural and is one of the most important places of the Christian pilgrimage in Italy. The upper church of the Basilica of San Francesco was built in Gothic architecture; while the lower church is in Romanesque architecture. After having lunch at Assisi, we visited Arezzo to see the Basilica of San Francesco, Chiesa di Santa Maria della Pieve, Piazza Grande and Duomo of Arezzon. Chiesa di Santa Maria della Pieve, which faces the Piazza Grande, has a characteristic façade with a five-arch lower floor, surmounted by three loggias, with the number of columns increasing with elevation. Similar to the Basilica of San Francesco in Assisi, it is a synthesis of the Romanesque and Gothic styles. The church's façade and apse was renovated in the 12th century. The interior was redesigned in Gothic style in the 13th century. After the visit in Arezzo, we departed for Florence.

Basilica of San Francesco, Assisi

Piazza Grande, Arezzo

February 27

Renaissance art and architecture bloomed in Florence. We began our two-day stay here by visiting Santa Maria Novella, which is well-known for its oldest drugstore, with a façade designed by Alberti. Then we visited Santa Croce to view the magnificent Gothic architecture designed in 1294. This church contains Michelangelo's tomb and Cappella de Pazzi, designed by Brunelleschi in 1430.

   After having a traditional Florence lunch at a restaurant, the students attended a restoration workshop at Santa Maria del Fiore. Here, in the atelier, the greatest stonemasons worked and Michelangelo carved the famous statue of David. The students learned about the techniques and art of masonry from a modern mason who works on protecting traditional works. Then we went inside the Baptistery of Saint John. Here the students were particularly moved by the amazing golden ceiling mosaics. We also toured the inside of the Basilica of Santa Maria del Fiore. This is the fourth largest Basilica in the world and is known for its giant cupola, completed by Brunelleschi, the first known architect of the Renaissance style. After leaving the Basilica, we went to the Museo dell' Opera del Duomo and appreciated displayed works related to Santa Maria del Fiore. Here there are famous works of the Renaissance, such as the Pieta by Michelangelo; the series of sculptures by Donatello; and East doors, or Gates of Paradise, by Lorenzo Ghiberti. Then we climbed through the narrow paths to arrive at the top of the cupola, and look out over the wonderful scenery of Florence. Before the day was over, we also climbed the bell tower of the Santa Maria del Fiore and enjoyed the beautiful view. From the top, we could even see the cupola.

Cappella de' Pazzi in Santa Croce, Florence

Santa Croce

The students enjoyed the view of Florence from the top of the bell tower of Santa Maria del Fiore

February 28

This was the second day at Florence and the last day of the exchange program. We began the day by visiting one of the most famous statues in the world, David by Michelangelo at Galleria dell' Accademia. This was one of the most prominent works during the Renaissance period. Michelangelo created this statue when he was only 26 years old. We also visited the four slave sculptures there. The next stop was the Laurenziana library in San Lorenzo. The students visited and sketched the Laurenziana library, which was designed by Michelangelo during 1524-1571. Here the students learned that the stairs between the reading room and the anteroom expressed a flow of waters and that Michelangelo created the central stairs in the image of a repeating an oval form, symbolizing stones melting and flowing.

After lunch, we visited the Basilica of San Lorenzo, designed by Brunelleschi. San Lorenzo is a great example of many of the keynote Renaissance architectural features, such as a proportional relationship between nave and aisle, an integrated system of column, arches, entablatures, and a relationship between column and pilaster. The Basilica of San Lorenzo is a large monastic complex that also contains other important architecture and works. This includes the Old Sacristy by Brunelleschi, with interior decoration and sculpture by Donatello, the Laurentian Library by Michelangelo, and the New Sacristy, based on Michelangelo's designs.

Then we visit the Sagrestia Nuova, or the New Sacristy, designed by Michelangelo. It is a small mausoleum, or a mortuary chapel for the Medici family. New Sacristy is the first example which dealt with all of architectural design and decoration by one artist. All aspects, from the niches and pilasters to the windows and a cupola, were placed with care and balance. They are unified with two gravestones facing each other. The statues display a gravestone, expressed four times each.

