

**Questing Role of Landscaping on the Visual Quality
of Public Indoor Spaces Based on the User
Reactions: Case of Restaurants**

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ABSTRACT

Nature is a crucial part of human life. Indoor landscaping is getting more important in today's conditions. Nature integration into the indoor spaces provides various benefits for the interior spaces and the users. In addition to psychological benefits that improve human mood, increase productivity, and give positive emotions to the users, it contributes to the ecological, physical/visual quality of spaces. Therefore, opinions of the users on indoor landscaping are essential. The majority of people spend most of their time indoors, such as homes, offices, and restaurants. This situation causing them to live far from the natural world. Hence, getting away from nature creates the need to integrate nature into the interior spaces. Restaurants are among the most preferred public indoors. Conducting a research on user opinions/reactions on interior landscaping in restaurant spaces, and a literature review on this subject will contribute to this field.

It has been identified that the indoor landscaping issue is not given enough significance and a limited number of indoor landscape solutions are preferred for nature integration into spaces at today's restaurant indoors. Thus, this thesis primarily aims to explore, the integration of nature into the selected restaurants that were preferred by various users by conducting a qualitative methodology. And the other aim of this study is to provide landscape integration suggestions that would assist interior designers while integrating natural elements into public interiors, based on the opinions/reactions of different users.

The findings of this research were obtained based on the results of the investigations/analysis of selected cases (restaurants) and the detection of user comments/reactions from several digital platforms. Accordingly, various spatial articulation of landscape elements has been detected as well as appreciative reactions of users upon existing solutions besides positive reactions towards alternate spatial articulations, use of natural materials and use of landscaping elements within the interior space.

Keywords: Indoor Landscaping, User Reactions, Nature in the Space, Restaurant.

ÖZ

Doğa, insan yaşamının çok önemli bir parçasıdır. Günümüz koşullarında iç mekan peyzajı tasarımının önemi günden güne artmaktadır. İç mekanlara doğa entegrasyonu kullanıcıya ve iç mekanlara bir çok fayda sağlamaktadır. İnsanların ruh halini iyileştiren, verimliliğini artıran ve kullanıcılara olumlu duygular sağlayan psikolojik faydaların yanı sıra mekanların ekolojik, fiziksel/görsel kalitesine de katkı sağlar. Bu nedenle peyzaj elemanlarının iç mekana entegre edilmesi ile ilgili kullanıcı görüşleri önem kazanmaktadır. İnsanlar zamanlarının çoğunu evler, ofisler ve restoranlar gibi kapalı alanlarda geçiriyor. Bu durum insanların doğal dünyadan uzak yaşamalarına neden oluyor. Dolayısıyla doğadan uzaklaşmak doğayı iç mekanlara entegre etme ihtiyacını yaratmaktadır. En çok tercih edilen kamusal alanlar arasında restoranlar yer almaktadır. Böylece, restoran mekanlarında iç mekan peyzaj tasarımı ile ilgili kullanıcı görüşleri/tepkileri üzerine bir araştırma yapılması ve bu konuda literatür taraması yapılması bu alana katkı sağlayacaktır.

Günümüz restoran iç mekanlarında peyzaj tasarımı konusuna yeterince önem verilmediği ve peyzaj elemanlarının bu mekanlarda yetersiz kullanıldığı ve ayrıca doğanın iç mekanlara entegrasyonunda sınırlı sayıda iç mekan peyzaj çözümünün tercih edildiği gözlemlenmiştir. Restoran mekanlarında iç mekan peyzaj tasarımına ilişkin farklı kullanıcıların görüşlerini tespit etmek bu konuyu geliştirmek için önemlidir.

Bu tez öncelikle doğanın iç mekanlara entegrasyonunu, özellikle çeşitli kullanıcılar tarafından tercih edilen restoranlara entegrasyonunu nitel metodoloji yöntemi ile

arařtırmayı amalamaktadır. Bu alıřmanın bir diđer amacı da, farklı kullanıcıların fikirlerine/tepkilerine dayanarak, i mimarların kamusal i mekanlara peyzaj elemanlarını entegre ederlerken gzetecekleri peyzaj entegrasyon nerilerini sunmaktır.

Bu arařtırmanın bulguları, seilen restoran mekanlarının inceleme/analiz sonularına ve belirlenen dijital platformlardan elde edilen kullanıcı tepki/yorumlarının tespitine dayanılarak elde edilmiřtir. alıřma sonucunda, restoran i mekanlarında peyzaj elemanlarının farklı entegrasyon yntemleri tespit edilmiř ve bu zmlere ynelik kullanıcıların olumlu yorumlar yaptığı belirlenmiřtir. Yorumlar bu tr mekanlarda peyzaj elemanlarının kullanımı ve dođa ile bađlantı kurmanın olası yntemlerine iliřkin de yol gsterici olmuřtur.

Anahtar Kelimeler: İ Mekan Peyzaj Tasarımı, Kullanıcı Grřleri, Mekanda Dođa Kavramı, Restoran.

DEDICATION

To my mother Filiz, and to my father Ferit...

With my gratefulness...

