

# Intercultural Understanding

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## PREFACE

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### Japanese View of Nature and Townhouse in Kyoto (Kyo-machiya) maintained with Traditional and Environmental Technique, Residents' Norm of Behavior and their Cultural Formation

わが国の自然観と京町家の伝統的住環境技術・生活態度・文化の形成

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#### 1. Exhaustion of Oil Resource and Global Environmental Ethics

##### Global warming and Oil

Global warming is progressing due to massive amount of carbon dioxide emission. Development of recyclable natural energies or energy saving technology to eventually hold back undesirable climatic changes or to prevent disastrous accidents of the nuclear power plants from occurring has to be an urgent task for all countries. But some of the world powers and developing countries are not active enough in saving energies. Recoverable reserves of oil applying present techniques is estimated to be exhausted in 80 years, if we remain indifferent to energy saving and should the life style in the developing countries be switched over to American style with mass production and consumption.

##### Global oil reserves

The amount of all recoverable oil reserves, divided by annual quantity of oil produced, will be exhausted in 40 years. Even if we count in all oil reserves, including large-sized submarine oil field found in these years and the ones expected to be developed in the years to come, the oil reserves will be exhausted in 80 years at the longest, only twice the 40 years at the most. These figures will diminish should China see further accelerated economic growth.

#### 1. 石油資源の枯渇と地球環境倫理

##### 地球温暖化と石油

大量の二酸化炭素排出により地球温暖化が進んでいる。気候変動を阻止し、さらに原子力発電の悲惨な事故を防ぐための、再生可能な自然エネルギーや省エネ技術の開発は、今まさに各国の緊急の課題である。しかしこの省エネに消極的な大国や多くの発展途上国がある。省エネに無関心のまま、もし次々と発展途上国が先進国と同様のアメリカ型大量生産・大量消費の生活に突入すると、ある予測によると 80 年後には現在の技術で採掘可能な石油資源は枯渇してしまうと言う。

##### 世界の石油埋蔵量

すなわち現在の石油の確認総埋蔵量を、毎年の石油総生産量で割算すれば、石油は 40 年程で枯渇する。さらにここ数年間に発見された、あるいはその後の発見が想定されている海底大型油田の究極の総埋蔵量を考慮しても、世界の石油は 40 年のせいぜい 2 倍の 80 年程度で枯渇すると言う。しかし中国などの経済成長が加速すればこれらの数字はさらに減少する。

### **Oil to run dry in 80 years**

Current extractive technology allows to recover 30% of offshore crude oil reserves at the most, but applying the injection techniques such as water flooding or CO<sub>2</sub> flooding (secondary recovery) or other enhanced recovery techniques such as gas or chemical flooding method (tertiary recovery) improve the rate of recovery to 60 % to prolong the reserve life index to 140 years. When oil is recovered from tar sand, oil sand or oil shale the life index will be further extended to 300 years. However, costs of high-technology applied in secondary or tertiary recovery which will follow the offshore oil field development or costs of relevant environmental protection are practically too high. Hence, the oil recovered by present techniques is concerned, can dry up in 80 years, or earlier in some cases. <sup>1)</sup>

### **Global Environmental Ethics**

Eighty years from now is an age of grandchildren of present students. We are required to preserve earth's limited resources to hand down sustainable life of human being to our descendants to come. To restrain ourselves in our behavior today for the life of our descendants to come in future, which is a matter of no direct relations to us today, is an idea of global environmental ethics. Ethical behavior can be an act conducted as a duty based on a certain decision for the sake of something that is irrelevant to our own profit. It is an act of global environmental ethics that one lives symbiotically in sacrifice of his own merits for the earth's environment, and further, makes efforts to develop energy-saving techniques aiming at living with earth, and not aiming at business income. Efforts to reconsider present life style or value based on mass-production and mass-consumption are required for respective countries to create and share practical visualization of symbiotic style of life and culture.

### **Shift from Atomic Energy to Natural Energy**

In March 2011 a disaster occurred at Fukushima nuclear power plant following massive earthquake and tidal wave, which I learned of at a hotel in Paris. People talked to me about it on the road or through the apartment

### **80 年後に石油は枯渇**

現在の掘削技術では海底原油の 30%程度しか採掘できないが、地下に海水や炭酸ガスを注入する二次回収、さらに化学攻法とかガス攻法を駆使した三次回収では回収比率は 60%になり、石油の寿命は 140 年に延びる。さらにその後はタールサンド、オイルサンド、オイルシェールなどがあり、石油の寿命は 300 年になる。しかし海底油田開発以降の二次、三次回収の高度な採掘方法や環境対策には膨大な費用を要する。従って少なくとも現在の採掘方法による石油は 80 年後に、場合によってはそれ以前に枯渇することになる。  
文 1)

### **地球環境倫理**

80 年後と言え、今の学生たちの孫の時代にあたる。まだ見ぬこの未来の人類のために、今生きている我々が、地球の限られた資源を今温存し、人類の生活を継承できるようにすることが求められている。自分に直接関係のない遠い未来の子孫の生活のために、今の自分自身の行為を自制することが地球環境倫理である。倫理的行為とは自分自身の利益には無縁のもののために、ある判断にもとづいて義務として行う行為であろう。すなわち自分自身の利益を犠牲にしても地球環境のために自然と共生し、さらに共生のための省エネ技術を開発する努力をすることが地球環境倫理に基づく行為である。ビジネスのための省エネ技術の開発ではない。それぞれの国において、現在の大量生産・大量消費に基づく生活態度や価値観を見直し、自然共生型の生活と文化の具体的なイメージを、共有できるようにする必要がある。

### **原子力から自然エネルギーへ**

2011 年 3 月、巨大地震と巨大津波が原因で福島原発の事故が起きた。それを私はパリのホテルで知った。歩道ですれ違う人、アパートの窓から身を乗り出した人たちから何度も声をかけられた。日本に住む外国人は全員

windows. It was when all the foreign residents in Japan are reported day after day to be fleeing abroad. Several days later we flew to Istanbul for the international conference, which we cosponsored. In either city the question of whether or not to continue nuclear power generation was discussed on television day after day, and in Istanbul they staged a demonstration against nuclear power generation. Incidentally, we found differences in the reported expanse of the stricken area affected by the nuclear plant disaster between newspapers of Japan and that of Turkey or Paris. A Japanophile Turkish offered to receive Japanese refugee. A professor of Turkish university asked how the Japanese can remain cool and orderly amidst such a disaster. Today, at nine months after the disaster, resumption of nuclear power generation has become a big issue of our country. Japan had employed an energy policy to cover over 50% of demand for electricity by nuclear power generation. At this moment, however, we suspect the policy may have been what is far from national consensus. Now, it is required of us more than ever to use natural energy or lead energy-saving life in symbiosis with nature.

### Natural Environment and Religion

As Japanese country is located in the monsoon region, we have 1,500mm annual average precipitation. While those of Europe, USA or China reaches 500mm at the most. The Japanese large amount of rainfall has blessed us with food from the land and sea. Yet, earthquakes, typhoons and floods have deprived of many lives. People, enjoying the bliss of nature, have always feared the nature with sense of awe. They believed in the evil spirits of the mountains and rivers. They offered fervent prayer for happy lives to a spiritual rock "Iwakura"<sup>(Fig.1)</sup> on which god descends or a big sacred tree<sup>(Fig.2)</sup>, a cascade and a mountain. They have held a memorial service "kuyo" for commodities such as used needles, knives or combs. Westerners cannot understand the "kuyo", saying "Things are things (they are only a commodities from first to last)". The Japanese regard a commodity as an existence like a human being. And so, a sense of "mottai-nai (wasteful)", which is unique to us Japanese, dominates over us when something is lost without

国外脱出という新聞記事が続いていた時であった。数日後私たちが共催する国際会議のためにイスタンブールに移動した。両都市では原発存続問題が連日テレビで議論され、イスタンブールでは原発反対のデモもあった。帰国して分かったことであるが、日本の新聞とトルコやパリの新聞では被災地域の広がりには大きな格差があった。日本人を受け入れたいというトルコの親日家の申し入れもあった。トルコの大学の教授からは、このような大惨事なのにどうして日本人はあのように冷静で規則正しいのかと聞かれた。事故から9ヵ月後の今、わが国の原発再開が大きな問題になっている。事故のあった2011年3月までのわが国のエネルギー政策は、半数以上のエネルギーを原発で賄おうというものであった。それはしかし、今となっては国民的合意からは、ほど遠いものであろう。以前にも増して、自然エネルギーの利用や自然と共生する省エネ生活が求められることになった。

### 自然環境と宗教

わが国の自然は、モンスーン地帯に立地している。そのため1年間に平均約1,500mmの雨が降る。欧州や米国、中国ではせいぜい500mm程度である。わが国のこの大量の降水量が山の幸、海の幸をもたらしてきた。しかし一方では、地震や台風や洪水などが多くの人命を奪ってきた。だから人々は自然の恩恵に浴しながらも、常に自然を恐れ、畏敬の念をもって自然に接してきた。そこには魑魅魍魎が住むと信じられている。神が降臨するという磐座<sup>(図1)</sup>や大樹<sup>(図2)</sup>や滝や山々に対して、幸せな生活を祈願してきた。また針や包丁や櫛などの生活道具でさえ「供養」してきた。西欧人は「物は物だよ」と、「供養」を理解できない。しかし日本人は、物も人と同じような存在だと思っている。だから物が満ち足りていても「勿体無い」と思う日本人独自の心が今もある。



being properly used even when we have them in abundance.

In contrast, the nature of desert regions with annual average of 10mm of precipitation is formidable. The hard nature always threaten people with anticipation of death. It is what the Japanese, who expect benefit of the nature usually, could by no means imagine. The religion born in the desert taught that the human beings, as creation of god, use the nature as the resources of their own. And man dominated over the nature and looked upon it as objective and mechanical existence, not as an autonomous nor self-organizing vital existence.



Fig.1) The object of worship enshrined at Isghidatami -shrine is the crowing of a huge rock rising out of the riverbed.

図1) 石畳神社の御神体磐座：下を流れる川から立ち上った巨大な岩の頂部

ところが年間平均約数 10 mmの雨しか降らない砂漠地帯の自然は恐ろしい。この厳しい自然は常に人々に死を予感させた。いつも豊かな恵みを期待できるわが国の自然からは想像さえできないものである。砂漠に生まれた神は、神が創造した人間のために、自然を資源として与えたと教えた。そこでは人間が自然を支配し、客体化し、機械化した。自然は自律的、自己形成的な生命的な存在ではないと考えた。



Fig.2) A spiritual rock and a sacred tree at Matsuo Shrine, Shiga prefecture.

図2) 滋賀県松尾神社の神が宿る磐と樹木

## 2. Meaning of “Nature” in Japanese and Views of Nature in the World

Shuntaro Ito conducted elaborate researches on the meaning of the word “nature” in the various cultures in the world. He explains the differences between them, as well as about the view of nature what the people who faces the environmental problems of the earth need to have as follows.<sup>2)</sup>

### Nature as Natural Object

Meaning of the word “nature” in modern Japanese is diversified. The first of them is the translated word from the Dutch word “natuur” establish back in 20<sup>th</sup> to 30<sup>th</sup> of Meiji period. It is the meaning of what the noun *nature* in the modern Western Europe on and after 17<sup>th</sup>

## 2.日本語「自然」の意味と世界の自然観

伊東俊太郎は世界の諸文化における「自然」という言葉の意味について膨大な研究を行い、それぞれの自然観の違いについて、そして地球環境問題に直面する世界の人々に必要な将来の自然観について以下のように解説している。<sup>文2)</sup>

### 自然物としての自然

現代日本語の「自然」の意味は多様である。まずそのうちの第一の意味は明治 20 から 30 年にかけて定着した和蘭語 *natuur* の訳語としての「自然」である。それは 17 世紀以降の近代西欧における「自然」*nature* が持つ意味、

century meant, i.e. natural object or nature as object. The image of nature, as Descartes viewed it, was of a mechanical one lacking in vital aspects, which was opposing to human being. Bacon who followed him made an attempt to anatomize the nature through experiments.

This view of nature in modern Western Europe dates back to Judeo-Christian religion where a hierarchical and heterogeneous order was established between God, man and nature. Man and nature existed for the superordinate. Personified God created the world and discriminated human being against nature. God, as a transcendental existence, became what was not inherent in the nature, and man was not a part of nature anymore. Nature, as one of the God's creation, became an "outsider" which has nothing to do with human being. Thus human being has come to top the nature and dominate over it as a superordinate. This is where we can see an origin of metaphysical speculation that created modern positivism to regard the nature as totally independent existence from man and as objective existence and make an attempt to scientifically grasp it through planned experimental process.

And yet, *natura*, which means "nature" in Latin of the Roman period, was used to represent about the same meaning as *physis* in Greek. It was an umbrella word which means all things in nature, including the properties of things, essentiality, inherent strength of an article. "Nature" as a word to include and integrate everything in natural scenery has its origin in the word *physis*. In the ancient Orient, heaven, earth or water was called by the deities' names reflecting the mythical connotation of them. So, there was not a word that corresponds to "nature" to include heaven, earth or water. "Nature" in Greek meant an animate existence with an inhere system of principle of generation and development unlike the heteronomous existence which is made to react and mechanically alter the movement by a force from outside as Descartes thought of. And human being was harmonically embraced in it.

すなわち物としての自然、自然物を意味する名詞である。17世紀のデカルトの自然像は人間が自然を操作的に支配し、人間と自然が対立する機械論的、脱生命的なものであった。またそれに続くベイコンは実験により自然を解剖しようとした。

この近代西欧の自然観の源泉はユダヤ・キリスト教にある。そこでは神・人間・自然の間に階層的、異質的秩序が成立し、それぞれは上位のために存在し、人格的な創造神が世界を創り、かつ人間と自然を峻別した。神は超越者として自然にまったく内在しなくなり、人間も自然の一部ではなくなった。自然も、人間と同じく、神によって創造されたものとして、今や人間の全く預かり知らない「外なるもの」となった。人間は自然を越えて、その上に臨み、それを支配するものとなった。ここに自然を人間とは全く独立無縁なものとし、客体化し、これに外から実験的操作を加えて科学的に把握しようとする、近代の実証主義的態度の形而上学的源泉が見られる。

ところがローマ時代のラテン語の「自然」ナートウーラ *natura* は、ギリシャ語の「自然」ピュシス *physis* とほぼ同様の意味に使われていた。それは森羅万象を包括する言葉として、自然物全体を指すと同時に、事物に内在する固有な本性や力を意味する言葉であった。この世の山川草木など自然界の一切を含み統合する言葉としての「自然」は *physis* において初めて誕生した。それ以前のオリエント世界では、天や地や水などは、彼らの神話的表象を反映してそれぞれの神の名で呼ばれ、天や地や水を総括する意味の「自然」と言う言葉はなかった。ギリシャ語の「自然」はデカルトのような他から力を加えられて因果的、機械論的な運動変化が惹起される他律的な自然ではなく、内に生成、発展の原理をもった生命的な自然であった。人間はその中に調和的に包み込まれていた。

### Nature to Represent Naturalness

The second meaning of “nature” was introduced with Buddhism. “Nature” did not mean object, but meant state which was natural such as “naturalness”, “natural” or “spontaneous”. Originally the word “nature” in China was an adjective to describe mode of existence of all things in the universe or self-organized, spontaneous and self-sufficient nature of the natural world.

### Fundamental and Original Connection between Nature and Man

The third meaning of “nature” represents a view of nature inherent in Japan, in which the nature and the human being is linked in a fundamental connection. Here is an example in the *Mannyo-shu* (“A collection of milliard leaves”). A poet composed:

*As I see lingering mist over the field  
my heart is filled with plaintive sadness  
And now I hear a nightingale sings  
in the evening shade as if to sympathize*

The poet describes the scenery and his emotion at the same time, by describing the nature his feeling is further deepened. The Western romanticism in late 18<sup>th</sup> century tried to build a bridge between the nature and human being by emotional involvement. It was a yearning to the nature through the medium of God. However, our ancient indigenous view of nature was of more direct and straightforward integration of nature and man.

The nature in the first category, i.e. a natural object which means sum of things, has brought about contraposition or discrepancy between nature and us and depletion and domination of the nature. Its picture was of a heteronomous, deterministic and mechanical one. It has become a driving force behind the science and technology to support a rich life of mass-production and mass-consumption. But, at the same time, it has caused public nuisance and environmental problems or disastrous nuclear power plant accidents. To cope with those results world is now seeking a new view of nature. A study to seek a picture of nature as autonomous and self-generating system that include human being as well as sum of things and culture is going on partly in reference to Japanese indigenous view of nature.

### 自然性としての自然

第二の「自然」の意味は仏教伝来によってもたらされたものである。それは自然物を意味するのではなく、自然性「おのずからに」を意味する言葉である。もともと中国における「自然」は天地万物の有り方、自然の自律性、自発性、自足性を表す言葉であった。

### 自然と人間の根源的紐帯

第三の「自然」の意味はわが国固有の自然観である。ここでは自然と人間が根源的紐帯によって連結されている。例えば万葉集に「春の野に霞たなびきうら悲しこの夕蔭に鶯鳴くも」とある。ここでは自然を歌うと同時に作者自身の心を表しており、逆に心は自然を歌うことにより濃密になる。18世紀後半の西欧ロマンティシズムは感情移入により自然と人間の間の橋渡しを図った。それは神を媒介とした自然への憧憬であった。しかし日本古来の自然観は自然と人間のもっと直接的で端的な一体化であった。

第一の意味、森羅万象を意味する自然物としての「自然」は、人間と自然の対立や断絶、自然の収奪と支配をもたらし、その自然像は他律的、決定論的、機械論的なものであった。大量生産大量消費を支える科学技術の原動力となり、豊かな消費生活をもたらした半面、公害や地球環境問題、悲惨な原発事故の原因ともなった。それを乗り切るために世界はいま新たな自然観を模索している。人間や森羅万象や文化を含む自律的かつ自己形成的な組織系としての自然像を求める研究が、わが国古来の自然観をも参考にしながら行われている。



### 3. Traditional and Environmental Techniques of Townhouse in Kyoto

Today, Japan has traditional techniques of residential environment which have been developed on the basis of her unique view of nature. We find clear evidence of the techniques in the town scape of wooden houses standing densely in a row in Kyoto which have been formed through the years of Edo (1603-1867), Meiji (1868-1912), Taisho (1912-1926) and Showa (1926-1989). During 300 years of Edo period, a time when Japan closed the country to foreign commerce, the nation lived a self-sufficient life depending upon the resources of Japanese archipelago. On the other hand each feudal clan developed new paddy field and encouraged production of specialty of the region in the efforts of realizing self-sufficiency. Japanese feudal government forced citizens to practice thrift by enforcing sumptuary law or encouraging *cho-shikimoku* (self-imposed town rule of ways of living), and so, various inventive energy-saving devices were practiced in the Edo period. As for *Kyo-machiya* (traditional townhouse of Kyoto), it is not only a treasure house with full of traditional techniques for living environment having been applied but also a reservoir of cultural assets i.e. residents' attention of the house and their *modus vivendi* (life-style) from which the techniques derives and the culture thus formed.<sup>3)</sup>

#### Traditional Environmental Techniques in *Kyo-machiya*

Now, let us look at traditional environmental techniques applied on *Kyo-machiya*. First of all, it is a house built with locally-produced and locally-consumed materials. Namely, local tree is cut, made into columns or beams, and local soil is kneaded or baked to turn them into walls or roof tiles. The natural material used with a little modification does not disturb the local landscape. Wooden house fabricated with high-precision column-pillar connection is designed with the style of *shinkabe* (wall with exposed timber pillars) so each timber component can be easily checked. It makes easy to find rot or decay if any, and facilitate easy replacement of columns and pillars, or dismantlement or removing and

### 3. 京町家の伝統的住環境技術

今のわが国には、その独自の自然観にもとづいて開発してきた伝統的住環境技術がある。その技術を、江戸から明治、大正、昭和にかけて形成してきた京都の高密度な木造の町並みに見ることができる。わが国が鎖国を続けた江戸300年間は日本列島の資源に依存する自給自足であった。また藩ごとに新田を開拓し、特産品を開発し、それぞれが自給自足の生活を工夫した。幕府は奢侈禁止令や町式目などによって節約を強制したため、江戸時代には省エネのための様々な工夫が行われた。京町家は省エネ型の伝統的住環境技術の宝庫であるだけでなく、その技術を創出した源泉である住まい手の心遣いや生活態度、そしてそれらが形成した文化の宝庫でもある。<sup>文3)</sup>

#### 京町家の伝統的住環境技術

さて京町家の伝統的な住環境技術にはどんなものがあるのだろうか。それはまず地産地消の建物であることだ。地元の木を切り、柱や梁にし、地元の土を捏ねて壁にし、焼いて屋根に載せる。自然の材料を少しばかり加工しているから土地の風景に調和する。高精度の仕口を加工して組み立てた木造住居はそれを構成する各部材が外からいつでも見えるように真壁の構成になっている。そのために腐食などを発見しやすいし、柱梁などの部材の取替、解体、移設が簡単である。山の北側に生えていた樹は家の北側に使い、生えていた通りに柱の上下を決める。<sup>(図3, 4, 5)</sup>

reconstruction of the building. A timber from a tree grown on the northern face of a mountain is used on the northern part of the house, and the top and bottom of the pillar conforms to the same with that of the growing tree. (Fig.3, Fig.4, Fig.5) In Kyoto all door fittings are standardized into 5 *shaku* 7 *sun* ×3 *shaku* 1 *sun* 5 *bu* (1730×955mm) and tatami mat, 6 *shaku* 3 *sun* ×3 *shaku* 1 *sun* 5 *bu* (1910×955mm). They are reusable in any other *Kyo-machiya* townhouses. (Fig.6, Fig.7) Roof tile is also standardized to be able to be replaced by a piece of unit. In summer a sheet of wisteria mat is spread over the floor and fixture for summer use replaces the conventional one. (Fig.8) In designing a Japanese house, the main roof is planed first, and then leaving deep eaves edgewise rooms are allocated under the roof. In the high-rising house, eaves are installed on every floor to protect the walls from weather. Blinds or screens commonly function as ventilator, blinder, protection of the wall, wind breaker and other various facilities. Because they are made of cheap and regenerating materials, it can be hung either on the southern or northern exterior of the house, or, either in summer or in winter. (Fig.9, Fig.10) The latticework serves for anticrime purpose as well as for ventilation, and it is a convenient device in that it allows one to look out of it but does not enable one to look in the interior. (Fig.11, Fig.12) Each room has a simple design so that it can be used for various purposes on various occasions. Furniture is not fixed in the room and it is brought in when necessary and taken out after use. The room is called not by its use but by the size. F.L.Wright wrote in his book as quoted below.<sup>4)</sup>

“At last I had found one country on earth where simplicity, as natural, is supreme. The floors of these Japanese homes are all made to live on—to sleep on and eat from, to kneel upon soft silken mats and mediate upon. On which to play the flute, or to make love. Nothing is allowed to stand long as a fixture upon the sacred floors of any Japanese home. Everything the family uses is designed to be removed when not in use and be carefully put in its proper place……. And strangely enough, I found this ancient Japanese dwelling to be a perfect example of the modern standardizing I had myself been working out. ……The size and shape of all the

京町家の建具 (5尺7寸×3尺1寸5分:1730×955) や畳 (6尺3寸×3尺1寸5分:1910×955) は同一寸法に規格化されているので、どの町家でも再利用できる。(図6,7) 屋根の瓦も規格化されており一枚ずつ取替可能である。また夏には床の上に簾箆を敷き、夏建具に入れ替える。(図8) 日本の建物は大屋根をまず考え、その周囲に深い庇を残しながら、その内側に部屋を設ける。建物が高くなれば各階に庇を付けて壁を風雨から守る。庇の下には簾を掛ける。簾は通風、目隠し、壁の保護、雨の吹き込み防止など多様な役割を果たし、蓄熱をしない安価な材料である。だから家の北側にも南側にも、夏でも冬でも軒下に吊り下げて置く。(図9,10) また格子も防犯、通風に役立つ。格子を通して内部から外を見ることができるが、外から内部は見えない便利な装置である。(図11,12) 各部屋はいろいろな用途に使用できるように単純な形である。部屋に家具を固定せず、必要な時にだけ持込み、終わったら部屋の外に片付ける。部屋名はその用途ではなく大きさで呼ぶ。F.L.Wright はその著書の中で言っている。<sup>文4)</sup>

「…単純さが当然のことながら最高である国を発見した。これらの日本家屋の床は、すべてその上で生活するように造られている。その上で眠り、そこで食事をし、柔らかなすべすべした畳の上に座り、そして瞑想する。笛を吹くのも畳の上なら、恋を囁き、愛を語るのも畳の上である。…どんな物もこの神聖な床の上にならばいつまでも固定した物として置くことを許されない。家族が使うものは、すべて使っていないときには動かせるようにデザインされ、適当な場所に注意深く納められる。…この古い日本の住まいが、私自身がずっと苦心してやり遂げようとしていた現代的な規格化の完全な見本であることを発見した。…家は全部、その寸法、形ともにこの畳によって決定される。仕切りの障子もすべて畳の寸法である。どんな場合であろうと人々はみな9畳敷、16畳敷、あるいは36畳敷の家と言う風に話す」と書いている。

だから家族構成が変わっても、持ち主が変わっても建て替える必要がない長寿命の住宅であった。



houses are both determined by these mats. The sliding partitions all occur at the unit lines of mats. And they all speak of a nine, sixteen or thirty-six mat house, as the case may be.”

It is a long-life residence that does not require refurbishment even when family make-up or the ownership should change in future.



Fig.3) Refurbishment of *Kyo-machiya*. Some members of framework are partly replaced.

図3) 一部の部材を交換した京町家の改修工事



Fig.4) Dismantlement and reconstruction in a new site; connection of the threshold sill.

図4) 茶室の解体移築：敷居の仕口



Fig.5) Dismantlement and reconstruction in a new site; connection of the pillar with the threshold sill.

図5) 茶室の解体移築：敷居のための柱の仕口

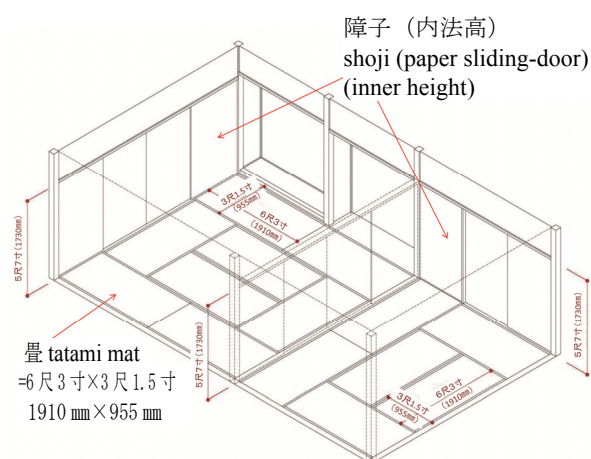


Fig.6) Standardization of tatami mat and sliding doors.

図6) 畳と建具の規格化



Fig.7) A space created by standardized tatami mat and fixture: Japanese-style rooms in a *Kyo-machiya* "Shiori-an"

図7) 規格化された畳と建具による空間：紫織庵



Fig.8) A Japanese-style room in summer with rattan mat spread over the tatami mat floor and summer sliding doors: Kojima residence

図8) 夏が来て籐筵を敷き夏障子を入れた和室：小島邸



Fig.9) Blinds hanging even in winter.

図9) 冬でもつりさげている簾



Fig.10) Blind(s) hanging on the verandah: Kojima residence

図10) 縁側の簾：小島邸

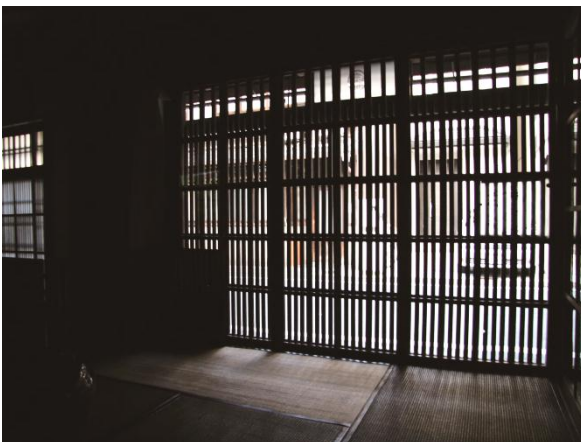


Fig.11) A sight of street seen through the lattice structure of *Kyo-machiya*.

図11) 町家の中から格子越しに見た通りの風景



Fig.12) Exterior of the *Kyo-machiya* and its lattice structure seen from the street: Hata residence

図12) 通りから見た町家の外観と格子：秦家



### Norm of Life of the Residents

It was the norm of residents and craftsmen that has created unique traditional techniques in living environment. That is to say, it was an attitude of putting priority in thrift. They never bought anything unless it is necessary. And yet, when they buy, they chose objects of good quality and used them long time with good care. Kimono is easily unsewn to original cloth. And the cloth again revives as a new kimono after it was washed, dyed and sewn. They used to make kimono using the same cloth at least for three generations. They cared not to be too flashy and lived having a high regard for the people in the community. Again, residents' attitude of life seems to correspond with the teaching of zen. Zen is not a religion to follow and teach the tenet of a single humanized divinity, but to help an individual with building self-directed spirit in himself. It is a religion to help pursuit "michi" i.e. to seek after truth. Zen monks cultivate vegetables in the backyard of temples, prepare meals and clean the temple. Each activity is an ascetic training for them. So, even in daily lives of common people, it is possible to practice the training of Zen Buddhism to pursuit "michi". The word "michi" or "do" is used in many terms such as Judo, kendo, *sado* (the way of tea ceremony), *kado* (art of flower arrangement). We can find Zen in arts and sports.

### Formation of Culture

The Culture of Kyo-machiya was formed during Edo Period, when their life was under the restrictions of sumptuary law repeatedly issued by the Tokugawa government as well as self-imposed regulation of the town. Especially the town scape was confined to that of modest appearance compared with that of the early Edo period by the town rule. On the other hand, the garden, the room or tea ceremony room in the back created a world of their own called "iki" (chic or "sui" in Kyoto) quite different from the front of the house. They were composed of asymmetric space structure, harmonization of heterogeneous materials, somber proper color etc., and a portrait longer than wide was preferred, and *iki* was expressed in vertical-striped kimono or lattice structure.<sup>5)</sup>

### 住まい手達の生活の規範

独自の伝統的住環境技術を創造したのは、住まい手や職人たちの規範すなわち生活態度であった。それは何事にも節約を旨とし、必要なもの以外は絶対に買わないが、買う時には良い物を買ひ、長く大切に使う。着物は糸を解くと簡単にもとの布地になる。それを洗い、染め直すとまた新しい着物に仕立てられる。こうして少なくとも三代は同じ布地でそれぞれの着物を作った。派手でないことに気を配り、町内の人々との共存を大切にしながら暮らした。住まい手達の生活態度はまた禅の教えにも似ている。禅は一人の人格神の教義を守り教える宗教ではない。一人一人が自分の力で自分自身の中に自律的な精神を作る、すなわち「道」を究めるのを手助けする宗教である。修行僧たちは禅寺の裏庭に野菜を栽培し、食事を作り、掃除もする。それらの一つ一つが修行である。だから庶民の日常生活の中においても「道」を究める禅の修行が可能である。日本語では柔道、剣道、茶道、華道と何でも「道」が付く。芸術やスポーツの中にも禅がある。

### 文化の形成

京町家の文化は、町衆の生活が幕府の繰り返す奢侈禁止令や町掟に縛られていた江戸時代に形成された。特に町並みは、江戸初期に比べると、町掟などによって地味な外観に統制された。しかし町並みの奥に育まれた庭や座敷や茶室は「いき」（京都では「すい」と呼ばれる表とは異なる独自の世界を形成した。それらは非対称の空間構成、異質な材料の調和、地味な固有の色などによって構成され、縦長の人物像を好み、縦縞の着物や格子によって表現された。<sup>文5)</sup>

京町家の庭は、平安時代末から始まる遁世者とんせいしやの営んだ山居の草庵を源流として、中世から近世に至る京の町に、町人達が形成した庭であり、「市中の山居」と呼ばれて、独自の文化を形成した。<sup>(図13,14)</sup>「市中の山居」

The garden of Kyo-machiya called "shichu-no-sankyō" (garden in town house designed as if it were located in a mountain) (Fig.13, Fig.14) was designed by residents in a town from the medieval to early-modern times to form the culture of its own. It was the downstream of the thatched hut for hermit in the mountain to date back to the late Heian period. Unlike the stone gardens in the temples, which show symbolic miniature of great nature based on the idea of "shiseki senri" (a thousand miles in a square foot of space; evoking a sense of great depth in a small area<sup>6)</sup>), "shichu-no-sankyō" has full-scale trees planted to create an atmosphere in a mountain. The garden was developed in the Kyo-machiya in densely-built up urban area by the culture of "wabi" of tea ceremony and vitality of townsmen, in which under stream of elegance of royal dynasty and taste of rustic scenery was lying.

Present environmental issue is absurdly irrelevant to culture. For example, when a tree-planting campaign is encouraged to promote energy-saving, only the green coverage ratio is brought up and the way of planting trees does not come to a discussion. We cannot see what culture is likely to be created upon energy-saving effort. To cite a case, one is subsidized when he covers the roof with greenery. But mere coverage of the roof invisible to residents is not enough. Architects are required to create cultural environment where one can enjoy greenery on the rooftop, say, by creating a space for garden by setting back the top-story structure. Such effort will promote a solution of environmental problem.



Fig. 13) Shichu-no-sankyō: Inner garden of Kadoya.  
 図 13) 市中の山居 角屋の中庭

とは、庭の中に原寸大の樹木を植えて山居の趣を表現したものであり、大自然を象徴的に縮小した「咫尺千里」<sup>文6)</sup>の寺院の石庭とは異なる。王朝の雅と山里の風景感を底流に、茶の湯の侘びの文化と、町人の活力によって高密度な都市型住居である京町家の中に花開いた庭である。

現在の環境問題は文化とはおよそ無縁である。例えば省エネのために緑化を奨励するが、緑被率だけが問題になり、どのように緑を植えるのかは議論にならない。いま省エネによってどのような文化を創造しようとしているのかが見えてこない。例えば屋根の上を緑で覆うと補助金が出る。しかし住まい手から見えない屋根の上をただ覆うだけでは能がない。建物の上部をセットバックして構成した屋上庭園などの工夫によって、屋上の緑を楽しめるような文化的環境を建築家は創造しなければならない。それが環境問題を前進させる。



Fig.14) A garden and "Shichu-no-sankyō" integrated with the room: Hataya  
 図 14) 室内と一体になった庭「市中の山居」：秦家

#### 4. Historical Environmental Ethics and Modern Architecture in Japan

Junichiro Tanizaki wrote in his “In praise of shadows<sup>7)</sup>.” “Of course, I do not dare to argue against introduction of modern amenity, may it be heating equipment or closet stool, but I wonder why they do not try to modify it little more in consideration of our custom, liking or way of life so that it suits us Japanese.” “If we have had physical science and chemistry of our own, technologies or industries should have naturally developed otherwise and we should have created matters better conform to our nationality may it be commonly used machines, medicine or work of art, shouldn’t we?”

This is the very view of culture which we need to think about. Since Meiji period, in order to rapidly civilize the nation, the Japanese gave up traditional conventional culture and hurriedly taken in the Western objects to their own life. Thereafter we have absorbed, digested, developed and acquired multiple technologies and sciences. And now we are world most advanced nation in science and technology. But isn’t it time we reviewed the history after Meiji period to reconsider machines around us, medicine, work of art or traditional and living environmental technique, in the context of national characteristics, nature or climate, specific culture of Japan, and unique view of nature?

As for modern architecture as far back as Meiji period has substantially changed responding to the occurrence of the Second World War and pursuant bubble economy or change in mode of life to American-style life which depends mass-production and mass-consumption. Modern architecture which was built in 1960s, years when massive investment in construction business began, is going to see its 50 years anniversary. They are now old enough to be nominated national cultural assets. 1960s was the time when Japan began to seek for Japanese modern architecture of its own style moving away from the influence of the architecture of Western Modernism of the early 20th century. In his book “In Praise of Shadows<sup>7)</sup>” published in 1933, Junichiro Tanizaki described the feature of traditional architecture of Japan as follows. “An umbrella named roof unfolds itself

#### 4. 歴史的環境倫理

谷崎潤一郎は『陰翳礼讃』<sup>いんえいらいさん 文7)</sup>の中に書いている。「暖房にしる、便器にしる、文明の利器を取り入れるのに勿論異議はないけれども、それならそれで、なぜもう少しわれわれの習慣や趣味生活を重んじ、それに順応するように改良を加えないのだろうか。」「もしわれわれがわれわれの独自の物理学を有し、化学を有していたならば、それに基づく技術や工業もまた自ずから別様の発展を遂げ、日用百般の機械でも、薬品でも、工芸品でも、もっとわれわれの国民性に合致するような物が生れてはいなかったであろうか。」

これはまさに今の我々に必要な文化論である。明治以降の急速な文明化のために、日本人はそれまでの文化を放棄し、西欧の文物を急いで自らの生活の中に導入した。多くの技術や科学を吸収し、消化し、開発し、いまや科学技術では世界の最先端にいる。しかしここでもう一度、明治からの歴史を見直し、その国民性、自然や気候、固有の文化とともに、わが国の日用百般の機械、薬品、工芸品、伝統的住環境技術、そしてわが国固有の自然観を見つめ直すべき時ではなからうか。

しかし明治から始まったわが国の近代建築は、第二次大戦やその後のバブル経済、アメリカ型の大量生産・大量消費を前提にした生活様式への変化によって大きく変わった。大量の建設投資が始まった1960年代に建てられた近代建築は、いま築50年を迎えている。わが国の文化財になりうる年齢に達した。1960年代は20世紀初頭の西欧モダニズム建築から脱皮し、わが国固有の現代建築を模索し始めた時代である。この国の伝統的建築の特徴を谷崎潤一郎は昭和8年に著した『陰翳礼讃』に次のように述べている。「屋根と云う傘を拡げ、大地に日かげを落とし、その薄暗い陰翳に家造りをし、そして庇や縁側によって一層光を遠ざけ、その家の姿の特徴が深い庇の下にできる濃い闇にある。」例えば、一つの大屋根が作る深い庇の下に、テラスや欄干を設け、その中に大小のホールや会議室を包み込んだ、寺院のように落ち着いた前川国男の京都会館や、各階の庇やベランダが



to throw a shadow on the ground. And in its dusky shadow, a house is built. The house moves farther away the light because of its eaves or verandahs and its features rest in the thick darkness created under the deep eaves.” His description well applies to the following examples. The first example is the Kyoto Kaikan (Kyoto International Conference Hall) designed by Kunio Maekawa, which is a building as quiet and settled as a temple. It houses terraces and parapets under the deep eaves of the single grand roof as if to wrap the halls of various sizes and conference rooms inside. The second example is the prefectural government office building designed by Kenzo Tange, a beauty of the building with eaves and verandahs on every floor reminds viewers of a five-storied pagoda. In the course of preservation of the value of major historical architecture, matters should not be discussed comparing and contrasting functional improvement of the building and preservation of its design. It is a problem of both global environmental ethics and historical environmental ethics. It should be considered whether or not we need to preserve rich historical environment for our descendants to come even if we have to sacrifice our life now. We have to constrain ourselves in our life if it is necessary. It is a matter of our ethics. The answer will be easily found when think of how much lives of each of us are enriched with many of us living in the historical cities our ancestors has secured or visiting them from the other side of the earth.