Restoration Workshop of Santa Maria del Fiore

The students sketched Santa Maria del Fiore at the rooftop of Museo dell' Opera del Duomo

Laurenziana library

New Sacristy in Basilica of San Lorenzo

March 1-2

On March 1st, the students thanked Dr. Murat for his program organization and bade him goodbye at Fiumicino Airport. After 14h of flight time with a layover in Helsinki, all members arrived at the Kansai International Airport in good spirits on the afternoon of March 2nd. The ICSA in Rome, program was a wonderful learning and cultural experience for the students.

Silk Road Culture and Architecture Lecture Series ＃04

Encounter with Other Cultures Along the Silk Road

Date： **June 4 (Saturday), 2016, 13:00～**
Venue： **The Industry Club of Japan Hall (Tokyo, Japan)**
Lecturers： **Dr. Kiyohide Saito (Specially Appointed Professor of Nara Women's University**
and Technical Advisor to the Archaeological Institute of
Kashihara, Nara Prefecture）
Dr. Kosei Morimoto (Abbot Emeritus of Todaiji Temple）
Performer： **FUJI (Saz Player)**

Encounter with Other Cultures Along the Silk Road, the forth lecture in the *Silk Road Culture and Architecture* series sponsored by Mukogawa Women's University Department of Architecture and Tokyo Center was held at the Industry Club of Japan Hall in Marunouchi, Tokyo on June 4 (Saturday), 2016. The speakers were Dr. Kiyohide Saito, specially appointed professor of Nara Women's University and technical advisor to the Archaeological Institute of Kashihara, Nara Prefecture, and Abbot Emeritus Kosei Morimoto of Todaiji temple in Nara. We were also fortunate to have FUJI (Yoshiyuki Fujii) to perform Turkish traditional music on the *saz*, a traditional stringed instrument of the region.

FUJI opened the afternoon program with a live performance on the *saz*, a traditional Turkish instrument once made from a horse skull with horsehair strings, but today is a long-necked instrument with a pear-shaped resonance box and six or seven steel strings. The most common stringed folk instrument in Turkey, the *saz* is popular throughout Turkey and surrounding areas. Singing to his own accompaniment, the audience was enthralled by the acoustics and the melodic tones of this classic instrument as it reverberated throughout the hall. FUJI also related colorful folktales associated with the songs he performed.

Dr. Kiyohide Saito then gave his talk entitled "World Heritage in the Eastern Mediterranean: Past and Present World Heritage Sites in Syria." After reviewing the long history of excavation, research, preservation, and renovation at Syrian archaeological sites, he went on to relate the sad state of world heritage sites in Syria today. Syria has many heritage sites of immense cultural value to world history, but unfortunately many of these sites have suffered extensive damage in the Syrian Civil War and as of 2013 have been placed on UNESCO's List of World Heritage in Danger. Focusing on the damaged sites, Dr. Saito first presented a broad introduction to the history and background of the ancient capital of Damascus, the caravan city of Palmyra, and other vulnerable sites, then detailed 3D measurement and modeling initiatives that have been undertaken to preserve these treasures of world heritage for posterity.

Dr. Kosei Morimoto then delivered a lecture entitled "Ali al-Tanukhi's Anthology 'Night Stories of the Islamic Empire': Bringing Early Islamic Society to Life." Recounting tales from "Stories to Remember: Essence of Conversation," a series of volumes translated by Dr. Morimoto, these are engrossing stories and anecdotes of the many people passing through Ali al-Tanukhi's courtroom in his capacity as a judge. Dr. Morimoto selected stories from the 11 volumes in the series that best illustrated early Islamic society and highlighted the relationship between Islam and Buddhism and other religions. Dr. Morimoto also described his own travels through Iraq, which he illustrated with his own photographs of archeological sites.