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LIST OF ABBREVIATIONS

CNS	Connection with Natural Systems
DDL	Dynamic & Diffuse Light
DEoN	Direct Experience of Nature
NITS	Nature in the Space
NRSS	Non-Rhythmic Sensory Stimuli
NVCN	Non-Visual Connection with Nature
PW	Presence of Water
TAV	Thermal & Airflow Variability
VCN	Visual Connection with Nature

Chapter 1

INTRODUCTION

Nature is an important concept for all living things. Therefore, the integration of nature into interior spaces has become a central concern today. In due course, views of the users on indoor landscaping are essential due to the fact that indoor landscape has a considerable role and effects/contributions on each individual user. People spent substantial time both at private and public indoors yet among those indoors restaurants are one of the most preferred ones. In this regard, it has been observed that while considering the subject of nature integration into indoors; conducting a research by focusing on the opinions/reactions of the users on indoor landscaping in restaurants will contribute to this field of study severely. Accordingly, this thesis aims to contribute to the literature by conducting a user-oriented study as well as the review of literature related with this issue.

This introductory chapter at first provides the subject matter, problem statement and research questions; secondly states the aim and objectives of the study followed by the explanation of methodology of this study, delimitations of the thesis and at the last section thesis structure is presented.

1.1 Subject Matter, Problem Statements and Research Questions

Increasing population, rapid urbanization and technological devices, which become the focal point of our lives, push us to live a life away from natural world that we need. This situation causes people's connection with nature to weaken day by day.

However, human and nature cannot be considered separately. Humans are an indispensable part of nature. According to Kellert (2005) “people living close to open spaces have been reported to have less health and social problems”.

Due to today's living conditions, people spend more time indoors than outdoors. In this case, the integration of nature into the interior has become an increasingly important concern. Therefore, this research focuses on *Indoor Landscaping* in the public indoors. Usage of indoor landscaping can affect both user and the visual quality of indoor spaces. In this regard this study investigates the role of landscaping in the public indoor spaces based on the users' opinions/reactions particularly at the -restaurants. “Biophilia is the field, which deals with the relationship between nature and human beings. People have an inborn requirement to connect with nature and natural systems or what is known as biophilia” (Wilson, 1984). And hence the need for close contact with nature is beneficial.

Biophilic design is the field of design that focuses on different methods of providing contact with nature both at indoor and outdoor spaces and furthermore reveals positive effects of contact with nature/natural elements on the users. “14 Patterns of Biophilic Design” (Browning et al., 2014) is the most widely known source for understanding the concept of ‘biophilic-design’. Accordingly, the stated patterns of biophilic-design categorized under 3 headings that describe alternative solutions and tactics for providing this contact. This research is limited to one of these categories that deal with the integration of natural elements that is to say landscaping elements into indoor spaces.

Landscape elements can be used in many interior spaces. Landscape elements with numerous physiological and psychological contributions to the user and space can be used in public interiors such as , restaurant, hotel, office, etc. These spaces are the places where people visit frequently. One of the most preferred places for people's socializing needs is restaurants. Since people spend less time in nature, it is important to use landscape elements in public places such as at the indicated most preferred ones.

The importance, effects and benefits of using landscape elements in interior design and various advantages of integrating natural elements into spaces such as environmental [reducing carbon dioxide levels, increasing humidity etc.] or psychological and physiological that can boost human mood and makes them feel happier along with increasing their productivity have studied previously (Kellert & Wilson, 1993; Shin, 2007).

Recently, as a result of the initial observations at real cases, it has been observed by the reasearcher that landscaping elements are more repeatedly started to be integrated into different public interiors and restaurant spaces are among them. However, it has been observed that this landscape elements are not used efficiently and sufficiently in today's restaurants. These designed spaces actively utilized by various users, thus it is significant and useful to obtain viewpoints of the users about the integration of nature/natural features into the restaurant interiors to be able to achieve enhanced integration solutions which would satisfy their users as well. At the first instance landscape/nature integration attempt seems visually appropriate however it needs to be quested:

1. Is this visually positive articulation of landscape elements in restaurant interiors preferred by the users or not?
2. What are the various existing solutions of indoor landscaping at restaurant indoors?
3. Which solutions are more favourable ones?
4. Which existing solutions are not satisfying users in these spaces?

1.2 Aim and Objectives

This study primarily aims to explore how nature integration into interior spaces admitted by various users; particularly at a specific type of public indoors which are restaurants. And secondly the other aim of this study is to propose recommendations of landscape integration based upon different users' views/reactions that would assist interior designers while integrating nature/natural elements into public indoors.

Accordingly, objectives of this research are;

- To determine various roles of landscape in interior space by reviewing different studies carried out on the subject matter as well as by analysing existing cases.
- To investigate user opinions/reactions on integrating natural features to the indoor spaces.
- To achieve solutions that would guide new designs in similar places in the further studies.

1.3 Methodology

This study is conducted with qualitative research methodology. Literature review, analysis of the selected cases and gathering user opinions and reactions through various digital platforms are the three main data collection techniques in order to achieve the main aims and objectives of the study. Literature sources that provide

data about the research subject; thesis, articles, papers, reports and information obtained from electronic media were examined.