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五重の塔のように美しい丹下健三の香川県庁舎などがその例である。時代を代表するこのような歴史的建物の価値の保存に際して、建物の機能の改善とその意匠の保存を天秤に掛けて保存問題を議論すべきではない。この問題は地球環境倫理と同じように、歴史的環境倫理の問題である。今の我々の生活を犠牲にしても、まだ見ぬ未来の子孫のために、豊かな歴史的環境が必要であるかどうかを検討すべきである。もし必要であるならば、今の我々の生活を自制すべきである。なぜならそれは我々の倫理の問題であるから。今われわれの多くが、先人達が守ってきた歴史都市に住み、あるいははるばる地球の裏側から訪れることによって、その一人一人がそれぞれの人生をどれだけ豊かにしているかを考えてみればすぐわかることである。

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# Interdependence of Traditional House Form and Settlement Pattern

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**Keywords:** traditional settlement, traditional building, traditional built form, settlement pattern.

**Abstract:** The main stream of research on traditional built form can be assumed to be focused on either cultural or natural deterministic approaches. Although the priority depends largely on the background of the scholar; culture and nature are mostly accepted to be the major factor determining the course of evaluation of traditional built form. Other forces acting on the formation of traditional built environments, ranging from defensive to administrative factors have also been issues of the discussion in scholar works. An important aspect of traditional built form, besides the constraints imposed and opportunities offered by the above forces, is the existence of discernible interdependences between the individual house form and settlement pattern. Neither the house nor the settlement evolves irrespective of one another. Individual houses are integral components of the settlements they belong to. Furthermore, no single house can be viewed as a self-sufficient building standing all by itself in the natural landscape. Isolated traditional buildings, like farm houses, are rare and exceptional. Similarly traditional settlements cannot be taken up as additive assemblies of individual masses. Space configuration of indoors and outdoors and also the modes of interaction between the two are shaped totally according to the aforementioned mutual dependence. Solid-void relationship that characterizes the textural properties of the settlement pattern, modes of enclosure and exposure, are all defined by the layout relations among the building masses. The theoretical contrast of this study is based on the binary relations of house form and settlement pattern as stated in the above.

## 1. Introduction

Traditional building has been, and continues to be, the subject of interest of scholars from a wide variety of disciplines which includes historians, art historians, geographers, ethnographers, anthropologists, folklorists, urban planners, architects and etc. Among this wide array of specializations the majority of the studies can be grouped in two main tracks, namely those who deal with the properties of the traditional house and those who research the traditional settlement pattern. Architects are more inclined to decipher the morphological characteristics of the individual dwelling unit. In the other words, their tendency is to see the traditional house as the end product of the traditional building. The same applies for the folklorist, architects and mostly for anthropologists, in that, the house is taken, more often than not, as the subject of investigation of material culture. In most of the available literature, the emphasis is on the individual house as if it is an independent element devoid of a context. The house is seldom viewed as an integral component of a greater entity- the settlement. Social scientists, on the other hand, are more oriented to research the process of shaping of the properties of settlement pattern irrespective of the interdependence among the individual houses.

Although the field of interest of scholars dealing with traditional building display a wide array of specialization, studies, notably those are oriented towards the research of genesis and evolution of the built form, are performed based on two main determinants namely culture and nature. This is primarily due to the fact that traditional settlements and their constituent traditional houses are culturally relevant artifacts, in that, they are the products of building traditions handed down from one

generation to the other (Eyüce, 2005).

Since they never challenge physical constraints imposed by nature, notably by climate and by topography, and are in harmony with their surroundings they are environmentally friendly settlements (Eyüce, 2005).

Other forces acting on the formation of traditional built form ranging from administrative factors, like building rules and regulations, to defensive determinants (defensive city walls) have also been issue of debate in scholarly works. As it has already been stated in the above the object of research is not the entirety of the built form as an assembly of houses but the constituent elements – the individual house.

This study does not aim at a refutation of neither the impact of natural forces nor the determining role of cultural factors during the evaluation process of the traditional dwelling. It, instead, focuses itself to the essential role of the interdependence between the individual house form and properties of settlement pattern during the shaping of traditional built form. The interdependence in some cases is so dense that it reflects itself in the built environment in the form of coexistence of house and settlement in an extremely compact setting. There exist traditional built environment that the entirety of the settlement is perceived as a big single building. The same has been stated by Rapoport as in the follow: "... it is sometimes difficult to separate dwelling and settlements. Particularly in the case of communal dwellings, where dwellings and settlement are one." (Rapoport, 1989). The same scholar goes on to state that: "The dwelling and its parts are linked to many other settings in the neighborhood, the settlement and beyond" (Rapoport, 1989) (Figure 1, 2).



Fig 1, 2. Pocitelj Traditional Settlement in Bosnia

The theoretical, construct of this study is therefore, based on the premise that the shaping of traditional built form, which includes both the house and the settlement simultaneously, is the product of a co-influence which gives way for the co-existence of the two. In other words the end product of traditional building and the object of the research in this field is the traditional built environment in all its entirety.

In connection with the aforementioned contention concerning the traditional building and particularly about traditions Charpentier's view is as follows: "traditions in this context means a way of organizing spaces from the scale of the house to the scale of the village and the town using models and practices which are legacy of the past" (Charpentier, 1989) (Figure 3, 4).



Fig 3, 4. Traditional Settlement in South East Turkey-Halfeti

The coexistence/interdependence of individual houses and the settlement pattern in traditional built environments reflects itself in the vernacular language of most traditional cultures. It is instructive to notice that the specific terminology employed for house and settlement varies considerably than that ours. As it has been mentioned by Charpentier: "... our vocabulary sometimes impoverishes certain concepts which are rich with meanings in another culture. ... The word for a village or for a quarter in a town '*ban*' also means 'house' or 'dwelling'. One word indicates the basic unit as well as the whole settlement without drawing any distinction between whether such a dwelling is a rural or an urban area" (Charpentier, 1989).

Similarly Batammaliba language employs the same word '*takienta*' to mean both house and family (Blier, 1989).

It is most appropriate in this section of this study to dwell duly on the terminology employed in this paper. The term 'traditional' has been preferred throughout the study to 'vernacular' while vernacular denotes to a specific location the term "traditional" signifies the determining role of culture and based on the fact that cultures produces similar built forms in various locations under diversified circumstances according to the same building tradition. The term built environment is utilized to signify the man-made environment, and similarly built

form to signify the artifacts produced as an output of traditional building activities. The term "traditional building" has been preferred to replace "architecture" in order to signify that traditional building is the product of a whole society not an artistic endeavor of a professional.

"Built environment is an abstract concept employed here and in some of the literature to describe the products of human building activity. It refers, in the broadest sense, to any physical alteration of the natural environment from hearts to cities, through construction by humans. Generally speaking, it includes built forms, which are defined as building types (such as dwellings, temples or meeting houses) created by human to shelter, define and protect activity. Built forms also include, however, spaces that are defined and bounded, but not necessarily enclosed, such as the covered areas in a compound, a plaza, or a street." (Lawrence & Law, 1990).

In traditional settlement interdependence between the individual houses has been the issue of discussion by many scholars in various contexts. Taking the issue of interdependence in connection with the 'traditional building practice' in Muslim countries, which is deeply rooted in the teachings of Islam, Hakim and Rowe state that: "...in a typical traditional setting in one of the old urban centers in North Africa such as in Tunis, Kairouen, Fez or Marrakesh, one can see why building design decisions by a home owner would have impacts on some or most neighbors. These impacts, the inherent interdependence between neighbors, and the resulting potential for conflict, were among the concerns of the *Mu'amalat* branch of the *Fiqh*, which is the Arabic term for jurisprudence or the science of religious law in Islam. It deals with two spheres of activity: *Ibadat*, which addresses related to ritual observances, and *Mu'amalat* which addresses concerns and conflicts arising from the interactions and relationships among people (eg. Family law, laws of inheritance, of property, of contracts, criminal law, conflicts due to building activity and/or decisions etc.) In essence, *Fikh* is the science of law based on religion and is concerned with all aspects of public and private life and business. The guiding source of the *Fikh* is the *Qur'an* (the wholly book of Islam considered by Muslims to be revealed words of god to the prophet Mohammad), and *Sunnah* (traditions, sayings and deeds) of the Prophet (Hakim and Rowe, 1983) (Figure 5).



Fig 5. Traditional Settlement-In Fez / Morocco

Another quotation to explain the complexity of traditional built environment, in connection to traditional Muslim cities is as follows:

The urban fabric in traditional Muslim cities is very complex. It is an outcome of interaction between the conditions of sites, the customs of community and the legal mechanisms that are derived from the Islamic Law, *Fiqh*. The condition of the sites could be identified in the topography, the local materials and climate agents. Evidence of these conditions can be seen in diversity of forms and typology, with greatly differs from Morocco to Persia (Ben- Hamouche, 2009).

Traditional settlements do not evolve according to a predetermined layout scheme. This is not to say that they are unplanned and haphazardly developed built environments. They are the outcome of unwritten laws of the community. That is,



they evolve in line with the accumulated and handed down building tradition emanating from cultural and natural factors. During this process of evolution house-to-house relations among the individual dwelling units play a major role. The function of each unit is not only to provide the necessary shelter so as to fulfill the spatial needs of its occupant but also to be an integral component of the whole settlement and help shape communal spaces (Figure 6).



Fig 6. Passenge Way between Houses-Fez, Morocco

According to Charpentier: “the layout of some houses is fixed by the layout of neighboring houses, thus generating a regular pattern in the organization of settlements (Charpentier, 1989).

The source of coexistence, on interdependence, can be interpreted, in a way, to be the outcome of house-to-house dependence.

## 2. Traditional Ottoman Settlements

It has to be mentioning here that traditional Ottoman settlements defy all natural differentiations emanating from locational variations abiding by the same settlement pattern principles over a considerably wide geographical expanse from East Anatolia to Balkans. Some minor modifications are the result of extreme site conditions.

One discernible aspect of this long lasting building tradition is the realization of settlements on the slope. This unwritten building tradition has produced its own saying which can be translated into English as: ‘Land aback, plain afore’, with very few exceptions, majority of Ottoman settlements have been realized on hilly sides for not only defensive purposes but also to make space for agriculture on the plain (Figure 7).



Fig 7. Traditional Settlement in West Turkey-Şirince

Hilly sites have their own difficulties and also advantageous peculiarities which reflect themselves both on the formation of the house form and on the shaping of settlement pattern. In other words being settled on a hilly site has a considerable impact on the shaping of the built form. It is an indispensable building tradition not to obstruct the view towards the plain of the neighbor in the front. In other words, each individual house in an Ottoman settlement, adapts itself to natural topography so well

that no house hinders the view of the house situated behind. In this way the desirable effects of nature, like prevailing wind for ventilation and solar orientation, are also admitted to indoors (Figure 8, 9).

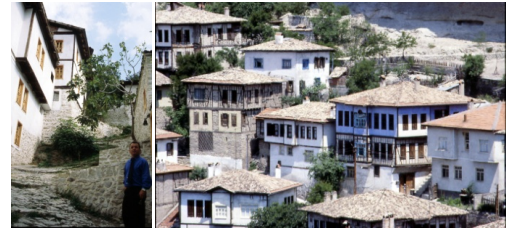


Fig 8, 9. Safranbolu-Turkey

Like all settlements realized/inhabited by Muslim communities provision of the necessary measures for privacy is of utmost importance in traditional Ottoman settlements. Teachings of Islam have always been a priority during the formation of the characteristics of the settlement and in shaping the necessary sequences among various spaces. This is achieved through the spatial hierarchies from the most public to the most private or vice versa.

Most important them all is the presence of this spatial sequential connection beginning from the most private-the room, continuing with ‘sofa’- the fluid space linking various part of the house, and giving onto courtyard, proceeding from the main door of the house to the street in front of the house and finally ending in the public open space locally called ‘meydan’, where more often than not a tree and a coffee house is located. The existence of a hierarchical chain from the most public to the most private or vice versa is the proof that in traditional Ottoman settlement individual houses and the entirety of the settlement can only be taken in unison. The integral structure of the settlement pattern is so strong that even the indoor spatial organization of the house is a part of the whole system.

As it is mentioned in the above, in traditional Ottoman houses with an open “sofa” the extroversion of the indoors is controlled, so far as the privacy is concerned, by the introverted court surrounded by high walls which also constitute a breath taking void for the whole settlement. This aspect of the settlement displays an evenly distribution of green areas among the built up areas.

Traditional Ottoman settlements consist of irregular street patterns whereas the first floor plan organization, which is the main living floor, consists of square or nearly square rooms. Cerasi explains this formation in traditional settlements as follows: “...patterns are open and allow the house to be composed as an agglutination of preconceived and geometrically regular rooms (Cerasi, 1998) (Figure 10, 11).



Fig 10. Traditional Settlement from East Turkey-Kemaliye



Fig 11. Kula-West Turkey

The ground floor at street level, which is reserved for ancillary utilizations like storage, is surrounded by high and windowless walls to secure complete isolation from the public space. These high periphery walls abide by the irregularities of both the site and also the ownership lines. In other words the ground floor morphology is not necessarily a projection of the regularly organized living level plan.

The living quarters are situated well above the ground level with two distinctly differentiated façade treatments. The one, which one may call the external façade is enriched with overhangs-‘*çıkma*’, and overlooks the street. The other façade giving onto the court-“*avlu*” is completely open and can be called as interior façade (Figure 12, 13).



Fig 12. ‘Çıkma’, Open ‘Sofa’ and Door to ‘Avlu’- Court / A House in Kula-West Turkey



Fig 13. ‘Çıkma’-Beypazarı

“*Çıkma*”, the protrusion from the main body of the building plays so important a role in the spatial syntax of both the house and the whole settlement that without mentioning its importance none of the analytical studies will be complete. It is not only an extension of indoor space toward the outdoors but also it provides the interior space with a full length view of the street. If the house is a corner building the two streets on both side of the corner become visually accessible (Figure 14, 15, 16).



Fig 14. Two House with “Çıkma” from Kula



Fig 15. A House from Muğla with high count walls



Fig 16. Coffee House in the Public Space

### 3. Traditional Hejaz Settlements

Hejaz, situated along the Red Sea coasts of Arabian Peninsula at the Western Region of Saudi Arabia possesses distinct features of traditional building as far as the peculiarities of its built environments are concerned. In other words, despite locational differentiations there exists substantial amount of evidence to consider a common building language of Hejaz and, even beyond the region, one can easily extend the boundaries and talk about a Red Sea tradition of building taking into account the Suakin Houses on the opposite coast of Red Sea (Greenlaw, 1995).

Unlike traditional Arab houses that one encounters in many Arab countries Hejaz Houses have not evolved taking the courtyard as the main organizing space around which other spaces are introvertly positioned. They do not also possess a court at the street level which is largely due to the scarcity of available land for building. The corresponding open spaces are situated well above the ground level in the form of open to sky terraces locally called: “*kharja*” –meaning outside. These open terraces are surrounded by high periphery walls so as to ensure



the privacy of the indoors. 'Kharjas' positioned at different levels display a roof scape peculiar to Hejaz (Figure 17, 18).



Fig 17. Traditional Street Pattern, Cumalikızık



Fig 18. Traditional Street Pattern, Kemaliye

Hejaz settlements consist of multistoried houses, positioned in a densely built compact pattern with irregular streets. The number of storeys varies between four to six. The houses have thick stone walls, quarried from the bottom of Red Sea. In sharp contrast with courtyard houses, Hejaz, have extroverted indoor spaces through large window openings. The houses windows are covered with highly elaborate wooden surface covering elements called "mashrabiya". Windows in Hejaz have open, openable and closed parts. Having several layers and displaying highly artistic and ornamental features. The wooden claddings do not have glass surfaces to allow the maximum benefit from the wind. The wooden elements are so cleverly designed and implemented that the house inhabitants can see the outdoors without being seen. Moreover, they lend themselves suitable to look downwards and upwards (Eyüce, 1985).

Compactness of settlements is the general property which holds true for all Hejaz cities. It is climatically appropriate and also bears relevance with cultural necessities. Nevertheless there are discernible settlement pattern differentiations among various cities emanating from the peculiarities of each city. Jeddah, Makkah, Madinah, Yanbu and Taif are the main cities of the region. In this study Jeddah and Makkah will be dealt with for a comparative analysis (Figure 19, 20, 21, 22).



Fig 19. Roofscape with 'Khanjas' in Jeddah



Fig 20. Proximity and Separation of Houses in Jeddah



Fig 21. Traditional Settlement in Jeddah



Fig 22. Traditional Settlement in Madinah-Saudi Arabia

Jeddah is a port city on the coast of Red Sea with hot humid climate. Being surrounded by city walls which remained intact until 1947 caused to scarcity of available building land. Jeddah houses have less shared walls and more exposed surfaces, compared to Makkah, in order to admit the maximum amount of wind from the Red Sea, so as to cope with extreme humidity with the help of passive ventilation systems.

Traditional settlement in Makkah on the other hand, has evolved, primarily, according to the criteria of proximity to holy Kaba- the most sacred place of Islam. This preference resulted in a highly dense and compact pattern of settlement. A hot dry climate prevails throughout the year in Makkah resulted in houses with more shared walls so as to minimize the heat gain. This property of the settlement has a direct impact on the organization of the individual houses with the development of airshafts called "manuar" to facilitate the air circulation inside the house.

#### 4. Settlements with Courtyard Houses

Courtyards are utilized in almost all building types, in all periods of history of architecture, in every part of the world as an organizing element of building design. Houses, palaces, monasteries, mosques, schools, governmental and private administrative buildings to name a few. So far as the traditional houses are concerned the genesis of the courtyard house is traced back to 7000 BC in Çatalhöyük/Anatolia and 10.000 BC in Beijing/China (Chen Li, 2000).

An elaborate version of courtyard house is the Roman Domus. Courtyards which can be interpreted as an assembly of solid masses around a void or as a void in the body of a solid mass has been, and still continue to be the preferred house typology by many a culture all around the globe. Both the house and the settlement composed of courtyard houses have proved to be the solutions which fulfill functional, cultural and environmental requirements.

Courtyard as an organizing element of spatial syntax of the house is the privatization of an open space totally under the control of the house inhabitants: it provides a clear spatial division of public and private domains. As an element of climate control it functions as a regulator of heat loss. Çatalhöyük and Aslantepe are early settlements located in Turkey. These two settlements are assemblies of courtyard houses with no streets among the houses at all. The access to each individual house is provided through the roofs. The compactness of the settlement to the extent of unifications must have been dictated by defense requirements (Figure 23, 24, 25).



Fig 23. Street Pattern in Traditional Madinah



Fig 24. A Courtyard House in Dirijah, Near Rijadh-Saudi Arabia



Fig 25. A Courtyard House in Mardin-Turkey

It has been mentioned in the preceding parts of this study that despite the fact that all traditional buildings are in harmony with nature and although different cultures have their own approaches to cope with the impact of natural forces. There are numerous examples of different cultures settled in the same geographical region and shaping their built form on their own way. Therefore courtyard houses are as components of settlements are assembled in varying degrees of compactness depending on the cultural interpretation of natural environmental factors. Chinese quarters in Malaysia with traditional row houses is one such case, in that, traditional Malay houses in the same region and under the impact of some natural factor have evolved according completely different principles of shaping. Traditional Malay houses are detached buildings and are elevated from the ground on stilts, whereas the Chinese house are constructed on the street level and have shops on the ground floor (Figure 26).



Fig 26. Shop Houses with Courtyard in Melaka-Malaysia

Despite the high level of humidity which prevails throughout the level in Malaysia these climatic situations are being coped through the help of courtyards positioned within the main body of the building. There exists usually more than one courtyard each of which functioning as air and light well. Since they are limited in size they hardly function as an activity space (Eyüce, 2005).

Courtyard house settlements with not only consisting of dwelling with shared walls but also with shared floor slabs is the case of Mardin with very peculiar type of compactness.

Mardin is a city situated at southern part of the turkey on the slope of a rocky hill. So far as the morphological properties of the traditional built environment is considered it displays all aspects of co-influence to support the main premise of this study. It is the epitome of compliance with constraints imposed by natural factors like topography and climate and also with the cultural determinant emanating from kinship relations of its inhabitants.

The settlement consists of houses with not only shared walls but also with shared slabs at several levels. The street pattern which is partly opened partly covered has so evolved that its continuity is provided with vaulted passage ways realized underneath the living quarters of the dwelling units. The vaulted passage ways are locally called 'abbara' (Figure 27, 28).



Fig 27. 'Abbara' in Mardin





Fig 28. 'Abbara' in Mardin

The case of Mardin constitutes the perfect example of evaluation of a settlement fabric with its solids and voids.

### 5. Conclusion

The main concern of the study is the interdependence between the morphological properties of the individual living unit and the pattern of settlement in traditional built environments. This interdependence, which reflects itself on the built form at varying degrees depending on the natural constraints and the specific requirements of different cultures reaches, in some cases, to the extent of an unavoidable coexistence of the integral components of traditional settlements. There are even cases that, like for instance the entirety of the settlement functions as if it has been conceived as a single building mass (Figure 29, 30).



Fig 29. Traditional Settlement Pattern-Kemaliye



Fig 30. Traditional House in Kemaliye

The settlements utilizing the surface of the earth as the basic building material and carving the method of building production, the interdependence, though each settlement has its own specificities, is largely and outcome of the necessity to comply with the cultural norms and also to be in harmony with natural surroundings (Figure 31).



Fig 31. Settlement Where Carving Utilized as the Fundamental Building Production Method-Hasankeyf

Although different cultures have their own way of approaching to the treatment of natural environment and adopting their habitat to their surrounding, to be in harmony with nature is a property which is perfectly in line with the eco-centric environmental logic which preaches "building with limited ecological foot prints" (Guy and Farmer, 2001).

Traditional societies have varying understanding/requirements of privacy on the indoors necessitating different means of proximity and separation with their neighbors. This in turn reflects itself in a wide variety of spatial organization schemes. These requirements are not solely fulfilled by means of the morphological properties of the individual houses but also by means of the properties of the settlement pattern. It is not surprising to notice that the need for privacy does not always necessitate separations and isolations. It can be solved instead by means of appropriate house-to-house relationships.

The evaluation of traditional built environments has to be taken as a process of interaction and development in unison. Therefore all research endeavors must be carried out under the guidance of this wholistic point of view which is intrinsic in all ecological approaches.

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# Functions of Mountains in Visual Composition of Christian Paintings in the Monastery of Hosios Loukas

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**Keywords:** background, Byzantine, Christian painting, element, Hosios Loukas, mountain, scene

**Abstract:** This paper clarifies the functions of mountains in the visual composition of the Christian paintings in the monastery of Hosios Loukas, weighs them against the functions of mountains in the visual composition of Christian Paintings in the Chora Church. We enumerated the elements of each painting, traced their outlines, and made “explanatory drawings.” In each explanatory drawing, we divided each painting into scenes, which we analyzed and discussed to determine the relationships between the mountains and the backgrounds of the people. In the Christian paintings in the monastery of Hosios Loukas, as is the case in the Chora Church, the mountains comprise the area with special meaning and divide one painting into different scenes and one scene into different areas. In the paintings, the mountains are drawn as “frames” that divide the world.

## 1. Introduction

In Europe, people<sup>1</sup> were historically expressed as the main theme of paintings. In some Byzantine paintings nature was drawn, not as the main theme but in the background or along with something else. What meaning does nature have in Byzantine paintings? In “Functions of Mountains in Visual Composition of Christian Paintings in the Chora Church” (Inomata, Okazaki & Yanagisawa, 2011), we analyzed and discussed the Christian paintings in the Chora Church (Turkey, the 14th century) because they are masterpieces of the Late Byzantine art and were drawn in the center of the Christianity world in medieval Europe. As a result, we clarified the mountains comprise areas with special meaning, they divide one painting into different scenes and divide one scene into different areas, the mountains are drawn as frames that divide the world in the paintings.

In this paper, we studied the Christian paintings in the monastery of Hosios Loukas<sup>2</sup> (Greece, the 10-11th century) which represents the Middle Byzantine art. This paper clarifies the functions of mountains in the visual composition of these paintings, weighs them against the functions of mountains in the visual composition of Christian Paintings in the Chora Church. Clarifying and weighing the functions of mountains in visual composition of Christian Paintings in different ages and areas lead to learning their meaning in Byzantine paintings and the fundamental relationship between people and nature. This research offers numerous suggestions about the view of nature in medieval Europe.

## 2. Related Works and Position of Research

There is much historical research on Christian paintings in medieval Europe. Chatzidakis (1997) and Connor (1991) are known on Christian paintings in the monastery of Hosios Loukas.

In European paintings, much research on paintings has focused on the post-Renaissance where nature was drawn, and most of these paintings are drawn in perspective. In contrast, the paintings in the monastery of Hosios Loukas and many other Byzantine paintings are not drawn in perspective, but two-dimensionally. Their visual composition is greatly different. In this context, to the best of our knowledge, no research exists on the functions of mountains in the visual composition of Christian Paintings in the monastery of Hosios Loukas. And, many previous studies say that nature was not a beautiful landscape in medieval Europe, but there are many unclear points. This research consider medieval European view of nature in detail and visually.

## 3. Research Method

### 3.1. ANALYSIS OBJECT

In the monastery of Hosios Loukas, frescoes are drawn in the Panagia Church (the church of the Virgin), mosaics and frescoes are drawn in the katholikon (main church), frescoes are drawn in the crypt (burial chapel). In the Panagia Church, there are only 7 paintings of saints. In the katholikon, there are 258 paintings of saints and the cycle of the life of Christ. In the crypt, there are 53 paintings of saints and the Passion cycle. Here, we analyzed 5 paintings where mountains<sup>3</sup> are drawn in the monastery of Hosios Loukas (Figs. 1-5)<sup>4</sup>.

### 3.2. ANALYSIS OUTLINE

We enumerated the elements<sup>5</sup> of each painting, traced their outlines, and made “explanatory drawings.” People, mountains, architecture, trees, animals, and so forth are drawn as the elements; people are the main themes in all 5 paintings.

Mountains, which also occupy a large area in each painting, are drawn as background behind other elements. We divided each explanatory drawing into scenes based on the narrative to determine the relationships among the elements. Next, we analyzed and discussed the functions of mountains in the visual composition to see the relationships between the mountains and people's backgrounds<sup>6</sup>.

In explanatory drawings, such numbers as “①” indicate different scenes. When more than one mountain is drawn on a single painting, they are called mountain I, mountain II, and so forth.

**4. Analysis**

Next we enumerate the elements of each painting, trace their outlines, and make explanatory drawings. We divide each explanatory drawing into scenes (Figs. 1-5).

In Fig. 1, “Nativity,” the birth of Christ is drawn. The Virgin and Christ are inside a cave in mountain I (scene ①). Joseph is at the lower left of mountain I (scene ②), Christ in the bath and two women are at the lower right of mountain I (scene ③), the Magi that came from the East following the star and angels are at the left of mountain I (scene ④), and shepherds are visited by angels on the right of mountain I (scene ⑤).

Fig. 2, “Entry into Jersalem,” is the first painting of the

Passion cycle in the crypt. Christ mounted on an ass and John get down Mount Olives, are greeted by Jews in front of an open gateway.

In Fig. 3, “Crucifixion,” Christ is on the Cross, the Virgin is at the left of him, John is at the right of him.

Fig. 4, “Descent from the Cross,” follows “Crucifixion”. Joseph of Arimathaea supports Christ and the Virgin holds Christ's right arm at the left of the Cross, John stands and Nicodemus bends to remove nails from Christ's feet with a pair of pincers at the right of the Cross.

Fig. 5, “Entombment and the Women at the Empty Tomb,” is the last painting of the Passion cycle in the crypt. On the left the body of Christ is lifted into a sarcophagus by the Virgin, Joseph and Nicodemus (scene ①). On the right an angel points out the empty tomb to two women; this scene shows the Resurrection of Christ (scene ②).

**5. Results and Discussion**

Here, we analyze and discuss the functions of mountains in the visual composition to see the relationships between the mountain and the people's backgrounds. A list of the analysis objects and the functions of mountains in the visual composition in each painting are summarized in Table 1.

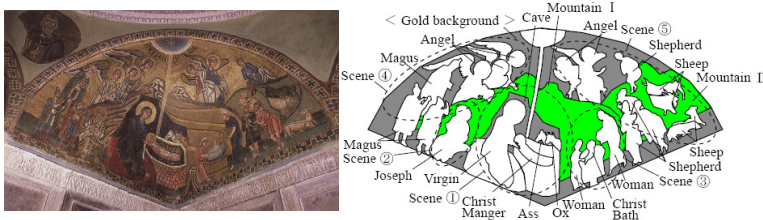


Fig. 1. Nativity: (mosaic) picture (left) (Chatzidakis, 1997) explanatory drawing (right)

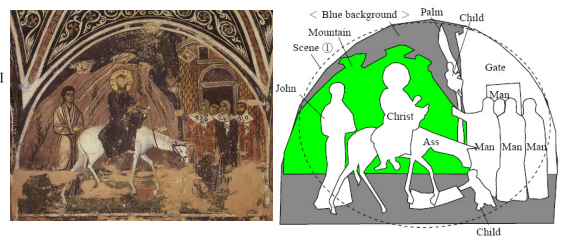


Fig. 2. Entry into Jersalem: (fresco) picture (left) (Chatzidakis, 1997) explanatory drawing (right)

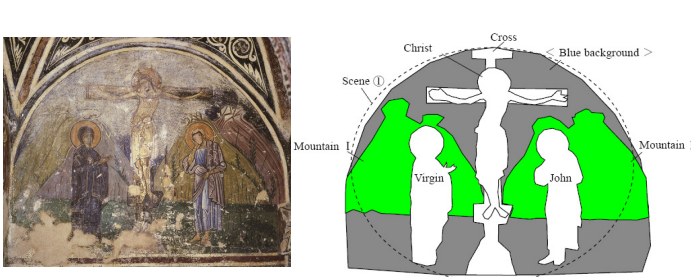


Fig. 3. Crucifixion: (fresco) picture (left) (Chatzidakis, 1997) explanatory drawing (right)

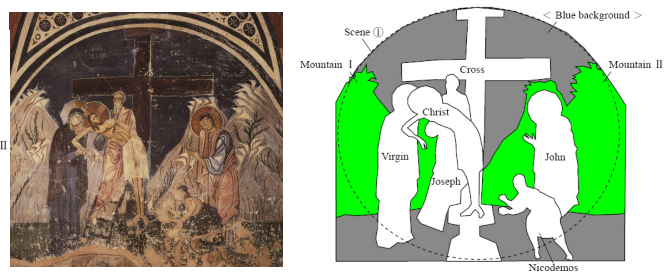


Fig. 4. Descent from the Cross: (fresco) picture (left) (Chatzidakis, 1997) explanatory drawing (right)

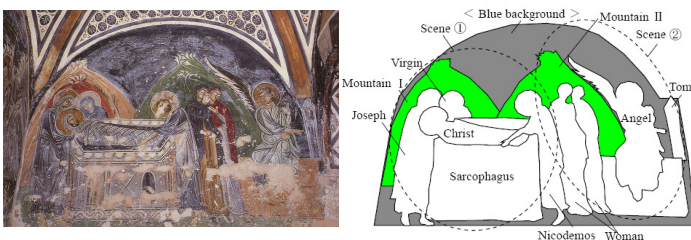


Fig. 5. Entombment and the Women at the Empty Tomb: (fresco) picture (left) (Chatzidakis, 1997) explanatory drawing (right)



Table 1. List of Analysis Objects and Results

Fig.	Title	Functions of Mountains in Visual Composition	
1	Nativity	Mountain I	Comprise an area of Christ, Virgin, Joseph and women Divides scene ④ into areas of mountain and gold background Divides scene ① and ②, and scene ④
		Mountain II	Comprise an area of the shepherds Divides scene ⑤ into areas of mountain and gold background Divides scene ① and ③, and scene ⑤
2	Entry into Jersalem	Mountain	Comprise an area of Christ and John Divides scene ① into areas of mountain and blue background
3	Crucifixion	Mountain I	Comprise an area of the Virgin Divides scene ① into areas of mountain and blue background
		Mountain II	Comprise an area of John Divides scene ① into areas of mountain and blue background
4	Descent from the Cross	Mountain I	Comprise an area of the Virgin Divides scene ① into areas of mountain and blue background
		Mountain II	Comprise an area of John and Nicodemos Divides scene ① into areas of mountain and blue background
5	Entombment and the Women at the Empty Tomb	Mountain I	Comprise an area of Christ, the Virgin and Joseph
		Mountain II	Comprise an area of Nicodemos and the women Divides scene ② into areas of mountain and blue background

### 5.1. MOUNTAINS THAT COMPRISE AN AREA

In Figs. 1-5, a mountain is in a person's background. A mountain's ridge line comprises one area within which a person is enclosed.

In Fig. 1, Mountain I is in the background behind the newborn Christ, the Virgin, Joseph and two women. The mountain comprises an area, within which Christ and the Virgin in scene ①, Joseph in scene ② and Christ and the women in scene ③ are enclosed, is in the backgrounds behind a miracle of the birth of Christ. Furthermore, there is a cave in the mountain where the newborn Christ and the Virgin are drawn inside; the mountain seems to protect them. And mountain II comprises an area, within which the shepherds listening to the angels in scene ⑤ are enclosed. In Fig. 2, the mountain comprises an area, within which Christ and John proceeding to Jerusalem are enclosed. In Fig. 3, mountain I comprises an area, within which the Virgin mourning Christ's death is enclosed, mountain II comprises an area, within which John mourning is enclosed. In Fig. 4, mountain I comprises an area, within which the Virgin holding Christ's arm is enclosed, mountain II comprises an area, within which John mourning and Nicodemos are enclosed. In Fig. 5, mountain I comprises an area, within which the Virgin and Joseph burying Christ in scene ① are enclosed, mountain II comprises an area, within which Nicodemos in scene ① and the

women informed the Resurrection by the angel in scene ② are enclosed.

As exemplified above, the mountain's function comprises an area with a special meaning that is different from its surroundings. Sometimes mountains are drawn as places that offer protection.

### 5.2. MOUNTAINS THAT DIVIDE ONE SCENE INTO AREAS

In Figs. 1-5, a mountain is the background behind a person; gold or blue is the background behind another person<sup>7</sup>. One person is drawn in the area of a mountain; another is drawn in the gold or blue background. In other words, the ridge line of the mountain divides one scene into areas of mountain and gold or blue backgrounds.

In Fig. 1, scene ④, mountain I is in the background behind the Magi, and the background is gold behind the angel and another Magus. In Fig. 1, scene ⑤, mountain II is in the background behind the shepherds, and the background is gold behind the angel and another shepherd. In Fig. 2, the mountain is in the background behind Christ and John, and the background is blue behind the Jews. In Fig. 3, mountain I is in the background behind the Virgin, mountain II is in the background behind John, and the background is blue behind Christ. The ridge lines of the

mountains divide the scene into the area of mountain that indicates the Virgin and John are in the earthly world and the area of blue background that indicates Christ is dead and disappeared from the earthly world. The deep sorrow for the death of Christ is expressed on the whole. In Fig. 4, mountain I is in the background behind the Virgin, mountain II is in the background behind John and Nicodemus, and the background is blue behind Christ and Joseph. In Figs. 3 and 4, mountains are drawn on each side of the paintings; Christ and the Cross at the center are emphasized. In Fig. 5, scene ②, mountain II is in the background behind the women, and the background is blue behind the angel.

As exemplified above, the mountain's function divides one scene into different areas. Furthermore, the background behind angels is either gold or blue, and no mountain is in the background behind them. In other words, a person in front of angels is drawn in the area of a mountain, and the angels are drawn in the gold or blue background areas.

### 5.3. MOUNTAINS THAT DIVIDE ONE PAINTING INTO SCENES

In Fig. 1, a mountain is in people's background and 5 scenes are drawn. Mountain I is in the background behind Christ and the Virgin in scene ①, Joseph in scene ② and Christ and the women in scene ③. Scene ④ is on the left of the mountain, and scene ⑤ is on the right of the mountain. scenes ①-③ are unfolded before the mountain; scenes ④, ⑤ are unfolded behind the mountain. In other words, the mountain divides the painting into scene ①-③ that show the birth of Christ and scene ④, ⑤ that the Magi and the shepherds are listening to the angels.

Therefore, the mountain's function divides one painting into different scenes.

As described above, in the Christian paintings in the monastery of Hosios Loukas, the mountains comprise areas with special meaning. They are considered to be places where we connect to the world of God, function as "frames" divides the earthly world and the world of God. They divide one painting into different scenes and divide one scene into different areas, function as "frames" divides the narrative in the paintings. The functions of mountains in the visual composition of the Christian paintings in the monastery of Hosios Loukas are the same as the functions of mountains in the visual composition of the Christian paintings in the Chora Church (Inomata, Okazaki & Yanagisawa, 2011). The mountains are drawn as frames that divide the world in the paintings in the Christian paintings in the monastery of Hosios Loukas, drawn in the different age and the area from the Chora Church.