Opening address by Professor Okazaki, Head of the Department of Architecture

Mr. FUJI (Yoshiyuki Fujii) on the *saz*

Dr. Kiyohide Saito

Abbot Kosei Morimoto

Venue: Hall at The Industry Club of Japan

Silk Road Culture and Architecture Lecture Series ♯05

Christian Culture Along the Silk Road

Date：　　　　**February 4 (Saturday), 2017, 13:00〜**
Venue：　　　**The Industry Club of Japan Hall (Tokyo, Japan)**
Lecturers：　**Dr. Shiro Sasano (Professor Emeritus at the Tokyo Institute of Technology**）
　　　　　　　　Dr. Tomotoshi Sugimoto (Professor, Faculty of Letters, Keio University）
Performer：　**Mr. Yuji Tsunemi (Oud Player)**

Christian Culture Along the Silk Road, the fifth lecture in the *Silk Road Culture and Architecture* series sponsored by Mukogawa Women's University Department of Architecture and Tokyo Center was held at the Industry Club of Japan Hall in Marunouchi, Tokyo on February 4 (Saturday), 2017. This program featured presentations by Dr. Shiro Sasano, Professor Emeritus at the Tokyo Institute of Technology, and by Dr. Tomotoshi Sugimoto, Professor at Keio University, and a musical tutorial by Mr. Yuji Tsunemi, who will perform classical Arabic music on the *oud*.

Mr. Tsunemi provided the opening act with a remarkable performance on the Arabian *oud*, a plucked string instrument played throughout the Arab world (the Arabic term *oud* denotes a thin piece of wood and may refer to the thin strips of wood used for the back of the instrument). The sound of the *oud* vibrates within a gourd-shaped sound box made of thin 1-mm-thick wood staves, and the pegbox of the instrument is bent back at a sharp angle from the neck, similar to the Japanese *biwa*. Mr. Tsunemi demonstrated the classical music of Turkey and Syria, and also described the instrument and the different musical scales characteristic of Arabian music. The audience clearly appreciated the lyrical tones, evocative of another place and time, that reverberated throughout the hall.

Dr. Shiro Sasano then delivered a presentation entitled "Survived Prayer or a Stone Ark: Christian Architecture in Eastern Anatolia." In his talk, Dr. Sasano gave a detailed overview of church architecture in the historical / cultural region of eastern Anatolia, where some 800 Christian structures were erected over the centuries from ancient to modern times. He also outlined the belief systems (faith) and thinking associated with the different phases of architectural history. Dr. Sasano went into some detail on the evolution of churches and monasteries over the ages from the very beginning of Christian architecture accompanied by his own personal photographs of ruins and remains taken over a lifetime of archeological research.

We then heard from Dr. Tomotoshi Sugimoto, who spoke on the subject "Byzantine Church in the Holy Land Israel: Based on Recent Archeological Surveys." Dr. Sugimoto's lecture focused on the Byzantine Church in Israel—regarded at sacred turf by the three main monotheistic religions of Judaism, Christianity, and Islam—detailing the geographical and historical background of each period, and archaeological insight into the faith, beliefs, and thinking of believers. He elaborated on architectural transitions of representative churches throughout Israel, talked about Christian art and archaeological sites that have been excavated, and explained the evolution of church architecture that began with the initial establishment of Christianity.

Opening address by Professor Okazaki, Head of the Department of Architecture

Mr. Yuji Tsunemi on the *oud*

Dr. Shiro Sasano

Dr. Tomotoshi Sugimoto

Venue: Hall at The Industry Club of Japan

ITCS Seminar ♯01 (2016 Academic Year)

Localism that Transgresses Borders: Christian Architecture of Eastern Anatolia with a Focus on Armenian Architecture

Date：　　　　April 20 (Wednesday), 2016, 16:30～19:00
Venue：　　　 K-222, Koshien Hall
Lecturers：　 Dr. Shiro Sasano (Professor Emeritus at Tokyo Institute of Technology)

The Institute of Turkish Culture Studies' first seminar of the 2016 academic year was held at the Koshien Hall on April 20 (Wednesday), 2016. Dr. Shiro Sasano, Professor Emeritus at Tokyo Institute of Technology, was the invited speaker and gave a presentation titled "Localism that Transgresses Borders: Christian Architecture of Eastern Anatolia with a Focus on Armenian Architecture".