Cases of the study for analysis have been determined from archdaily.com website as a result of a systematic filtering method based on a pre-determined criteria. The role of indoor landscaping at café & restaurant spaces will be investigated by the analytical reading method of the selected cases. Moreover, user opinions/reactions upon indoor landscaping solutions in the determined cases were collected from various digital platforms including archdaily.com design website as well as various social media platforms where users are flexibly sharing their ideas on an unlimited basis. The in-depth data collection methodology for case determination is stated in Chapter 3-section 3.2 and for gathering user opinions/reactions is stated in Chapter 4-section 4.2.

1.4 Delimitations

This study limited to find out detailed information about the indoor landscaping solutions and user opinions/reactions about existing solutions at restaurant spaces not at all different types of public interior spaces. Thesis tries to explain the relationship between human and nature. In addition, interior landscaping approaches in restaurants are examined with a particular/limited focus on the 'Nature in the Space' concept of Biophilic Design Approach. Accordingly, it is limited to an analysis of the determined 21 cases from various parts of the globe at 16 countries in order to understand how indoor landscaping based on the Nature in the Space Concept was articulated. Furthermore, this study is also limited to the users' opinions/reactions towards the solutions of indoor landscaping in the determined 21 cases from 16

different country particularly were attained as a result of the systematic filtering method.

1.5 Structure of the Study

This thesis is composed of 5 chapters. Chapter 1 is the Introduction where subject matter, problem statement, aims, objectives, research questions, limitations and the structure of the thesis is put forward.

Chapter 2 is the review of the literature by focusing on the concepts of *landscape*, *biophilia*, *biophilic design*, *nature in the space (NITS)*, *patterns of this concept* and *indoor landscaping* in order to understand the integration of nature into spaces as an indoor landscaping approach. As a result of this chapter, NITS concepts as a method of integrating landscaping to the indoors has been put forward in detail and *codes* for each pattern has been assigned, which were used in the following chapter for the investigation of the cases.

Chapter 3 initiates with an introductory section which focuses on the restaurant indoor design and their role/significance in the users' life. And followed with the methodology for the determination of cases and ended up with the investigation of indoor landscaping solutions of restaurant indoors from different parts of the globe.

Chapter 4 at the first part initiates with the evaluation of the tabulated/collated investigation results in order to reveal what kind of indoor landscaping solutions were articulated in restaurant indoors. And then continue with the investigation, collation and evaluation of the user opinions/reactions about indoor landscaping solutions at the determined cases in the section 4.2.

Chapter 5 is the conclusion of the thesis with the summary of findings and recommendations for the further stages of this study.

Chapter 2

UNDERSTANDING THE INTEGRATION OF NATURE INTO SPACES AS AN INDOOR LANDSCAPING APPROACH

2.1 Landscape

2.1.1 Background

As living standards and conditions change, landscape is becoming increasingly important today and in the future. 'Landscape' has been described in many different ways in the literature. According to the Oxford English Dictionary (OED) the meaning of the 'Landscape' is: 'all the visible features of an area of land'. There are similar terms in the other languages, such as the German 'Landschaft', the Dutch 'Landschap', the French 'Peysage' and the Spanish 'paisaje'. According to The European Landscape Convention (ELC) "Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, 2000). Accordingly, definition of landscape encompasses (Landscape Institute and IEMA 2013) (see Figure 1);

- all kinds of rural landscapes
- sea and coastal views (seascapes);
- village, town and city views (townscapes).

Seascape: Description of 'Seascape' is landscapes with the sea views or coasts views, as well as coasts and the adjoining marine environment (Landscape Institute and IEMA 2013). The European Landscape Convention explains that landscape definition includes views of sea and marine environments (Council of Europe, 2000). Water is an important and powerful element of nature. Kellert et al. (2008) states that, water connects all the features of the landscape in nature and provides this because of its mobile feature. In addition, water defines the landscape by specifying its own borders (Kellert et al., 2008).

Townscape: 'Townscape' means landscape in the residential area, including buildings and their relationships between them, and the relationship between buildings and open spaces (Landscape Institute and IEMA 2013).

In today's conditions where everything is consumed very fast, natural resources are also consumed unconsciously. Protecting nature and transferring it to the future is very important. Woolley, (2003) argued that, as a result of the increase in the urban population and the rise in industrialization, many negativities have emerged for people. And hence, with the change of urban landscape, problems such as water and air pollution, noise, waste materials, deterioration of urban life quality and reduction of urban landscape areas have arisen (Woolley, 2003). Landscape is an important aspect both for humans, cities and also for the environment. Urban green areas provide right set of circumstances for habitats (Woolley, 2003), better aesthetic view (McCormack et al., 2010), rises on quality of life conditions at cities and urban landscapes (Yılmaz and Mumcu, 2016).



Figure 1: Types of Landscapes

2.1.2 Importance of Landscape

There is a major effect of landscape on the human psychology, spatial - visual quality and an impact on the environmental quality. Abkar et al. (2011) suggested that; urban landscapes with high aesthetic value and as a preferred aspect; have become a necessity. Landscape quality can be enhanced by the inclusion of many different factors. These factors can be environmental as well as socio-cultural besides ecological, and psychological that may have effects on the human beings (Schofield and Cox, 2005; Polat, 2015).