## 6. Conclusion

This paper clarified the functions of mountains in the visual composition of the Christian paintings in the monastery of Hosios Loukas, weighed them against the functions of mountains in the visual composition of Christian Paintings in the Chora Church. We enumerated the elements of each painting, traced their outlines, and made explanatory drawings. In each explanatory drawing, we divided each painting into scenes. Next, we analyzed and discussed the relationships between the mountains and the backgrounds. In the Christian paintings in the monastery of Hosios Loukas, as is the case in the Chora Church, the mountains comprise areas with special meaning. They divide one painting into different scenes and divide one scene into different areas. The mountains are drawn as frames that divide

the world in the paintings.

## Endnotes

1. In this paper, we treated Christ, the Virgin, and angels as "people" because they are drawn as human figures.
2. The monastery of Hosios Loukas dominates the slopes of Mount Helicon, which is in the northwest of Athens, Greece. It was probably built in the 10-11th century, but the exact dates of the monuments are not clear.
3. In this paper, we defined a mountain as a rugged ground that greatly rises and excluded a smooth ground that only slightly rises.
4. Fig. 1 is a mosaic in the katholikon. "The Nativity is the only mosaic composition in the katholikon which depicts the landscape to any extent." (Chatzidakis, 1997, p.25) Figs. 2-5 are frescoes of the Passion cycle in the crypt.
5. One main purpose of the Christian paintings in medieval Europe was to faithfully express a Biblical content (Wakakuwa, 2000, p.104). Such drawn elements are comparatively rare.
6. In this paper, "background" refers to what is drawn around the outline of a person. However, exceptions are hereinafter described.
7. In Fig. 1, the Magi and the shepherd listening to the angels protrude from the area of the mountain to the area of the gold background. In Fig. 4, the Virgin holding Christ's arm protrudes from the area of the mountain to the area of the blue background. A person whose background is the mountain protrudes from the area of the mountain to contact the person in the area of the gold or blue backgrounds.

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The pictures in Figs. 1-5 are by HOSIOS LOUKAS (Chatzidakis, 1997) . The other figures and tables were made by the authors.

# Case Studies of Collaboration between Architects and Contractors in Japan

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**Keywords:** collaboration, architect, contractor, Japan, Mayekawa Kunio, Murano Togo, organization, sharing roles and responsibilities, building construction process

**Abstract:** The aim of this paper is to show some typical cases of collaboration between architects and contractors on Japanese building construction projects. To be concrete, this paper deals with real projects of two famous Japanese architects, Mayekawa Kunio and Murano Togo, and considers how they collaborated with contractors. The Tokyo Metropolitan Art museum is examined as Mayekawa's project and the Kyoto Takaragaike Prince Hotel as Murano's project. To grasp the collaboration methods of Mayekawa and Murano, I conducted the following surveys: analysis of both projects' records, and interviews with architects and contractors who joined each of the projects. Then I show organizations and sharing roles and responsibilities and, building construction process of the both projects.

## 1. Introduction

Until the middle of the 18<sup>th</sup> century (Edo era) in Japan, the main project delivery system was the design-build process. A master builder of wooden construction controlled carpenters and managed the process, and then they built houses, temples and shrines by Japanese traditional construction methods (Hashimoto, 1995). Furthermore, master builders also designed, so the origin of architects' profession in Japan was the master builders' (Fujii and Tsurumaki, 1997).

In the late 18<sup>th</sup> century (Meiji era), the concept of 'architect' came to Japan from the West. Then, a British architect traveled to train young Japanese architects in the architecture department at the Engineering University, which became Tokyo University (Yamamoto, 1980). A professional institute of architects was also formed in Japan imitating RIBA (Royal Institute of British Architects) and AIA (the American Institute of Architects). After that, Japanese architects tried to establish their profession and separate it from construction.

However, architects and contractors have collaborated closely to confirm building quality. The collaboration was not based on explicit systems, like contract documents and handbooks. Architects and contractors just collaborated and shared roles tacitly. Today, such situations are changing to some extent. Some tacit collaboration has been replaced by clear roles and responsibilities, strict contracts, and so on.

Therefore, the aim of this paper is to show some typical cases of collaboration between architects and contractors on Japanese building construction projects. To be concrete, this paper deals with real projects of two famous Japanese architects, Mayekawa Kunio and Murano Togo, and considers how they collaborated with contractors. The Tokyo Metropolitan Art museum is examined as Mayekawa's project and the Kyoto Takaragaike Prince Hotel as Murano's project.

Mayekawa and Murano are typical examples of architects who collaborate with contractors to achieve high quality buildings. However, their collaboration methods seem different from each other. On projects led by Mayekawa Kunio, architects worked on more parts of construction than on other projects. On the other hand, contractors worked on more parts of design on projects led by Murano Togo.

To grasp the collaboration methods of Mayekawa and Murano, I conducted the following surveys: analysis of both projects' records, and interviews with architects and contractors who joined each of the projects. After that, I analyzed the projects according to the following perspectives: how architects and contractors share their roles and when they communicate with each other.

## 2. Case 1: Project led by Mayekawa Kunio

### 2.1 OUTLINE OF RESEARCH

#### 2.1.1 Overview of Object

Mayekawa Kunio (1905~1986) is one of the architects representing modernism in Japan. He studied under Le Corbusier from 1928 to 1930 in France. After returning to Japan, he studied under the American architect, Antonin Raymond, and established Mayekawa Kunio Associates and Architects & Engineers in 1935. He strove for the spread and development of modern architecture in Japan. His works were awarded The AIJ Prize for Design, the most authoritative prize presented for architecture in Japan, five times. He also worked establishing the profession of architects, and served as JIA president (1959~1962) and UIA vice-president (1965~1969).

One of Mayekawa's characteristic design methods was the

*Technological Approach*. This aimed to promote development and sharing of fundamental building technology, and stoic and fastidious plastic design. As a result, by collaboration with specialist contractors, Mayekawa's Original Tiled Panel System, Weatherability Steel, and PC (architectural precast concrete) were developed.

The Tokyo Metropolitan Art Museum (1975) is a public art museum located in Ueno Park in Tokyo. Three representations of the *Technological Approach*, Mayekawa's Original Tiled Panel System, Weatherability Steel and architectural precast concrete were used. The site area is 16,000 square meters, building area is 6,000 square meters and the total floor area is 32,000 square meters. The number of stories is two, with two basement floors, and it is a reinforced structure, and partially steel. The axis of the whole composition and flow is set as an *esplanade* on the ground floor, sunken garden and entrance lobby one story beneath ground level, and sculpture halls two stories beneath ground level. Continuous arches are hung over them. Four exhibition buildings, a plan exhibition building, and a cultural-activities building are arranged around it. Repair work has been performed since 2010 and it is due to be used continuously even after 35 years have passed since completion of works.



Fig.1 The Tokyo Metropolitan Art Museum

The building elements where collaboration was performed closely on design and construction are the structure of concrete, whose part is architectural concrete, the ceiling of architectural precast concrete, the tile on the wall surface, which partly adopted Mayekawa's Original Tiled Panel System, and the doors and windows, which partly adopted Weatherability Steel based on the *Technological Approach*.



Fig.2 Mayekawa's Original Tiled Panel System

### 2.1.2 Research Method

There are two reasons for choosing the Tokyo Metropolitan Art Museum as a subject of research. First, the preserved data is abundant and can be used. Second, sufficient interviews are possible since architects and contractors who participated in the project are available. With the above, concrete examination was able to be performed regarding collaboration between architects and contractors.

## 2.2 RESEARCH RESULTS

From these two viewpoints, "organizations and sharing roles and responsibilities" and "construction process", I consider the collaboration in the Tokyo Metropolitan Art Museum building construction project. First, I show the organizations that participants in the project belong to, and the relation between organizations and sharing roles and responsibilities (Fig. 3). Then, I survey the collaboration in the building construction processes.

### 2.2.1 Organizations and Sharing Roles and Responsibilities

The owner of the Tokyo Metropolitan Art Museum building construction project was Tokyo government, and the architect was Mayekawa Kunio Associates, Architects & Engineers, and the general contractor was Obayashi Corporation.

Persons from the Education Bureau of the Tokyo Metropolitan Government resided on the construction site permanently as owner and supervised like participation in site meetings and approval of design variation.

Mayekawa Kunio Associates and Architects & Engineers took charge of design management, architectural design, and environmental engineering as a design firm. Mayekawa supervised in the firm. Furthermore, he inspected and gave directions on the construction site, made the final decisions about important elements, like arches of the sunken garden, sashes, and performed color arrangements. Yokoyama Consulting Architectural Engineers also participated in the project and took charge of structural engineering.

In the construction stage, they performed surveillance by being divided into *Honsha-Kanri* and *Genba-Kanri*. *Honsha-Kanri* (*Honsha* means head office, and *Kanri* means surveillance in Japanese) performed detailed design about unspecified parts, and variation of design in the design office. Two persons took charge of *Honsha-Kanri*. One (A1) took charge of exchanges between Mayekawa or *Genba-Kanri*, and attendance of regular site meetings. The other (A2) took charge of making drawings in response to directions from A1, communicating with A1. *Genba-Kanri* (*Genba* means construction site, and *Kanri* means surveillance in Japanese) resided at the construction site permanently and arranged with the owner, examined and approved shop drawings, construction essentials books, site work management plans, and issued site instructions. Two persons took charge of *Genba-Kanri*. One (A3) took charge of exchanges with the owner or A1, *Honsha-Kanri*, management of the process of making drawings in the design office in order to be sufficient for construction, gave instructions to contractors, and approval of shop drawings. The other (A4) took charge of collation of drawings and execution of work.

From Obayashi Corporation, about 30 persons took charge of site work management. Moreover, a draftsman also resided on the construction site permanently, and drafted shop drawings. Specialist contractors signed the subcontract contract with Obayashi Corporation, and participated in the project. As for this, specialist contractors who collaborated with the architects from



the design stage were also the same.

2.2.2 Building Construction Process

In the schematic design stage, materials and construction methods, which needed collaboration with specific specialist contractors, were chosen (ex. Mayekawa’s Original Tiled Panel System, architectural precast concrete). Therefore, in the design development stage, specialist contractors participated in examination of details, constructability of these materials and forms. Moreover, the architects drafted details with shop drawings.

From the tender stage to commencing the execution of the structural works, the architects explained the design intentions, such as important design parts and cautions on execution of work, for the site work management staff of Obayashi Corporation. Moreover, the architects showed contractors the building that adopted Mayekawa’s Original Tiled Panel System like the Tokyo Metropolitan Art Museum. This was for deepening contractors’ understanding of Mayekawa’s Original Tiled Panel System.

In the construction stage, the owner and persons in charge of *Genba-Kanri* and the site work management staff of the general contractor resided at the construction site permanently. Therefore, daily, whenever a point in question or that needed examining arose, it could be addressed. The contents of the examination by *Genba-Kanri* persons and site work management staff were reflected in shop drawings, and were shared. Moreover, regular site meetings about progress of work, etc. were held once a week, and the owner, the *Honsha-Kanri* persons, the *Genba-Kanri* persons, and the site work management staff participated.

Instructions on changes from the owner, such as use of rooms, were transmitted to the *Genba-Kanri* persons with a change order. The *Genba-Kanri* persons told the *Honsha-Kanri* persons about the changes, and requested additional drawings. The *Genba-Kanri* persons explained the additional drawings to the owner, and they obtained private consent. The *Genba-Kanri* persons transmitted it to the site work management staff.

When a draftsman of Obayashi Corporation and specialist contractor drafted shop drawings, the *Genba-Kanri* persons judged "whether design intentions are correctly reflected in shop drawings", and approved the shop drawings. In some elements, like Weatherability Steel sashes, Mayekawa approved the shop drawings. In addition, the site work management staff checked whether the shop drawings drafted by specialist contractors would suit the construction budget, and the *Genba-Kanri* persons approved them. Moreover, the site work management staff also got the owner’s approval for important drawings, which cost a large amount of money, like of Mayekawa’s Original Tiled Panel

System.

The *Genba-Kanri* persons checked construction essentials books, which contractors summarized before the construction execution, about whether design intentions are achieved when the work is performed. After the *Genba-Kanri* persons’ approval, the work could be started.

Furthermore, the *Genba-Kanri* persons supervised the construction execution of placing concrete. They checked staff charts of site work management staff and checked the test results about forms, steel reinforcement, etc. that the specialist contractors submitted. On the day before placing concrete, the *Genba-Kanri* persons gathered the site work management staff and specialist contractors, and commanded the simulation in order to make contractor’s understanding deepen about roles and responsibilities, procedures and notes. On the day of placing concrete, the *Genba-Kanri* persons checked the time for ready-mixed concrete that was left, and commanded placing concrete.

3. Case2: Project of Murano Togo

3.1 OUTLINE OF RESEARCH

3.1.1 Overview of Object

Murano Togo (1891~1984) is one of the architects representing modernism in Japan along with Mayekawa. He established Murano & Mori Architects in 1929. He designed various buildings both public and commercial buildings, and he was awarded the AIJ Prize for Design three times. While designing buildings with unique details, his knowledge was deep of the Japanese tea ceremony and he also excelled at Japanese-style buildings.

The Kyoto Takaragaike Prince Hotel (1986, the present Grand Prince Hotel Kyoto) is a hotel located in Takaragaike in northern Kyoto. It is one of the projects of Murano’s later years. To attract a summit held in Japan to Kyoto, it was planned as accommodations attached to the Kyoto International Conference Hall. The site area is 29,000 square meters, building area is 7,000 square meters and the total floor area is 37,000 square meters. The number of stories is eight with two basement floors, and the structure is steel-frame-and-reinforced-concrete composite construction. It has a low-layer building, which consisted of curves, and an upper-layer building of an elliptical form. Guest rooms are arranged only on the outside of the passage surrounding a courtyard. Repair work was performed in 2006 and has been used continuously until now.

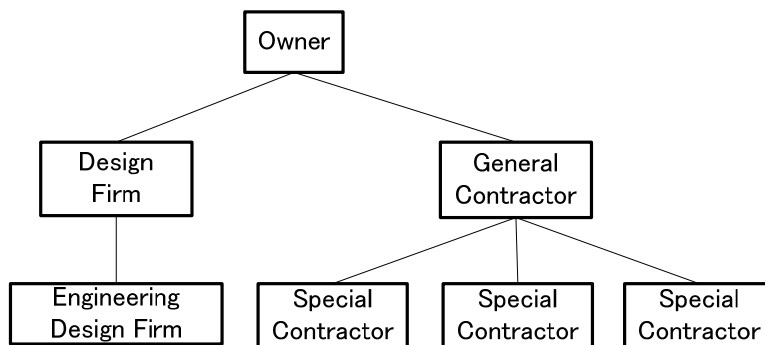


Fig 3 Organizations of the Tokyo Metropolitan Art Museum Building Construction Project



Fig. 4 The Kyoto Takaragaike Prince Hotel

The building elements where collaboration was performed closely on design and construction are outer walls of the low-layer building, on which natural stones were stuck on the three-dimensional phase, ceiling and wall of banquet halls, which are main parts of the hotel, and window sills, which is a characteristic design of the upper-layer building.

3.1.2 Research Method  
As with the Tokyo Metropolitan Art Museum, the reasons for choosing the Kyoto Takaragaike Prince Hotel as a subject of research are as follows. First, the preserved data is abundant and can be used. Second, sufficient interviews are possible since architects and contractors who participated in the project are available. With the above, concrete examination was able to be performed regarding collaboration between architects and contractors.

### 3.2 RESEARCH RESULTS

As with the preceding section, from these two viewpoints, "organizations and sharing roles and responsibilities" and "construction process", I consider the collaboration in the Kyoto Takaragaike Prince Hotel building construction project. First, I show the organizations that participants in the project belong to, and the relation between organizations and sharing roles and responsibilities (Fig. 5). Then, I survey the collaboration in the building construction processes.

#### 3.2.1 Organization and Sharing Roles and Responsibilities

The owner of the Kyoto Takaragaike Prince Hotel building construction project was SEIBU Railway, the architect was Murano & Mori Architects and the general contractor was Takenaka Corporation. Takenaka Corporation also took charge of environmental engineering.

The project was due to be progressed by the design-build process of Takenaka Corporation at the beginning. However, Murano & Mori Architects participated in the project by the requirement of the owner, SEIBU Railway. SEIBU Railway had requested the design of the Prince Hakone (1978) and the Grand Prince Hotel New Takanawa (1982) from Murano & Mori Architects. The general contractor at that project was also Takenaka Corporation.

Murano & Mori Architects took charge of architectural design and structural engineering, and the staff drafted drawings and made scale models as a design firm. Murano himself performed inspection of the site, sketches, drafting drawings, examination of scale models, and arrangements with the owner. A design chief of the design firm, who made concepts about almost all of the projects at Murano & Mori Architects, mediated communication between Murano and architects, and assisted Murano.

In the construction stage, for the *Zumen-Kanri*, five architects participated in the project from Murano & Mori Architects, and they resided at the construction site permanently. At Murano & Mori Architects, some staff who was called *Zumen-Kanri* (*Zumen* means drawings, and *Kanri* means surveillance in Japanese) took charge of drafting architectural drawings, plans for drafting shop drawings and mockups and their examination, and approval and arrangements in the construction stage. An architect, who resided permanently at the Grand Prince Hotel New Takanawa building construction project, played the role of chief of the *Zumen-Kanri*. On the other hand, some in charge of architectural design and structural engineering remained in the office and drafted drawing of unspecified parts under the design chief.

From Takenaka Corporation, about ten architects, structural engineers and environmental engineers, who belonged to the in-house design team of Takenaka Corporation, shared the design from the beginning of the project. Moreover, the chief of the in-house design team of the project of the Grand Prince Hotel New Takanawa (in the following, the New Takanawa design chief) received Murano's offer and participated in the project. He grasped Murano's intentions, and told them to other architects and engineers in the in-house design team.

In the construction stage, the site work management staff included a draftsman, architects, structural engineers, and the New Takanawa design chief of the in-house design team of the general contractor, who resided at the construction site permanently. They examined constructability and compatibility and, drafted detail drawings. Moreover, they judged which parts of the building required time and cost (because the owner might emphasize final performance as important or Murano & Mori Architects might design preponderantly), and which parts could be advanced rationally or should be decided a little early. Then, they managed cost distribution and progress of drafting drawings.

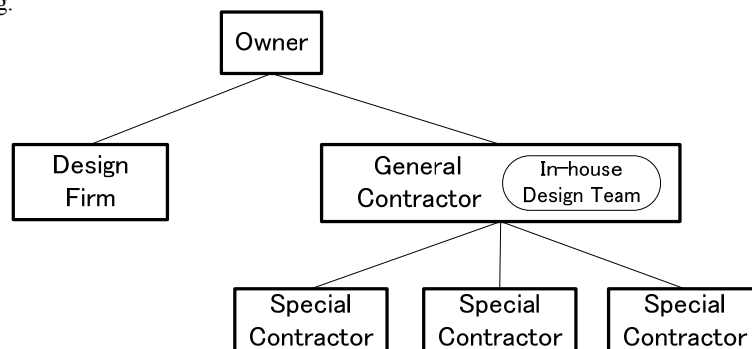


Fig 5 Organizations of the Kyoto Takaragaike Prince Hotel Building Construction Project

### 3.2.2 Building Construction Process

In the design stage, Murano made sketches and the architects of Murano & Mori Architects drafted drawings, which had scale but not dimension. Moreover, clay models were made and Murano corrected them. The in-house design team of Takenaka Corporation understood these intentions, and they considered the design condition, examined construction methods or cost and then drafted drawings. When there was the necessity for correction of these drawings, Murano & Mori Architects corrected them and also drafted drawings. Such exchanges were repeated.

In the construction stage, the *Zumen-Kanri* persons of Murano & Mori Architects, the in-house design team of Takenaka Corporation and site work management staff resided at the construction site permanently. Therefore, in addition to regular site meetings, they had site meetings almost every morning, and whenever anything disputable arose.

In Murano & Mori Architects, under the design chief, they drafted drawings of portions that were not examined sufficiently in the design stage and communicated them to the *Zumen-Kanri* persons at the construction site. The *Zumen-Kanri* persons interpreted these drawings, put in characteristic details of Murano & Mori Architects, and then drafted architectural drawings. At this time, they consulted with the in-house design team of Takenaka Corporation about constructability, if needed. The *Zumen-Kanri* persons sent architectural drawings and told design intentions to the architects of the in-house design team, and showed details about forms to express and their materials, and how to use the materials (for example, the form of curves of eaves, and the curved surface of marble columns). The elements of buildings, which Murano & Mori Architects designed in the past, were frequently used for illustration. About these, the in-house design team and the site work management staff of Takenaka Corporation examined the most rational methods according to the construction situation, and they selected a specialist contractor based on expertise.

Based on the above examination, or in order to urge examination of parts that should be decided at an early stage, the in-house design team of Takenaka Corporation drafted drawings (full size drawings are included). They also drafted structural drawings considering joints and detailing, and adjusted shop drawings. The draftsman of the general contractor and specialist contractors drafted shop drawings and made mockups if needed. The in-house design team checked them as to whether they reflected design intentions and were achievable. Further, the *Zumen-Kanri* persons checked and examined them and edited the shop drawings and the mock-ups. The above exchange was repeated. The *Zumen-Kanri* persons approved using mock-ups and samples (for example, colors and texture, such as wood and paint materials) in addition to shop drawings. In the case of outer walls of the low-layer building, specialist contractors drafted full-size drawings on the floor of the whole outer walls of the low-layer building, and they placed the actual sandstone material on them, and examined how stones aligned. The *Zumen-Kanri* persons checked this.



Fig. 6 Samples Approved by the *Zumen-Kanri* Persons

## 4. CONCLUSIONS

This paper examined two construction building projects to show typical methods of collaboration between architects and contractors in Japan. The first case is the Tokyo Metropolitan Art Museum, which was led by Mayekawa Kunio. The second one is the Kyoto Takaragaike Prince Hotel, which was led by Murano Togo. I showed organizations and sharing roles and responsibilities and, building construction process of the both projects.

In the future studies, I will show more details of these projects' building construction process and their features. Moreover, I will examine how these typical collaboration methods have changed in the present day, and what problems have arisen.

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# An Example of The Design and Construction of Rock Cut Places in Cappadocia: CEC

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**Keywords:** rock cutting, construction technique, Cappadocia,

**Abstract:** In line with the tourism demands nowadays constructing rock-cut places in Cappadocia, which is the heart of Anatolia and an area defined as Asia Minor, is on-going. New places are needed where local hand workmanship and shows are exhibited and sold in addition to food and sheltering. The CEC pot production-sale workshop and restaurant is a rock-cut structure designed to meet these demands. The construction style for which hand workmanship is needed, the material, and the bearing properties of the material have shaped the stages of design and construction of this structure. It is hoped with this study that there will be an increase in the number of architectural products, especially in the Cappadocia region in Turkey, which support the continuation of rock cut architecture and construction styles, preserve the natural environment and traditional construction materials and techniques, and serve tourism.

## 1. Introduction

The transferring of architectural values into the future and the liveability of sites where current architectural values thrive ensure the liveability and thus sustainability of such places. For a sustainable architecture and construction style, it is important to meet the demands of future generations by protecting architecture and nature, and the consistency of new structuring in the place where it is built.

The environment has come to the forefront among the reasons why the tourists choose a place. It has become important to present tourism by finding different features and integrating them with cultural and specific values (Çubuk, 1996a). Socio-cultural resources for tourism are: the past and current culture of the region, traditions and customs (eating, entertainment, ritual, ceremony etc.), handicraft, local music and dances etc. These increase the attractiveness of the region and the country (Atay, Özyayın, 1996). Touristic development, however, is initiated by a strong investment in quality and identity (Lobo, 1996).

A structure which can integrate the historical environment, natural data and economic benefit is important for sustainable tourism (Çubuk, 1996b, Koç, 1996, Oral, Şenbük, 1996, Özek, Sirel, Akansel, 1996). Sustainable tourism is a development within which cultural integrity, ecological processes, biological diversity and systems continuing life are maintained by protecting the environment without disturbing or changing it as well as managing all resources in such a way as to meet the economic, social and aesthetical needs of tourists and people living in the region and the same needs of future generations (WTO, 1993). Social-ecological-economic-spatial-cultural sustainability is defined in sustainable tourism (Çubuk, 1996a). In the organizing a region for touristic purposes, thus in corresponding structuring, the protection of natural beauties is

regarded as essential (Çubuk, 1996a). The planning and application of land use decisions in the frame of certain environmental protection rules (procedures) are at the forefront (Oral, Şenbük, 1996). Demand and developments for touristic purposes are shaped in a way as to protect natural and historical properties in touristic regions. Instead of structures which ruin the aesthetic and are not suitable for regional patterns, environmental planning is recommended by architecture containing local motives suitable to the region (Çubuk, 1996a, Oral, Şenbük, 1996). In this respect, historical towns and villages which maintained residential patterns and historical identity have become important (Dökmeci, Kerimoğlu, 1996). The findings of the research showed that environmental properties built in consistency with the natural, historical, and social environment are preferred by individuals (Aktürk, 1996, Dökmeci, Kerimoğlu, 1996). Touristic structures can be structural forms consistent with the natural environment by using local construction techniques, materials and cultural images (Şenlier, 1996). The projects preferred in touristic regions and designed to contain traces of past architectural culture to meet the psychological needs of users have been gaining importance (Aktürk, 1996).

Whereas previously the source of income at the city of Avanos examined in this study which is located in the center of the Cappadocia region renowned worldwide as a touristic center was agriculture and handcraft intensive pottery; today it has become the sales of handcraft intensive pottery in tourism. This has brought with it the use of current structure stock and affected new housing/development. While current patterns have been repaired, making new designs suitable to the pattern has led to sustainability through the transferring of architecture values to future generations. The demand for places to meet accommodation, catering and shopping needs due to tourism has brought the reuse of traditional structures as well as the development of new ones. Therefore, in addition to the

utilization of current potential for accommodation purposes, new places are also needed for catering and shopping. Designing and constructing new places having new functions by using the current pattern, material and traditional construction techniques have been paid attention to in addition to making the historical pattern functional again via sustainable architecture. The fact that tourism functions are designed and applied in carved rock locations which are important parts of the local texture is an important proceeding of this. When designing and building a new carved rock space, it is important to know the methods of rock carving, the distances that can be traversed in carved rock spaces, the tools and machines to be used during the process as well as using this information correctly. By designing rock carvings, it is possible not only to provide the sustainability of spaces but also of the methods used. In this study, a structure designed as carved rock in the Cappadocia region which is important for Turkey has been explained by taking into account these aforementioned criteria.

This study deals with a structure which was built in Avanos, which is the centre of Cappadocia for handicraft, by the rock cutting technique through wide openings and designed for tourism purposes by using natural patterns within the current architecture. A rock-cut touristic and handicraft sale shop and restaurant was designed in part in 1995-96 and completed in the following years in line with tourism needs. In the study, the reasons for the use of rock carving architecture in Cappadocia along with its historical, geographical, climatic and geological necessities have been explained. Reasons for the increase of rock carving in Cappadocia in time have been specified. Afterwards, the examined CEC restaurant and the city where the pottery production-sale shop is located along with the Cec tumulus have been defined. The prominent features of the city in the Cappadocia region where the structure is located at along with the historical importance of the Çeç tumulus have been emphasized. The design, building and usage stages of the newly designed CEC restaurant and pottery production-sales store have been evaluated. The plans and cross-sections of these places were given particular importance during this study. Since the structure was built into a rock by carving it has no surface element in terms of architecture. Therefore, the faces were not mentioned in the study. The structure discussed in the study is considered important since it is an example of sustainable architecture in terms of tourism structures from the point of the design process and local construction techniques used. It is expected that it will act as a guide to tourism structures that will be built in the coming years with local material and techniques. The importance of the sustainability of rock carving design and methods under the tourism heading was tried to be emphasized in this study. Thus, it will be possible to see that different local material and building methods can be sustainable as well.

## 2. General Information

### 2.1. ROCK-CUT ARCHITECTURE IN CAPPADOCIA

Cave-houses formed by carving rocks or ground are seen everywhere in the world. They are present nowadays particularly in Cappadocia-Turkey and in places such as the clayish and sandy plateaus of Huang He-China (Yellow river basin), the Andalucia region in Spain, Matmata located in the east of Tunisia and Matera in Italy (Murakami, 2008). When considered from an environmental point of view, the houses in the shape of caves have been created by the people of regions where the difference in temperature is significant and the architectural material and technique is not suitable for protecting themselves

against natural disasters. It has been said that the people survived in fixed thermal environments by utilizing the temperature of the soil in summers and winters (Murakami, 2008).

The reason for building cave-houses and underground cities in Cappadocia is mainly due to the need of Christians to defend themselves against the persecution of non-Christian and other ethnical groups and the lack of building material due to reasons such as the fineness of soil formed by the accumulation of tuff as a result of the continental climate of Cappadocia region. Yet another reason was ease of excavation due to the tuff-filled ground (Murakami, 2008).

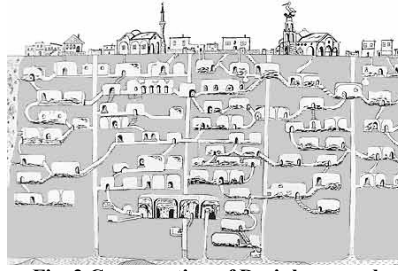
Early Christians, by carving the rocks, built places for worship and living purposes which contained all the social and physical facilities that could not be seen from the outside. The Muslim community which had migrated here and used the available places throughout history built different places by carving rocks according to their needs. The part of houses built by carving the walls of rocks and the part constructed by manmade materials constitute the houses that combine vernacular and modern architecture. The natural material is constituted by rock walls formed by tuff as well as manmade material (Murakami, 2008). Even the houses built 100 years ago are still in use (Murakami, 2008). These overlapping and side-by-side settlements which are consistent with the natural mass structure continued to be built up until 20 years ago. Nowadays, the houses carved in rocks are not built. However, even less in number are the people still living in traditional cave-houses (Murakami, 2008). The designs made by the rock-cutting technique for tourism purposes are important for sustainable architecture and the tourism of Cappadocia. Moreover, local carving and stone workers and masters can survive by the utilization of the rock cutting building system in designs.

The climate of Cappadocia is a continental climate in which the difference in temperature is high (Murakami, 2008). In Cappadocia people started to live in houses built by excavating the rocks and the ground. In such houses there are some concerns due to difficulties with ventilation and lighting. However, it is known that the effect of difference in outside temperature on the temperature of the house is low due to the heating property of soil and that the inside temperature is almost constant in summers and winters in which differences in daily temperature are low (Murakami, 2008). The traditional houses of Cappadocia are classified into two as cave-shaped houses and underground cities. Cave-houses reveal semi-underground shapes formed in mountains or hills (Murakami, 2008). Since these houses use the heat absorbing property of soil, the temperature of wall surfaces is important (Murakami, 2008). When day-time temperatures in places carved into rocks are compared to those from midnight to morning it was confirmed that the difference is hardly noticeable whereas the inside temperature is constant when compared to outside temperatures (Murakami, 2008). In new tourism structures carved into the rocks today, ventilation and temperature control are employed as a solution to this problem.

There are 36 confirmed underground cities nowadays (Fig. 1, Fig. 2, Fig. 3). In order to provide air circulation in underground cities, air doors have been constructed. It is known that some methods have been developed in houses built deep underground to prevent poor ventilation. All facilities such as kitchens, places for food preservation, wineries and even churches have been provided for people to sustain life for a very long time. These facilities are obtained by carving the rocks in the tourism structures built today.



**Fig. 1 Plan of Derinkuyu underground city (Haritalar, 2011)**



**Fig. 2 Cross-section of Derinkuyu underground city (avanos evi, 2011)**



**Fig. 3 Zelve Outdoor Museum (Fotoğraflı gezi rehberi, 2011)**

Fairy chimneys and local surface structures were formed as a result of erosion, by meteorological factors like rain and wind, and of tuff and tuff-derived soft rocks formed as a result of Erciyes, Hasandag and Gulludag volcanisms. The underground structures built in the region are within such rocks. When these units are locally examined it is seen that they are heterogeneous in narrow regions and homogenous in broad regions. These tuffs also have swelling properties (Yolveren et al., 2011). Thus these rock properties are taken into account in building new and interconnected places carved into rocks. Therefore, the properties of the material determine the system of construction.

Since the water absorption capacity of the material that forms the mountain is 25%, swelling is encountered accordingly. Partial surface deformations occur in the outer surface of the material as a result of seasonal temperature changes and cracks are seen due to a freeze-thaw effect ranging from micro scale to macro scale (Yolveren et al., 2011). This brings about partial deformations. However, it occurs only on the outer surface and local parts of the area which are exposed to meteorological effects. Such negative effects are not observed in the underground rock structures, which were opened for any purpose and whose connection to the outdoor environment was cut (Yolveren et al., 2011). Thus, the answer to the question of how much the material properties, bearing in particular, of the proposed structure are affected by the outdoor environment is "it has no effect". However, surface deformation can be encountered due to rain, erosion, solar effects and temperature differences. In order to prevent these, to some extent, drainage precautions around the structure are required.

## 2.2. AVANOS and CEC TUMULUS

The history of Avanos, which is a part of Cappadocia having Hittite, Phrygian, Roman, Byzantine, Seljuk and Ottoman traces, dates back 4000 years. According to the findings obtained from the excavation performed by Italians in Topakli Mound it is said that the history of Avanos goes back to Hittites. Hittites, Medes, Phrygians, Assyrians, Persians, Celts, the Cappadocia Kingdom and Ottomans have appeared in different periods in the history of Avanos. It is one of the most important tourism centres of the region having various handicraft and tourism values, such as pottery making, a carpet business and souvenir manufacturing. (Avanos kaymakamlığı, 2011, Kadınlar için, 2011) Pottery making and sales in Avanos have come to the forefront through tourism. The reason that this art has developed in Avanos is again geographical location, as Avanos is located on the north bank of the longest river of Turkey, Kizilirmak, which took its name from its red colour and divides Cappadocia into two (Avanos Belediyesi, 2011, Wikipedia, 2011, Derinkuyu Belediyesi, 2011). The banks are named new and old Avanos. Old Avanos is under protection by the Ministry of Culture of Turkey and is constituted by old Avanos houses which are carved into the rocks and made up of stone. (Avanos Belediyesi,

2011) The old houses of Avanos have been built over the caves carved into rocks by older civilizations for sheltering purposes (Kadınlar için, 2011). Avanos with its historical, cultural and architectural properties is where the first tourism facilities were founded. Economical investments have shifted towards tourism by tourism activities in the town which had formerly dealt in agricultural and stockbreeding. This rapid change created a problematic, artificial environment in terms of sustainable architecture and tourism. However, some entrepreneurs have been successful in sustaining the use of the new places with old materials and workmanship by identifying the demands of tourists visiting the region. Today, sustainable architecture by increasing the consciousness of local people is regarded as crucial for sustainable tourism.

## 3. CEC Pottery Making-Sale Shop and Restaurant

Starting from the initiation of civil engineering, building houses by creating spaces in the soil via architectural techniques are regarded as one of the simplest methods (Murakami, 2008). Rock carving, hand-workmanship, and a labour intensive construction technique have shown physical and technical developments in accordance with advancing technology. By technological advances, short scale places formerly carved into rock by hand (1–600 m<sup>2</sup>) have become bigger structures where even cars can be used (Yolveren et al., 2011). In addition to the number of historical examples in Cappadocia, rock cutting was utilized in the place discussed in this study. The rocks formerly cut by hand are cut by machines which today can extract bigger masses. Having finished cutting by machines, the hammers of local masters were also needed. Sustainability of handicrafts and labour-intensive building techniques were maintained by the participation of these masters in the construction of CEC buildings. Uncontrolled use of machines causing high vibrations during the building stage can create problems in the texture. This also causes cracks or other structural problems in natural coverings and bearing systems. Geophysics, geological or civil engineers are needed in building stage. The applications that may cause vibration must be avoided during the building of rock-cut places. Furthermore, fractures, cracks, discontinuity and loose structures can be encountered. This is an important issue both for labour safety in the building stage and user safety in the utilization stage. In this case, consultancy by expert engineers is needed. The size of the rock-cut place, where, and at which level to build it are separate problems. So, the issues were worked on with survey engineers during the construction stage to build a structure suitable for plan and ownership status and to determine the coordinates.

The data about material and building style shaped the design of the structure examined and determined the building stage. Main rock masses were extracted via machines by taking the above mentioned criteria into account (Fig.4, Fig.5). Then smaller places and fixed furniture which cannot be processed by





**Fig. 4** The texture formed after the extraction of big rock masses via machines



**Fig. 5** The texture formed after the extraction of the big rock masses via machines



**Fig. 6** The natural pattern formed due to hammer marks on walls done by hand workmanship

machines were prepared by hand workmanship. In order to provide visual integrity, hand workmanship was needed over the cutting process made via machines. Thus, hammer marks together with a wall and ceiling texture were formed (Fig.6). Moreover, the negative look of electrical circuitry and plumbing inside the cut rock which could not be done by opening channels inside the rock, as in usual structures, were covered by a mixture of rock dust and cement of a colour and pattern close to that of the rock.

In the project, in addition to the rock material and rock cutting technique the initial data of the design was presented as field structure, spatial function expectations, and customer identity. For a designer, these data differ from certain ordinary inputs. The main approach of the design has been to provide sustainability of the structure and to utilize a traditional construction technique and material in accordance with modern requirements. Therefore, the effort of solving different functions together according to the rock-cutting technique in the design and building stages have come to the forefront. Sometimes, the rock-cutting technique has even affected the design more than the other data.

The context of the work in the design of the rock-cut structure, which can be defined as designing its own limit within limitlessness, is a pottery making, sale and exhibition place and a restaurant. The employer's rock-cut restaurant within the mountain and the pottery sale workshop in the city centre have started to not be able to meet the rising tourism demand. Moreover, since the employer is a world-wide pottery artist (Fig. 7) he needs a place he can use for the production, exhibition and sale of the products. The field currently available is located on a hill where CEC Tumulus (Fig.8) also resides. It is thought that CEC tumulus located in the immediate vicinity of Avanos, which has the most uncertain (Kapadokya gezi, 2011) story among many tumuluses located between Urgup-Avanos and Ozkonak and which has a height of 32 m, is a king's tomb, like Gordion, Mount Nemrut and Karakus (Adiyaman). However, since no excavation has been done, limited information is available about the tumulus (Avanos evi, 2011, Kapadokya gezi, 2011). Scientific studies show that the place may either be a king's tomb or a sacred place. It is understood that the tumulus does not belong to the Phrygia or Lydia civilizations, which are famous for their tumuluses (Kapadokya gezi, 2011). Since CEC tumulus is available at the same place, the construction site has also been given the same name and access to the site is via two way road. There is no intensive housing around the site but a small number of touristic facilities are available.