Dr. Sasano began with a general overview of the development of Armenian architecture and its associated issues. He next introduced the characteristics of Eastern Anatolia's early-, mid-, and late-stage architectural remnants in approximate chronological order. This discussion revealed some general trends in Eastern Anatolia's constantly changing historical architecture that accompanied transformations in the practice of prayer, including trends in various architectural structures such as basilica, inscribed cruciforms, and pendentive-type and squinch-type frames. Finally, doubts were raised about the "standard" perspective on the history of Western architecture and architectural language that is often taken for granted.

Dr. Sasano's lecture included abundant photos and even videos complete with commentary and music, which conveyed a sense of what it must be like at the sites. Furthermore, he related various anecdotes from his own research, giving the audience a glimpse of his life as a professor and researcher. It was a wonderful workshop that rekindled in the audience a sense of the richness, beauty, and depth of architecture.

Seminar Poster

Venue at Koshien Hall

ITCS Seminar ♯02 (2016 Academic Year)

Technologies for Measuring Cultural Assets, and the Utilization of the Outcomes of Such

Date：　　　**March 6 (Monday), 2017, 13:30～16:00**
Venue：　　　**K-222, Koshien Hall**
Lecturer：　　**Mr. Hiroshi Kiguchi (Senior Administrative Officer, Cultural Heritage Division, Ciba City Board of Education)**

The Institute of Turkish Culture Studies' second seminar of the 2016 academic year was held at the Koshien Hall on March 6 (Monday), 2017. Mr. Hiroshi Kiguchi from the Chiba City Board of Education, Cultural Heritage Division was the invited speaker and gave a presentation titled "Technologies for Measuring Cultural Assets, and the Utilization of the Outcomes of Such".

　Mr. Kiguchi first outlined the objectives of measuring cultural assets, the types of outcomes, and general preparedness. He then covered digital photographic surveying and 3D laser scanning as examples of recent trends in measurement technology. An overview of laser measurement was then presented, along with a discussion of the challenges involved in its application in areas such as buildings and constructions, topographical measurement and landscape study, disaster site record preservation, restoration and documentation of cultural assets, laser measurement of remains and stone walls, and measurement and physical modelling of relics. After a presentation of case studies from Afghanistan and Okinawa the lecture concluded with an overview of trends and challenges in the utilization of measurement outcomes.

　This field is experiencing rapid progress and steady technological advancement. As such, things which were just dreams in the past are now becoming reality. This current situation was illustrated by many high-quality photographs, maps, and videos. There was lively debate during the question and answer session and the lecture was declared a success by all. This proved to be an enlightening lecture which allowed all participants to become acquainted with the significance of the field of cultural asset measurement.

Seminar Poster

Venue at Koshien Hall

ITCS Seminar ♯03 (2016 Academic Year)

Architectural History, Preservation, and Maintenance of a Gandhara Site in Pakistan

Date ：   **March 14 (Tuesday), 2017, 13:30～16:00**
Venue ：   **K-222, Koshien Hall**
Lecturer ：   **Dr. Masaya Masui (Professor, Kyoto University)**

The Institute of Turkish Culture Studies' third seminar of the 2016 academic year was held at the Koshien Hall on March 14 (Tuesday), 2017. Dr. Masaya Masui, Professor at the Graduate School of Human and Environmental Studies, Kyoto University, was the invited speaker and gave a presentation titled "Architectural History, Preservation, and Maintenance of a Gandhara Site in Pakistan".

Dr. Masui began with an overview of the Gandhara Buddhist temple remains and a brief history of his own involvement at the site. Having now been working at the site since 1983, he detailed the goals and results of excavation at the Ranigat site, then related his own first-hand experience maintaining and preserving the site after the excavation work was done. Through close analysis of the stonework, masonry, material and structural features, Dr. Masui was able to identify structural transitions of temples at the site as well as morphological transitions of the stupas over time.