Several studies have reported that landscapes have many effects both on human psychology and physiology. According to Özgüner and Kendle (2006); studies on the observed environment show that the visual quality of the environment has positive effects on the emotional mood of the human beings by making positive changes. Thus, even watching nature has benefits on people. In addition, there are studies on the relationship between childhood and nature connection. It has been stated that people who have regular connections with the natural environment as a child have fewer symptoms of depression when they are adults (Snell et al., 2017). Walking in the natural environment can improve human health positively. It has been reported that regular walkers have lower levels of depression and stress than those who do not

walk regularly, and their psychological well-being has increased (Marselle, Irvine, & Warber, 2014; Yeh 2017).

The investigated positive impacts of exposure to nature also include lower rates of illness (Moore, 1981), decrease on stress levels for office workers (Shin, 2007), increases on cognitive performances and quicker recovery for patients who had operation (Ulrich, 1984). Previous studies have proven the necessity and the importance of landscape for people. According to Kellert & Wilson (1993); each individual being not only needs physical natural environment, but also necessitates its effects on people's cognitive, emotional, aesthetic and even non-material development.

On the other hand, the term "cultural landscape" encompasses various manifestations of the interaction between humanity and its natural environment (UNESCO) as the instance of the altering significance of landscape from a different point of view. In addition, Birnbaum et al. (1996) defines 'cultural landscape' as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values". While cultural landscape elements ensure the development of tourism as the most important tourist product in the area, local people are also affected economically and socially by this development (Kaya, 2002; UNESCO, 1999; Varnacı Uzun and Somuncu, 2011). Some studies have shown that landscape also contributes to the economy by attracting the attention of tourists (Willis, 2013). As an example of natural areas that take attention of tourists and contribute to the economy; 'Stonehenge, Avebury and Associated Sites' in England has major importance for internationally, 'Diyarbakır Fortress and Hevsel Gardens

Cultural Landscape', 'Pamukkale (Cotton Palace)', 'Lake Tuz' in Turkey or 'Landscape of Grand Pré' in Canada can be stated. These areas are important places for tourism and can provide opportunities for social activities and contribute to the local economy.

Accordingly, following the discussions above on the importance of landscape(ing); 'Biophilic design' concept will be explored in depth in the following section due to the fact that it is the main field of study when considering aspects of design in order to strengthen both the relationship between human beings and the nature and also to understand approaches in the provision of human beings stronger contact to nature.

2.2 Biophilic Design

2.2.1 Background of Biophilic Design

Nowadays, it is possible to talk about the desire to establish an innate connection between human and nature, although people spend more time at indoor spaces. People have an inborn requirement to connect with nature and natural systems or what is known as biophilia (Wilson, 1984). The integration of nature into spaces is not a new concept. According to the Dictionary of Environment and Ecology Fifth Edition (Collin, 2004), Biophilia and Biophilic Design are the concepts derived from the prefix 'bio' that is 'referring to living organisms' and the suffix 'philia' is 'attraction towards or liking for something. The 'biophilic design' approach, in other words, 'life-friendly design' or 'love of life design', removes the boundaries between indoor and outdoor spaces, helping people to connect with nature (Fromm, 1973). The biophilia hypothesis argues that the interaction between humans and natural environments is necessary and that this contact provides psychological and physiological benefits (Browning et al, 2014).

The psychoanalyst Erich Fromm describes the word 'biophilia' in his books; in *The Anatomy of Human Destructiveness* (1973) as a “tendency to preserve life and to fight against death” and in *The Heart of Man* (1964): “the passionate love of life and of all that is alive”. Biophilia can also be defined as the innate tendency of humans to be connected to nature (Kellert & Calabrese 2015). Biophilic design is gaining importance day by day and the number of studies on this subject is increasing. Studies have shown that integration of the nature into interior spaces and human - nature interaction have various positive effects. Browning et al (2014) suggested that “interacting with nature on a daily basis provides sustainable communities by strengthening our environmental responsibilities” . According to Kellert et al. (2008) the concept of Biophilia is "creating places that respond to and celebrate the natural world, while evoking a positive response from their inhabitants". Researches that support this approach show that humans are giving strongly responses to nature (Kellert & Wilson 1993, Kellert et al. 2008). In this regard;

The idea of biophilic design arises from the increasing recognition that the human mind and body evolved in a sensorially rich world, one that continues to be critical to people’s health, productivity, emotional, intellectual, and even spiritual well-being (Kellert et al 2008, p.vii).

In addition to being useful to users, biophilic design can also provide financial profit to companies. Design companies that apply biophilic design, draw attention to the positive effects of biophilic design integration to different spaces. For example, Oliver Heath Design (2019) stated that; when biophilic design is integrated into:

- *Office design*: increases can be observed on well-being (by 13%), productivity (by 8%) and creativity, as well reduction on absenteeism and presenteeism.
- *Education spaces*: increase in; learning (20-25%), attendance and concentration.