The rock-cut places can be built by taking the bearing capacity of the rock and approaching the ownership boundaries at a distance of no more than 5 m according to the regulations regarding rock-cut places. Although there is no housing in the area or in the immediate vicinity, the size of the place was realized by utilizing only the necessary areas. Building a structure in this area of historical value, in accordance with the current regulations is also important in terms of the sustainability of historical and natural environment. The only data given to the designer is a hill. So a design for a place which the designer has not seen in an area which will not be seen is required. This brings a freedom and a limitation to the design. The design draws its own limits in limitlessness.



**Fig. 7** The Place Owner at the Bench



**Fig. 8** CEC Tumulus (Avanos evi, 2011)

The customer had a small restaurant in the current area. However, it could not meet the demand of visiting tourists. Thus, a bigger and newly designed restaurant was needed. The boundary of the land that the customer owns was known. Furthermore, common use of the kitchens of the current and the new restaurant by widening the current one was also desired. A

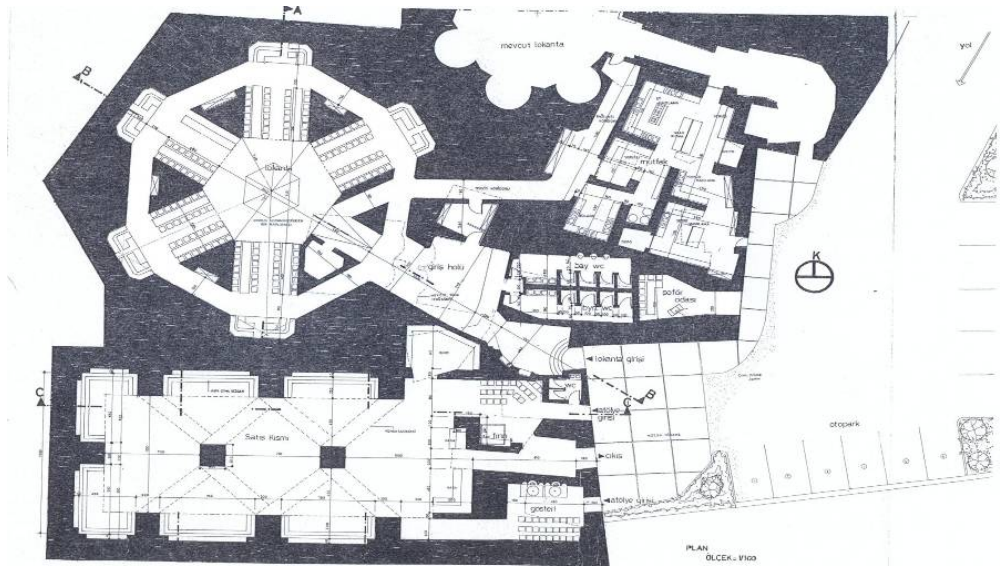


Fig. 9. Plan of CEC

design including the use of both the old and new places was drawn up for this purpose. The kitchen of the old restaurant was widened for use by the new restaurant. Public service areas such as the WC were designed for common use by both of the restaurants as well. In the design of necessary storage areas, the needs of drivers of tour busses and guides as well as the needs of teams arriving for folk dance shows were taken into account. Due to the field structure and current state of the roads the service entrance to the kitchens of the restaurants was designed over the same transport axis which customers would use to enter the restaurant. A visual solution was employed to create a difference between customer entrance and service entrance. This was provided by cutting the mountain (hill) into steps. Thus, attempts were made to separate the functions in the design. The customer entrance to the restaurant was provided by a wide transition and a corridor with a low ceiling. The feel and visual impressiveness of the main space of the restaurant was increased by creating different sizes in plan and cross section planes between the corridor and the main lunch/dining space. The main space of the restaurant was comprised of a show area, private lodges, lodges and corridors. The design in terms of the interconnection of private lodges and lodges has become the first example around the region. The main space of the restaurant is reached through a small, arched entrance (Fig. 9).

It should be mentioned that the architectural design and construction criteria of the structure has its own characteristic properties. The expectation of the employer from the design was to show pottery making to the tourists and to encourage tourists to buy potteries. The place of exhibition for this purpose in the design was chosen as the place where tourists are welcomed and the exhibition takes place (Fig.10). This place is accessed via a small, narrow door and has a capacity to serve for a tourist group. The direction of the light that shines on the pottery artist's bench and the design of the area where tourists can watch the exhibition are the factors that shaped the place. This place was kept as small as possible so that the spatial size of the next place the customers passed to could be emphasized. Customers who watch the pottery making pass to the main sales space via a narrow corridor (Fig 11, Fig. 12, Fig. 13, Fig 14). After the exhibition place and narrow corridor, the customers are suddenly directed to a large place – the sales area. The columns carved into the rocks are support columns of the main sales area, which is comprised of three parts (Fig. 15, Fig. 16, Fig. 17). These parts are also connected to smaller size places where the potteries are exhibited (Fig. 18). Service places for storing and firing potteries had to be considered. Moreover, collection pieces had to be exhibited in a separate place and even safety precautions had to be taken. Therefore, by a divided plan solution, safety requirements were met in such a way that the desired part of the structure could be closed when necessary (Fig. 19, Fig. 20).



Fig.10 Sitting Benches for Watching Pottery Making



Fig.11 Narrow corridors connecting the pottery making area to the sales area.



Fig. 12 Arched entrance in sales area





**Fig. 13** Narrow corridors connecting pottery making area to large sales area.



**Fig. 14** The case made up of stone.



**Fig.15** Support columns carved into rock



**Fig. 16** Images from inside



**Fig. 17** Images from inside



**Fig. 18** Support columns and side rooms

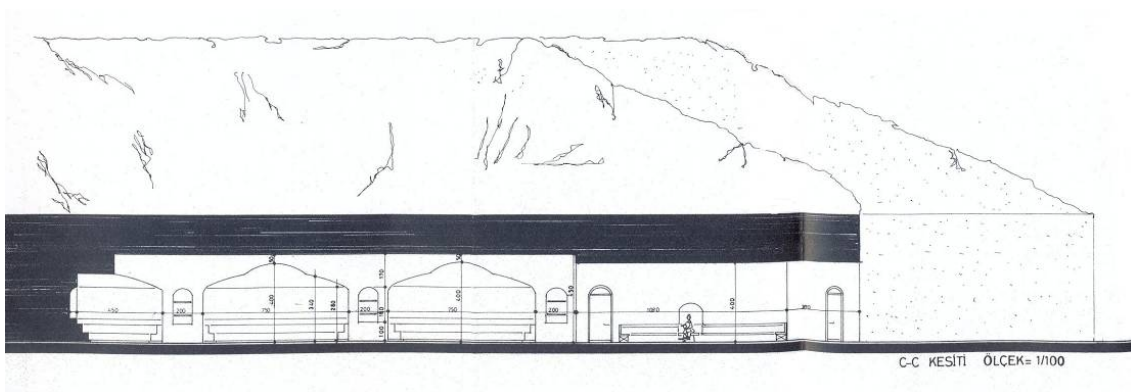


**Fig. 19** Small exhibition rooms



**Fig. 20** Transition to collection areas

Structures and facilities such as a watchman's hut can be built on the surface on the condition that  $E:0.05$ ,  $h_{max}$  does not exceed 6.50m and providing that no harm is given to the rock mass bearing. Since all places in the design were built by cutting the rock building, more of such places were not needed. Moreover, the plants taking roots were not used in the landscape of the structure since they can cause fractures and cracks. Low roof heights of current pottery workshops serving tourism in Avanos were eliminated by increasing the roof elevation by cutting the roof (Fig. 21, Fig 22). Another benefit of a high roof is that it is a rational solution to the humidity problem encountered in places carved into rock. Since the utilization of natural ventilation elements, windows for example, is not possible, additional ventilation tunnels were needed (Fig. 23, Fig. 24). Air tunnels were built between the natural ground and the place where the tourism facility was designed. The length and the end of these tunnels depend on the slope and land surface at different elevations. The lengths of the tunnels were different at different points. The advantage of rock carving was the attempt to utilize the interior. Large and small niches were designed to exhibit the products in every section.



**Fig. 21** The section of CEC pottery and exhibition space

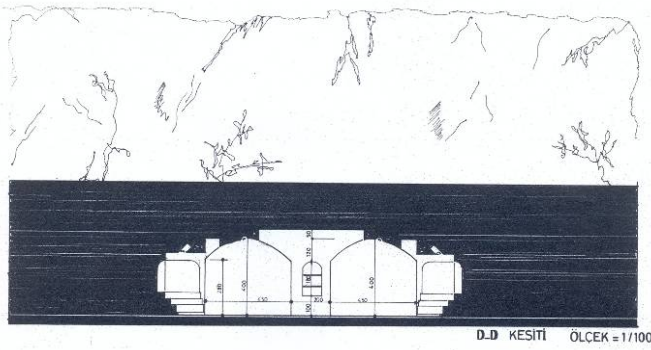


Fig. 22 The section of CEC pottery sales and show area



Fig. 23 Natural ventilation tunnel



Fig. 24 Natural ventilation tunnel

The show area at the centre of the place is almost a 9 m-space. This space was formed by cutting the rock in the shape of a dome (Fig 25). Huge columns support the main dome. The large sizes of the columns contributed to the separation of the centre of the restaurant from the corridors. The height of the main dome is about 6 m. The height of the corridors is 2.5 m. (Fig. 26) which emphasizes the dimension of the main dome. Since the corridors will be used for service they were designed as transition places and thus their dimensions were kept at a minimum. The private lodges and the lodges were constructed in stages so that folk dance shows to be performed in the main centre can be seen by all customers. The private lodges stand at the highest place, and the interconnection and the lodges were connected to the centre by an inclined section (Fig. 26). The heights of these places were 2 and 2.8 m, respectively. The lodges were designed to accommodate a tourist group. For small groups and private reservations, private lodges were designed (Fig. 25, Fig 26). Service cabinets were carved into columns at the corridors. Tables and some of the sitting benches in the private lodges were also designed as cut rock. Ventilation was again important for these places. The ventilation system utilized in the place where pottery making, sales and exhibitions were made was also used in the restaurant. Natural ventilation and light receiving (such as windows) opportunities were not possible due to the distance from a natural surface of the mountain.

Niches were built in the interior walls which constituted the pottery making, sales and exhibition place were built via the utilization of the rock carving technique. These niches were used as interior decoration elements by lighting the exhibitions of potteries and ceramic products sold (Fig. 27, Fig 28). Thus, the rock in which the place designed is located was also used in the exhibition. The owner had shelves built from natural wood inside some of the niches (Fig. 27, Fig. 28).

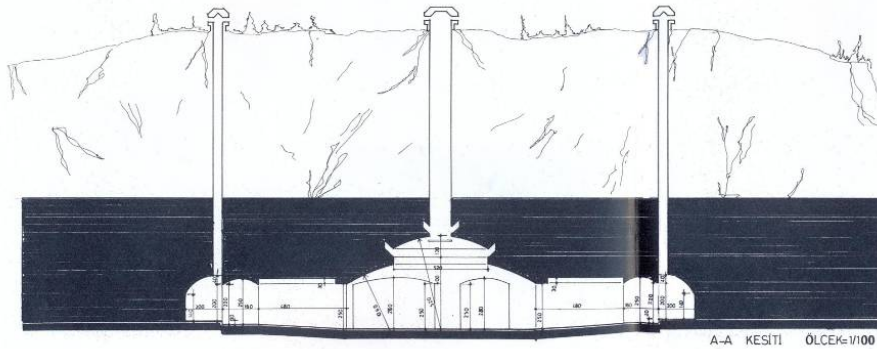


Fig. 25 The section of CEC restaurant

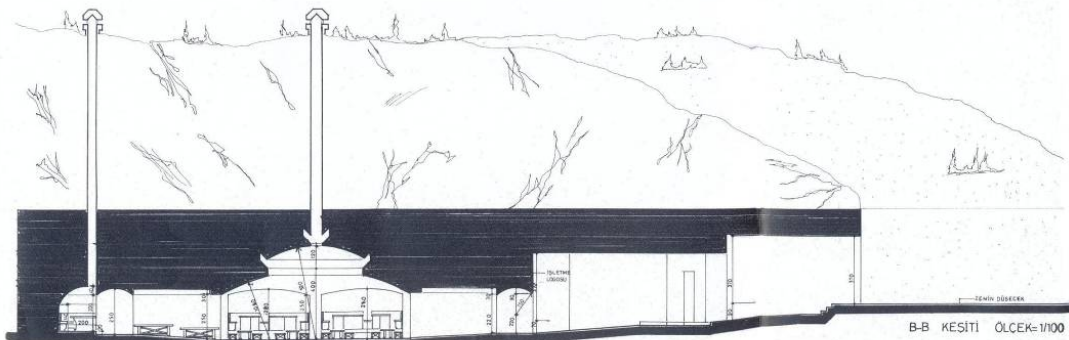


Fig. 26 The section of CEC restaurant and restaurant entrance





Fig. 27 Wall niche and lighting



Fig. 28 Wooden shelf in wall niche

It was thought that the exhibiting indoor rock carving hand workmanship might attract the visitors. Hence, hammer marks formed due to hand workmanship used in the rock carving technique in the walls, roofs and floors intentionally not being removed (Fig. 29). However, since horizontal circulation would be high, especially in transition spaces, earthenware products and marble, which is another natural product, were used to cover the floor, in consideration of the fact that the natural texture of the rock would be worn away by time (Fig. 30, Fig. 31). In this way, abrasion due to circulation was avoided. When the building stage of the place was finished, waste rock masses formed as a result of using the rock cutting technique. These rocks were fragmented and then used in the details designed where needed (Fig. 32, Fig. 33). Thus, recycling of waste rocks was provided.



Fig. 29 Natural Floor Texture



Fig. 30 Natural stone floor cover



Fig. 31 Earthenware floor cover



Fig. 32 Texture combination of rock-cut and stone part



Fig. 33 Stone combination detail at a rock-cut wall

Since CEC Tumulus has a historical value, authorities do not permit artificial housing around the field. Attention was paid not to have any artificial structure in the faces of CEC pottery sales and the restaurant since it is located in the field where the tumulus resides. Moreover, a solution was considered in which only the entrances of the main and auxiliary places are seen at the face of the design made by the effect of land structure. The entrances were designed as stone cover, which is consistent with the natural structure and look (Fig. 34). Service entrances were small and formed by surficial shaping of the rock (Fig. 35). At the face, ventilation tunnels supposed to be seen at the surface and needed for inside were considered to consistent with the natural structure, therefore not creating visual pollution.

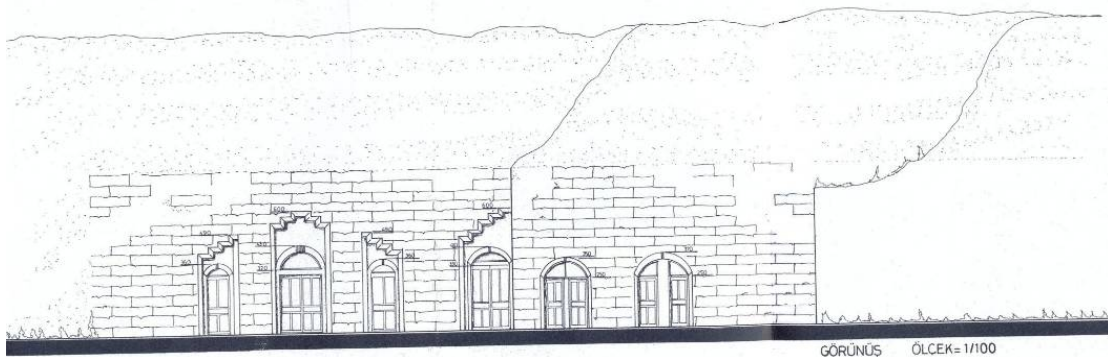


Fig. 34 CEC elevation



Fig. 35 Service Entrance Door



Fig. 36 The lean-to roof added to the entrance by the owner

Today, some additions made by the owner are seen at the face of the structure. By the owner's desire and construction, a corridor was added which has a lean-to roof which it was assumed would emphasize the entrance (Fig. 36). This was not done by a professional approach. It was rather the owner's own solution for making the place stand out. However, no permission to build a permanent structure on the surface was given due to the historical value of CEC Tumulus. Thus, the owner generated a temporary solution. This is also thought of as a problem since the modification was done without consulting the project owner.

#### 4. Discussion and Result

Tourism plays an important role in providing sustainability in architecture. The architectural features of a location along with its current use are of importance for the selection of that region by tourists. It is important not only to open old buildings for new uses but also to design new structures in accordance with the local features of the region. Thus, it will be possible to transfer local architecture, material and building methods to posterity. From this perspective, Cappadocia is an important example regarding the applications in Turkey. Cappadocia is important for Turkey as well as the world for its unique environmental structure, its historical diversity and architecture brought about by these. New architectural designs for this region should contribute to the sustainability of the unique architecture of the region. Handcraft intensive pottery production intended for tourism at Cappadocia-Avanos should be supported for selling to tourists in carved rock spaces. Hence, with the building of new carved rock spaces, the sustainability of the architecture of the region, building methods and handcraft intensive structure building will have been ensured.

The structure subject of this study is an important application to ensure sustainability at Cappadocia. The CEC pottery building-sales and restaurant structure realized in Cappadocia –Avanos has been designed in line with tourism needs using the current natural texture and local architecture. The history of the location of the CEC pottery building-sales and restaurant was taken into consideration while making the design in accordance with current regulations. It is considered that the structure discussed in this study is important for providing sustainability in Cappadocia. It is hoped that CEC structures built by the rock-cutting technique and using traditional and local material will contribute to the design of quality and liveable places in which to exhibit handicrafts. By the use of local and handcraft-intensive building techniques the disappearance of this workmanship will be prevented and improved at the same time. Promotions towards the building of rock-cut structure designs by such workmanship will also contribute to the training

of new skilled people. In this way, the structures built by the rock-cutting technique will not only provide architectural sustainability but also help developing the economy of the country and the region as well as increasing job opportunities.

The history and geography of the location should be very important for new designs. The CEC pottery making-sales store and restaurant has been built in the Avanos Çeç tumulus. It is obligatory that the designs do not harm historical areas and the environment and that they are respectful to history. The CEC pottery making-sale store built by giving importance to the Çeç tumulus and without making any façade formation contributes to the environment with this property. Also CEC pottery sales and restaurant is distinctive in terms of reflecting the supports and material properties in the interior. The place has differences compared to the other rock-cut places in the region in ways that big rock columns were used and main space and smaller places are connected via corridors in the design. In the design of the restaurant, staged transitions, from main space to lodges and from lodges to private lodges, were made using cuttability of rocks. It is also the only structural example in which spectator chambers are linked to the general chambers by narrow cut corridors. The flow of spaces to one another in interior planning and the fact that all areas open to the stage is important. The Restaurant, which allows visitors to see the visual shows, is the first example of its kind. The other pottery making and sale atelier in the design also has unique fetures that set it apart from the other ateliers in the region. There are many pottery production and sales workshops in Avanos. A low height and cellular structure are seen in the roofs of the available rock-cut workshops. Wider and higher places were obtained using the maximum bearing capacity of the rock in the place designed as a pottery workshop in CEC. The passage from small areas to larger areas in the pottery atelier increase the grandiosity perception of sales locations. High ceilings also contribute to this aspect. This allowed the visitors to tour the place in a comfortable manner and let the owner of the place exhibit the products in a spacious place.

Handcrafting has extensively been used in the building of the CEC pottery making-store and restaurant. Large parts were built by machines to speed up the process and handcarving was continued afterwards. Thus, the negativities that could be caused by the vibration of the machines have been prevented. Fixed decoration elements have also been carved in stone. As in each part of the structure, the rock carving handwork has not been changed. In addition, scrap rocks have been reprocessed and used for decorative purposes. Thus, scraps have also been used.



It is regarded as important to pay attention to material properties, the bearing of the rock, and available joints within the rock while making rock-cut designs. The construction stage is thought important considering the destruction of the rock by machines. Thus, it is recommended that engineers work together to find a solution. Furthermore, it is considered as important that necessary drainage and indoor ventilation precautions should be taken for rock-cut designs and no design should be made for heavy-structures in the field. Natural ventilation in the aforementioned structure has been provided by way of air ducts that go all the way up to the surface of the rock. No damage has occurred on the surface of the rock while building these ducts and the natural landscape has been left untouched. Despite the efforts to protect the natural environment on the façade, several additions have been made in time by the owner of the building. In addition, protection from exterior weather conditions is provided at rock carved spaces due to the property of rocks to store heat. When the CEC pottery making-store is considered from an environmental perspective, the inside temperature can be kept constant using the property of earth to store heat. Thus, the ventilation and temperature control of the area has been handled naturally.

It is expected that CEC pottery production-sales and restaurant design discussed in this study will be a model for future designs and constructions. With this study, it is hoped that architectural products that give importance to natural environment along with traditional building materials and methods while ensuring the sustainability of rock carving architecture and building method especially in the Cappadocia region of Turkey will be formed.

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# Embodiment of Arata Endo's Philosophy on Architectural Beauty at the Former Koshien Hotel

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**Keywords:** former Koshien Hotel, Arata Endo, 'An essay on architectural art', Philosophy on architectural beauty, Frank Lloyd Wright

**Abstract:** The 'former Koshien Hotel,' completed in 1930, was designed by Arata Endo, who worked with Frank Lloyd Wright on the design of the Imperial Hotel. It has been converted into the 'Mukogawa Gakuin' school facility and is presently called 'Koshien Kaikan.' It makes an expressive and profoundly meaningful impression even now and it is an excellent representation of the Japanese buildings of that time. In this study, the Endo philosophy on architectural beauty at that time, as explained and broken down into nine key points in 'An essay on architectural art,' was investigated and, through a survey of 'Koshien Kaikan,' it is apparent that Endo poured his philosophy on architectural beauty into the design of the 'former Koshien Hotel' and embodied the nine key points into it from various points of view.

## 1. Introduction

### 1.1. OBJECTIVE

The 'former Koshien Hotel (Koshien Hotel),' designed by Arata Endo (Endo), who had worked with Frank Lloyd Wright on the design of the Imperial Hotel, has been converted into 'Koshien Kaikan' of 'Mukogawa Gakuin.' The Department of Architecture of Mukogawa Women's University, founded in 2006, uses it as a schoolhouse. Endo designed over one hundred and thirty buildings and wrote approximately seventy articles in his lifetime. He designed fewer buildings between 1924~1927 (from the end of the Taisyo era to the beginning of the Syowa era). During that time, he wrote more than twenty articles, including 'An essay on architectural art' (1926) and 'An essay on architecture' (1928). The Koshien Hotel was designed right after that time and was completed in 1930. It is thought that the Koshien Hotel is a building that fully represents Endo's philosophy on architecture at that time. The objective of this study is to clarify Endo's philosophy on architectural beauty and determine how it is embodied in the Koshien Hotel.



Fig. 1. The Koshien Hotel (presently Koshien Kaikan)

### 1.2. METHOD

The articles that comprehensively depict Endo's philosophy on architecture in that timeframe are 'An essay on architectural art' and 'An essay on architecture,' as mentioned above. 'An essay on architectural art' is about architectural beauty and 'An essay on architecture' is concerned mainly with the relation of use, strength, and beauty in architecture. In this study, Endo's philosophy on architectural beauty is investigated through 'An essay on architectural art' and the philosophy of Frank Lloyd Wright (Wright), his mentor, is investigated in relation to it. How Endo's philosophy is embodied in the Koshien Hotel is investigated through a survey of the present Koshien Kaikan and investigation of related data.

## 2. Endo's philosophy on architectural beauty

... from the standing point of working practically on architectural design, I want to think about daily facts on architecture and architectural beauty of the moment, which is found on either side of us, by the roadside and everywhere.<sup>1</sup>

Endo expressed this intent and composed the following nine points as developed thoughts of his philosophy on architectural beauty:

- (1) To be centrifugal;
- (2) To be suggestive;
- (3) Associative beauty;
- (4) Scale;
- (5) Momentum is natural;
- (6) Material comes first;
- (7) The beauty of collapsed objects;
- (8) The third object;
- (9) Toward the third dimension.

He explained these nine key points, illustrating examples of beauty both in our daily life and in architectural design, and introduced Frank Lloyd Wright's philosophy on architectural beauty.

## 2.1. TO BE CENTRIFUGAL

*There is no center in nature. ... the Japanese garden, which is intended to reflect nature, has no center. ... there is always preparation in order to be centrifugal there. If architecture wants to occupy a part of nature and to become as one with it, melting into nature, the necessary preparation is to be centrifugal. Being organic and being centrifugal are inseparably related. It is almost as though to design organic architecture is to be centrifugal.*<sup>2</sup>

*Nature has a center. It exists in a part obviously. And it exists at certainly an important point. ... in the flower, in the eyeball, there is the important matter of the so-called finishing stroke — architecture has such a knack.*<sup>3</sup>

Frank Lloyd Wright (Wright), Endo's mentor, coined the term 'organic architecture,' which is architecture constructed as a space for life where all elements are harmonized according to the character of the site and nature of the materials. Endo explained that the important thing is to design organic architecture to be centrifugal in order to harmonize the architecture with nature, occupying a part of nature and becoming as one with it, and the public space of the Imperial Hotel was designed to be centrifugal in every aspect. At the same time, for the center that exists in nature, he referenced the bright core of the hollyhock flower that bloomed all over Taliesin and fascinated Wright, and commented that a center as the finishing stroke of a part is also acceptable.

## 2.2. TO BE SUGGESTIVE

*One part extends to the other part and, moreover, in an order not abrupt, that part already has prepared for the other part. ... preparation for the other part of one part — The psychological effect is nothing but the suggestion. ... therefore, to handle a building psychologically is an important key to connecting life to architecture. By the way, handling a building psychologically comes back to the suggestion of form. ... negotiations between form and mind, psychological effect of form, psychological arrangement of form. The important key for human beings to live in architecture and that architecture can teach human beings is appreciated there.*<sup>4</sup>

Endo showed, as examples of the suggestion of form in the natural world the scenery of Musashino, which moves from the high road to the ridge between rice fields, from the field to the grove, from the grove to the hill, and eventually opens out, and, as examples in architecture, the round window at the end, the transom toward the next room, the pine over the wall, a distant view of the tower, a 'torii' (a gateway at the entrance to a shrine) approaching and looking up, the first 'torii,' and the second 'torii.' With these preparations of suggestion, the architect's idea easily became three-dimensional.

## 2.3. ASSOCIATIVE BEAUTY

*Standing on a hill in Wisconsin, I saw the evening sun sink heavily into the end of overlapped land. The large setting sun looked like a mat of tempered copper — I could not decide how to envision that. Looking back on my homeland, I realized that there were so many associations in the objects that I looked at or listened to. In rain and wind, mountain and water, going in and out, associations always follow — personally, historically. The fixed form of the association is a part of many traditions there. Thus, 'architecture,' which should agree with the basic sense of use and form, falls into the arena of taste by mistake. ... For example, here is a Gothic church and Gothic style is a result of historical association. It falls short of the viewpoint of religious sense. And it expects all religious effect only to the historical*

*association. ... originally, architecture is circumstances that agree with the law of use and form and remove the association — the direct promise of the beauty and the truth exists there.*<sup>5</sup>

Endo argued that there are many forms of association that have taken root in Japanese culture, a tendency to explain things by borrowing associations without satisfactorily explaining them, and an attitude of tracing some allegory instead of faithfully creating something. He explained that the Unity temple designed by Wright was lampooned in that it was not a church, but a stable, and he worries that architects in particular have this tendency.

## 2.4. SCALE

*Wright often told me that the most difficult thing about the design of a large building was scale. A skillful person could create an interesting design or provide ornaments for it here and there. But it was not so easy to unify the scale all over (of course, the character of the design should be unified as well). This scale also exists in Japanese architecture. For example, they certainly utilize an excellent human scale to make the three 'syaku' (≒ 90.9 cm) as the standard dimension of a residence, and make the height of fittings five 'syaku' and seven 'sun' (≒ 172.71 cm). By the way, in temples and shrines, by making the span of a column standard and the eaves rafter a unit, the dimensions of the wooden frame and roof tile are calculated. This is called 'kiwari.' ... In western-style architecture, there is nothing like 'kiwari' and everybody strays from this scale easily. Architects should pay attention to this today.*<sup>6</sup>

Endo stated that the Imperial Hotel was composed in human scale paying close attention to the standard of four 'syaku' (≒ 121.2 cm), allowing a person to melt into the building immediately and become one with it anywhere. On the other hand, he asserted that the 'Basilica di San Pietro' in Rome was proportional, but its scale was difficult to discern. He explained that it was important to unify scale and design with the human scale.

## 2.5. MOMENTUM IS NATURAL

*... A roof hanging over columns that rise steeply comes down the pitch surging from the thick ridge and goes over the columns. To columns are added single or double square flaring and brackets. However, the roof spreads and extends until the very edge and calms the momentum. ... There are the eaves — the edge of the rafters put in order, supple detail of comma-pattern roof tiles and arabesque-pattern roof tiles. ... and the natural economy, natural efficiency, and natural chain of the dynamics and the aesthetics are the stage where the structure and the architecture are unified between the momentum of truth and falsehood. The power of architecture is due to the appearance of this momentum.*<sup>7</sup>

Endo described the true and false momentum of river flow, dance, and so on, and of temples and pagodas in the architectural field, and explained that the unification of structure and architecture is important and that the power of architecture is produced by it.

## 2.6. MATERIAL COMES FIRST

*Materials are important. This does not mean that there is first the best design and human beings make something by chopping materials for it; this means that there are natural materials first and human beings make something pulled from those materials. There, power that cannot be forgiven exists with beauty. ... this casual structure became a 'torii' with a little transformation and*



became the clothes-drying stand of a dye house with more change. ... this structure makes us feel powerful enough to forcibly pull human beings. Of course, human beings have a purpose, but it has an atmosphere in which human beings listen to the command of the materials gently to achieve this purpose. ... when we make the building in a large scale, if the scale of the materials disappears, the building is spineless.<sup>8</sup>

The materials Endo mentioned here do not seem to be finishing materials, but structural ones. He explains that, because of the primitive materials and the powerful structural impression of those materials, the architecture of those days was pulled not by the materials, but by the structure. He explained that he was surprised by the strong expression of temporary fencing at a construction site and was impressed by the architectural beauty of the constructed steel. However, he finds it deplorable that the completed building usually betrays these temporary fences and steel.

## 2.7. THE BEAUTY OF COLLAPSED OBJECTS

*A roof beginning to rot, a wall beginning to collapse, these have unspeakable virtue. Although newly made objects are good-looking, collapsed ones have indescribable beauty. —It is not a matter of taste, but is pure architectural beauty. When an object made by a human being collapses, it is released from constraints and follows the law of nature. It is beautiful on this account, whatever others may say. The general feeling is an aesthetic one that is urged from the particular case rather than urged from an emotional point of view. ... That is, to make an object natural to remove when it collapses, in other words, to respect the nature of a material thoroughly, to be obedient to the nature.*<sup>9</sup>

Endo has been asked if it is useless to carve a stone that is not hard because it has holes and is rounded off at the corners. He stated that he always answered this question that, although the stone has holes, eruptions, and rounded off corners, Wright encouraged eruptions and unevenness. As it is too arrogant to attach a reserved beautiful pattern to it, he adopted modesty and persistency, helping the materials faithfully, thus giving them life.

## 2.8. THE THIRD OBJECT

*There is a male and a female. They become a couple. But this is yet a plane. Then, a child is born — the third object. A three-dimensional situation develops. Conflicting power is relieved. Not physical existence one by one, but true composition starts. Here, they become architecture. There is a first object, a second object, and the third object is arranged. For example, there are two squares like these. At first, there is no architectural composition. And it is not architectural yet to attach any pattern to each. It can be said that by causing the third object there, they have become architectural, like these, for the first time. (Fig. 2, Fig. 3) When a straw-thatched roof like a turned down shell in the country appears in our eyes and confronts the earth with a 'shoji' column, wall, and so on, as third objects, it has unlimited taste architecturally. ... The earth as the first object, a roof as the second object, and columns, wall, and 'shoji' as the third objects. And this relation goes into a part, the earth as the first object, column as the second object, and basis and board between them as the third objects.*<sup>10</sup>

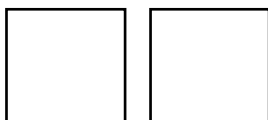


Fig. 2. The first object and the second object

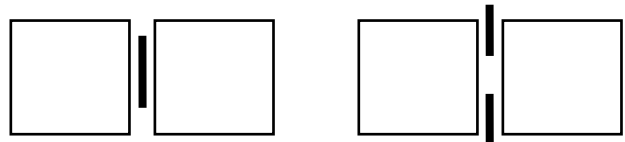


Fig. 3. Addition of the third object

Endo explained that, with the addition of the third object to the first and second object as architectural elements, a composition results and becomes architecture, illustrating the composition of Japanese architecture. He mentioned that Wright used third objects freely at the wings of the rooms, restaurant, and promenade in the Imperial Hotel.

*...a telegraph pole — crosspieces, electric wire and ceramic insulations of it — beauty between crosspieces, electric wires that cross on the right. ... there are third objects like these, canopy coming down from the ceiling, chandelier, hanging lantern, curtain, tassel; I cannot imagine how much they improve architectural sense. Architecture has a large field in which to invite the element of tension.*<sup>11</sup>

Endo explained the importance of the existence of third objects and that a sensible way of ornamentation is to add color, embroidery, or patterns not to the first or the second object, but to the third. He commented that architects should use consciousness of composition for the use of materials and that the brick wall of the Imperial Hotel had sculptural modeling of unspeakable taste.

## 2.9. TOWARD THE THIRD DIMENSION

*There is scenery. And it is said to be good. This is almost framed scenery, scenery to make a good picture, scenery as a picture. ... we are apt to pick up an episode of nature instead of watching nature and we do not stop until we make three-dimensional nature into a two-dimensional picture. This also occurs in architecture. Architecture is three-dimensional, which nobody can refuse. — Only no one treats it completely as three-dimensional. Since the Gothic era, architecture has not been treated as a three-dimensional form for a long time. ... From three-dimensional architecture, the third dimension has vanished as an element of three-dimensional form. ... Japanese architecture is composed as three-dimensional, Chinese architecture is as well. ... Many sculptures are created there that are not two-dimensional ornaments, but three-dimensional all over, and they stand out harmoniously as great sculpture — a three-dimensional form.*<sup>12</sup>

Endo sounded the alarm to the tendency to fail to treat architecture as a three-dimensional form. He considered Wright a genius who could have completed the sense of the three-dimensional form and that there was no lack anywhere of preparation for three dimensions in the basis of the plan, composition, and ornamentation. He explained that, when looking at the Imperial Hotel, we are surprised at the soft swelling of it in spite of the use of large lines, broadness of area, and great number of straight lines and angles.

## 3. Embodiment of the philosophy on architectural beauty at the former Koshien Hotel

### 3.1. TO BE CENTRIFUGAL

The main facilities of the Koshien Hotel, such as the rooms, banquet hall, and grill, are arranged outside of the towers and the central part is mainly reception room. For the hotel facade, the central part is two stories high with a flat roof and both wings are

three to four stories high with pavilion roofs. Because of this, the composition of the building form is centrifugal. The Midway Gardens, which Wright designed, had a similar external appearance composed of horizontal lines and vertical lines of twin towers with the Midway Gardens' main facilities located in the center, and this central part is massive. Because of this, in comparison, the Koshien Hotel is felt to be more centrifugal than the Midway Gardens.

For detail, the consecutive square pattern, which was often used by Wright to give unity to a huge, complicated building, is also used at the Koshien Hotel; that is, five 'suns ( $\approx 15.15$  cm)' of unglazed square tiles for both the exterior and interior wall. In the center of four tiles, a convex pattern with the motif 'Uchide no kozuchi' (small good luck hammer) appears. Furthermore, above and below/right and left of the convex pattern, the motif 'Uchide no kozuchi' appears. Although these shapes are the center of a part, consecutive patterns remove the center of the whole and perform as a woven pattern from a distance and as a human scale grid and pattern on closer inspection.

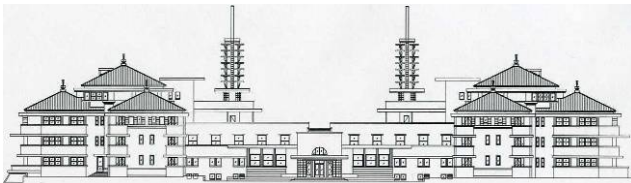


Fig. 4. The façade of the Koshien Hotel

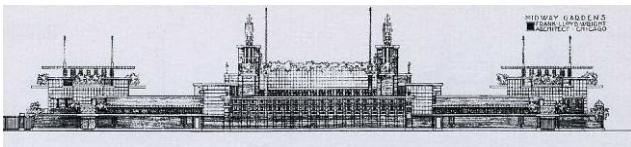


Fig. 5. The façade of the Midway Gardens

On the other hand, several partial center finishing strokes are developed also at important spots—a fountain in front of the banquet hall, 'Uchide no kozuchi' in the library and at the stage of the roof garden, and fireplaces in five rooms and the bar—and their role is to brace spaces.



Fig. 6. The fountain in front of the banquet hall as a partial center

### 3.2. TO BE SUGGESTIVE

The twin towers that characterize the hotel façade and transom around the wall correspond to the 'tower seen from a distance' and 'transom toward the next room,' respectively. The border and square tiles of the interior wall are an example of 'preparation of a part for another part' and create continuous interior and exterior spaces.

The motifs that characterize the Koshien Hotel are 'Uchide no kozuchi' and 'drops of water.' 'Uchide no kozuchi,' small

good luck hammer, is a symbol of happiness that means that you can get anything you want by hammering. Drops of water are thought to be the symbol of safety to protect guests and the building. Happiness and safety are the desire of every guest and these ornamental motifs seem to impart psychological effects.