Based on his knowledge of preservation and conservation of archeological remains through case studies, Dr. Masui offered technical insights gleaned through actual restoration work carried out at the Ranigat site: fitting together corners, brackets, and other elements of stupas, capping, and so on. The presentation made for a very detailed yet fascinating seminar.

Seminar Poster

Venue at Koshien Hall

Dr. Burhan Koroglu and Mr. M. Agah Karliaga of Turkey's Bahcesehir University Civilization Studies Center Pay Courtesy Call on Chancellor Okawara and President Itoigawa

Date：April 23 (Friday), 2016

Representing Turkey's Bahcesehir University Civilization Studies Center, Dr. Burhan Koroglu and Mr. M. Agah Karliaga visited the university and made a courtesy call on Chancellor Okawara and President Itoigawa on April 23 (Friday). Dr. Burhan is a distinguished professor of Islamic philosophy and currently serves as General Manager of Turkey's satellite Al Jazeera television station. Recently, Dr. Burhan was in charge of producing an award-winning documentary titled "East to West" that has been picked up by broadcasters around the world.

Constructive and meaningful discussions were held on a wide range of topics including the history of Turkey and Japan, development of civilization, the position of Turkey and Japan in world affairs, and the significance of education for advancing world peace. The ongoing collaborative activities between Bahcesehir University and Mukogawa Women's University and prospects for further exchanges were also taken up for discussion during the meeting. Three students from Turkey, now in Japan pursuing masters degrees in architecture, were also present at the meeting. They demonstrated their language abilities in Japanese by severing as translators for the visiting professors.

Group photo

Annual Events　Apr. 2016- Mar. 2017

Date	Events
April 20, 2016	**ITCS Seminar #01 (FY2016)** "*Localism that Transgresses Borders: Christian Architecture of Eastern Anatolia with a Focus on Armenian Architecture*" (Dr. Shiro Sasano, Professor Emeritus at the Tokyo Institute of Technology)
April 23, 2016	**Dr. Burhan Koroglu and Mr. M. Agah Karliaga of Turkey's Bahcesehir University Civilization Studies Center, visited MWU.**
June 4, 2016	**"Silk Road Culture and Architecture" Lecture Series #04** "*Encounter with Other Cultures Along the Silk Road*" (Dr. Kiyohide Saito, Specially Appointed Professor of Nara Women's University and Technical Advisor to the Archaeological Institute of Kashihara, Nara Prefecture / Dr. Kosei Morimoto, Abbot Emeritus of Todaiji Temple / FUJI, Saz Player)
June 25-August 2, 2016	**Inter Cultural Studies of Architecture (ICSA) in Japan 2016**
July 16-18, 2016	**4th International Conference on Archi-Cultural Interactions through the Silk Road**
February 4, 2017	**"Silk Road Culture and Architecture" Lecture Series #05** "*Christian Culture Along the Silk Road*" (Dr. Shiro Sasano, Professor Emeritus at the Tokyo Institute of Technology / Dr. Tomotoshi Sugimoto, Professor, Keio University / Mr. Yuji Tsunemi, Oud Player)
February 18-March 2, 2017	**Inter Cultural Studies of Architecture (ICSA) in Rome**
March 6, 2017	**ITCS Seminar #02 (FY2016)** "*Technologies for Measuring Cultural Assets, and the Utilization of the Outcomes of Such*" (Mr. Hiroshi Kiguchi, Senior Administrative Officer, Cultural Heritage Division, Ciba City Board of Education)
March 14, 2017	**ITCS Seminar #03 (FY2016)** "*Architectural History, Preservation, and Maintenance of a Gandhara Site in Pakistan*" (Dr. Masaya Masui, Professor, Kyoto University)