- *Hospitality design*: Guests can pay more (23%) for rooms that include biophilic elements.
- *Healthcare spaces*: decreases on; post-operative recovery times (by 8.5%) and need for pain medication (by 22%).
- *Homes*: areas with access to nature can provide more restorative and calming and increases in property price (4-5%).
- *Retail spaces*: costumers can pay more (around 8-12 %) for the presence of vegetation & landscaping on retail spaces.

‘14 Patterns of Biophilic Design’ (Browning et al., 2014) is the most widely known source for understanding the concept of ‘biophilic design’. This study helps to understand how these principles can be an intermingled part of the interiors. “The biophilic design concept includes 14 Patterns for nature integration into spaces. The 14 patterns are divided into three categories: Nature in the Space, Natural Analogues and Nature of the Space” (Browning et al., 2014) (see Table 1).

Table 1: Three Categories

<p>a. Nature in the Space: The approach of 'Nature in the Space' refers the direct connection between human and nature in the built environment. It encompasses the natural elements such as plants, animals, water elements, as well as the sensorial interaction with nature as the smells, sounds and other features of nature in the spaces.</p> <p>b. Natural Analogues: Inanimate and indirect connections of nature such as use of biomorphic forms in shapes, patterns, objects, colors and use of natural materials and organic shaped furniture in the built environment.</p> <p>c. Nature of the Space: This approach includes spatial experiences. The desire of people to see their admiration for slightly dangerous or not familiar beyond their immediate environment.</p>

On the other hand, according to Kellert and Calabrese (2015); “three kinds of nature experiences have been identified as the basic categories of biophilic design. These are; direct experience of nature, the indirect experience of nature, and the experience of space and place” (see Figure 2 and Table 2 for additional information).

Table 2: Various Ways of Experience With Nature

<p>A. The direct experience of nature: 'The direct experience of nature' point out to direct connection with natural features in the built environment. This encompasses natural light, air, animals, fire and more.</p> <p>B. The indirect experience of nature: It includes the contact with the images of nature, natural materials, natural colors, simulating natural light and air, naturalistic shapes and forms.</p> <p>C. Experience of space and place: It includes prospect and refuge, organized complexity, integration of parts, transitional, mobility and wayfinding, cultural and ecological attachment to place.</p>



Figure 2: Biophilic Design Experiences and Attributes (Kellert and Calabrese, 2015).

Biophilic design consists of three main categories as already stated. These categories are briefly defined in this section. However, in line with the scope of this thesis, this study is limited to a focus on the indoor landscaping that is directly related to the categories of biophilic design named ‘Nature in the Space-*NITS*’ (Browning et al. 2014) and ‘The Direct Experience of Nature-*DEoN*’ (Kellert and Calabrese, 2015) which deals with landscape elements straightforward.

2.2.2 Nature in the Space-*NITS* as a Biophilic Design Principle

This principle focuses on the multi-existence of nature in the indoor environment such as transient, direct and physical. It refers to multisensory interaction and direct

relation with the natural elements. Browning et al. (2014) suggest that there are 7 patterns of *NITS*. This encompasses plants, water elements, animals, wind, sounds, sense of smell and other natural elements such as butterfly gardens, vertical gardens and green roofs. Nature in the Space (*NITS*) (Browning et al., 2014) “includes seven biophilic design patterns as shown in the below Table 3:

Table 3: 7 Patterns of *NITS* Concept

Nature in the Space (Browning et al., 2014) includes seven biophilic design patterns;
P1. Visual Connection with Nature (VCN)
P2. Non-Visual Connection with Nature (NVCN)
P3. Non-Rhythmic Sensory Stimuli (NRSS)
P4. Thermal & Airflow Variability (TAV)
P5. Presence of Water (PW)
P6. Dynamic & Diffuse Light (DDL)
P7. Connection with Natural Systems (CNS)

Pattern one: Visual-Connection-with-Nature (VCN):

It includes the visual connection with natural elements, natural processes and natural systems. This pattern allows people to visually connect with nature at spaces. (Browning et al., 2014) suggested that; interiors with *VCN* can have stimulating, remarkable or relaxing effects, and it can also provide people the awareness of the sense of time and weather while indoors.

Several studies have demonstrated that connection with nature has positive effects on human productivity, stress and health. In this sense; some studies are summarized (Kellert, 2005; Kellert et al., 2008):

- Direct contact with nature such as natural light, vegetation or pictures of nature can increase healing of the patients.
- It has been reported that people living near open spaces experience fewer social and health problems.
- The existence of nature features such as natural lighting and natural ventilation in offices provides an increase in performance and motivation and a decrease in stress of the workers.
- Nature interaction improves cognitive performance.

Studies on the relationship between stress and nature have shown that; contact with real nature and seeing pictures of nature can reduce the stress level of human beings (Ryan et al., 2014). As a result of a study on visual preference; it has been reported that natural views such as trees, flowers and clean water bodies are universally preferred. Moreover, studies on nature and elderly people shows that, outdoor spaces with greenery, water features and fresh air preferred by elderly people (Rodiek, 2006).

Browning et al. (2014) analysed “the effects of the 14 biophilic design patterns on humans in three categories which are; 1- stress reduction, 2- cognitive performance, and 3- emotion, mood and preference”. In this regard, it has been noted that VCN; helps to recovery from several illness and improve human well-being and improves cognitive performances by an increase in mental attention (Biederman & Vessel, 2006) as well as some other positive effects.