On the carpets of the public spaces, patterns of waves, sweet flags, cherry blossoms, Japanese maple leaves, and deer are woven. They remind us of the 'crystal-clear lake' and (mentioned in the hotel brochure), the Mukogawa River and Nishinomiya Beach, sweet flags around the lake (painted in a postcard of the hotel), cherry blossoms at the Mukogawa riverside, and the 'wooded hills of Rokko' (also mentioned in the hotel brochure).

*First, I observe the site. It tells me about architecture. How architecture is allowed, how life is allowed, and how that life is developed, I learn from the nature there.*<sup>13</sup>

*The site is located along the new national road that connects Osaka and Kobe. The Mukogawa riverside has white sand and green pines. The scenery is the combination of the garden with a crystal-clear lake appropriate for boating, with the sea and mountain in the distance.*<sup>14</sup>

Endo spoke of this and it is thought that he embodied the Koshien Hotel with these ornaments to encourage guests to reflect on the character of the nature and the site. Here, 'association' does not mean beauty based on similarity of form, but beauty that is developed by 'ornaments that are meaningful only to the imaginative heart,' as Wright urged.



Fig. 7. The view of the twin towers from the Muko-ohashi Bridge



Fig. 8. The ornaments of the 'Uchide no kozuchi' motif

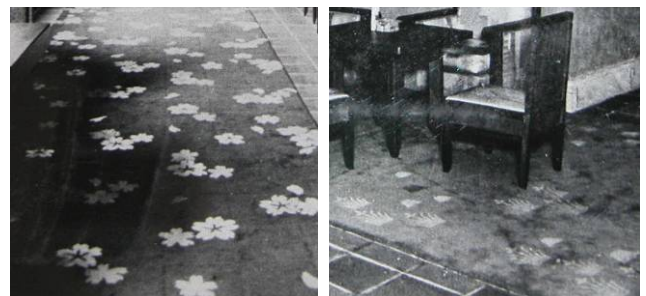


Fig. 9. Patterns of carpet with cherry blossom motifs (left) and with the sweet flags motifs (right)



### 3.3. ASSOCIATIVE BEAUTY

The façade of the Koshien Hotel is characterized by horizontal lines, vertical lines, and pavilion roofs. It does not imitate Japanese-style inns, nor does it imitate western-style hotels. Aisaku Hayashi, who formulated the plan of the Koshien Hotel and managed it, planned to create an ideal hotel with good accommodations and services, because the Japanese-style inn had been superior in service, but inferior in accommodations. Endo designed the hotel in order to give form to function based on Hayashi's plan. Thus, the design of the Koshien Hotel did not aim for associative beauty based on similarity to any specific building style.



Fig. 10. The external composition of the Koshien Hotel

### 3.4. SCALE

The Imperial Hotel is designed with the unit of foot and the module of four feet, and the Koshien Hotel is designed with the unit of 'syaku' and the module of six 'syaku' (one 'ken'  $\approx$  1818 mm). 'Syaku' is the standard measurement of Japanese wooden buildings. At the Koshien Hotel, columns were arranged with a span of two to four 'ken' ( $\approx$  3636 mm  $\sim$  7272 mm) and the standard floor height was ten 'syaku' ( $\approx$  3030 mm). It is said that the Koshien Hotel's special composition was fit to the Japanese sense of scale. The size of the unglazed tiles is five 'sun' (a half 'syaku',  $\approx$  151.5 mm) square including joint width and the size of the border tiles is one 'shaku' ( $\approx$  30.3 mm) long including joint width. Thus, the module is also applied to the scale of the materials. The Koshien Hotel was designed in human scale with unified measurements.



Fig. 11. Columns with a span of two 'ken'



Fig. 12. Square tiles (above), border tiles (below)

### 3.5. MOMENTUM IS NATURAL

Drops of water gush out from the conspicuous ornament of the ridge of the pavilion roof, fall down the ornament in one breath, run down the roof with the rhythm of the hip notch, trickle from the eaves end roof tiles, come down to the horizontal eaves, fall down along the columns, and pour into the 'crystal-clear lake' in the front garden. A story with such momentum and rhythm is notably suitable for the Koshien Hotel. Endo may have given it this power.



Fig. 13. Momentum of the drops of water

### 3.6. MATERIAL COMES FIRST

The finishing materials of the Koshien Hotel are tiles for the walls, floors, exterior wall, and interior wall of the public spaces, and stone for the retaining wall, floors, ornaments, and roof tiles. All are made from soil or stone, and the color of the tiles and turf is close to that of earth. The green color of the roof tiles becomes one with the green color of the pines. Wright stated that a major element of 'organic architecture' is to perform its highest function related to the human life inside and the natural scenery. Therefore, Endo based his choice of materials on this same philosophy.



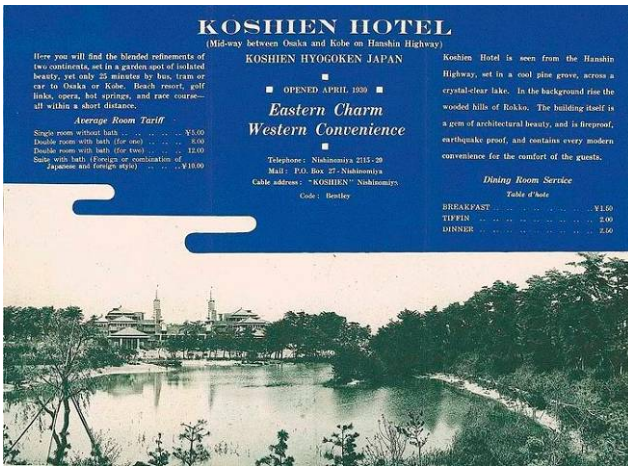


Fig. 14. The brochure of the Koshien Hotel showing the harmony of the green roofs of the hotel with the pine groves

### 3.7. THE BEAUTY OF COLLAPSED OBJECTS

The stone used for the retaining wall, floors, and ornaments is a type of tuff called ‘Nikkaseki’ that is produced in Komatsu city, Ishikawa prefecture. It has been used as architectural material since the beginning of the Taisyo era. ‘Nikkaseki’ is a tuff similar to the ‘Oyaishi’ that Wright used in the Imperial Hotel. Although ‘Nikkaseki’ is more durable than ‘Oyaishi,’ the ‘Nikkaseki’ used in the Koshien Hotel has become partially cracked and broken over the past more than eighty years. However, its texture exudes a warm feeling and reflects the blessing of earth without appearing dirty or unsightly. It is thought that Endo evaluated the nature of ‘Oyaishi’s’ texture, but preferred to use materials that had higher endurance and would retain an elegant texture even if broken. He therefore chose ‘Nikkaseki.’



Fig. 15. Fireplace in the reception room made of ‘Nikkaseki’

### 3.8. THE THIRD OBJECT

For the façade's composition, assuming that the exterior wall and pavilion roofs are the first and second objects, the twin towers, horizontal borders of the upper and lower end of the openings, and the large transparent openings are the third objects. The twin towers are the vertical lines that soar in contrast to the composition of the horizontal lines. The horizontal borders of the upper and lower window ends are the lines that brace the horizontal composition. The large transparent openings confront the earth-color wall and green roof. These are expressions to make us feel the ‘tension’ that Endo spoke of. Around the roof,

the ornament of the ridge of the pavilion roof, drops of water at the hip roof, and the eaves end roof tiles are the third objects. Around the exterior wall, the reliefs of several patterns, including ‘Uchide no kozuchi,’ are the third objects. Moreover, for detail, the deep joints of the border tiles also represent the third object, as Endo said that the brick wall of the Imperial Hotel was modeled like sculpture. About the interior of the hotel are ornaments of columns around the entrance hall and reliefs of ‘Uchide no kozuchi’ in the banquet hall, the library, and fireplaces in several rooms, including the bar. Furthermore, the coved ceiling of the banquet hall and the grill, and the shell-shaped chandeliers and bracket lamps seem to correspond to the ‘canopy coming down from the ceiling,’ ‘chandelier,’ and ‘hanging lantern.’



Fig. 16. Wall, canopy, and a ornament as the third object (front), wall, openings, and horizontal borders of ‘Nikkaseki’ as the third object (back)

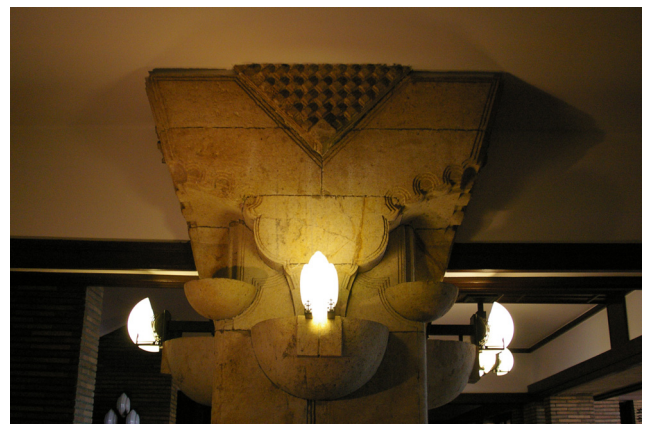


Fig. 17. The ornament of the column in the entrance hall

### 3.9. TOWARD THE THIRD DIMENSION

Three-dimensional expressions are seen everywhere at the Koshien Hotel. On the façade, the combination of masses of pavilion roofs, the composition of the twin towers with ornamental plates, and the expression of rich shade of the exterior wall by tiles and reliefs are examples. In the internal space, ornaments of columns around the entrance hall, the composition of the ceiling of the banquet hall and grill, and the shell-shaped chandeliers and bracket lamps are also three-dimensional. Endo has said that Wright is the genius who raised architecture up from the corruption of being non-three-dimensional and breathed life into it, and then embraced the concept of three-dimensionality thoroughly. On the other hand, Wright replied to Endo that the design of the Koshien Hotel was a splendid performance and that he could see how Endo had

concentrated on it after looking at the drawings and pictures of the Koshien Hotel that Endo sent to him. From this fact, it is understood that the Koshien Hotel is architecture properly prepared to be three-dimensional.



Fig.18. Three-dimensional composition of the tower



Fig.19. Three-dimensional composition of the ceiling of the banquet hall

#### 4. Conclusion

Endo expressed his philosophy on architectural beauty by explaining the nine key points related to it. In comparing these points with the philosophy of Wright, they have much similarity with the sense of 'organic architecture' that Wright advocated. Endo was a pupil of Wright and learned the principles of architectural design from Wright. It is thought that Endo added the knowledge he learned from Japanese architecture to what he learned from Wright and that he established a philosophy of his own. Through this study, it is observed that Endo poured his philosophy on architectural beauty into the design of the Koshien Hotel and embodied the nine key points into it. It is thought that the accumulation of such embodiment from various points of view makes us appreciate the present Koshien Kaikan (the Koshien Hotel) as expressive and profoundly meaningful. These key points are not only the theme of the days when the Koshien Hotel was designed, but also a universal theme that is still new today. The following subject is to survey mutual relevance among nine points of Endo's philosophy on architectural beauty and relevance of them to the philosophy of Wright on architecture.

#### Endnotes

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2. Endo, op, cit., pp. 1-2
3. Endo, op, cit., p. 4
4. Endo, op, cit., p. 5
5. Endo, op, cit., pp. 6-7
6. Endo, op, cit., pp. 7-9
7. Endo, op, cit., pp. 10-11
8. Endo, op, cit., pp. 11-12
9. Endo, op, cit., p. 13
10. Endo, op, cit., pp. 14-15
11. Endo, op, cit., pp. 18-20
12. Endo, op, cit., pp. 20-23
13. Endo, A. (1925). *Kenchiku keimo no.1*, Tokyo Asahi shinbun, Endo Arata shinbun, zashi kiji syuusei, Jutaku kenchiku bunken syusei vol7, Kashiwa syobo, p. 104
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Reference Drawings of the Koshien Hotel

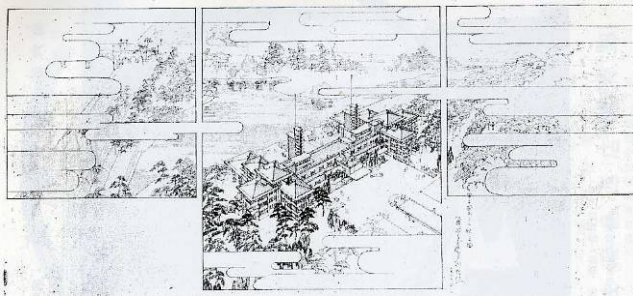


Fig.20.Perspective drawing

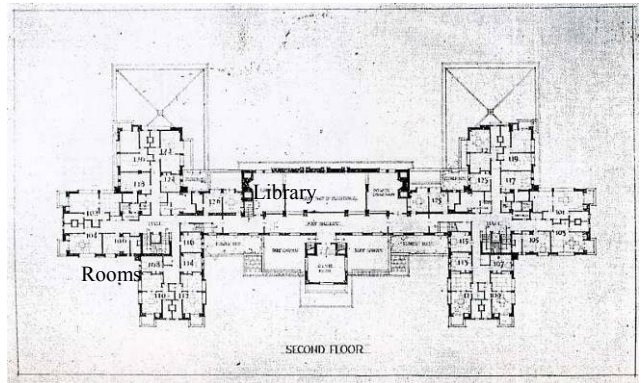


Fig.23.Second floor plan

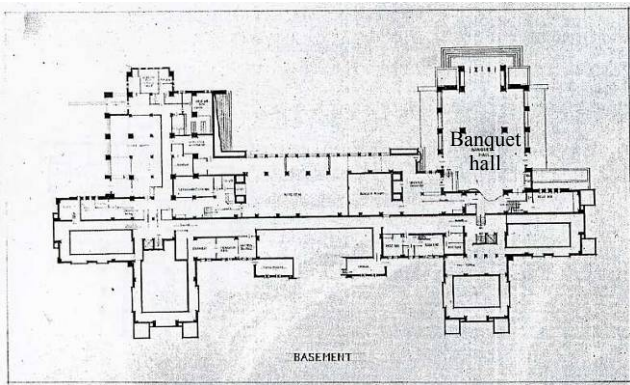


Fig.21.Basement floor plan

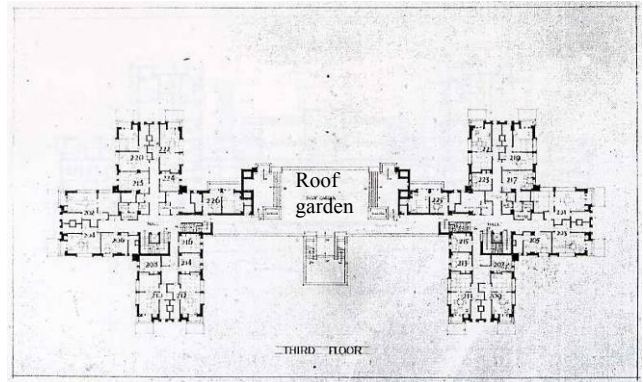


Fig.24.Third floor plan

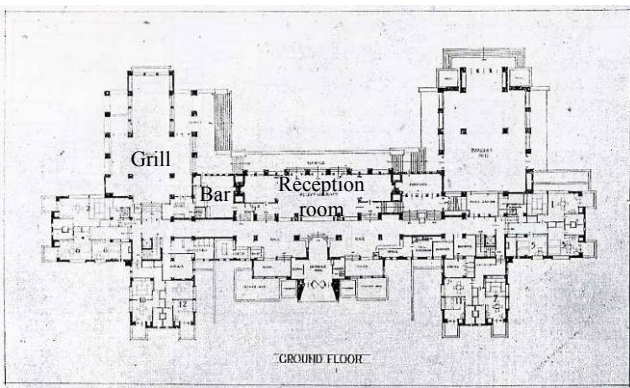


Fig.22.Ground floor plan

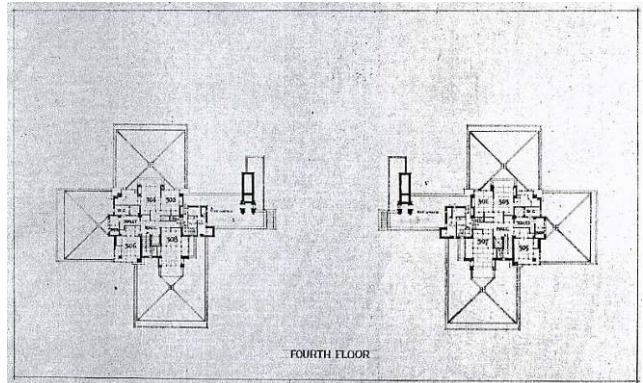


Fig.25.Fourth floor plan



# A Study of the Classical Landscape at the Wang River Villa of Wang Wei

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**Keywords:** Wang Wei, Wang (Wheel) River Villa, Wang (Wheel) River Collection, Landscape,

**Abstract:** The landscape of Wang Wei's Wang River Villa is examined by reviewing the essays and papers written about the poetical collaboration, the "Wang River Collection." The purpose of this paper is to clarify the meaning of villa architecture in China. The author expects that this research will contribute to a mutual understanding between cultures. The villa was a Utopia for Wang. On the other hand, he was a pious Buddhist and Buddhist concepts are reflected in the landscape. I consider the features of the classical landscape of Xie Lingyun and "Chu Ci," as written in "The Collection," a reflection of the Buddhist concept. When considering what the classics meant to Wang Wei, it is apparent that his villa is a representation of the classical landscape. It is not an imitation of the classical landscape, but a unique and original creation of art by Wang.

## 1. Introduction

The Wang River Villa (輞川莊) was purchased by the Chinese poet Wang Wei (王維)<sup>1</sup> and was written about in his anthology, the "Wang River Collection" ("Wangch'uan ji" 『輞川集』)<sup>2</sup>. Wang Wei was a government official who lived during the Tang Dynasty of China approximately 1300 years ago. Like Li Po (李白) and Du Fu (杜甫), he is one of the most famous poets of Chinese literature. His poetry has been translated in nearly every language and he is well known in the West<sup>3</sup>.

This paper is a study of architecture. The purpose of this paper is to clarify an issue in the architecture of the villa. This paper regards the Wang River Villa as architecture or landscape and discusses Wang Wei's "Wang River Collection" as a description of his experience there. It is a historical fact that he lived in the Wang River Villa and wrote the "Wang River Collection." It is logical to view his poetry as a description of the scenery in this research, as Tatsuya Konno (2003) has stated in his research. A method of architectural research is to consider the distinctive features of architectural places through poetry. This is a concrete method for clarifying the essential concern of the experience in architecture. This paper considers architecture a human issue and mainly refers to past research.

On the other hand, the theme of this paper is also cultural research. The characteristics of a certain culture differ from the characteristics of another. These differences are what distinguish a certain culture. The difference between cultures results from differences in climate and geography. Cultural history is a history of tradition and customs. However, the basis of these differences requires similarity. To identify with something is to accept differences and similarities simultaneously. We are able to understand other cultures. At the very least, we should believe that we have the ability to accept other cultures. There may be universality at the base of all cultures. Moreover, it may be the fact that we are all human. This paper attempts to clarify one feature of culture through historical Chinese architecture. The

author expects that this research will reveal an issue of the universal human being.

## 2. The "Wang River Collection" by Wang Wei

As mentioned in the introduction, this paper is a study of the Wang River Villa. The villa was written about in Wang Wei's anthology, the "Wang River Collection." In other words, the villa is composed by the "Wang River Collection," which includes twenty pieces. For each poem written by Wang, his friend Pei Di (裴迪) wrote twenty replying couplets. Therefore, this anthology consists of a total of forty poems. According to Taichiro Kobayashi (1944), this anthology was completed around 756 A.D. Hideki Watanabe (2010) indicates that it was completed around 743 A.D. The time of completion is therefore not certain. In any case, the completion was determined to be before the "rebellion of An Lu-shan (安祿山の反乱)," which took place when Wang's life was the most stable.

Each poem is composed of a five-character Chinese quatrain (五言絶句), which is a traditional Chinese style of fixed verse. Although written in the preface by Wang himself, these twenty titles correspond to viewpoints in the villa. The titles<sup>4</sup> "Apricot-Grain Cottage" (「文杏館」), "Bamboo-Midst Cottage" (「竹里館」), "South Lodge" (「南垞」), "North Lodge" (「北垞」), etc., are architectural sites, and "Master-Flourish Ridge" (「華子岡」), "Bamboo-Clarity Mountains" (「斤竹嶺」), etc., are the names of hills or mountains. "Deer Park" (「鹿柴」) and "Magnolia Park" (「木蘭柴」) are fence-enclosed parks. Moreover, a pathway, spring, and lake at the villa are also named and composed in the poetry.

Taichiro Kobayashi (1944) critiques the "Wang River Collection" as follows:

When I read the "Wang River Collection," I noticed first that Wang Wei tended to move away from the contamination of the human world. The "Wang River Collection" has a clean image. Yearning for such Pure Land

can be found throughout the entire piece. This yearning is expressed as an emotion of silentness of Wang Wei's heart. This silence and expression of the silent view, the words of Zhang Yanyuan (張彥遠), indicates the second most remarkable feature of this poetry. This was Wang Wei's most important feature for the people of the Tang Dynasty. Moreover, his expression of silence made the villa at Wang River a place of deep mountains distant from the capital. Furthermore, he yearned for a rich Utopia. In any case, separating and escaping from the dirty world is the origin of his art. There is no other work clearer than his poetry in the expressional relation of asking for purification and silentness. (pp. 247-248)

Kobayashi uses a keyword—silentness. Wang Wei escaped from the dirty world and asked for purification. He desired the Pure Land. Kobayashi indicates that such desire is apparent in Wang Wei's "Wang River Collection."

Sensuke Iritani (1976) holds a similar opinion:

When reading the "Wang River Collection," there is no pastoralism in the poetry. Pastoralism regards nature as production or a place of labor. In the "Wang River Collection," there are words of labor, such as the woodcutter in Wang Wei's "Bamboo-Clarity Mountains," rinsing silk in Wang Wei's "White Rock Shallows" (「白石灘」), and collecting firewood in Pei Di's "North Lodge." However, these are imaginary, it is an ideological expression, and there is no realistic character. Realistic expression is not carried out, either. Furthermore, agriculture and farmers do not appear at all in the poetry, which usually express pastoralism. The poetic view is not pastoral, landscape, or rural landscape, either; for Wang Wei, the Wang River Villa is an object of imagination of art. Then, what kind of imagination did Wang Wei give to the Wang River Villa? I think the purpose of the "Wang River Collection" is to fashion the Wang River Villa as a visionary world isolated from reality. (pp. 614-615)

Iritani critiques Wang's poetry with a different approach from Kobayashi. While Kobayashi analyzes the overall impression of the poetry, Iritani points out the lack of pastoralism. However, they reach a common conclusion, that is, a lack of actuality in the "Wang River Collection." Actual refusal becomes the imagination of art and this becomes the composition of the visionary world. Iritani determines also that the world of the "Wang River Collection" is an isolation from reality.

Tatsuya Konno (2004) also considered the absence of pastoralism in the "Wang River Collection." He determined that the absence of pastoralism in the poetry has the effect of separating the Wang River Villa from the everyday world.

The pastoral landscape differs from the city (Chang'an (長安) for Wang Wei) landscape. However, since the pastoral exists at places other than the Wang River, the depiction of the pastoral in poetry is to express a separation from the city, but it is not an expression meant to make Wang River the only place. It is not different from other pastoral lands. In order to make the Wang River the only place, the classics need to be quoted to build a world of fantasy. Therefore, there is no pastoralism in the "Wang River Collection." (p. 125)

Konno considers the absence of pastoralism and the relation of the fantasy world in detail. Konno opines that Wang Wei had the intention to make the Wang River Villa the only place.

Konno indicates that, in the poetry of Wang Wei, classical quotation was an important expression.

In this paper, when examining the Wang River Villa, two key points, "landscape based on the classics" and "isolation from the everyday world," are especially important, and these points are probably closely related.

### 3. The Wang River Villa

This chapter examines the Wang River Villa structure. The Wang River is located in Lantian County about fifty kilometers southeast of Xi'an (Chang'an) <Watanabe (2010) p. 114>, which is about one day's distance from the capital. Since it was not far from the capital, the neighborhood consisted of the villas of many influential people. Wang Wei lived in Chang'an often and it is thought that he returned to the Wang River Villa for the holidays <Kobayashi (1944) p. 204>. Wang Wei's mother lived at the Wang River Villa until she died in 750 A.D.

The time when Wang Wei obtained the Wang River Villa varies. According to Watanabe's research (2010) <pp. 132-133>, the earliest time was 726 A.D. based on Kobayashi's study (1944) <p. 204>. On the other hand, general opinion places the time as around 740 A.D., as noted by Iritani (1976) <p. 582>, Tadahisa Ishikawa (2007) <p. 312>, and others. Watanabe believes that Wang Wei took possession of the villa twice, in 726 A.D. and 741 A.D. Since Wang Wei did not live in the suburbs of Chang'an from 736 A.D. to 739 A.D., the problem lies with before or after that time. In any case, it is known that the villa was owned sometime around 740 A.D. Since the "Wang River Collection," discussed in this paper, was produced after that time, this experience of Wang Wei took place in the latter half of his life.

The Wang River Villa was originally possessed by Sung Chih-Wen (宋之問, 656?-712?) <Kobayashi (1944) p. 204>. He was also a famous poet of the Tang Dynasty. However, he was banished late in life and ultimately committed suicide as a result of further punishment he received. Wang Wei remembers Sung Chih-Wen in the "Wang River Collection." That fact that Sung Chih-Wen owned the villa was important to Wang Wei. Moreover, the ruined castle of the Jin Dynasty is located on the Wang River, also providing an historical context for the poet.

Iritani quoted the poetry of Sung Chih-Wen at the Wang River and considered the characteristics of the place <Iritani (1976) p. 581>:

(About "Lantian Villa" (「藍田山莊」), which is poetry by Sung Chih-Wen) It is a work that feels like the pastoral poetry of Sung Chih-Wen. It is like Tao Yuanming (陶淵明), which is a new work of Sung Chih-Wen. ...Although it is difficult to guess from one poem that the Wang River may have been pastoral land. (As Kobayashi (1944) reasoned) It is not certain that this was a profitable estate, but there was a plantation on the Wang River and at least it was a place to see a tenant and serf working. The aristocratic villa of the Six Dynasties period (六朝時代) originally was a place to rest and play, with the character of the farm as an income source.

The preceding chapter referred to in this paper indicated that the "Wang River Collection" is not pastoral; however, the pastoral character of the original Wang River Villa was considered to be strong. Besides the "Wang River Collection," Wang Wei composed other poetry about the Wang River. Konno (2004) pointed out these features:

(a) (Except for the "Wang River Collection") In Wang Wei's pastoral poetry of the Wang River, words and

people that represent a secluded life are confirmed.

- (b) (Except for the "Wang River Collection,") the pastoral landscape at Wang River depicts a scene of secluded life.
- (c) In poetry, the free life at the Wang River and the everyday life in Chang'an are in contrast. The pastoral landscape of the Wang River is distinct from Chang'an, which is a place of work, and thus makes the Wang River a special place. It is a place where Wang Wei could relax mentally.
- (d) Considering the expression of rural landscapes in other poetry by Wang Wei, the place of composition of which is not certain, there is a high possibility that the poem was composed on the Wang River.

Besides the "Wang River Collection," pastoralism is observed in poetry composed at the Wang River Villa. Konno analyzes pastoralism in contrast to the city. For Wang Wei, the city was Chang'an, which was a place of everyday life and hard work. On the other hand, the Wang River Villa is a place that comforted Wang Wei and allowed him to relax. The Wang River Villa is a villa in that sense and is a special place distant from everyday life. It represents the key point mentioned in the preceding chapter. It was said previously that the Wang River Villa written about in the "Wang River Collection" had twenty views (titles). Wang Wei named those twenty views. Landscape and constructed architecture are included in the twenty views.

Konno examined in detail these twenty views and uncovered a tendency. He examined the total landscape of the Wang River Villa written of in the "Wang River Collection" on the basis of this tendency.

If the "Wang River Collection" is examined, I think that Wang Wei is looking at two landscapes at the actual Wang River Villa:

- (a) The landscape of the Chang River valley, which is mainly concerned with the poetry of Xie Lingyun (謝靈運); and
- (b) The landscape of "Chu Ci" (楚辭), which is mainly from "Chu Ci" (「楚辭」).

The poetry of Xie Lingyun and "Chu Ci" are recorded in the "Wen Xuan." Therefore, Wang Wei recognized not the actual landscape of the place, but the landscape of the Chang River composed in the classic poetry work "Wen Xuan." I think Wang Wei's "Wang River Collection" tends to express this world with poetry.

Konno pointed out the influence of classics on the landscape as a tendency of the "Wang River Collection." The classic is "Wen Xuan" (『文選』), which is a collection of poetic works edited by Xiao Tong (蕭統) during the period of the Northern and Southern Dynasties.

Konno explored the reason:

(When Wang Wei composed the landscapes of the "Wen Xuan" into the "Wang River Collection") The reason is that he looked for classicalness in his own scenery. First of all, realistic features of scenery are acquired from actual experience. However, these feelings are forgotten with the passage of time. The scenery expressed by the classics is inherited with its history. There is the sense of stability of the work. That is, I think that Wang Wei intended to make his scenery a stable thing that does not change and disappear. That is the reason for the many classical landscapes of authoritative literary work. "Wen Xuan" is seen.

"The scenery based on the classics" is an important key phrase for an understanding of the Wang River Villa. It is relevant that Konno demonstrated clearly that the landscape of Wang Wei was based on the classics. However, an understanding of the "Wang River Collection" instead of the theme of an understanding of the Wang River Villa was Konno's intent. A poetic understanding is the theme. Since this paper undertakes architectural research, an understanding of the Wang River Villa is the theme. Architecture needs to be considered through poetic experience. Based on Konno's research, a different approach is needed in this paper.

#### 4. Ideological Backgrounds and the Classical Landscape

Wang Wei is known as a pious Buddhist. There are many papers that consider the influence of Buddhism on his poetry. The fact that Wang Wei was called the "poet-Buddha" (「詩仏」), as Li Po was called the "poet-transcendent" (「詩仙」) and Du Fu the "poet-sage" (「詩聖」), is not unrelated to his faith.

Three religions, Confucianism, Taoism, and Buddhism, have had historical influence on the Chinese people. Iritani (1976) stated that the Tang Dynasty was a time of comparatively little influence from Confucianism. Li Po was a famous poet who was influenced by Taoism and Wang Wei was influenced by Buddhism.

We must be cautious about the relation between Taoism and Wang Wei. All of his Taoist poetry is social poetry exchanged with a Taoist. Wang Wei lived during the era of Emperor Xuanzong (玄宗). The Emperor Xuanzong expressed Taoist philosophy even in the name of the mausoleum. It was a time when Taoism flourished most. It is thought that Taoism flowed in and out of many residences besides the court. It was not odd to have the poetry of a Taoist friend for the sociable Wang Wei. The negotiation between Wang Wei and a Taoist does not have any meaning other than social contact. (p. 473)

Iritani concludes that Taoism did not influence Wang Wei significantly. He examined the Buddhist poetry of Wang Wei in detail, and considered its influence specifically.

Buddhism promised the world of the metaphysical Nirvana beyond reality for Wang Wei. Rather, Buddhism taught Wang Wei that reality is a false image. In China, such thought is only seen in Buddhism. Such thought charmed Wang Wei, who could not resign his unpleasant court service. He was able to accept his unpleasant reality with this thought. It is because the world of an idea can be built outside of reality and that reality, which is not escaped, can be escaped. The made-up reality and the world of a true idea are fundamental thoughts to Wang Wei. They are the thought of his art as well. (pp. 491-492)

According to Iritani, the Buddhist concept enables Wang Wei to escape from the reality. It is a secession from everyday life. The purpose of the Wang River Villa was also a secession from everyday life.

Iritani further observed the outlook on nature of the Buddhist concept:

Although Buddhism alone did not teach the Chinese people natural beauty, Buddhism had a big influence on the natural ways of appreciation. Xie Lingyun was not only the first of the Chinese to pursue natural beauty, but he was also the



first Buddhist poet in China. The Buddhistic prosperity and the prosperity of Shanshui poetry (山水詩) in aristocratic culture are parallel in the Six Dynasties period. (p. 520)

Iritani points out that the hermit who lives in the mountain, who appears in the classical document "Analects" and "Chuang-tzu," is a political refugee. He states that the ancient Chinese hermit did not consciously wish to live in a mountain eternally, but hid himself temporarily. He concludes that, in ancient China, the hermit who enjoyed a life in nature did not exist. However, during the period of the Six Dynasties, where the mountain and the hermit are connected positively, Iritani believes that it became an esthetic object.

Xie Lingyun, who is a nature poet, was an adventurer akin to an alpinist, a large landowner, and also a Buddhist. While he was a large landowner who exerted himself for land reclamation of a lake and development of new rice fields, and was a nature poet, he was also a natural pioneer. However, Buddhism provided the important role of pioneer for him. That is, while reclaiming deep mountains, this was a role that changed the Chinese people's outlook on nature. Buddhists, such as Xie Lingyun, converted the mountain into a spiritual place that was quiet and settled down from the fearful outside world. The Taoist followed in the footsteps of the Buddhist and poets also followed, and the aesthetic sense of respecting nature as beautiful, which was peculiar to China, was created. Wang Wei enhanced such an aesthetic sense to the limit with his art. (pp. 524-525)

Iritani's consideration relates also to the influence of Xie Lingyun and "Chu Ci" in the "Wang River Collection," as Konno pointed out in the preceding chapter. Konno indicated that Wang Wei used classical documents in order to give authority to the "Wang River Collection." However, Iritani asserts that Wang Wei inherited and developed the outlook on nature presented by the classical document. This also differs from the realistic pastoral landscape of Tao Yuanming. This is because there was no depiction of labor in Wang Wei's "Wang River Collection."

The nature composed by the poetry of Wang Wei is objective and with reality, but essentially it is a kind of ideological poetry. Was the poet satisfied composing only nature? Didn't he have the desire to convert nature itself with his idea or create nature with his poetry? The desire is inevitable. If there is ability, people will try to achieve it. Wang Wei tried to create nature. Wang Wei investigated the essence as a poet. We should consider the relation between created nature, the Wang River Villa, and his poetry. (p. 578)

Iritani states that the Wang River Villa is nature created by Wang Wei. Wang Wei created his own nature as a poet. It is creation as an artist and is essence.

Hong Zhang (2009) considered the "nature" that Wang Wei created in connection with the Buddhistic concept:

The theme of all works included in the "Wang River Collection" is "nothingness." To be more precise, Wang Wei expresses the space of "no onlooker." "No one seen. In empty mountains" and "late sunlight ablaze on green moss." "In those forest depths, no one knows," "only the moon hears the sound of a koto." "Nobody in the valley, but only flower blooms and falls." These examples of "nothingness"

do not mean "there is anything." Moreover, they do not signify the silence of ceased sound. For Wang Wei, the "nothingness" life is filled in nature, even if there is no onlooker. ... In the space of "nothingness" in the work of Wang Wei, there is no sign of people and neither the author nor an observer. It is a primitive landscape intersecting purely with nature. ... Zhuangzi's thoughts on life, "eternal illuminated in silence" and "illuminating though constantly still" in Buddhism all lurk in this deep silence.

According to Zhang, although people are rarely described in the "Wang River Collection," "there is nothing" is not Wang Wei's true intention. Rather, not depicting people there expresses the natural and primitive landscape. The nature of the Wang River Villa is filled with vitality.

What is the meaning of the classics for landscapes? It may be the authorization of scenery, as Konno points out. However, on one side, the classical landscape is the ancients' first scenery to be suggested by people and is original and unique. It is the experience of the ancients who support our uncertain and unstable experience, and is the path along which our predecessors walked. In other words, it is the basis of the identity that we make a foundation. The classic experience can also become authority in that sense. However, when considering the landscape of Wang Wei as a matter of art, was the classic meaning authorization of the landscape? Rather, is it a representation of the experience of the animated beginning discovered by our predecessors? It is representation and it is creation of art. The landscape of Wang Wei's Wang River Villa was a new experience enabled by the Buddhist concept enabled in a place called a mountain.

## 5. Conclusion: Living Far From the Everyday World

The Wang River Villa was one method of escaping from everyday life for Wang Wei. It was a representation of the ideological Utopia for him. This image was described through the "Wang River Collection" with the Buddhistic concept as the basis. His scenery quoted the classical landscape, such as Xie Lingyun and "Chu Ci." However, it is not an imitation of the classical landscape. His image of the classic was a lively representation of unique scenery. The scenery of the Wang River Villa is a creation of Wang Wei's art in that sense.

When everyday life is left behind at the Wang River Villa, his Utopia appears. However, when we consider the meaning of Utopia at the Wang River Villa from one aspect, Wang Wei's everyday world should appear. That is, an everyday image and the image of Utopia are different manifestations of the same matter. It is both sides of one sheet of paper. One does not precede the other side; the two are simultaneous. The research method of this paper was to examine the essays and papers written about the poetical works of Wang Wei's "Wang River Collection." Poetic analysis is omitted. With poetic analysis, we should consider the specific image, which this author will study next.

## Endnotes

The heading for endnotes is the style of a first order heading but should not be numbered. The endnotes should be 8 pt, 10 pt leading, numbered. Please conform to the following style:

1. There are various opinions on the birth year of Wang Wei. According to Iritani (1972) and Kobayashi (1964), it is 699 A.D. and, according to Yoshikawa (1952), it is 701 A.D. The historical records describing Wang Wei are detailed in Iritani (1972).

2. The “Wang River Collection” by Wang Wei is reviewed often in Japan. Translations and explanations of the entire poetic work include Kobayashi (1944), Kobayashi (1964), Iritani (1972), Iritani (1976), Ishikawa (2007), Watanabe (2010), and more.
3. Eliot Weinberger and Octavio Paz compared sixteen “Deer Park” in the “Wang River Collection” as translated in English, French, and Spanish. Translations include “W.J.B. Fletcher, 1919,” “Witter Bynner & Kiang Kang-hu, 1929,” “Soame Jenyns, 1944,” “G. Margouliès, 1948,” “Chang Yin-nan & Lewis C. Walmsley, 1958,” “C.J. Chen & Michael Bullock, 1960,” “James J.Y. Liu, 1962,” “Kenneth Rexroth, 1970,” “Burton Watson, 1971,” “Wai-lim Yip, 1972,” “G.W. Robinson, 1973,” “Octavio Paz, 1974,” “William McNaughton, 1974,” “François Cheng, 1977,” “H.C. Chang, 1977,” and “Gary Snyder, 1978.” The titles are “The Form of the Deer,” “Deer-Park Hermitage,” “The Deer Park,” “La Forêt,” “Deer Forest Hermitage,” “The Deer Enclosure,” “Deep in the Mountain Wilderness,” “Deer Fence,” “Deer Enclosure,” “Deer Park,” “En la Ermita del Parque de los Venados,” “Li Ch’ai,” and “Clos aux cerfs.”
4. All of the titles of the “Wang River Collection” were translated by David Hinton (2007). See appendix.