OUTLINE OF THE INSTITUTE OF TURKISH CULTURE STUDIES

Organization

Position	Affiliation	Title	Name
Director	Department of Architecture	Professor	Shigeyuki Okazaki
Researcher	Department of Architecture	Professor	Yusei Tazaki
		Professor	Shigeki Tosu
		Professor	Satoshi Matsushita
		Professor	Kazuhiko Yanagisawa
		Associate Professor	Fumie Ooi
		Associate Professor	Noritoshi Sugiura
		Associate Professor	Toshitomo Suzuki
		Associate Professor	Hiroyuki Tagawa
		Lecturer	Akira Tanaka
		Lecturer	Hideaki Tembata
		Lecturer	Keisuke Inomata
		Lecturer	Tomoko Uno
		Lecturer	Junko Morimoto
		Lecturer	Sachiko Morishige
		Assistant Professor	Aya Yamaguchi
		Visiting Professor	Mamoru Kawaguchi
		Visiting Professor	Kunihiko Honjo
	Institute of Turkish Culture Studies	Professor	Shushi Sugiura
Visiting Researcher	Bahçeşehir University (Turkey) Faculty of Architecture and Design	Associate Professor	Murat Dündar
Assistant	Department of Architecture	Assistant	Yuna Tanaka
		Assistant	Yuuka Nakamura
	Institute of Turkish Culture Studies	Assistant	Beyza Nur Bozkurt
Secretariat	Secretariat Division of School of Human Environmental Sciences	Chief Clerk	Miyuki Nakaichi

Reviewers of *Intercultural Understanding*

Name	Title and Affiliation
Yasushi Asami	Professor, The University of Tokyo, Japan
Kunio Kato	Professor Emeritus at Kyoto University, Japan
Mamoru Kawaguchi	Professor Emeritus at Hosei University, Japan
Mitsuo Takada	Professor Emeritus at Kyoto University, Japan
Shuichi Hokoi	Professor Emeritus at Kyoto University, Japan
Kosaku Maeda	Professor Emeritus at Wako University, Japan
Minako Mizuno Yamanlar	Representative of NPO The Japanese-Turkish Friendship Association, Japan
Kazuya Yamauchi	Professor, Teikyo University, Japan
Hironobu Yoshida	Professor Emeritus at Kyoto University, Japan
Murat Dündar	Associate Professor, Bahçeşehir University, Turkey
Murat Şahin	Associate Professor, Özyeğin University, Turkey
Shigeyuki Okazaki	Professor, Mukogawa Women's University, Japan
Kazuhiko Yanagisawa	Professor, Mukogawa Women's University, Japan

Rules and Regulations of the Institute of Turkish Culture Studies (ITCS) at Mukogawa Women's University

(Establishment)
Article 1 The Institute of Turkish Culture Studies (hereinafter "the Institute") shall be located in Mukogawa Women's University (hereinafter referred to as "the University").
(2) The Institute shall be operated under the administration of the University's Department of Architecture for the time being.

(Objective)
Article 2 The objective of the Institute is as follows:
(i) to conduct comparative studies on life, technology, and culture centered on the architecture of Japan and Turkey as the east and west starting points of the Silk Road, and to clarify the cultural base common to both countries beyond their differences in history, climate, and so forth.
(ii) to conduct, by pursuit of the above-mentioned aims, extensive studies on life, technology, and culture centered on the architecture of neighboring Silk Road countries, clarify similarities among them, and contribute to new mutual understandings that promote the peace and prosperity of the Silk Road region.
(iii) to support international exchange of students predominately in the field of the human environment and conduct international educational activities in the fields of architecture and human environment based on the achievements of the studies mentioned in (i) and (ii).
(iv) to discuss internationally the achievements in research and education mentioned in the preceding three items, introduce (*or* transmit) them to the world in various ways at every occasion, and share common values with people around the world.