Figure 3: Indoor Space with Natural View; (URL1)



Figure 4: Column Living Wall Installation at Burkert US Headquarters - ABD; (URL2)

Pattern two: Non-Visual-Connection-with-Nature (NVCN):

“Auditory, tactile, olfactory or gustatory stimuli of items that have a positive reference to nature, living systems or natural processes are included in this pattern” (Browning et al., 2014). *NVCN* includes communication with nature or natural processes through the sense of touch, hear, smell or taste. This pattern comprises fragrant herbs and flowers, sound of birds, natural ventilation, sound of fireplace/fire, flowing water, warm and cool surfaces (Browning et al., 2014). Helena van Vliet Architect (2016) puts it as; "We must breathe Nature, smell Nature, feel it, hear it, touch it, live it, eat it to be whole. We must be immersed in it".

In a study conducted by Ulrich (1991), the participants were exposed to the sounds of nature and urban environment, and as a result, it was found that the sound of nature caused better physiological stress recovery than the sound of urban environment. Exposure to the sounds of nature can improve positive feelings of human after watching a disturbing video (Benfield et. al., 2014).

The relationship between olfactory and nature show that smell of the plants and essential oils of trees can improve human immunity and have positive effects on recovery (Li et al., 2012). Furthermore, Koga and Iwasaki (2013) reported that touching the plants causes a relaxation effect.



Figure 5: Sound of Leaves – Smelling Lavenders; (URL 3)



Figure 6: Experience with Nature by Touching and Smelling to Living Wall; (URL 4)



Figure 7: Non-Visual Connection with Nature with Touching to Tree; (URL 5)

Pattern three: Non-Rhythmic-Sensory Stimuli (NRSS):

“The Non-Rhythmic-Sensory-Stimuli pattern encompasses randomly and temporary but statistically analysable (with; eye reflexes, heart rate and blood pressure) connections with nature when it is integrated into spaces, it gives momentarily feelings like special, energizing, fresh, and attractive” (Browning et al., 2014).

This pattern includes movements of the nature like; breezes, falling leaves, movement of the clouds, chirps of the birds, sound of water, movements of the animal or insect and more over. The Non-Rhythmic Sensory Stimuli pattern can be defined like 'whisper of the nature'.

Browning et al. (2014) put forward that implementation of the pattern 3 into indoor spaces can provide positive impact on several health issues such as heart rate and so far. Clancy and Nestor (2015) states that in the analysis of the Paley Park in New York, it has been revealed that the waterfall creates *non-rhythmic sensory stimuli* by taking visually (falling water drops and light reflects) and auditory (sound of waterfall) attention of people. Thus, it can provide benefits on stress reduction.

It has been found that this pattern “positively affects heart rate, systolic blood pressure and sympathetic nervous system activity” (Browning et al., 2014) “and also quantified and observed behavioural measures of attention and exploration” (Browning et al., 2014).



Figure 8: Sound of Plant Leaves and Movement of Trees at Morocco; (URL 6)



Figure 9: Momentary Nature Movements – Breezes; (URL 7)

Pattern four: Thermal & Airflow Variability (TAV):

“Slight changes in relative humidity, temperature of the air, the flow of air on the skin, and surface temperatures reveal natural environments. This pattern can provide feelings of refreshing, alive, comfortable and healthy & energetic” (Browning et al.,

2014). Studies show that *Thermal and Airflow Variability* pattern has various benefits.

There are many researches that have been done earlier on this pattern such as; “investigations on the positive impacts of ventilating indoors with natural solutions and changes of thermal issues and their effects on comfort of the employees, productivity and well-being” (i.e research of Wigö, 2005). Furthermore, Heerwagen (2009) states that, reasonable changes on light, temperature and sound are liked by people. Slight breezes as well as natural motions can increase attentiveness (S. Kaplan, 1995).

Presence of the changes in the temperature and airflow can provide benefits. On the other hand, lacking of variability and sensory stimulation in spaces can be boring and lead to passiveness (Schooler, 1984). Natural ventilation can help recovery some health problems. For example, as a result of the study conducted by Seppanen and Fisk (2002) it was found that natural ventilation can reduce headaches, colds, mucosal symptoms, and sick building syndrome.



Figure 10: Access to Thermal and Airflow Variability - Openings with outdoor; (URL 8).

Pattern 5: Presence of Water (PW):

This pattern includes seeing, hearing or touching water in places. Water is a remarkable element when it is integrated indoors. The water features can be used in a wide variety of forms and for many various purposes such as for aesthetic purposes, to reflect sustainability or just for its functionality (Cao, 2020).

As it is known water is needed to sustain life. Roger Ulrich (1993) observed in previous studies that water features are constantly loved and preferred at high levels. Due to the movement, power, sound and change characteristics of the water, it has "strong animistic traits that give it lifelike qualities, which strongly reinforce our humanistic bond" (Kellert et al. 2008). Browning et al. (2014) suggested that, visual and auditory experiences of water can help to create dynamic work places and provide productivity.