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## Appendix

The entire text of the poetry taken up in the paper is as follows: (English translation by David Hinton (2007). *Mountain Home: The Wilderness Poetry of Ancient China*. London, Great Britain: Anvil Press Poetry Ltd.) “Apricot-Grain Cottage” 「文杏館」

Roofbeams cut from deep-grained apricot,  
fragrant reeds braided into thatched eaves:  
no one knows clouds beneath these rafters  
drifting off to bring that human realm rain.

文杏裁爲梁 香茅結爲宇  
不知棟裏雲 去作人間雨

“Bamboo-Midst Cottage” 「竹里館」  
Sitting alone in recluse bamboo dark  
I play a ch’in, settle into breath chants.  
In these forest depths, no one knows  
this moon come bathing me in light.  
獨坐幽篁裏 彈琴復長嘯  
深林人不知 明月來相照

“South Lodge” 「南垞」  
I leave South Lodge, boat light, water  
so vast you never reach North Lodge.  
Far shores: I see villagers there beyond  
knowing in all this distance, distance.  
輕舟南垞去 北垞淼難即  
隔浦望人家 遙遙不相識

“North Lodge” 「北垞」  
At North Lodge north of these lakewaters,  
railings flash red through tangled trees.  
Here, meandering forest-stained horizons,  
South River shimmers in and out of view.  
北垞湖水北 雜樹映朱欄  
逶迤南川水 明滅青林端

“Master-Flourish Ridge” 「華子岡」  
Birds in flight go on leaving and leaving.  
And autumn colors mountain distances again:  
crossing Master-Flourish Ridge and beyond,  
is there no limit to all this grief and sorrow?  
飛鳥去不窮 連山復秋色  
上下華子岡 惆悵情何極

“Bamboo-Clarity Mountains” 「斤竹嶺」  
Tall bamboo blaze in meandering emptiness:  
kingfisher-green rippling stream water blue.  
On Autumn-Pitch Mountain roads, they flaunt  
such darkness, woodcutters too beyond knowing.  
檀欒映空曲 青翠澹澗漪  
暗入商山路 樵人不可知

“Deer Park” 「鹿柴」  
No one seen. In empty mountains,  
hints of drifting voice, no more.  
Entering these deep woods, late sun-  
light ablaze on green moss, rising.  
空山不見人 但聞人語響  
返景入深林 復照青苔上

“Magnolia Park” 「木蘭柴」  
Autumn mountains gathering last light,  
one bird follows another in flight away.  
Shifting kingfisher-greens flash radiant  
scatters. Evening mists: nowhere they are.  
秋山斂餘照 飛鳥逐前侶  
彩翠時分明 夕嵐無處所

“White-Rock Shallows” 「白石灘」  
White-Rock Shallows open and clear,  
green reeds past prime for harvest:  
families come down east and west  
rinse thin silk radiant in moonlight.  
清淺白石灘 綠蒲向堪把  
家住水東西 浣紗明月下





# Esquisse on Location of Psychiatric Hospitals in Osaka Prefecture and the Image of the Boundary of Osaka City in the Formative Period of "Great Osaka"

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**Keywords:** psychiatric hospital, location, boundary, Great Osaka, population, river, railway, Hedate.

**Abstract:** After the Meiji restoration, Osaka developed radically to become "Great Osaka" at the beginning of the Showa Period. For about 65 years, Osaka City administratively enforced area extensions twice, but despite this the city became a disorderly sprawl, losing its own distinct image. In the same period, in Osaka Prefecture, some modern psychiatric hospitals were founded, but they were not located in Osaka City but rather in the surrounding rural districts. Formerly I surmised, through the investigation of Iwakura and Kuze in Kyoto, that such location on the boundaries of the cities has medical significance for mentally handicapped people. For the psychiatric hospitals, a definite distance from the busy city filled with various stresses is necessary, but simultaneously an assurance of intimate relationships with its parent city. In this esquisse, I study the locations of 18 psychiatric hospitals that were founded from Meiji 14 (1881) to Showa 15 (1940) to reflect the boundary of Osaka City in reference to some rivers and railways. The "Hedate" relationship that such rivers as the Yamato River represent seems to be one of the important factors when considering the location of psychiatric hospitals and the city boundary.

## Prologue

Osaka, which has been a city since the middle of the 15th century with the building of Ishiyama Honganji Temple and Osaka Castle, was developing into a megalopolis like Edo and Kyoto throughout the Edo Period. After the Meiji Restoration, Osaka succeeded in its radical modernization based on its commercial and industrial power. In Meiji 22 (1889), Osaka started the municipal organization with four wards around the old Osaka Sango (Three Quarters) and has been developing into "Great Osaka" with global economic faculties between the Taisho and Showa Periods. However, there appeared some social problems with the lack of civic infrastructure and the occurrence of environmental pollution.

How did people imagine Osaka City in such a process of transforming into "Great Osaka"? In this esquisse, I reflect on the area of Osaka City and its boundaries with some research on the hospital facilities in Osaka Prefecture for about 60 years from the early years of the Meiji Period to Showa 15, when Osaka grew into the first city in Japan to overtake Tokyo with regard to population and economic power.

## 1. Mental Medicine in Pre-modern Period

Even in the Edo Period, when modern medical facilities had not appeared, it's well known that in every district in Japan many mentally handicapped people were cured with various folkloristic methods. In the Kinki region, Daiunji Temple at Iwakura, Kyoto has been very famous for the treatment of mental disease, and Iwayasan-Shimiyuin Temple in the northern area of

Kyoto City, which is well known from the Kabuki "Narutaki", was an ascetic practice place for medical treatment.

In comparison of these two temples, I have already indicated in my former report that Iwakura has some characteristics as a treatment place for mentally handicapped people. Though Iwaya is far from Kyoto City and therefore has a distinctly isolated atmosphere, Iwakura is separated by only the gently sloping Matsugasaki Hills, and is conscious of the relationship with Kyoto.<sup>1</sup>

Kuze, where the former Saigoku-Kaido Road from Kyoto City crosses over the Katsura River and continues to the western districts, is a very interesting place concerning folkloristic mental treatment. Around Dainichi-Do Temple along Saigoku-Kaido Road, a lot of mentally handicapped people gathered and lived cooperatively. Like Matsugasaki Hills for Iwakura, Katsura River was not only the separation but the assurance of the relation to Kyoto City. These handicapped people seemed to aim at a return to society looking at the Tower of Toji Temple over Katsura River.

These treatment places around Kyoto City show us the essential conditions for the location of the psychiatric hospitals. Such boundary areas are separated from the city but maintain a relation to the city

In Osaka Prefecture, similarly to Kyoto, there existed some folkloristic treatment places. In the southern part of Osaka Prefecture, at Nanayama, the former Hine District, at the end of the 16th century a religious pavilion for mental treatment by herbal medicine and acupuncture was founded. In the Edo Period many patients visited from Osaka City and other places and its place name "Nanayama" was well known as a mental treatment place and was feared as an isolation facility for insane persons.

In contrast to Nanayama, like Iwaya, Kyoto, Ishimaru Lunatic Asylum has been similar to Iwakura or Kuze. At the end of the Edo Period, the Doctor of Osaka Castle, Shugo Ishimaru, built the treatment facility at Kumanoda, in northern Osaka, and it developed into the modern Ishimaru Lunatic Asylum in the Meiji Period. Kumanoda, which was about 10 km from Osaka City and surrounded by the calm countryside, was a proper place for mental treatment.

### 2. Establishment of Psychiatric Hospital in Osaka Prefecture

In the Meiji Period, when the new government was eager to establish modern institutions after the model of Europe and America, the first prefectural psychiatric hospital, Kyoto Prefectural Lunatic Asylum was founded in Nanzenji Temple in Meiji 8 (1875). This asylum was abolished after some years because of financial difficulties, but its location near Keage, one of the seven gates of old Kyoto along the Tokaido Road, seems to be important for such mental treatment facilities.<sup>2</sup>

Though the transfer of the capital to Osaka did not come about, Osaka started to construct its infrastructure to be the most important trading port and industrial city in Japan. In this process of city development, the public health service became so important according to the radical increase of its population that, in Meiji 6 (1873), Osaka Prefectural Hospital was founded on Nakanoshima Island at the center of Osaka City. After that, public facilities weren't established for some time but private hospitals steadily increased in Osaka City. From the Statistics of Osaka Prefecture,<sup>3</sup> in Meiji 14 (1881), there existed nine hospitals (including one at Sakai and another in Hino, in the southern part of Osaka). In Meiji 15 (1882), the number of hospitals increased to 22 and it is remarkable that, in Hine District, Honda Hospital was registered as the internal medicine and surgery until Meiji 26 (1893) but then became the mental hospital that inherited the above-mentioned "Nanayama" mental treatment facility.<sup>4</sup>

In Meiji 21 (1888), the number of hospitals in Osaka Prefecture increased to 31, and for the first time two psychiatric hospitals were recorded in the statistics. One of these was the

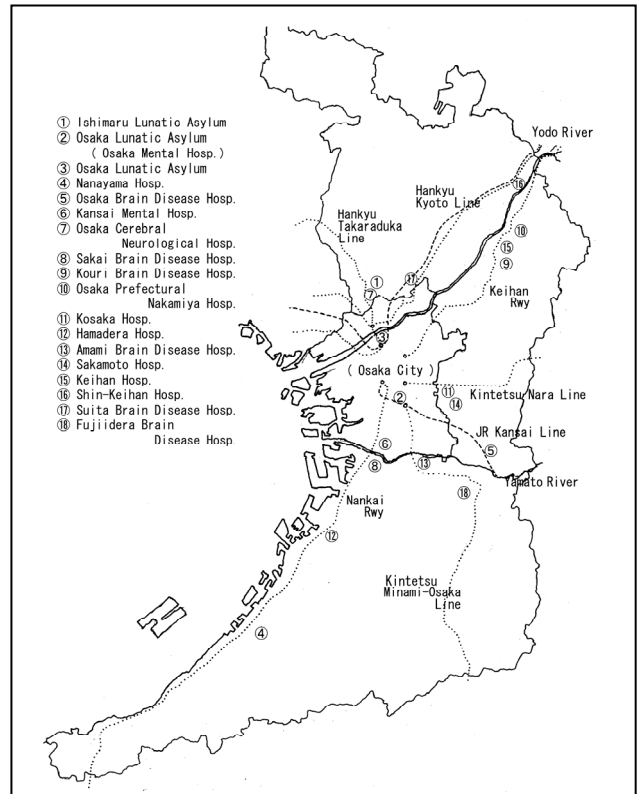


Fig 2. Location of Psychiatric hospitals in Osaka Prefecture

above mentioned Ishimaru Lunatic Asylum and the other was Osaka Lunatic Asylum founded at Tennoji Village, Higashinari District in Meiji 19 (1886). The latter was located in a rural district, not in Osaka City, like Ishimaru Lunatic Asylum. However, as compared with Kumanoda in northern Osaka, Tennoji was located on the outskirts of Osaka City or on the boundary between the city and the rural district. It seems that the location of this Osaka Lunatic Asylum was a gate to Osaka City along the Kumano-Kaido Road and Kishu-Kaido Road, which were important and well-traveled roads between Osaka and Kumano Shrine and Wakayama for many years.

In Meiji 22 (1889), Osaka was municipalized to be Osaka City with four wards. After the creation of this municipality, in Osaka Prefecture, the hospitals increased gradually but the rate of concentration of hospitals in Osaka City increased yearly. Concerning the psychiatric hospital, Honda Hospital at Nanayama changed its name to Nanayama Hospital but has been recorded as one for internal medicine and surgery. Osaka Lunatic Asylum changed its name to Osaka Mental Hospital, too. In Meiji 25 (1892), another Osaka Lunatic Asylum started practice at Toyosaki Village in Nishinari District. Toyosaki Village was on the bank of the Yodo River and, after the deluge of the Yodo River in Meiji 18 (1885), was developed to be a surrounding area for Osaka Station. In this era, the station generally was not placed at the center of cities, and Osaka Station was obliged to stand on the northern bank of the old Yodo River, far from the central areas of Osaka City such as Dojima and Senba. Toyosaki Village just north of Osaka Station was regarded as the surrounding area discriminated from Osaka City and the riverbank where Nose-Kaido Road crossed over the Yodo River. From this fact, we could recognize the firm connection between the psychiatric hospital and the principal road.

In Meiji 27 (1894), in the Statistics, Nanayama Hospital changed its specialty from internal medicine and surgery to psychiatric medicine. Consequently, the psychiatric hospitals in

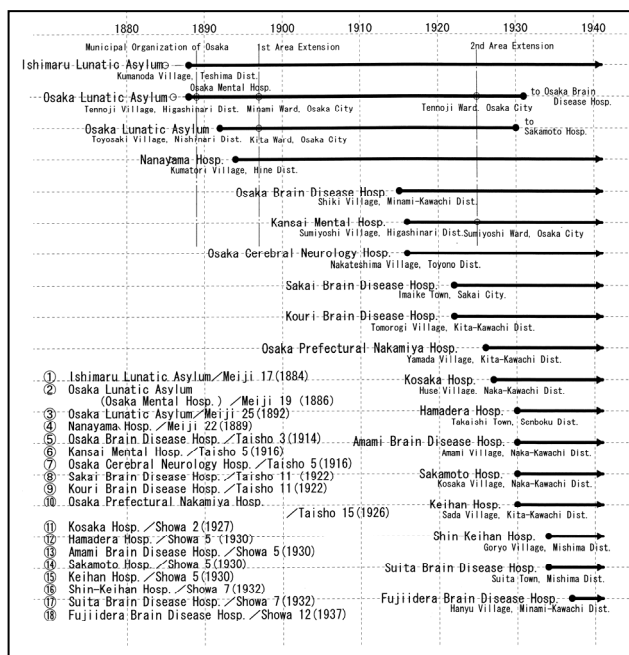


Fig 1. Psychiatric hospitals in Osaka Prefecture

Table 1-1. Numbers of hospitals and concentration rates in Osaka Prefecture (Meiji period)

Years	Total No. of Hosp. in Osaka Pref.	No. of Psychiatric Hosp. in Osaka Pref.	No. of Psychiatric Hosp. in Osaka City	Concentration Rate of Psychiatric Hosp. in Osaka City	No. of General Hosp. in Osaka Pref.	No. of General Hosp. in Osaka City	Concentration Rate of General Hosp. in Osaka City
Meiji							
14 (1881)	9	0	0	—	9	7	78%
15 (1882)	22	1*	0	0%	21	17	81%
16 (1883)	24	1*	0	0%	23	18	78%
17 (1884)	21	1*	0	0%	20	15	75%
18 (1885)	(No Data in Statistics of Osaka Pref.)						
19 (1886)	(No Data in Statistics of Osaka Pref.)						
20 (1887)	(No Data in Statistics of Osaka Pref.)						
21 (1888)	32	3*	0	0%	29	19	66%
22 (1889)	26	3*	0	0%	23	16	70%
23 (1890)	26	3*	0	0%	23	19	83%
24 (1891)	33	3*	0	0%	30	24	80%
25 (1892)	31	4*	0	0%	27	22	84%
26 (1893)	34	4*	0	0%	30	23	77%
27 (1894)	32	4	0	0%	28	25	89%
28 (1895)	36	4	0	0%	32	25	78%
29 (1896)	36	4	0	0%	32	25	78%
30 (1897)	50	4	2	50%	46	38	83%
31 (1898)	53**	4**	2	50%	49	43	88%
32 (1899)	59**	4**	2	50%	55	48	87%
33 (1900)	57	4***	2	50%	53	47	89%
34 (1901)	63	4***	2	50%	59	53	90%
35 (1902)	55	4	2	50%	51	46	90%
36 (1903)	56	4	2	50%	52	45	86%
37 (1904)	59	4	2	50%	55	48	87%
38 (1905)	64	4	2	50%	60	53	88%
39 (1906)	63	4	2	50%	59	54	92%
40 (1907)	64	4	2	50%	60	55	92%
41 (1908)	62	4	2	50%	58	53	91%
42 (1909)	68	4	2	50%	64	56	88%
43 (1910)	67	4	2	50%	63	55	87%
44 (1911)	(No Data in Statistics of Osaka Pref.)						

\* : Honda Hosp. in Hine District, which was recorded as internal medicine and surgery, is treated as psychiatric hosp. in this list because it has been well-known as a healing place for mental patients. This hosp. was not found in the data of Meiji 21 (1888) in Statistics of Osaka Pref. but it has continued to exist and has been classified in psychiatric hosp. as Nanayama Hosp. from Meiji 21 (1888) onwards.  
 \*\* : After the first area extension of Osaka City, Osaka Lunatic Asylum was registered both in Osaka City and in Nishinari District mistakenly. In this list, it is seemed located in Kita Ward, Osaka City.  
 \*\*\* : It is recorded that there exists a psychiatric hosp. in Mishima District instead of in Sennan District. It seems to be a mistake because Nanayama Hosp. in Sennan Dist. has been existing up to present.

Table 1-2. Numbers of hospitals and Concentration rates in Osaka Prefecture (Taisho and Showa period)

Years	Total No. of Hosp. in Osaka Pref.	No. of Psychiatric Hosp. in Osaka Pref.	No. of Psychiatric Hosp. in Osaka City	Concentration Rate of Psychiatric Hosp. in Osaka City	No. of General Hosp. in Osaka Pref.	No. of General Hosp. in Osaka City	Concentration Rate of General Hosp. in Osaka City
Taisho							
1 (1912)	(No Data in Statistics of Osaka Pref.)						
2 (1913)	55	4	2	50%	51	40	78%
3 (1914)	(No Data in Statistics of Osaka Pref.)						
4 (1915)	59	5	2	40%	54	46	85%
5 (1916)	65****	7****	2	29%	58	50	86%
6 (1917)	69	7	2	29%	62	55	89%
7 (1918)	75	7	2	29%	68	57	84%
8 (1919)	80*****	7*****	2*****	29%	73	62	85%
9 (1920)	99*****	0*****	0*****		99	80	81%
10 (1921)	121	7	2	29%	114	91	80%
11 (1922)	134	9	2	22%	125	97	78%
12 (1923)	142	9	2	22%	133	101	76%
13 (1924)	149	9	2	22%	140	103	74%
14 (1925)	160	9	3	33%	151	128	85%
Showa							
1 (1926)	171	10	3	30%	161	138	86%
2 (1927)	166*****	11*****	3	27%	155	132	85%
3 (1928)	(No Data in Statistics of Osaka Pref.)						
4 (1929)	126	11	3	27%	115	105	91%
5 (1930)	135	15	3	20%	120	108	90%
6 (1931)	136	14	2	14%	122	109	89%
7 (1932)	(No Data in Statistics of Osaka Pref.)						
8 (1933)	(No Data in Statistics of Osaka Pref.)						
9 (1934)	196	15	1	7%	181	160	88%
10 (1935)	200	15	1	7%	185	162	88%
11 (1936)	205	15	1	7%	190	168	88%
12 (1937)	208	16	1	6%	192	181	94%
13 (1938)	217	16	1	6%	201	182	91%
14 (1939)	220	16	1	6%	204	184	90%
15 (1940)	241	16	1	6%	225	203	90%

\*\*\*\* : No psychiatric hosp. is recorded in Minami-kawachi District, but Osaka Brain Disease Hosp. founded in Taisho 4 (1915) existed surely. Therefore its data of Osaka Brain Disease Hosp. is added in this list.  
 \*\*\*\*\* : In Statistics of Osaka Pref. of Taisho 8 (1919) only 4 psychiatric hosp. are mentioned. Actually there existed Osaka Mental Hosp. in Minami Ward and Osaka Lunatic Asylum in Kita Ward, Osaka City along with Kansai Mental Hosp. in Sumiyoshi Village, Higashinari District. Thereby the data is corrected to 7 hosp. from 4 in this item.  
 \*\*\*\*\* : There is no data for psychiatric hosp. in Statistics of Osaka Pref. There seem to exist 7 psychiatric hosp. as much as the data of next year.  
 \*\*\*\*\* : Though, in this Statistics, Osaka Cerebral Neurological Hosp. and Osaka Brain Disease Hosp. are not mentioned, these three hosp. are added in this list and there seem to be 11 hosp. in Osaka Pref. in Showa 2 (1927).

Osaka Prefecture increased by one, to four, and these hospitals all were located in the rural districts such as Higashinari, Nishinari, Teshima and Hine Districts.

### 3. Development of railway and extension of surrounding areas

Osaka City expanded in Meiji 30 (1897), in the first area extension and, therefore in the statistics two psychiatric hospitals were registered in Osaka City, one in Toyono District and another in Hine District. However, this change of indication merely resulted from the address modification in the area extension. After that, only these four psychiatric hospitals had been registered in Osaka Prefecture until when, in Taisho 2 (1913), Osaka Brain Disease Hospital was established in Shiki Village, Minami-Kawachi District. Moreover, in Taisho 4 (1915), Osaka Cerebral Neurological Hospital was founded in Naka-Teshima Village, Toyono District, and Kansai Mental Hospital in Sumiyoshi Village, Nishinari District; thus, the psychiatric hospitals in this prefecture numbered seven in all. Shiki Village, the location of Osaka Brain Disease Hospital, was about 15 km from Tennoji, Osaka City, but Shiki Station on the Kansai Line of the Japan national railroad connected this village to Osaka City. Naka-Teshima Village along Nose-Kaido Road was rather near Ishimaru Lunatic Asylum and the nearest station, Hattori Tenjin Station on the Takaraduka Line of the Hankyu Railway founded in Meiji 43 (1910) intimately connected this village to Osaka City. Sumiyoshi village along Kishu-Kaido Road has been crowded in front of Sumiyoshi Taisha Shrine for many years and was located in the surrounding area of Osaka City like Toyosaki Village, the location of Osaka Lunatic Asylum.

There seems to be some confusion on the data of the psychiatric hospitals in the Statistics of Osaka Prefecture because of the enforcement of the Mental Hospital Law in Taisho 8 (1919). In Taisho 11 (1922), Sakai Brain Disease Hospital was founded on the left bank of Yamato River at Imaike-cho, Sakai City, and Kouri Brain Disease Hospital was established in the Kita-Kawachi District. These nine psychiatric hospitals existed in Osaka Prefecture and, after the second area extension of Osaka City, Osaka Mental Hospital, Osaka Lunatic Asylum and Kansai Mental Hospital were registered in Osaka City.

### 4. Establishment of Osaka Prefectural Nakamiya Hospital and removal to rural districts of psychiatric hospitals

In Taisho 15 (1926), Osaka Prefectural Nakamiya Hospital was established at Yamada Village, Kita-Kawachi District at long last. Since the establishment of a public mental hospital was required of Tokyo, Kyoto and Osaka Prefectures first by the regime of medical service founded in Meiji 6 (1873), the public hospitals hardly were built without any financial supports of the Japanese Government. Therefore it has been common that the private hospitals served usefully as substitutes for public hospitals for many years.

Early in the Showa Period some psychiatric hospitals were founded one after another in the rural districts around Osaka City. In Showa 2 (1927), Kosaka Hospital was established at Fuse Village, Naka-Kawachi District followed in Showa 5 (1930) by Hamadera Hospital in Takaishi Town, Senboku District; Amami Brain Disease Hospital at Amami Village, Naka-Kawachi District; Sakamoto Hospital at Kosaka Village, Naka-Kawachi District; and Keihan Hospital at Sada Village, Kita-Kawachi District. Then, there existed 15 psychiatric hospitals including Osaka Prefectural Nakamiya Hospital.

The Kita-Kawachi area, where this Osaka Prefectural Nakamiya Hospital was established, has seemed to be an Omote-Kimon, a tabooed quarter from Osaka and an Ura-Kimon, a rear tabooed quarter from Kyoto. Therefore, this area had not developed very positively but, after the opening of Keihan



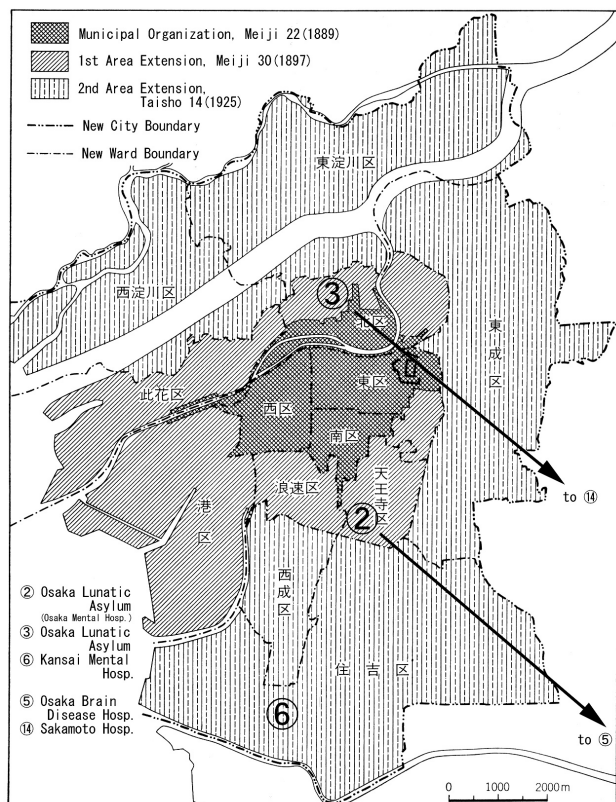


Fig 3. Area extensions of Osaka City and Removal of psychiatric hospitals to surrounding districts<sup>6</sup>

Electric Railway in Meiji 43 (1910), has showed the rapid metamorphosis. Hirakata East Gate Station (present Hirakata City Station) near Nakamiya Hospital started to develop as the center of the Kita-Kawachi area. Also, Kouri Station near Kouri Brain Disease Hospital and Kozenji Station between Hirakata and Kouri close to Keihan Hospital were the traffic bases to connect surrounding villages to the center of Osaka City smoothly. The great significance of Keihan Railway for these hospitals could be inferred from the name of Keihan Hospital.

Similarly, Shin-Keihan Hospital founded at Goryo village, Mishima District in Showa 9 (1934) was closely related to Shin-Keihan Railway (present Hankyu Kyoto Line) between Tenmabashi, Osaka and Saiin, Kyoto and opened in Showa 3 (1927). After its opening, when the new station called Kanmaki-Sakurainoeki Station of Shin-Keihan Railway was established in Showa 9 (1934), at the same time, Shin-Keihan Hospital was constructed in the Kanmaki area. Along this Shin-Keihan Railway, Suita Brain Disease Hospital was also established in Showa 9 (1934) and connected to Tenmabashi and, later, to Juso and Umeda Terminals of Osaka through some stations in the Suita area on the right bank of the Kanzaki River as the border of Osaka City. This Suita area, as with Sakai City, was an example showing that, concerning the location of the psychiatric hospital, the relation between its location and the principal city should be considered.

Successively in Showa 9 (1934), Suita Brain Disease Hospital began examinations at Suita Village, Mishima District as did Shin-Keihan Hospital at Goryo Village, Mishima District. On the other hand, the mention of Osaka Lunatic Asylum had disappeared in the Statistics of Osaka Prefecture in Showa 6 (1931), nor was there mention of Osaka Mental Hospital in the same statistics in Showa 9 (1934). These two hospitals, which were founded early in Meiji 25 (1892) and Meiji 19 (1886), were substantially succeeded by Sakamoto Hospital and Osaka Brain

Disease Hospital, each moving to the surrounding rural districts from Osaka City. As a consequence of such removals, only Kansai Mental Hospital, which changed its name from the former Kansai Brain Disease Hospital, remained in Osaka City. This hospital, whose name would again be changed to Tedukayama Hospital in Showa 15 (1940), continued to operate for a good while after that. In Showa 12 (1937), Fujiidera Brain Disease Hospital was established at Hanyu Village, Minami-Kawachi District, and then the number of psychiatric hospitals in Osaka Prefecture became 16.

Amami Brain Disease Hospital and Fujiidera Brain Disease Hospital were built along the present Minami-Osaka Line of Kinki Nippon Railway. The nearest stations for each of these hospitals, Amami Shako-Mae Station (present Kawachi-Amami Station) and Fujiidera Station, could link these hospitals to Osaka City by the Kinki Nippon Railway.

### 5. Development of "Great Osaka" and the location and number of sickbeds in psychiatric hospitals

In Showa 5 (1930), there were recorded 135 hospitals in the Statistics of Osaka Prefecture. Though 90% of the general hospitals were situated in Osaka City, only 3 of 15 psychiatric hospitals stood in Osaka City. As mentioned, these three hospitals were all founded originally in the surrounding rural districts and, in consequence of the two area extensions of Osaka City in Meiji 30 (1897) and Taisho 14 (1925), came to be registered in Osaka City. Furthermore, I have already mentioned that Osaka Lunatic Asylum and Osaka Mental Hospital moved substantially to the rural areas, and therefore only one hospital remained in Osaka City after Showa 9 (1934). In regard to the number of sickbeds in hospitals, many general hospitals were built on a small scale, and 60% of them had less than 30 beds.

Table 2. Populations of Osaka Prefecture and Osaka City, its concentration rates in the city area

	Population of Osaka Pref.	Population of Osaka City	Concentration Rate of Pop. into Osaka City
Meiji			
17 (1884)	1139800	300662	26.4%
21 (1888)	1242400	442658	35.6%
26 (1893)	1315500	482961	36.7%
31 (1898)	1485500	821235*	55.3%
36 (1903)	1675600	995945	59.4%
41 (1908)	1948200	1226647	63.0%
Taisho			
2 (1913)	2175700	1395823	64.1%
7 (1918)	2560600	1641580	64.1%
9 (1920)	2587847	1252983**	48.4%
14 (1925)	3059502	2114804***	69.1%
Showa			
5 (1930)	3540017	2453573	69.3%
10 (1935)	4297174	2989874	69.6%
15 (1940)	4736900	3252340	68.7%

\* : In Meiji 30 (1897) the first area extension of Osaka City was carried out to increase the population of Osaka City one and a half times rapidly.

\*\* : From Taisho 9 (1920) the National Census started in Japan and the continuity of population data was interrupted.

\*\*\* : In consequence of the second area extension in Taisho 14 (1925) the Concentration Rate of Population into Osaka City increased to about 70%.

In contrast to such small-scale general hospitals, almost all psychiatric hospitals possessed over 100 beds and showed an increasing trend. Particularly, some psychiatric hospitals that were established in the rural district after the Taisho Period possessed over 300 beds, becoming huge asylums. Such newly founded hospitals were a little far from Osaka City but practically connected enough with Osaka City by railways as modern urban transportation service.

In Showa 15 (1940), Osaka City became "Great Osaka" with 13 wards. In about Meiji 15 (1882), the population of Osaka Prefecture was almost 1,000,000, and in Osaka City some 300,000 people resided. In Meiji 21 (1886), the population of this prefecture became 1,250,000 and 35%, 450,000 people, dwelled densely in Osaka City. After the first area extension of Osaka City, the population increased one and half times from 500,000 to 750,000, and so half of the inhabitants of Osaka Prefecture were concentrated there. At the beginning of the Taisho Period, the population concentration in Osaka City was 70% and, in Taisho 14 (1925) after the second area extension, the population of Osaka City topped 2,000,000. Two thirds of the population of Osaka Prefecture were citizens of Osaka City.

As I have said, in Osaka Prefecture, in spite of such concentration of population into Osaka City, 94% of psychiatric hospitals were located in the rural districts and one third of the psychiatric hospitals possessed over 300 sickbeds. Their average number of sickbeds was 236 and such large-scale psychiatric hospitals were conspicuous in contrast to 69% of the general hospitals, which had under 30 sickbeds.

Investigating more closely the location and number of sickbeds of the psychiatric hospitals, it could be understood that the number of sickbeds of the psychiatric hospitals, which stood in the areas close to Osaka City, in short, on the boundary between Osaka City and its surroundings, was comparatively small.

Sakamoto Hospital, whose address changed nominally from Naka-Kawachi District to Fuse City, had 125 sickbeds in Showa 15 (1940) and Kosaka Hospital in Fuse City had 130 beds. These hospitals were located along Osaka Electric Railway, which opened in Taisho 3 (1914). Kosaka Hospital, close to Eiwa Station (present Kawachi-Kosaka Station), and Sakamoto Hospital near Fukae Station (present Fuse Station) or Hitonomichi Station (present Kawachi-Eiwa Station), were immediately connected to Uehonmachi Terminal Station in Osaka City by this railway. Thereby, their location in Fuse City seemed to be the boundary of Osaka City.

Consequently Osaka Lunatic Asylum, founded in Meiji 25 (1890) at Toyosaki Village around Osaka City, was temporarily absorbed into Osaka City but then left it for the eastern rural area to become Sakamoto Hospital. Similarly Osaka Mental Hospital, established at Tennoji Village, Higashinari District as Osaka Lunatic Asylum in Meiji 19 (1884), moved to Shiki Village at the southern foot of the Ikoma Mountains but maintained the relationship to Osaka City by means of the railways radiating from it.

## 6. Conclusion and Considerations

In the process of the creation of "Great Osaka", as mentioned in "History of Osaka City", the city area of Osaka expanded as a disorderly urban sprawl.<sup>5</sup> The two area extensions of Osaka City seemed to always be forestalled by such urban sprawl. The actual border of the Osaka area has not been very explicit, but the people have a common, vague image of its boundary. I have thought that such an image was reflected as one of the factors of the site selection for psychiatric hospitals. In this developing term, a lot of hospitals were built as social health facilities in Osaka Prefecture, but concerning the psychiatric hospital, only 18 were opened in total up to Showa 15 (1940). Almost all the general hospitals were very small and possessed 10 to 30 beds. In contrast to the fact that about 90% of these general hospitals were concentrated in Osaka City, all psychiatric hospitals were founded in the rural districts. As mentioned above, three psychiatric hospitals were absorbed into Osaka City by the two area extensions, but two of these hospitals were shut down at the

beginning of the Showa Period and actually unified with affiliated hospitals located in the rural districts to leave Osaka City. Most psychiatric hospitals were built on a large scale with over 100 beds and, in Showa 5 (1930), Osaka Mental Hospital had 145 beds, and Osaka Lunatic Asylum had 105 beds in Osaka City with fairly spacious sites. As the reasons for these hospitals to moving or closing, it was pointed out that they needed large sites difficult to find in dense city areas and that potential problems with the psychiatric patients should be prevented for the public peace. At the same time, there was medical significance that the psychiatric hospitals required calm environments far from Osaka City with its various social stresses. In the first half of the Meiji Period, besides Nanayama Hospital and Ishimaru Lunatic Asylum with the background of folk medicine or pre-modern treatment, some psychiatric hospitals were established in the Higashinari and Nishinari Districts neighboring Osaka City. This fact is apparently connected with the conditions of the sites for psychiatric hospitals illustrated by the example of Iwakura, Kyoto mentioned above. That is to say, early psychiatric hospitals had been founded on the boundary of Osaka City, where some distance was ensured and simultaneously an intimate relationship with Osaka City could be maintained.

However, after that, according to the remarkable development of the railway network radiating from Osaka City in the Kansai Area, such closeness to the city would be not so important for the psychiatric hospitals. With the direct connection between the nearest station of each hospital and a terminal inside Osaka City, in spite of some physical distance, it seems that the hospitals in the rural districts acquired a modern relationship to Osaka City. Like Saigoku-Kaido Road was beneficial for the formation of the treatment place in Kuze on the right bank of the Katsura River, these railways accelerated construction of psychiatric hospitals in rural districts whose land prices were evidently cheaper.

As I have said, in the Meiji, Taisho and early Showa Periods, "Great Osaka" expanded with no relation to the administrative borders of Osaka City and its actual borders were surmised from such investigation on the location of the psychiatric hospitals and so on. In the opposite way, it has been proved that, for the planning of the psychiatric hospitals, the distance relation, called in Japanese "Hedate", between its site and the city area is one of the important factors.

At the end of this esquisse, I would like to explain Sakai Brain Disease Hospital as an example of this "Hedate" relation of the boundary.

Similarly to many psychiatric hospitals in Osaka Prefecture, Sakai Brain Disease Hospital and Hamadera Hospital were both just located along the Nankai Railway opened wholly between Namba, Osaka and Wakayama in Meiji 36 (1901). This Nankai Railway originated as Hankai Railway, the first privately owned railway in Japan, and could allow the chance to found psychiatric hospitals in the southern part of Osaka Prefecture by connecting directly into the center of Osaka City. From ancient times, this area has been crowded with lots of travelers on Kumano-Kaido and Kishu-Kaido Roads and, in particular, Sakai was the most important international trade port in the 15th and 16th centuries. Sakai has the Sumiyoshi Taisha Shrine and even now there exists Aguchi Shrine as a branch of Sumiyoshi Taisha, and it remains a resting place for the Gods of Sumiyoshi in Sakai City. Until the beginning of the Edo Period, the Yamato River was not running between Sakai and Sumiyoshi and so the unity of Sumiyoshi and Sakai on the same adjoining plain was stronger than nowadays because of their active interchange of personnel and merchandise. To avoid the deluge of the Yamato River, the redirection of its course was completed only for 10 months in Genroku 17 (1704).

The Yamato River flows in a straight line to Osaka Bay just on the north of Sakai Port and a large quantity of earth and sand that the Yamato River brought from Nara Prefecture would clog the port of Sakai causing the decline of Sakai City. Consequently, the Yamato River had been the definite boundary between Osaka and Sakai. From Osaka City, Sakai Brain Disease Hospital was founded on the opposite bank of the Yamato River as a boundary area adequate for the psychiatric hospitals. Here, I could find a resemblance to the example of Kuze, Kyoto City.