(Operation)
Article 3 The operations of the Institute to achieve the above-mentioned objectives are as follows:
(i) to conduct studies in cooperation with the Research Center of Japanese Culture Studies, Bahçeşehir University, Istanbul.
(ii) to hold an international workshop, the "Inter Cultural Studies of Architecture in Japan (ICSA in Japan)," where architecture and human environment students of the world, centered around Turkey, are invited every year in principle to support a similar workshop, the "Inter Cultural Studies of Architecture in Istanbul" that is held at the Research Center of Japanese Culture Studies at Bahçeşehir University, and to send teachers and students of the University's Department of Architecture for research and educational activities.
(iii) to hold seminars, introduce research achievements, exhibit, and organize lectures concerning life, technology, and culture, centered around architecture, to which researchers, business persons, and residents who belong to the field of studies conducted by the Institute are invited.
(iv) to hold permanent and special exhibitions on the life, technology, and culture of neighboring Silk Road countries, centered around Turkey.
(v) to conduct public relations activities, such as publication of the research and educational achievements of the Institute, symposiums, and so forth.
(vi) other operations required to accomplish the aims specified in the preceding article.

(Organization)
Article 4 The Institute may establish research departments with respect to differences in research fields to perform relevant activities.

(Director)

Article 5 The Institute shall install a director.

(2) The chancellor shall appoint the director from among professors.

(3) The director shall be appointed for a period of two years and may be reappointed.

(4) The director handles the operations of the Institute under the president's direction.

(Vice Director and Head of Research Department)

Article 6 The Institute may install a vice director and heads of research in each department referred to in Article 4.

(2) The chancellor shall appoint the vice director and heads of the research departments from among the faculty. The latter positions may be substituted with adjunct teaching staff.

(3) The vice director assists the director and engages in the administrative operations.

(4) The vice director fills in for the director under the director's direction.

(5) Each head controls his research department and engages in research under the director's direction.

(Senior Researcher)

Article 7 The Institute may install senior researchers with the chancellor's approval.

(2) The director appoints senior researchers from among the researchers.

(3) The senior researchers will assist their heads and engage in research.

(Researcher)

Article 8 The Institute shall install researchers as required.

(2) Teachers at Bahçeşehir University may be appointed as researchers.

(3) The researchers will engage in research under the director's direction.

(Temporary Researcher)

Article 9 The Institute may install temporary researchers as needed.

(2) The president appoints temporary researchers upon the recommendation of the director.

(3) The period of the appointment shall be less than one year and may be renewed when necessary.

(4) The temporary researchers will engage in specific research or joint research.

(Assistant)

Article 10 The Institute may install assistants.

(2) The assistants will assist in research under the director's direction.

(Steering Committee)

Article 11 The University shall establish a steering committee for the Institute (hereinafter "the steering committee") to deliberate basic policy concerning the Institute's operation.

(2) The steering committee shall consist of a director and a few members chosen from among the vice director, the heads of the research departments, the senior researchers, and researchers.

(3) The president will appoint the members of the steering committee.

(4) The director shall be the chairperson of the steering committee.

(5) The chairperson shall convene and lead the steering committee.

(6) Members shall be appointed for a period of two years and may be reappointed. When a vacancy arises, the successor's term of office shall be the predecessor's remaining term.

(7) Details of the steering committee shall be otherwise laid down.

(Secretariat)

Article 12 The Institute shall install a secretariat.

(2) The secretariat shall consist of a few members and the chief clerk of the School of Human Environmental Sciences shall be the chief of the secretariat.

(3) The members of the secretariat will handle clerical duties under the guidance and supervision of the chief clerk under the director's direction.

(Supplementary Rules and Directions)

Article 13 In addition to what is provided in these rules and directions, necessary matters concerning the administrative operations of the Institute shall be prescribed by the director.

(Modification or Elimination of the Rules and Regulations)

Article 14 Modification or elimination of the rules shall be implemented with the chancellor's prior approval.

Supplementary Provisions

(1) The rules and regulations shall be enforced beginning on July 29, 2009.

(2) From the day the rules and regulations are enforced until March 31, 2011, the term of the appointed directors and members of the steering committee shall begin on the day when they are appointed and end on March 31, 2011, notwithstanding the provisions of Article 5, paragraph (3) and Article 11, paragraph (6).