Presence of water in indoor spaces can provide stress reduction, improved cognitive performance and positive feelings. In this sense, studies show that there are evidences on visual preferences and positive emotions for *PW* pattern (i.e studies such as Biederman & Vessel, 2006). Furthermore, this pattern can provide enhancement in memory related issues; reductions on various illnesses such as stress, or blood pressure (i.e reported in study of Biederman & Vessel, 2006). Researches have shown that, closeness to coasts and blue spaces can effect human well-being positively (Wheeler et al. 2012).



Figure 11: Entrance with a Water Feature; (URL 9).



Figure 12: Human – Water Interaction at Moses Bridge / Netherlands; (URL 10)

Pattern 6: Dynamic & Diffuse Light (DDL):

Dynamic and Diffuse Light creates situations that exist in nature by using the changeable intensity of light and shadow (Browning et al., 2014). This pattern encompasses; direct sunlight, daylight from multiple angles, firelight, moonlight and star light, etc. As it is known, “natural light may change over time, so its language and its effect on a sunny June are different from a cloudy January” (Barker, 1997, p. 120; Naseri, 2014). Browning et al. (2014) states that; different lighting situations bring out varied psychological reactions. In this sense, it is possible to talk about effects of natural light on human mood and well-being as well its contribution to indoor spaces. Without light, the design of the space has no value. “Although magnificent colours and highest quality materials are used for a fascinating design, if there is no light; time, money and effort goes to waste” (Naseri, 2014).

Naseri (2014) summarized the importance of natural lighting in buildings such as; natural light can provide holistic view to space, presence of natural lighting in enclosed spaces has positive effects to people and space, as well as contribute to human productivity and more and emphasized the need for natural light to improve the indoor visual quality (Figure 13).

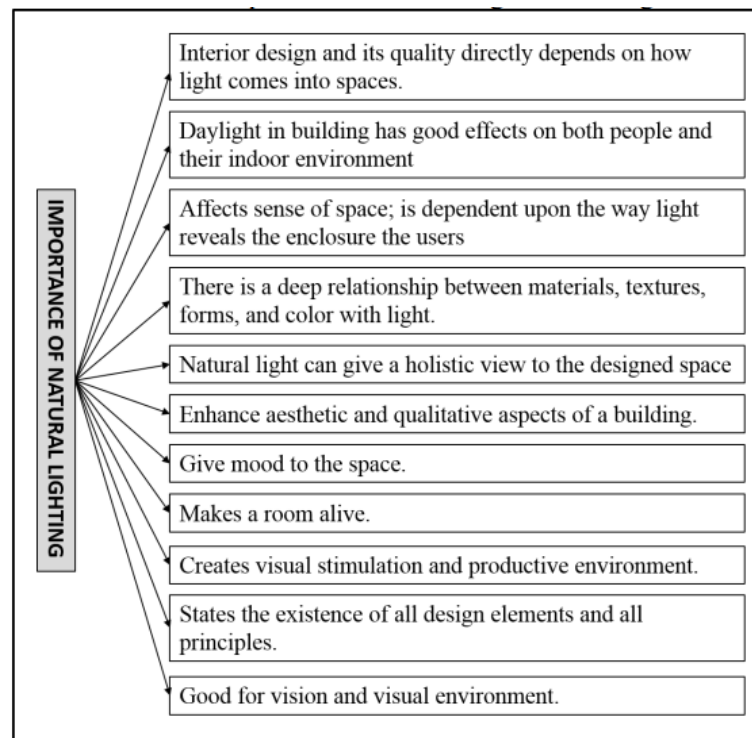


Figure 13: Importance of Natural Light in Building (Naseri, 2014).



Figure 14: Changes On Day-Light and Shadows; (URL 11)

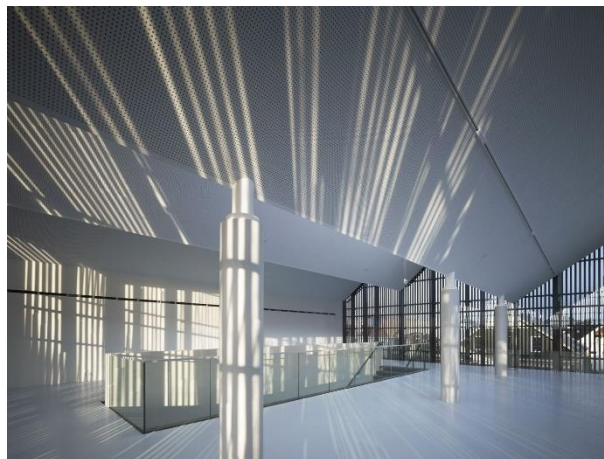


Figure 15: Rhythmic Play of Shadow and Light in Maritime and Beachcombers Museum / Netherlands; (URL 12)

Pattern 7: Connection with Natural Systems (CNS):

This pattern includes being aware of the natural processes, temporal and seasonal changes of a healthy ecosystem. This pattern contains the features of healthy ecological systems, for example; a deciduous tree in the backyard, rain, fog, night sky (stars and moon phases), animal movements and more over. According to Browning et al. (2014); spaces with *Connection with Natural Systems* can evoke these feelings; calming, enlightening or deep, nostalgic and expected. Lawson (2001,

p.29- 30) stated that interior windows not only provide natural lighting and ventilation, but also enhance connection between user and the outdoor. In addition, places that shows seasonal changes and let their users being aware of the time passing by while experiencing these spaces can make people feel secure and calm.