The river generally is an obvious physical boundary and often an administrative boundary, but it seems that the image of the boundary for the residents does not necessarily agree with such a physical boundary. A river has a function of separating both banks of itself and at the same time it has another function that connects its both banks ontologically. The Yamato River became the boundary between Settsu and Izumi Province after the excavation work for replacement of the course of the Yamato River and has been the boundary between Osaka City and Sakai City even up to now. However, thanks to the long, intimate relationship between Osaka and Sakai, these cities didn't lose friendly relations, and the northern edge of Sakai City as the left bank of Yamato River could be considered to be the opposite bank for Osaka City. In other words, the left bank of the Yamato River in northern Sakai and its right bank in southern Osaka are separated and connected ambiguously. On the left bank of the Yamato River, Sakai Brain Disease Hospital was separated from Osaka City and connected to Osaka City in order to heal the mentally handicapped people in a calm environment while maintaining the relationship to their society in Osaka City. Such location is indeed the typical example that shows the "Hedate" relation. The location of the psychiatric hospital has to be not so far from the city area. When the network of railways was completed in the modern period, some areas around the stations far enough physically from Osaka City seemed to be connected directly to the city terminals with the modern railways but, for the imagination of the inhabitants, lost the "Hedate" relationship.

Like Iwaya in the north of Kyoto and Nanayama in the south of Osaka, such treatment facilities so far from the city of Kyoto and Osaka were not able to maintain the intimate relations with their parent cities, and therefore they had to be a sort of asylum. On the other hand, at the center of the cities or inside the cities, the distance is so close that any stresses are rather strong for the patients. There the patients couldn't build "Hedate" relation with their parent societies. They needed some distance for the ambiguous "Hedate". Some rivers could be the proper "Hedate" for the psychiatric hospitals, I think. For the psychiatric hospitals, such ontological meanings have been very important.<sup>7</sup>

At the present time, there exist 52 hospitals of mainly psychiatric specialty in Osaka Prefecture, but only one psychiatric hospital that was newly founded in Heisei 20 (2008) is registered in Osaka City.<sup>8</sup> Like in Showa 15 (1940) as mentioned above, even now it seems that the psychiatric hospital is considered to be improper for Osaka City for various reasons. With the development of public transportation such as railways, the area of Osaka City has extended and the rural areas close the railway stations came to be practically the boundary of Osaka City. However, it is necessary to reflect on the significance of the location of the psychiatric hospital once more, I believe. This requires further comprehension of the spatial construction of the cities. Also as future work, I would like to continue this esquisse for other prefectures.

## Endnotes

1. On these examples in Kyoto concerning psychiatric treatment, I have already mentioned in my paper "Esquisse on the city boundary of Kyoto and the location for the psychiatric treatment facility" in "Bulletin Osaka Seikei University Faculty of Art and Design" No.1, 2005. There I examined the meanings of the city boundary at Iwakura and Kuze as a sort of "Hedate".
2. About the history of psychiatric treatment in Japan, various studies have been reported lately. On the psychiatric treatment facilities before the Modern Period, the following documents comprehensively explain the historical facilities. cf. Waichiro Omata "The Origin of Psychiatric Hospitals", 1998, Yasuo Okada "History of Psychiatric Treatment in Japan", 2002, Gohei Yagi and Akira Tanabe "History of Treatment for Mental Illnesses in Japan", 2002. Particularly on the formation of modern psychiatric hospitals in Japan, Waichiro Omata "The Origin of Psychiatric Hospitals Volume on Modern Period" shows lots of examples in detail.
3. Almost all "Statistics of Osaka Prefecture" of the formation period of "Great Osaka" from Meiji 14(1881) to Showa 15(1940) are stored and open for public in the "Digital Library from the Meiji Era" of the National Diet Library. Also, "Statistics of Osaka City" of the Meiji Period can be inspected in the same "Digital Library".
4. On the historical change of the psychiatric treatment in Osaka Prefecture, in the report "New Fudoki (description of various characters of a certain region) of the psychiatry in Japan (29) Osaka Prefecture" in "Japanese Journal of Clinical Psychiatry" no.8, vol.38, 2009, Yoshiharu Honda outlines it plainly.
5. cf. Compilation Office for the History of Osaka City, "History of Osaka City, New edition" vol.6, 1994, pp.120–124.
6. This map is adapted from the following book and revised partially in English. Study Group on the Name of Towns in Osaka, "The Name of Towns in Osaka—Osaka San-go (three quarters of old Osaka) to Yonku (four wards of East, West, North and South) of new Osaka City—", 1977.
7. Concerning "Hedate" as architectural phenomenon, Yoshio Tamakoshi reflected in "Dwelling in ancient Japan", 1980, in an ontological logic relying on Martin Heidegger. In the planning of psychiatric hospital, the "lived Hedate" between the patients and their families, societies, medical stuffs should be examined with some documents as the clinical records or visitors reports of their families, diaries of the patients themselves from the phenomenological point of view.
8. About the data of the hospitals in Osaka Prefecture, all hospitals are recorded in "Hospital Information of Kinki District 2010". I select 52 hospitals that are licensed to possess the particular beds for mental patients.



# Types of Rivers with Respect to Frame, Drawn by Turkish Students Based on Landscape Montage Technique

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**Keywords:** cross-cultural study, development, frame, landscape, Landscape Montage Technique, river, spatial schema, Turkish student

**Abstract:** We applied the Landscape Montage Technique (LMT) to 233 Turkish students ranging from kindergarten to university. The purpose of this paper is to clarify the developmental characteristics of types of rivers with respect to the frames in landscapes drawn by Turkish students based on LMT. We identified eight types of rivers with respect to the frames and found their developmental changes. Furthermore, compared with the results of the Japanese cases in our previous research, this paper's results basically show the same tendencies as the Japanese cases. We conclude that the developmental characteristics of types of rivers with respect to the frames probably concern universal and fundamental spatial schema that human beings have in their inner worlds and transcend cultural frameworks.

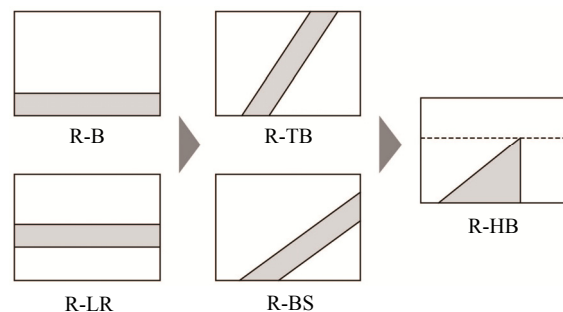
## 1. Background and Objective

We previously conducted developmental and pathological studies on *spatial schema* using the Architectural Space Montage Technique (ASMT) and the Landscape Montage Technique (LMT), hypothesizing that universal and fundamental principles can be found in human beings and in the compositions of living environments by children and schizophrenic patients (Okazaki, 1992; Okazaki & Ito, 1992; Okazaki, Nanba, & Yanagisawa, 1998; Okazaki, Ooi, Yamaguchi, & Urasaki, 1997; Okazaki, Yanagisawa, & Nanba, 1999; Yanagisawa, 2003; Yanagisawa & Okazaki, 2002, 2011a, 2011b; Yanagisawa, Okazaki, Kikuchi, & Nanba, 1999; Yanagisawa, Okazaki, & Takahashi, 2001).

LMT is an art therapy technique devised by Nakai (1970, 1971) based on sandplay therapy. The therapist draws a frame on a piece of paper and tells the participant to draw a landscape within it. The items to be drawn are said sequentially, and the participant draws only one landscape by adding the following items in the following order: river, mountain, rice field, road (large items), house, tree, person (medium-sized items), flower, animal, and stone (small items). After drawing them, anything else can be added. The participant then colors the landscape to finish the drawing.

Yanagisawa (2003) applied LMT to 1080 Japanese students ranging from kindergarten to university and focused on the *space enclosed by a frame*, which is one LMT feature, analyzed how a river is drawn with respect to the frame, and clarified the developmental characteristics of the spatial composition based on the types of rivers. The study clarified the following developmental changes that occur in the relationship between the frame and a river: *rivers that flow along the bottom of the frame with the limit of the lower side not shown* (R-B), which changes to *rivers that connect the left and right sides of the frame* (R-  
LR); then *rivers that connect the top and bottom sides of the frame* (R-TB) and *rivers that connect the bottom and either the left or right side of the frame* (R-BS), and later changes to *rivers that connect the horizon and the bottom side of the frame* (R-HB), which provide a perspective representation (Fig. 1).

A detailed discussion of the significance of analyzing how a river is drawn with respect to the frame can be found in Yanagisawa and Okazaki (2011a). Therefore, here we only provide the following brief summary of the significance. By analyzing how a river is drawn with respect to the frame, we can clarify the diverse structure that a *space enclosed by a frame* could have to which diverse *spatial schema* is related that human



R-B: River that flows along bottom of frame with limit of lower side not shown  
R-LR: River that connects left and right sides of frame  
R-TB: River that connects top and bottom sides of frame  
R-BS: River that connects bottom and either left or right side of frame  
R-HB: River that connects horizon and bottom side of frame

Fig. 1 Developmental changes of types of rivers drawn by Japanese (based on Yanagisawa, 2003)

beings have in their inner worlds to compose the world in which we live.

This study is an extension of our many previous studies. Here, we focused on a cultural perspective, which is a new perspective for us, and applied LMT to Turkish students ranging from kindergarten to university. Our goal is to clarify the developmental characteristics of types of rivers with respect to the frames in landscapes drawn by Turkish students based on LMT. This study reveals aspects of the characteristics of *spatial schema* that Turkish people have in their inner worlds.

**2. Literature Review**

A number of researches on LMT have been done in such fields as psychiatry and clinical psychology. Refer to Yanagisawa and Okazaki (2011a) for previous studies on schizophrenic patients.

Here are a few representative examples of the developmental studies on LMT. Yamanaka (1984) analyzed types of rivers in landscapes drawn by students ranging from kindergarten to junior high school. Hirota (1986) studied the developmental characteristic of each item of LMT and analyzed rivers. Kaito (1994) proceeded with a wide variety of LMT researches, such as quantitative researches and reading studies, and set “compositional stage” and “spatial stage” as development indexes. Based on landscapes drawn by elementary school and university students, Takaishi (1996) described the “types of composition” and their developmental changes and considered how they may be associated with the development of ego.

Previous researches related to culture include Kuwayama (1996), who reported works based on LMT done by Filipino women who married into the families of a rural area in Japan and showed that in the cases of those who adapted to Japanese culture well, the rivers and the mountains resembled those of Japan. However, the houses looked like those in the Philippines or stilt houses. Kaito (1996, p. 52) argued that many people in Korea felt uncomfortable with having a frame. Kaito (2009) also said, “LMT was introduced into countries such as Germany, America, Korea, and China. In the process, we came to understand that there were cultural differences, for example, ‘rice fields’ were hard to understand for Westerners” (p. 18).

Looking at the foregoing previous researches on LMT, none but us classified rivers with respect to the frame and applied LMT to Turkish people.

**3. Method**

**3.1. PARTICIPANTS**

We conducted our research on Turkish students ranging from kindergarten to university in Istanbul. Participants included 35 kindergartners (one class with four- to five-year olds and one class with five- to six-year olds), 92 elementary school students (one class per grade from first to fifth grades), 47 junior high school students (one class per grade from sixth to eighth grades), 16 high school students (volunteers from ninth to twelfth grades),

Table 1 Cases with each type of river and percentages for each grade

	K 4-5	K 5-6	1st graders	2nd graders	3rd graders	4th graders	5th graders	6th graders	7th graders	8th graders	9th-12th graders	Univ. students	Total
Scribble	3 3 (17.6)												3 3
Circle	8 11 (64.7)	3											8 11
Large square	1 1 (5.9)												1 1
R-B	1 1 (5.9)	3 9 (50.0)	1 3 (15.0)	2 6 (35.3)	2 2 (10.5)		1 1 (6.3)		3 3 (18.8)	1 2 (14.3)			13 27
R-LR	1 1 (5.9)	1 2 (11.1)	1 4 (20.0)	1 2 (11.8)	2 7 (36.8)	1 1 (5.0)	1 1 (6.3)	3 3 (17.6)		1 2 (14.3)		2 2 (4.7)	10 25
R-BC			1 1 (5.0)		1 1 (5.3)	2 2 (10.0)	2 2 (12.5)	1 1 (5.9)					1 1
R-TB			1 1 (5.0)	1 3 (17.6)	2 1 (5.3)	1 2 (10.0)	1 1 (6.3)	1 2 (11.8)	2 2 (12.5)	1 1 (7.1)	3 4 (25.0)	5 5 (11.6)	11 22
R-TS					1 1 (5.3)	2 3 (15.0)	1 1 (6.3)		1 1 (6.3)	1 1 (7.1)		1 1 (2.3)	1 1
R-BS			1 2 (10.0)	1 1 (5.9)	3 4 (21.1)	4 6 (30.0)	2 6 (37.5)	2 4 (23.5)	3 6 (37.5)	1 4 (28.6)	2 7 (43.8)	5 21 (48.8)	16 61
R-HS									1 1 (6.3)			1 1 (2.3)	1 1
R-HB							1 1 (6.3)			1 3 (21.4)	2 3 (18.8)	1 11 (25.6)	5 18
IR-B		1 1 (5.6)	1 2 (10.0)			1 1 (5.0)							2 4
IR		3 6 (33.3)	3 6 (30.0)	4 4 (23.5)	2 2 (10.5)	1 4 (20.0)	1 2 (12.5)	1 3 (17.6)	1 3 (18.8)		1 1 (6.3)		14 28
IR-M			1 1 (5.0)	1 1 (5.9)			1 1 (6.3)	3 4 (23.5)	1 3 (18.8)		1 1 (6.3)		9 11
Unspecified					1 1 (5.3)	1 1 (5.0)				1 1 (7.1)		1 1 (2.3)	1 1
Total	13 17	4 18	8 20	10 17	9 19	8 20	9 16	7 17	11 16	6 16	6 16	8 43	9 36
													109 124

For each type of river under each grade, upper left box indicates cases by males, upper right box indicates cases by females, and total number of cases with each type of river is shown in the bottom box with percentage of total number of cases for each grade shown in parentheses.

- R-B: River that flows along bottom of frame with limit of lower side not shown
- R-LR: River that connects left and right sides of frame
- R-BC: River at bottom corner
- R-TB: River that connects top and bottom sides of frame
- R-TS: River that connects top and either left or right side of frame
- R-BS: River that connects bottom and either left or right side of frame
- R-HS: River that connects horizon and either left or right side of frame
- R-HB: River that connects horizon and bottom side of frame
- IR-B: Interrupted river that flows along bottom of frame with limit of lower side not shown
- IR: Interrupted river
- IR-M: Interrupted river that connects with a mountain

K 4-5: 4-5 year-old kindergartners  
 K 5-6: 5-6 year-old kindergartners



\* Captions show grade, gender in parentheses, and type of river. \*\* K 4-5: 4-5 year-old kindergartners \*\*\* K 5-6: 5-6 year-old kindergartners



Fig. 2 K 4-5 (m) Scribble



Fig. 3 K 4-5 (f) Circle



Fig. 16 7<sup>th</sup> grader (m) R-TB

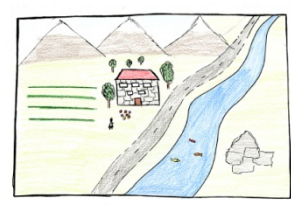


Fig. 17 Univ. student (f) R-TB



Fig. 4 K 4-5 (f) Large square



Fig. 5 K 5-6 (m) R-B



Fig. 18 5<sup>th</sup> grader (f) R-TB

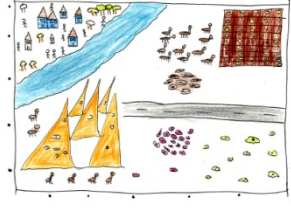


Fig. 19 4<sup>th</sup> grader (m) R-TS

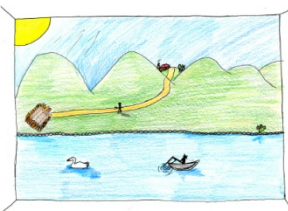


Fig. 6 8<sup>th</sup> grader (m) R-B



Fig. 7 1<sup>st</sup> grader (f) R-B

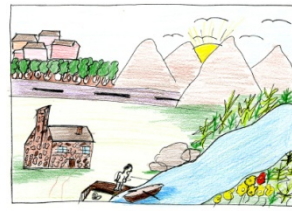


Fig. 20 Univ. student (f) R-BS



Fig. 21 Univ. student (f) R-BS



Fig. 8 2<sup>nd</sup> grader (f) R-B



Fig. 9 3<sup>rd</sup> grader (f) R-LR



Fig. 22 3<sup>rd</sup> grader (m) R-BS



Fig. 23 7<sup>th</sup> grader (f) R-HS



Fig. 10 6<sup>th</sup> grader (m) R-LR



Fig. 11 2<sup>nd</sup> grader (f) R-LR

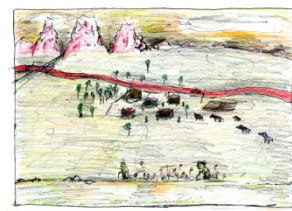


Fig. 24 Univ. student (m) R-HS

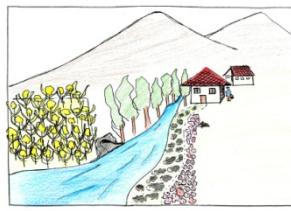


Fig. 25 Univ. student (f) R-HB



Fig. 12 Univ. student (f) R-LR

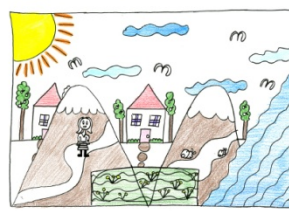


Fig. 13 5<sup>th</sup> grader (f) R-BC

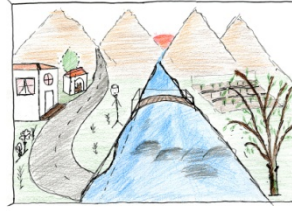


Fig. 26 Univ. student (f) R-HB



Fig. 27 4<sup>th</sup> grader (f) IR-B



Fig. 14 4<sup>th</sup> grader (f) R-BC



Fig. 15 9<sup>th</sup> grader (f) R-TB



Fig. 28 7<sup>th</sup> grader (m) IR-M



Fig. 29 2<sup>nd</sup> grader (f) IR



and 43 university students (undergraduates from 18 to 23). Table 1 shows a breakdown of the participants<sup>1</sup>.

### 3.2. IMPLEMENTATION METHOD

We conducted the research on the entire class of students during their normal class period time as a group. However, for the high school students, the research was not conducted on one particular class, but on a group who volunteered. Dündar, one of the authors, explained the LMT procedure in Turkish, while Yanagisawa and class teachers supported the process from the side.

B4-size paper, black felt pens, and colored pencils were used. For the kindergartners, the researcher preliminarily drew a frame on each piece of paper. For students ranging from elementary school to university, each participant drew a frame on a piece of paper based on an example shown by the researcher.

“Rice fields” were especially hard for the Turkish students to understand. In this case, we substituted “fields.” Sometimes the students asked if drawing a field of flowers was acceptable.

## 4. Results and Discussion

We analyzed how a river is drawn with respect to the frame and identified eight types of rivers (Table 1, from *river that flows along bottom of frame with limit of lower side not shown* (R-B) to *river that connects horizon and bottom side of frame* (R-HB)). Table 1 shows the number of cases with each type of river and their percentages for each grade. Besides these eight types, seven other types were identified and added (from *scribble* to *large square* and from *interrupted river that flows along bottom of frame with limit of lower side not shown* (IR-B) to *unspecified*). Below, each type of river is discussed. First, we discuss the rivers drawn by the 4-5 year-old kindergartners.

### 4.1. RIVERS DRAWN ESPECIALLY BY 4-5 YEAR-OLD KINDERGARTNERS

The 4-5 year-old kindergartners mainly drew three types of rivers: *scribble* (17.6%, Fig. 2), *circle* (64.7%, Fig. 3) and *large square* (5.9%, Fig. 4). The characteristics of *scribble*, *circle* and *square* are also often pointed out in the field of drawing development in children (see also Yanagisawa, 2003).

In each case where the type of a river was a *scribble*, a *circle* or a *large square*, almost all the items were depicted by geometric lines and had tenuous relationships. It was also often difficult to identify other items such as mountains and rice fields. When the type of a river was a *scribble*, other items were also scribbled by undifferentiated lines. Takaishi (1996) mentioned that “it is not until the *base line* [which represents the ground] appears that some composition becomes possible” (p. 244). However, in these cases, a *base line* was not found, which meant that these cases are expressions prior to the expression of a landscape composition. In these drawings, however, we sensed the children’s rich energy. Furthermore, occasionally it was only after the chaotic lines were colored that rivers could be identified. It was expected that they viewed rich landscapes even in these lines that were considered expressions before the composition.

### 4.2. RIVER THAT FLOWS ALONG BOTTOM OF FRAME WITH LIMIT OF LOWER SIDE NOT SHOWN (R-B)

This type was more common from kindergartners to 3<sup>rd</sup> graders and peaked in the 5-6 year-old kindergartners (50.0%, Fig. 5). This was the typical type drawn by many children. Most were

horizontal rivers. This type was also slightly more common in 7<sup>th</sup> and 8<sup>th</sup> graders (Fig. 6). There were also cases in which a landscape like the Bosphorus was drawn with land at either end of the R-B type river and a bridge or a road spanning them (Figs. 7 and 8).

### 4.3. RIVER THAT CONNECTS LEFT AND RIGHT SIDES OF FRAME (R-LR)

This type was more common from kindergartners to 3<sup>rd</sup> graders, same as the R-B type, and peaked in 3<sup>rd</sup> graders (36.8%, Fig. 9). This type was also slightly more common in 6<sup>th</sup> and 8<sup>th</sup> graders (Fig. 10). Diagonal rivers were also found (Fig. 11). There were also cases of university students who drew tapered rivers (Fig. 12).

### 4.4. RIVER AT BOTTOM CORNER (R-BC)

This type was found in students ranging from 1<sup>st</sup> to 6<sup>th</sup> graders; however, there was no remarkable peak. We generally considered that this type represented a river’s diagonal flow (Fig. 13). There was also the case in which this type represented a waterfall and a pond (Fig. 14).

### 4.5. RIVER THAT CONNECTS TOP AND BOTTOM SIDES OF FRAME (R-TB)

This type was found widely from 1<sup>st</sup> graders to university students and peaked in 9<sup>th</sup>-12<sup>th</sup> graders (25.0%, Fig. 15). A number of vertical rivers (Fig. 16) and tapered rivers were also found (Fig. 17). In drawings in which mountains were drawn at the bottom side of the frame, it was often confusing whether the area below the top side of the frame represented the sky or the ground (Fig. 18). However, drawings in which the river was diagonal or tapered and mountains were drawn at the top showed landscapes with a certain degree of integration that looked like a kind of bird’s eye view (Figs. 15 and 17).

### 4.6. RIVER THAT CONNECTS TOP AND EITHER LEFT OR RIGHT SIDE OF FRAME (R-TS)

This type was found widely from 3<sup>rd</sup> graders to university students; however, there was no remarkable peak. Many of the drawings were a kind of bird’s eye views (Fig. 19). Fig. 19 showed mountains like those in Cappadocia.

### 4.7. RIVER THAT CONNECTS BOTTOM AND EITHER LEFT OR RIGHT SIDE OF FRAME (R-BS)

This type appeared most frequently in the drawings by Turkish students. Also in Japan, this type appeared most frequently (Yanagisawa, 2003). It was found widely from 1<sup>st</sup> graders to university students and peaked in university students (48.8%, Fig. 20). Tapered rivers were also found (Fig. 21). In drawings in which mountains were drawn at the bottom side of the frame, it was often confusing whether the area below the top side of the frame represented the sky or the ground (Fig. 22). However, when mountains were drawn at the top, especially when the lower end of the mountains were drawn higher than the upper end of the river, the landscapes appeared to have a certain degree of integration that resembled a kind of bird’s eye view, with the horizon clearly shown or implied (Figs. 20 and 21).

### 4.8. RIVER THAT CONNECTS HORIZON<sup>2</sup> AND EITHER

## LEFT OR RIGHT SIDE OF FRAME (R-HS)

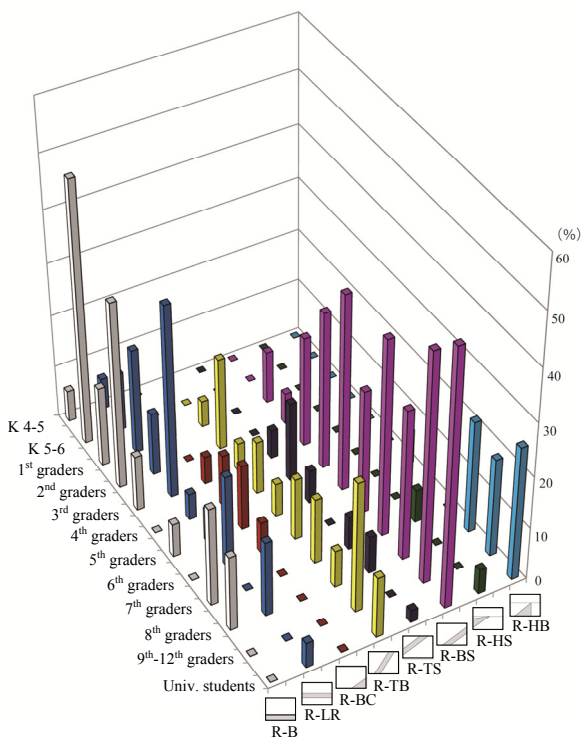
This type was found in just one 7<sup>th</sup> grader (Fig. 23) and two university students (Fig. 24), and appeared least frequently.

## 4.9. RIVER THAT CONNECTS HORIZON AND BOTTOM SIDE OF FRAME (R-HB)

This type was more common from 8<sup>th</sup> graders to university students and peaked in university students (25.6%, Figs. 25 and 26). The upper end of the river is not connected with the frame. A tapered river is drawn from a focal point in the picture and widened as it reached the bottom side of the frame. In most cases, mountains were drawn around the focal point and the landscape was structured at once. All of the items drawn in the distance or close up were interrelated by this river, which provided a perspective representation.

## 4.10. INTERRUPTED RIVER

We also identified three characteristic types of rivers that were interrupted: *interrupted rivers that flow along the bottom of the frame with the limit of the lower side not shown* (IR-B, Fig. 27), *interrupted rivers that connect with a mountain* (IR-M, Fig. 28), and any other *interrupted rivers* (IR, Fig. 29). In the IR type, we included not only interrupted rivers that were shaped like a rectangle but also round ones.



R-B: River that flows along bottom of frame with limit of lower side not shown  
 R-LR: River that connects left and right sides of frame  
 R-BC: River at bottom corner  
 R-TB: River that connects top and bottom sides of frame  
 R-TS: River that connects top and either left or right side of frame  
 R-BS: River that connects bottom and either left or right side of frame  
 R-HS: River that connects horizon and either left or right side of frame  
 R-HB: River that connects horizon and bottom side of frame

K 4-5: 4-5 year-old kindergartners  
 K 5-6: 5-6 year-old kindergartners

Fig. 30: Percentages of cases with each type of river for each grade

We don't know why the rivers were interrupted. Possible factors include the effects of not knowing what to draw next, Takaishi's indication that children tend to draw items separately for each instruction (Takahashi, 1996, p. 247), and the effects of conducting the research by group.

Additionally, for example, the appearance ratio of the IR type in Turkey (12.0%: 28 out of 233 cases) was more than twice that in Japan (5.0%: 54 out of 1080 cases, Yanagisawa, 2003). We cannot simply compare both percentages because the numbers of cases are very different. However, the fact that rivers are relatively uncommon in Istanbul might have influenced the appearance of rivers that were interrupted.

## 4.11. DEVELOPMENTAL CHANGES AND THE TYPES OF RIVERS DRAWN BY TURKISH STUDENTS

As mentioned above, we analyzed how a river is drawn with respect to the frame and identified eight types and abbreviated them as R-B, R-LR, R-BC, R-TB, R-TS, R-BS, R-HS, and R-HB. Fig. 30 indicates the percentages of cases with each type of river for each grade; refer to Table 1 for the specific figures. Fig. 30 shows the developmental changes where the relationship between a frame and a river begins with the R-B type and the R-LR type, changes to the R-TB type and the R-BS type, and eventually reaches the R-HB type, where the drawings feature more perspective views.

Compared with the results of Yanagisawa (2003), we found that these results basically show the same tendencies as the Japanese cases (Fig. 1). Therefore, the developmental characteristics of the types of rivers with respect to the frames are likely to concern universal and fundamental spatial schema in human beings that transcend cultural frameworks.

However, the total number of cases in this research was 233, while the total number of Japanese cases in Yanagisawa (2003) was 1080. By increasing the number of Turkish cases, more rigorous and detailed comparative studies can be conducted. However, that is a challenge for future researches.

## 5. Conclusion

We applied the Landscape Montage Technique to 233 Turkish students ranging from kindergarten to university and clarified the developmental characteristics of types of rivers with respect to the frames in these landscapes. We found the following:

1. We analyzed types of rivers with respect to the frames and identified eight types of rivers: 1) rivers that flow along the bottom of the frame with the limit of the lower side not shown (R-B), 2) rivers that connect the left and right sides of the frame (R-LR), 3) rivers at the bottom corner (R-BC), 4) rivers that connect the top and bottom sides of the frame (R-TB), 5) rivers that connect the top and either the left or right side of the frame (R-TS), 6) rivers that connect the bottom and either the left or right side of the frame (R-BS), 7) rivers that connect the horizon and either the left or right side of the frame (R-HS), and 8) rivers that connect the horizon and the bottom side of the frame (R-HB).
2. We found the developmental changes where the relationship between a frame and a river begins with the R-B type and the R-LR type, changes to the R-TB type and the R-BS type, and eventually reaches the R-HB type, where the drawings feature more perspective views.
3. Compared with the results of Yanagisawa (2003), we found that the results in the previous paragraph basically show the same tendencies as those of the Japanese cases. Therefore, the developmental characteristics of types of rivers with

respect to the frames are likely to concern universal and fundamental spatial schema in human beings that transcend cultural frameworks.

4. We identified three types of rivers mainly drawn by 4-5 year-old kindergartners: *scribble*, *circle*, and *large square*.
5. We also identified three characteristic types of rivers that were interrupted: *interrupted rivers that flow along the bottom of the frame with the limit of the lower side not shown* (IR-B), *interrupted rivers that connect with a mountain* (IR-M), and any other *interrupted rivers* (IR).

## Endnotes

1. The number of cases of high school students was too small. Therefore, in this paper we grouped them together as “9<sup>th</sup>-12<sup>th</sup> graders.” A future challenge remains to increase the number of cases of high school students.
2. In this paper, when a tapered river was drawn from a focal point in the picture, even if the horizon was not drawn clearly, we used the term “horizon.” Even though the horizon was not drawn clearly, some kind of spatial schema related to the horizon lay behind the tapered river that was drawn from the focal point in the picture, and we consider the horizon to be a part of the frame.

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## **ACTIVITY REPORTS OF THE INSTITUTE OF TURKISH CULTURE STUDIES**

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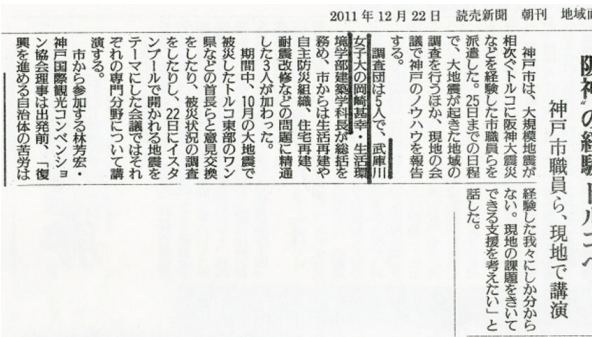
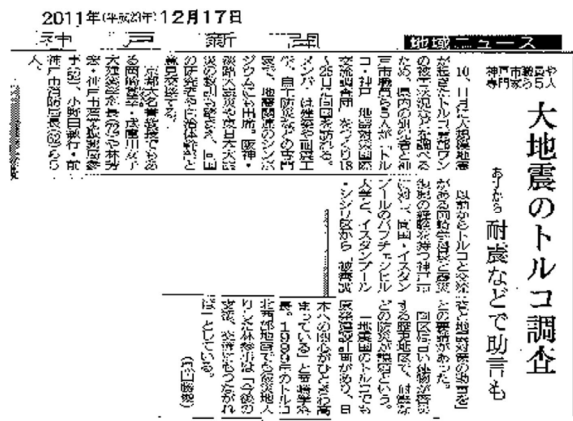
### **Turkey-Japan International Survey Group of Anti-earthquake Measures December 19-23, 2011**

A massive earthquake occurred in Van prefecture located at the east end of Turkey bordering Iran on Sunday, October 23, 2011. It happened to be one week before Mukogawa Women's University held the Opening Ceremony of "Ceramics Gallery for the Exhibition of Architecture and Culture through the Silk Road" in Koshien Hall. For the opening ceremony, the following people attended: Mr. Hideo Tamai, former Director-General of the Agency for Cultural Affairs, Prof. Dr. Şenay Yalçın, the president of the Bahcesehir University, his wife Mrs. Elif Yalçın, Prof. Dr. Ahmet Eyüce, the architecture division manager, Asst. Prof. Dr. Murat Dündar and Asst. Prof. Dr. H. Sezin Tanrıöver of the department of architecture, Mr. Ayşegül Atmaca, culture and public-relations secretary, Turkish embassy, Mr. Shoji Manabe, superintendent of education of Nishinomiya, Prof. Tomoko Masuya of Institute for Oriental Culture, the University of Tokyo, Mr. Masahiko Shibatsuji and Mr. Daisuke Mitsumoto, who helped with collecting the exhibits, and Chancellor Ryo Okawara and President Naosuke Itoigawa of Mukogawa Women's University. After the ceremony, the Bahcesehir University suggested that members from Mukogawa Women's University and Kobe city visit Turkey for an earthquake survey and a symposium in Istanbul under the joint hosting of the university and Sisli Municipality in Istanbul. The suggestion was materialized as "Turkey-Japan International Survey Group of Anti-earthquake Measures" formed by Mukogawa Women's University, Kobe city and the Bahcesehir University.

The participants from Japan were as follows: Prof. Dr. Shigeyuki Okazaki (president of Architecture department of Mukogawa Women's University, president of Institute of Turkish Culture Studies, the emeritus professor of Kyoto University; manager of the team), Mr. Eiji Tarumi (adviser of Hyogo Branch of Architects & Building Engineers Association, former head of Kobe Housing Bureau: in charge of housing reconstruction, anti-earthquake refurbishment, city planning administration, city planning (land readjustment.)), Mr. Toshiyuki Onoda (Kobe citizen co-op representative director, former head of Kobe city fire department: civilian disaster prevention organization (disaster prevention and welfare community), firefighting in general, earthquake fire, fire prevention), Mr. Takuya Nagae (Senior research scientist of the Hyogo seismic technology research center of National Research Institute for Disaster Prevention: Seismic technology) and Mr. Yoshihiro Hayasi (former Kobe Crisis Management Office chief examiner, Kobe industrial development office secretary, Kobe Convention & Visitors Association director, former head of Kobe Crisis Management Office: Safe city-planning and life reconstruction, lessons of the Kobe earthquake and the East Japan great earthquake). A press conference was held at Kobe City Office prior to departure. And then Japan and Turkey deepened exchanges in the area of anti-earthquake measures in Sisli, the Municipality of Istanbul, Van prefecture, Van city, and Erciş city between December 19 and 22, 2011.



Left: Maimichi Newspapers Kobe edition, Dec. 17, 2011  
 Right: Kobe Shimbun Dec. 17, 2011



Left: Yomiuri Shimbun Morning paper 2011.12.22  
 Right: map of Van city: Van prefecture is on the Van Lake in the west and the borders Iran in the east. The city has an area of 19,069 square kilometers with a population of 1,035,418 as of 2010.

Leaving Kansai International Airport in the early morning on Monday, December 19, 2011, we arrived at Istanbul/Atatürk International Airport after a flight of about 12 hours. We had an official meeting at Sisli Municipality from 3 p.m. to 5 p.m. Then, we paid a courtesy visit to Mr. Enver Yücel, chairman of the board of directors of the Bahcesehir University and Prof. Dr. Şenay Yalçın, president of the Bahcesehir University. Following the visit a welcome dinner party was held at the university.



Left: An exclusive residential area of Sisli Municipality. Even before the daybreak, the bridge spanning the Bosphorus has already been congested with cars from the Asian part. There is a line of commuters' cars on the bridge. Nighttime population is 310,000, while daytime is 4 million. The city area measures 35 square kilometers. According to Consul-General Mr. Hayashi, Sisli Municipality in Istanbul is one of the three major modernization bases of Istanbul, the capital city with population of 15-million, along with the cities of Beşiktaş, and Taxim. The photograph at left show views of the Bosphorus from the dining-room on the 18th floor of Point Hotel Barbarous. Right: On the opposite side, a hub traffic base of Istanbul is seen across from the hotel. From the base, bus route stretches toward the west, and the express buses, which are combinations of two or more vehicles, run at intervals of few minutes on the proprietary highway.



Left: Exchange of opinions with the Sisli Municipality staff. We heard about the means of escape in a disaster from the staff. Crisis Management Office was set up in 2003. Suitable residential areas and dangerous areas against disasters were designated after a ground survey to create a map of escape route for evacuees. Questions of improvement of quality of construction workers and registration of the building contractors are yet to be solved. They showed a unit of personal digital assistant to receive urgent information from a citizen. However, the questions of evacuation and returning home of commuting population, which were actualized in Tokyo in the past earthquake in March, were not paid attention here.

Right: We first visited the site of collapsed hospital in Van city. An initial damage occurred at the first shock of earthquake, however, with the patients having evacuated beforehand there was no casualties at the collapse caused by the second shock. Children in a long vacation were playing while the smoke still lingers. Some were helping with steel bar recovering. Most of women and children took refuge in other cities. The steel rod from collapsed buildings was thin and small in number. Of course, there was not anything like deformed bars. The surface of concrete works did not have characteristics peculiar to concrete, either.

The members of the team as shown below met at the lobby of the Atatürk International Airport at 7a.m. Tuesday December 20, 2011 and left for Van on a plane. Members: The Japanese group, and the Turkish group (Prof. Dr. Ahmet Eyüce, dean of Architecture School of the Bahcesehir University; Asst. Prof. Dr. Murat DüNDAR, associate dean; staff from Sisli Municipality and so on.) In Van, the Bahcesehir University Van school staff and others welcomed us. We inspected the city affected by the earthquake such as a site of collapsed hospital or a leaning medium-rise collective housing, etc. by bus. We visited Van city mayor at a temporary government building and heard the situation of damage, and exchanged views with the mayor. Then we visited the collapsed hospital where a Japanese doctor, Mr. Miyazaki, suffered damage, a public facility the reconstruction of which was being planned with a support of the Sisli Municipality, etc. We also visited Disaster Coordination Center, a center of volunteer engineers in Van city in the evening, and exchanged opinions of a methodology of detailed and specialized analysis of earthquake, measures of recovery and reconstruction etc. We visited governor of Van Province after sunset at a temporary government building of the Van Province crowded with many people. The governor who has once visited Kobe provided us with overview of the damage of disaster of entire Van Province, reconstruction assistance, governmental aid etc. before we exchanged opinions. After that, dinner party was held at the hotel on the Van Lake and where citizen of Van city, Sisli Municipality, and people from the Bahcesehir University participated. We stayed at the hotel. At the breakfast hour of the next morning, we found a number of rescue team members in the uniform of the same model, whom we thought to be counterparts of Japanese fire brigade members, were staying at the hotel, which was a sole hotel unaffected by the earthquake.





Left: A camp along the main road in the Van city.

Right: A leaning collective housing on the brink of collapse. We were told since the building was built on the basis of a dry riverbed the damage had been that much larger.



Left: This type of ceramic block is used everywhere. We had never witnessed that the wall of concrete being housed in the frame of RC structure under construction.

Right: Interview with mayor of Van in the temporary government building on December 20, 2011. Citizens were in a state of panic. The fire broke out in 20 places, when there were only six fire trucks in the city. Although there were 65 fire trucks in Kobe, it was not enough for extinguishing fire.



Left: Mr. Idris Canbay, a volunteer engineer in Van city in the front. Upon entering a disorderly office in the cemetery led by a staff we found many people there. The desks were insufficient for the size of staff. They started activity at the beginning of this month. They could not begin any practical activities until one month after the disaster. They are engaged in planning of the transportation route of relief supplies, reconstruction work, damage survey, budget management etc. We heard that it is the committee which citizens started by their own power. Van is the greatest town in east Anatolia with a nominal population of 400,000. Someone says it must be 600,000 or 700,000, but none can tell exact number. The population was 100,000 in 1990. According to an Iranian oil system engineer, with whom we shared the breakfast

table in a hotel in Istanbul some days, Van functions as the doorway to Iran. A surge of population caused a housing problem. Some take refuge in the urban environment of Van for fear of terrorist attack. There are a large number of illegal buildings. It is said 50,000 out of 90,000 buildings in Van were illegal ones before the earthquake. There is a problem with collapsed unauthorized residences. Eight buildings collapsed in the 1st earthquake and 21 in the 2nd earthquake. Eighty-three are being demolished. No buildings are inhabited. They are too scary to live in.

Right: Mr. Baris Denizer, a staff sitting at the desk, interrupted. He said he had once worked for TAISEI Corporation for five years as an engineer of the tunneling work of the Bosphorus. He explained using a self-produced animation. He showed precious data, such as video commentary of the earthquake belt in Turkey, results of a survey of various areas, and the building where Mr. Miyazaki was killed in the earthquake. Then, I got Mr. Nagae, an ant earthquake design specialist to sit beside him. Then, we demonstrated an experiment of Mr. Nagae's E-defense. Mr. Denizer accompanied us to Erciş next day. He asked Mr. Nagae a lot of questions about the structural problem involved in repair work. Returning to Van city he showed us around a public building whose first floor had been ruined. When he said goodbye, we asked him to read a paper in the international conference scheduled to be held in July. We told him that Mr. Nagae would also present a paper in July and that Mr. Denizer's paper would make a precious report. The outline of his explanation was as follows: the earthquake belt in Turkey was discovered in 2002; the 2nd earthquake that was destructive was of an epicentral earthquake of magnitude 5.6 on the Richter scale, and it occurred 20 days after the preceding 1st earthquake; incidentally, the first one was a rolling earthquake; it was 3 seconds after the occurrence of the 2nd earthquake that the building in which Mr. Miyazaki stayed collapsed. Incidentally, the earthquake of Kobe was of magnitude 7.6 on the Richter scale and was an epicentral earthquake. In that sense his DVD data is precious for us.



Left: Interview with governor of Van in the evening of December 20, 2011. Although it was after sunset, the prefectural office building was in serious congestion with overwhelming number of people including police and apparent soldiers. Governor's talk is summarized as follows: 600,000 people were stricken by the earthquake; the stricken area covers 21,000 square kilometers (We heard it covered 120 or 130 kilometers); It was aftershocks which amounted to 7000 times that troubled disaster victims the most; they have distributed 75,000 units of tents ; government has a provision of 45,000 units of tents; they have 11,000 units of container houses in reserve; they placed priority on allocating the container houses to rural areas; the target number of containers to be procured is 22,000 units; there are 400 engineers; they aim at the completion of permanent houses in next summer; a tent village requires 200,000 meals a day; container dwellers are suffering from want of food; medical staff comes from the neighboring areas taking turns every ten days; schools are closed for the moment; schools will start again on January 20; there are many nomads in the outskirts of Van, and, as food cost, 400 Turkish liras per head for cows and horses and 60 Turkish liras for small domestic animals have been subsidized (then-exchange rate was 45yen for 1 Turkish lira.); 50,000 people are using neighboring public buildings as hotel accommodations; he has visited Kobe once, and unlike Kobe Van has frigid climate.

Right: Commemoration photography after the dinner at the hotel



Left: Many rescue workers in red vest stayed at the hotel in Van. Seeing many men in red wear in the dining-room the next morning we asked who they were and learned they were members of time-honored Turkish volunteer group comparable to Japanese fire brigade. I wished if only Mr. Miyazaki should have been staying here. And I wondered, at the same time, this hotel might be too expensive for general public to stay in.

Right: The mosque in Erciş city whose pair of minarets were broken.



In the early morning of Wednesday, December 21, 2011, we went up north along Lake Van in a microbus to visit Erciş city on the north coast of the lake. We paid a courtesy visit to mayor of Erciş at the temporary government building, and exchanged views on anti-earthquake measures. Then, we inspected damaged areas in the city and container houses led by municipal personnel. After that, we returned to Van city down the lake, and after inspecting a public building the first floor of which had been damaged, we headed for the airport.



Left: Interview with mayor Erciş in the temporary government building. I wondered why public facilities or schools had been so seriously affected. The mayor was soft-mannered and talked calmly and orderly. He said that a ground survey was required here first. The earthquake has been occurring here every 30 years. Although there are as many as 84 villages here, death toll from this earthquake counts only three. Rest of the casualty occurred in the city area. Many were killed in a collapse of a cafeteria. They are taking measures according to the report by the professional team from the prefecture. Although the drawings of buildings are reserved, many of which are of illegal buildings and date back over 30 years. They have sent drawings to the Public Prosecutor's Office, and survey is in progress. Twenty units of 3- or 4-story buildings collapsed. The buildings built within the past ten years have seldom collapsed. After the interview, one of the city personnel showed us around the city in our bus. I asked who helped disaster victims. He answered that a specialist came over by plane to help them. No fire occurred. The hospital collapsed and they were rescued by the ambulances and helicopters which came from the neighboring communities. According to a member from Kobe, the pace of constructing 2,000 units of container houses within two months after the disaster exceeds that of Kobe. The mayor emphasized the fact that relief was progressing by direct order of the prime minister himself. The situation was special in that they have frigid winter and large families. We inspected a village of 2,500 container houses in a bus. Another village of the same scale was being constructed.

Right: Children of a village of 2,500 units of container houses. A room of 1 meter wide with a toilet bowl and a basin is located next to the entrance. A room about 2 meters square with two beds overlapping in L-shape is located on the right. There is a room with a sink and a sofa on the left. Women and children gathered from nowhere.



Left: Friendly people like people of the country in Japan invited me into the container.

Right: Erciş city container village of 2,500 houses. The door to each container house aligns on either side and the passage of service is on the other side. It is likely to get hot here in summer.





Left: The village and the fields are enclosed with birch trees. The city guide said the leaves grew thick in summer and the village seems as if it has disappeared in the green background. It must be so. I would like to come back someday and see the scenery by all means. It is also the scenery which people have nurtured.

Right: A tent village in the Erciş city.



Left: As one leaves Erciş city, beautiful scenery of the Lake Van continues before him. There is no river to flow into the lake. We occasionally came across shepherds leading a flock of sheep. We also passed by tracks of the army which carried fully equipped tanks, and had inspection of the army several times. It was exactly the border region amid the continued tension.



Left: We returned from Erciş city to Van city, and inspected damaged Waterworks Bureau building. There was no wall on the first floor of the extended annex buildings. The building has lost connections at the L-shaped corner.

Right: The lecture meeting started in the Bahcesehir University. From the left: Murat, Okazaki, mayor of the Sisli Municipality, the Enver chairman of the board of directors, president, and, vice president. Many television stations came. First, the president showed the photograph of tile presentation in Mukogawa Women's University, and made a complimentary address. The mayor introduced that Sisli Municipality offered a lot of assistance quickly. The Enver chairman of the board of directors greeted at the end, and presented the souvenirs.





## **Inter Cultural Studies of Architecture (ICSA) in Istanbul 2011**

Based on the general exchange agreement between Mukogawa Women's University (MWU) and Bahcesehir University (BU) signed on December 8, 2008, seven first-year master's degree students of architecture major will visit BU in Turkey on September 27 and stay until October 11, 2011. They will have practical training on conservation and restoration in the projects prepared by BU. Here is the report.

### **September 26-27**

Leaving Kansai International Airport on the 27<sup>th</sup>, we arrived at Istanbul Ataturk International Airport via Dubai. We first paid our respect to Dr. Yalcin, president of Bahcesehir University and dean Ahmet, and had a tour of the campus led by Mr. Murat. And we were invited to a dinner sponsored by dean Ahmet at an old-established restaurant which serves Turkish cuisine.

### **September 28**

We are trained on conservation and restoration was given at Yildiz Palace. In the morning, we visited bottega and observed conservation and restoration works on ornament of wooden furniture, decorative pieces of shell or tortoise-shell, clothes for curtains or for furniture, carpet and Kilim. In the afternoon, we observed bottega for wooden fixture and floor parquet and then we, in two groups, we worked on actual measurement or making sketches of the draft of the fixture (wooden balanced sash and wooden jalousie) originated from Dolmabahçe Palace.



Prof. Dr. Senay Yalcin, the president of Bahcesehir University, far left, with students from Mukogawa Women's University.



Textile atelier at Yildiz Palace



Measuring and making sketches of a window frame at Dolmabahçe Palace



Architectural atelier at Yildiz Palace Removing paint



## September 29

In the morning, we first made sketches of the western gate of the palace, and then visited the museum building which is under conservation and restoration work (originally build as a residence of a son of sultan). In the afternoon, at the conservation and restoration bottega in the Palace, we were given by a repairing staff an explanation of methods applied for various purposes including creation and installation of lead-covered roof, recovery of the stone ornament, marbling (stucco) technique, conservation and restoration of gold or silver materials used in the articles.

## September 30

We visited Büyükada Island situated to the south of Istanbul in a distance of one and a half hour by ferry to observe a large scale wooden structure and wooden houses. In the morning, we visited Greek Orphanage, which is said to be the largest of the wooden building in Turkey. The building was originally designed and constructed in 1888 as a hotel, and yet, it had been used as orphanage until 1960s because the use as a hotel was not granted. In the afternoon, we visited the city hall of Adalar upon request of head of mayor's secretary, where we took ceremonial pictures with deputy mayor and exchanged with the head of secretary. Then, we visited a wooden house which seemed to have been influenced by the idea of Japanese architecture and made sketches of it.



Students making sketches of the western gate of Dolmabahce Palace



Atelier of stucco at Dolmabahce Palace



Photograph in front of Greek Orphanage



Street of Buyukada

## October 1

We visited Historic Areas of Istanbul. In the morning, we began with a visit to Hagia Sophia, the highest summit of Byzantine (architecture) and made sketches of it. And then we visited Topcapi Palace, once primary residence of Ottoman Sultans. In the afternoon, we visited Sultan Ahmed Camii, which is called Blue Mosque, and made sketches of it. In the evening, we paid a courtesy visit to Chairman of the Board of Trustees of Baçeşehir University Enver. He was quite appreciated with the student's greeting in Turkish and a donated hagoita (battledore) as an exhibit for the newly established Research Center of Japanese Culture Studies, Baçeşehir University.

## October 2

We visited Edirne situated close to the borders with Greece and Bulgaria. Edirne is said to have originated in a town constructed by Emperor Hadrian. The town, which was called Adrianopolis or Adrianople, was once the capital of Ottoman Empire for a certain period. We visited Selimiye Camii designed by that great Ottoman architect Sinan, which Sinan himself values as his own magnum opus, as well as Eski Camii (Edirne's oldest Camii), Uç Serefeli Mosque whose four minarets are all different in form each other and Edirne Medical Museum Beyazit II which is characterized by its space for music therapy.



Inside view of Hagia Sophia



Students receiving an explanation on Topkapi Palace



Selimiye Mosque designed by architect Mimar Sinan in the late 16th century and considered by himself to be his masterpiece



Inside view of Eski Camii (Old Mosque)



### October 3

We visited The Glass Furnace, a glass works at Sile, a town in the suburb of Istanbul. Following the observation of the bottega and the process of glass blowing in the morning, we worked on glass bead manufacture in the afternoon. Then, we moved to another room to create a glasswork applying a technique called fusion, where pieces of colored glass in whatever shapes are placed on a sheet of clear glass. The work will be completed later as pieces of objet d'art or plates of fused glass after being treated in the kiln at the glassworks. After that, in the showroom of the glassworks we appreciated pieces of Turkish traditional blown glass, such as vases, called Cesmibulbul.

### October 4

We visited Bursa, the first capital of Ottoman Empire. To begin with we observed Cumalikizik, a traditional settlement with 700 years' history. This colony has come to attract attention in the recent ten years. We enjoyed walking and sketching maze of streets characterized by the lined-up houses with Cumba, a structure with the second and/or the third story jutting out over the street. Then we moved to downtown Bursa to visit Ulu Camii, a building contemporary with Eski Camii at Edirne, Koza Hanı, which has a popular café in the courtyard, and, Yeşil Türbe (green tomb) in which the body of Mehmed I rests. Then, we left Bursa for Iznik to stay at the guest house of Iznik foundation Tiles.



Visiting a glassblowing studio at the Glass Furnace



Students making glass sculptures using a technique called fuzyon



Cumalikizik: Jutted upper story was devised so as the muslimahs (Muslim women), who were not allowed to go out, could have better views of the street



Koza Han: A caravansary built in 1490 The name Koza (cocoon) Han derives from then flourishing cocoon trade. In



## October 5

We visited a bottega (Iznik Foundation Tiles) in Iznik and wooden houses in Sölöz. In the morning we had a course at the bottega. For the renaissance of Iznik culture, the Iznik Foundation was established in 1993. Today, in its bottega, tiles are manufactured upon orders from all over the world, and educational programs are also performed. After observing the kiln and the laboratory, we learned the outlines of manufacturing process of ceramics before practicing the drawing on 12-cm-square tiles. In the afternoon, we visited a small town called Sölöz to observe and sketch a four-storied wooden building. The building is said to be at least 150 years old. The building is basically constituted of timber framework with stone structure in the lower part and the walls of brick layers in the upper part.

## October 6

We had a course at a municipal department KUDEB, which engages in conservation and repair of wooden house, cami, bridge and rampart which do not belong to the palace. It has a basic stance to respect original parts or design as much as possible. After the briefing of KUDEB with DVD and slides, we were taken to the laboratory to observe and try renovation of wooden fixture. We experienced a shave using Turkish plane as well as the filling of worm holes on the door that date back about 200 years ago. We were also taken to a site of restoration by an architect in charge where a 19<sup>th</sup> century wooden house with a shop was being repaired. When renovated, it will be used as the library. Then we visited Süleymanyne Camii designed by Mimar Sinan to observe and sketch it.



Students experiencing Iznik tile painting



The town of Sölöz as seen from the height



Working at the bottega: Students as working on the repair of worm holes on the door from 200 years ago



Wooden structure being refurbished, the hall on the second floor

## October 7

We visited Göreme National Park in Cappadocia. In the morning we observed famous camel rock, Paşabağ with three mushroom-shaped rocks as well as a bottega in a well-known pottery town Avanos. We had a lunch of *testi* (jug) kebab, a specialty of Cappadocia at a restaurant in the cave of rock. In the afternoon, we first visited an open-air museum to see Elmali Kilise (apple church) and Yılanli Kilise (snake church) as well as Tokali Kilise, the largest of the rock-cut churches in Cappadocia located near the entrance to the museum. Then we observed suite rooms and standard rooms or the restaurants at a cave-residence-turned-hotel. We visited Çavuşin at the end of today's course to see large-scale cave residences and made sketches of them.

## October 8

The second day in Cappadocia. In the morning we visited various places: Ürgüp, famous with mushroom rocks in a set of three; Mustafapaşa, a town once inhabited by the Greek and now a town of mixed styles of houses from Roman period, Ottoman Empire as well as modern times; Kaymakli, the largest of the underground towns; and old towns of Göreme and Nevşehir built on the slopes. After lunch we continued to: Göreme panorama; a cave house still being inhabited; Uçhisar, the largest of the cave castles; and pigeon valley with nests of 500,000 pigeons. Then we returned to Istanbul by air.



Listening to an explanation of technique of pottery at a bottega in Avanos



Having lunch at a cave restaurant



View of the three mushroom-shaped rocks in Ürgüp



Observing Uçhisar at a short distance



## October 9

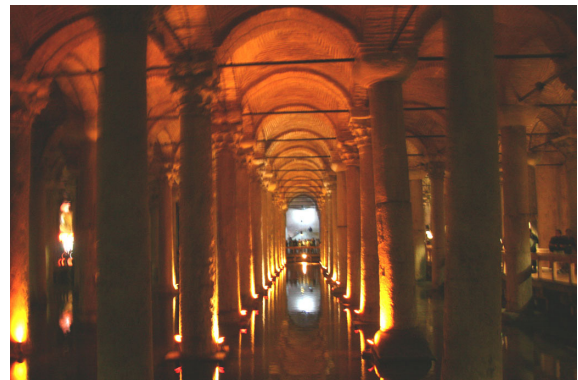
We visited an underground palace in Sultan Ahmet district in the old town of Eyüp in the Asia side of Istanbul. In the morning we moved to Eyüp on a ferry to visit and sketch the Eyüp Sultan Camii, an important sacred place for the Muslims. After lunch we visited the underground palace built in in the period of Roman Empire from 4<sup>th</sup> to 6<sup>th</sup> century as a reservoir. Then we returned to the hotel to prepare for the sketch exhibition for tomorrow as well as presentations scheduled for the day after tomorrow.

## October 10

We set up the sketch exhibition scheduled for tomorrow. In meantime we visited Mimar Sinan University and attended a lecture on the life of Sinan. Also we visited the Institute of Japanese Culture studies and displayed a battledore which we donated this time.



Outside view of Eyüp Sultan Camii



The interior of underground palace



Listening to a lecture on the life of Bruno Taut



Visiting the Institute of Japanese Culture studies



**October 11, 12**

In the morning we visited grand bazaar. In the afternoon we held the sketch exhibition at Bahcesehir University. Soon after the exhibition, we left for home. The exhibition began with the greeting by associate dean Murat, followed by lecturer Tembata’s greeting in Turkish and introduction in English of MWU and its architectural department and outline of the present exhibition. Then students in turn gave presentation of their design works in English. At the end of the presentation a student and associate professor Ooi gave addresses of thanks in Turkish on behalf of the students and the teaching staff, which was accepted with applause. And the exhibition ended successfully.



The sketch exhibition at Bahcesehir University



After the sketch exhibition

**Participants**

Professors: Fumie Ooi and Hideaki Tembata

Students: Aiko Okamoto, Misato Ono, Misako Kuroe, Misato Sakurai, Maki Sato, Chisako Fujii, Chika Matsueda

**Schedule**

- September 26 Departure from Kansai International Airport for Istanbul
- September 27 Arrival at Ataturk International Airport, Istanbul  
Visit to Bahcesehir University
- September 28 Practical training on conservation and restoration at Ateliers of Yildiz Palace in Istanbul
- September 29 Visit to conservation and restoration site at Dolmabahce Palace in Istanbul
- September 30 Visit to Buyukada (the largest island in Istanbul)
- October 1 Istanbul tour
- October 2 Edirne tour
- October 3 Practical training at Glass Furnace in Istanbul
- October 4 Bursa tour
- October 5 Practical training at Iznik Foundation Tiles in Iznik Visit to a wooden dwelling in Soloz
- October 6 Practical training on conservation and restoration at Conservation and Implementation Working Group (KUDEB) in Istanbul
- October 7 Cappadocia tour
- October 8 Cappadocia tour
- October 9 Istanbul tour
- October 10 Istanbul tour  
Preparation of exhibition at Bahcesehir University
- October 11 Exhibition of sketches drawn by MWU’s students at Bahcesehir University  
Departure from Ataturk International Airport for Japan
- October 12 Arrival at Kansai International Airport

## Architecture and Culture through the Silk Road Galleries Opening Ceremony

Opening ceremony of the “Architecture and Culture through the Silk Road Galleries” of the Institute of Turkish Culture Studies took place at Koshien Hall on Sunday, October 30, 2011.

The galleries consist of the ceramic gallery, the Turkish culture gallery, and the carpentry tools gallery. The ceramic gallery was newly set up to display ceramics related to architecture and culture in regions along the Silk Road, e.g. Persian tiles, architectural terracotta, Chinese pottery warriors, Japanese traditional tiles, bricks of Japanese modern architecture, tiles of Koshien Hall and so forth. Along with the opening of the ceramic gallery, the existing Turkish culture gallery and the carpentry tools gallery were remodelled and reopened.

Many guests were invited to the ceremony, including Ms. Aysegul Atmaca, cultural and information counselor of Turkish embassy, Dr. Senay Yalcin, president of Bahcesehir University, and Mrs. Yalcin, Dr. Ahmet Eyuce, dean of faculty of architecture and design of Bahcesehir University, and Mrs. Eyuce, Mr. Hideo Tamai, former commissioner for Cultural Affairs, Mr. Akiharu Manabe, superintendent of schools of Nishinomiya city, Mr. Ryo Okawara, chair of the board of trustees of Mukogawa Women’s University(MWU), Dr. Naosuke Itoigawa, president of MWU, and the people who helped with the opening of these galleries, including Dr. Tomoko Masuya, professor of the Institute for Advanced Studies on Asia at University of Tokyo, Mr. Masahiko Shibatsuji, Mr. Daisuke Mitsumoto and Mr. Kunihiko Honjo.

After a ribbon cutting ceremony at the ceramic gallery, the attendants were invited to see each gallery.



Ribbon cutting



Guests at the ceramic gallery



Guests as visiting the carpentry tools gallery



Guests as visiting the Turkish culture gallery



After the tour of the galleries, gratitude and congratulatory addresses were exchanged between the host and the guests at the West Hall. Chair of the board of trustees of MWU, Mr. Ryo Okawara said, “I am deeply appreciative of the people who helped with the opening of the galleries. I hope, through these galleries, more people become interested in the architecture and culture of the countries along the Silk Road including Japan and Turkey.” Then, congratulatory speeches were delivered by Ms. Aysegul Atmaca, cultural and information counselor of Turkish embassy, Dr. Senay Yalcin, president of Bahcesehir University, Mr. Hideo Tamai, former commissioner for Cultural Affairs, and Mr. Akiharu Manabe, superintendent of schools of Nishinomiya city. To conclude Dr. Senay Yalcin’s speech, Turkish traditional tiles from Bahcesehir University’s collection were donated to Mukogawa Women’s University to be newly displayed at the Turkish culture gallery.



Mr. Ryo Okawara, the chair of the board of trustees of Mukogawa Women’s University



Ms. Aysegul Atmaca, the cultural and information counselor of Turkish embassy, as delivering congratulatory speech



Felicitations by Dr. Senay Yalcin, the president of Bahcesehir University



Turkish traditional tiles, “ Tree of Life ”, a collection from Bahcesehir University being donated to Mukogawa



Guests enjoying the tea break at the tea ceremony house



Dr. Naosuke Itoigawa, president of Mukogawa Women’s University, giving a closing remark



## Lecture

### The Turkish House

Date : Tuesday, October 25th, 2011, 13:05~15:00

### Mimar Sinan & His Architecture

Date : Thursday, October 27th, 2011, 13:05~14:35

Place : K-222, the Koshien Hall

Lecturer : Dr. Sezin Tanriover (Assistant Professor of Bahcesehir University, Istanbul)

Dr. Sezin Tanriover, Assistant Professor of Bahcesehir University, gave two lectures entitled “The Turkish House” and “Mimar Sinan & His Architecture”, as part of the faculty exchange program. She discoursed on Turkish traditional timber houses, and Mimar Sinan, the greatest architect in Turkish architectural history, and his works.

The first lecture was focused on three major points: Characteristic Properties of Space and Structure of Turkish Houses, Reviewing Turkish Houses Applying Universal Architectural Concept, Comparison of Traditional Turkish House with Traditional Japanese House. We realized differences and similarities between Turkish traditional houses, which originate from nomads in central Asia, and their Japanese counterpart..

The second lecture was focused on the following three major points: Ottoman Empire in the 16th and the 17th Centuries, General Information about Mimar Sinan, Sinan’s Designs. We depend our understanding of Sinan’s distinguished works, such as Suleymaniye Mosque, Selimiye Mosque, Mustafa Pasha Bridge, and Maglova Aqueduct, through the lecture with a lot of beautiful photographs.

After each lecture, we had active question-and-answer sessions. We are grateful to Dr. Sezin for her really comprehensible lecture. It was a valuable opportunity for us.



The Lecture at K-222, Koshien Hall



Dr. Sezin Tanriover, Assistant Professor of Bahcesehir University

## Lecture

### Islamic tiles from the 12th to the 14th centuries

**Date : Sunday, October 30, 2011, 16:00~16:40**

**Place : West Hall, the Koshien Hall**

**Lecturer : Dr. Tomoko Masuya (Professor at Institute for Advanced Studies on Asia, the University of Tokyo)**

We held a lecture entitled “Islamic tiles from the 12th to the 14th centuries” inviting Dr. Tomoko Masuya, Professor at Institute for Advanced Studies on Asia, the University of Tokyo. The lecture was held in commemoration of the opening of the Architecture and Culture through the Silk Road Galleries. She had written descriptions of the collection of Islamic tiles in the galleries.

The lecture began with a commentary on the history of tiles in Islamic architectures up to the 12th century, including Glazed bricks, which were used in ancient Mesopotamia and ancient Iran (Persia) since BC, stucco used for architectural decoration in the Sassanid Persian Empire, Mosaic, which were mainly used for architectural decoration before the 7th or mid-8th century, luster-painted tiles in Iraq in the 9th century, luster-painted tiles in Egypt in the 11th century.

Then, tiles in the Islamic dynasty in the 12th to 14th centuries were introduced. Tile decoration developed during this period. Tile mosaic of Alhambra in the Nasrid dynasty (current Spain), glazed bricks and tiles used on the outer walls, *mīnā’ī* tiles and underglaze-painted tiles used on the inner walls in the Sultanate of Rum (current Turkey and Syria), tiles in Ghaznavids (current Afghanistan) in the 12th century were also explained.

Lastly, tiles of the 12th to the 14th century Iran, which comprise the core of the collection, were introduced. Professor Masuya’s commentary was made from various perspectives such as decorative techniques of tiles, types of tiles used for interior wall (e.g. Dado tiles, Frieze tiles, Border tiles, *Mihrāb* tiles and Floor tiles), and inscriptions and pictures drawn on the tiles.

We appreciate the comprehensible lecture on Islamic tiles by the researcher actively at work. It was a valuable opportunity for us.



The Lecture at West Hall



Dr. Tomoko Masuya, Professor at the Institute for Advanced Studies on Asia, the University of Tokyo

## Lecture

### Introduction of Tile to Japan

**Date : Tuesday, November 29, 2011, 13:00~15:00**

**Place : Presentation Room, the Architecture Studio**

**Lecturer : Mr. Masahiko Shibatsuji (President of the Institute for Arts & Crafts)**

We invited Dr. Masahiko Shibatsuji, President of the Institute for Arts & Crafts, to hold a lecture entitled “Introduction of Tile to Japan” as part of the seminars sponsored by the Institute of Turkish Culture Studies. He commented how tiles as pottery like “glazed bricks” and Chinese “Sen (bricks used in oriental architecture)” were introduced to Japan.

The lecture began with bricks and tiles in the ancient architecture built before the Christian era. Blue glazed tiles in ancient Egypt, Glazed bricks in Mesopotamia, fired bricks in ancient Greece, bricks and mosaic in ancient Rome etc. were also explained.

Then, the history of the tiles in Islamic architecture was taken up. Bricks and colored tiles of the Royal Mosque in the Safavid dynasty, tiles of the Topkapi Palace in the Ottoman Empire, tiles of the Alhambra Palace in the Nasrid dynasty etc. were also referred to.

And then, the history of distribution of tiles to Europe and U.S.A. was introduced. Azulejo (a form of painted, tin-glazed, ceramic tile work) of Portugal and Spain, maiolica tile of Italy, Delft tile of Netherlands or France, stove tile of Switzerland or Germany, bricks of England after the Industrial Revolution, brick ornament and Terra Cotta of U.S.A. in and after the end of the 19th century etc. were also explained.

Lastly, tiles in Japan after the 19th century were explained citing examples of major ceramics manufacturers or the buildings built with bricks and tiles.

We appreciate the comprehensive lecture by the commentator of tiles. It was a valuable opportunity for us.



The Lecture at Presentation Room



Mr. Masahiko Shibatsuji, President of the Institute for Arts & Crafts



## Lecture

**Through the excavation and research at Anatolian highland, Turkey, where relics of ten thousand years' culture lie in layers**

**Date : Saturday, January 28, 2012, 13:00~16:30**

**Place : West Hall, the Koshien Hall**

**Lecturer : Dr. Sachihiko Omura (Director of Japanese Institute of Anatolian Archaeology, Middle Eastern Culture Center in Japan)**

A lecture entitled “Through the excavation and research at Anatolian highland, Turkey, where relics of ten thousand years' culture lie in layers” was held inviting Dr. Sachihiko Omura, director, Japanese Institute of Anatolian Archaeology, Middle Eastern Culture Center in Japan as lecturer. Dr. Omura has been leading the excavation and research at the site of Kamen-Kalehoeyuk over 27 years. Dr. Omura introduced ancient civilization in the Anatolian region from the viewpoint of an archaeology reflecting his experiences of years of excavation.

In the first section it was explained using pictures or cross sectional drawings of the layers from the relics that the Kamen-Kalehoeyuk site is located on Anatolian highland, crossroads of cultures, where remainders of various cultures of over 10 thousand years lie in layers, e.g. artifacts from Ottoman Turk, Alexandrian silver coins, Polish coins from 17th century, or ceramic ware from Min dynasty, and that the purpose of excavation and research is to arrange ‘cultural chronology’, or ‘chronological table’.

In the second section, various articles excavated were shown with the comment on the differences between ‘excavation and research’ and ‘archaeology’. An effort of preserving cultural assets was also explained introducing the background of the establishment of the museum in 2010 including the steps of creating a Japanese garden and organizing the research institute. In the final part, he concluded, “By studying the relations of Ancient Japan and Anatolia, we can read many aspects of modern Japan. In that sense, archaeology is indeed a tool to know the modern world.”

It was a meaningful occasion for us to have listened to the lecture of Dr. Omura, an active scholar on the front line, about the culture as well as the way of life from the archaeological point of view.



The Lecture at West Hall



Dr. Sachihiko Omura, Director of Japanese Institute of Anatolian Archaeology, Middle Eastern Culture Center in Japan

## **Annual Events    Apr. 2011- Mar. 2012**

Date	Events
September 26 - October 12, 2011	Inter Cultural Studies of Architecture (ICSA) in Istanbul 2011
October 25, 2011	The lecture given by Dr. Sezin Tanriover (Assistant Professor of Bahcesehir University, Istanbul) “The Turkish House”
October 27, 2011	The lecture given by Dr. Sezin Tanriover (Assistant Professor of Bahcesehir University, Istanbul) “Mimar Sinan & His Architecture”
October 30, 2011	Architecture and Culture through the Silk Road Galleries Opening Ceremony
October 30, 2011	The lecture given by Dr. Tomoko Masuya (Professor at Institute for Advanced Studies on Asia, the University of Tokyo) “Islamic tiles from the 12th to the 14th centuries”
November 29, 2011	The lecture given by Mr. Masahiko Shibatsuji (President of the Institute for Arts & Crafts) “Introduction of Tile to Japan”
December 19 - 23, 2011	Turkey-Japan International Survey Group of Anti-earthquake Measures
January 28, 2012	The lecture given by Dr. Sachihiko Omura (Director of Japanese Institute of Anatolian Archaeology, Middle Eastern Culture Center in Japan) “Through the excavation and research at Anatolian highland, Turkey, where relics of ten thousand years’ culture lie in layers”

## **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	Takahiko Otani
		Professor	Jun Sakakihara
		Professor	Uzushi Nakamura
		Professor	Sanae Fukumoto
		Professor	Yusei Tazaki
		Associate Professor	Fumie Oi
		Associate Professor	Takashi Manda
		Associate Professor	Kazuhiko Yanagisawa
		Associate Professor	Noritoshi Sugiura
		Associate Professor	Toshitomo Suzuki
		Lecturer	Tomoko Uno
		Lecturer	Akira Tanaka
		Lecturer	Hideaki Tembata
		Lecturer	Keisuke Inomata
		Assistant Professor	Sayaka Nishino
Visiting Professor	Kunihiko Honjo		
	Institute of Turkish Culture Studies	Professor	Shushi Sugiura
Visiting Researcher	Bahçeşehir University (Turkey) Faculty of Architecture and Design	Professor	Ahmet Eyüce
		Assistant Professor	Murat Dündar
Assistant	Department of Architecture	Assistant	Junko Morimoto
		Assistant	Aya Yamaguchi
		Assistant	Fumine Ise
	Institute of Turkish Culture Studies	Assistant	Yuna Hongo
Secretary ( <i>or</i> office administrator)	Secretariat Division of School of Human Environmental Sciences	Chief Clerk	Masaki Ichie

### *Reviewers on Intercultural Understanding*

Name	Title and Affiliation
Yasushi Asami	Professor, University of Tokyo, Japan
Kunio Kato	Professor Emeritus at Kyoto University, Japan
Mamoru Kawaguchi	Professor Emeritus at Hosei University, Japan
Mitsuo Takada	Professor, Kyoto University, Japan
Minako Mizuno Yamanlar	Professor, Ryukoku University, Japan
Hironobu Yoshida	Professor Emeritus at Kyoto University, Japan
Ahmet Eyüce	Professor, Bahçeşehir University, Turkey
Murat Dündar	Assistant Professor, Bahçeşehir University, Turkey
Murat Şahin	Associate Professor, Yeditepe University, Turkey
Shigeyuki Okazaki	Professor, Mukogawa Women's University, Japan
Kazuhiko Yanagisawa	Associate 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** Mukogawa Women's University (hereinafter referred to as "the University") locates the Institute of Turkish Culture Studies (hereinafter "the Institute") in the University.

(2) The Institute shall be operated under the administration of the department of architecture (of the University) 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 around architecture of Japan and Turkey, as the east and the west starting points of the Silk Road, and to clarify the cultural base common to both countries beyond the differences in history, climate and so forth between the two countries.

(ii) to conduct, developing above-mentioned aims, extensive studies on life, technology and culture centered around architecture of neighboring Silk Road countries and to clarify similarities among them and contribute to new mutual understandings and contribute to the peace and prosperity of the Silk Road region through such understandings.

(iii) to support international exchange of students mainly in the field of human environment and conduct international education activity of architecture and human environment based on the achievements of the studies mentioned in (i) and (ii).

(iv) to discuss internationally the achievements of research and education referred to in the preceding three items and to introduce (*or* transmit) it to the world in various ways at every occasion, and to share common values with the 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 at Bahcesehir University, Istanbul

(ii) to hold an international workshop "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 the similar workshop "Inter Cultural Studies of Architecture in Istanbul" which is held at the Research Center of Japanese Culture Studies at Bahcesehir University and to send teachers and students of the University centered around the department of architecture for the research and education activities.

(iii) to hold seminars, introduce the research achievements, exhibit and hold lectures, concerning life, technology and culture centered around architecture, where 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 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, symposium and so forth.

(vi) other operations required to accomplish the aims mentioned in the preceding article.

### **(Organization)**

**Article 4** The Institute may have 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 appoints a 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 appoints a vice director and heads of research department from among the faculty. The latter position may be substituted by 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 the 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 researchers.
- (3) The senior researchers assist their heads and engage in the research.

**(Researcher)**

**Article 8** The Institute shall install researchers required.

- (2) Teachers at Bahcesehir University may be appointed as researchers
- (3) The researchers engage in research under the director's direction.

**(Temporary Researcher)**

**Article 9** The Institute may install temporary researchers as the need arises.

- (2) The president appoints temporary researchers upon recommendation of the director
- (3) The period of the appointment shall be less than one year and it may be renewed when necessary.
- (4) The temporary researchers engage in the specific research or joint research.

**(Assistant)**

**Article 10** The Institute may install assistants.

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

**(Steering Committee)**

**Article 11** The University shall have the steering committee of the Institute (hereinafter "the steering committee") to deliberate the basic policy concerning the operation of the Institute.

- (2) The steering committee shall consist of the director and a few members chosen from among the vice director, the heads of research departments, the senior researchers and researchers.
- (3) The president appoints 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) The member 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) The details on 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 School of Human Environmental Sciences shall be the chief of the secretariat

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

**(Supplementary Rules and Directions)**

**Article 13** In addition to what is provided in this rules and directions, the 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 starting on July 29, 2009.

(2) In the period from the day the rules and regulations is 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).



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