There are some studies on the effects of human connection with natural systems. In a study conducted by Ulrich (1984), it has been noted that faster recovery observed for patients who had outdoor views in the hospital. Accordingly, one could see that visual access to natural systems may have positive effects on the health. Furthermore, another research which has compared efficiency of the children in the classrooms without windows and with windows/natural light has concluded that children with no connection with sunlight had some concentration problems in the classroom (Küller & Lindstren, 1992; Lawson, 2001). The stated researches explore the significance of being aware of natural systems for human being such as, movement of sunlight, weather conditions such as rain, snow, and signs of seasonal changes.



Figure 16: Effect of Weather Changes on The Changing Atmosphere of The Context Fallingwater House, Pennsylvania; (URL 13)



Figure 17: Having Opportunity To See And Feel The Snowy Weather; (URL 14)

2.3 Indoor Landscaping As An Approach Of Nature in The Space

Indoor landscaping helps people to reconnect with the natural world, so it has a big importance for humans and places. In this part of the thesis, firstly, interior landscape approaches that can be used in interior spaces are explained and then the importance of indoor landscaping is described in two categories; the physical effects of indoor landscaping that contributed to the interior spaces, and the psychological effects of indoor landscaping on the user.

2.3.1 Indoor Landscaping Approaches / Elements

From past to present, people use natural elements at indoors. People used to have or perceive landscape elements such as potted plants, trees, indoor gardens or indoor pools in their living spaces; for instance, in homes, workplaces or in public spaces where they go to socialize. It could be said that people tend to integrate nature into the interior spaces.

Kellert et al (2008, p7 - 15) have suggested; 'environmental features' include many different elements such as colour, water, air, sunlight, plants, animals or vistas, facade greening and so far. According to Kellert and Calabrese (2015) “light, air, water, plants, animals, weather, natural landscapes and ecosystems, fire” are the main features (Figure 2, p.16).

Water is the most important resource for human life. It is also a unique landscape element that can be used in landscape design (Burmill et al., 1999). In interior design, water is one of the primary elements that enrich the design by addressing multiple senses (visual, auditory, tactile, etc.). In this sense, the visual connection with the water features in the interior can create more preferred spaces by people. Water has the ability to connect different places (Figure 18).



Figure 18: Jewel Changi Airport; (URL 15)

Facade greening, in other words vertical gardens or live walls are also important on the ecological and visual benefits of architecture (Figure 19). Green facades provide natural shade on the exterior surface of the building, thus, it helps to energy and cost savings for indoor cooling systems (Schmidt 2006).



Figure 19: Vertical Garden; (URL 16)

Usage of fire as an indoor landscaping element in interior spaces can be an indication of civilization, comfort, color, warmth and movement (Kellert et al., 2008, p. 8). Browning et al (2014) mentioned fire as a one of the example of a non-visual connection with nature. It can be integrated in interior design as a landscaping element. In addition, usage of the fire at interior spaces can provide different atmospheres to spaces by its visual and sensorial features. For example; sound of

crackling fire and smells of wood and view the movement and color of fire (see Figure 20 for fireplace at indoor space).



Figure 20: Use of Fireplace at Indoor Space; (URL 17)

A life without light is unthinkable, thus the use of natural light is important in indoor design and indoor landscaping. Natural light can add depth to indoor space with the usage of reflective color and material and glass walls (Kellert and Calabrese, 2015) (Figure 21).



Figure 21: Sunlight Movements at The Integral House at Canada; (URL 18)

The natural ventilation experience in the interior can be achieved through changes in airflow, temperature, humidity and barometric pressure (Kellert and Calabrese, 2015). For example, operable windows can provide natural ventilation in indoor spaces (Figure 22). Furthermore, being aware of the weather conditions (such as sunny or snowy weather) and time is essential for humans. Operable windows, patios, balconies, or just a view to the outside can ensure the connection with the outdoor environment.



Figure 22: Operable Window; (URL 19)

2.3.2 Importance of Indoor Landscaping

Many studies have been carried out on the effects of exposure to nature. The existence of natural elements in the interior spaces provides many benefits to people and places. A life away from nature can cause many problems such as; mental and physical health problems and decreased performance. Effects of indoor landscaping can be explained in two categories which are; physical effects of indoor landscaping and psychological effects of indoor landscaping;

a) Physical Effects of Indoor Landscaping

A more specific area can be created by integrating nature into the interior. The use of natural elements in indoors can be considered an important factor in increasing the attractiveness of the spaces. In addition, considering the ecological effects of indoor landscaping provides many benefits for the quality of life in the interior. Dash (2017) stated that the benefits of interior landscaping have positive effects on reducing stress, increasing pain tolerance and increasing people's productivity, as well as physically improving air quality and comfort indoors. Studies investigating the effects of indoor plants on air quality, thermal comfort and CO₂ concentration of the space have been conducted. In these studies, it has been found that plants have positive effects on; “the amount of carbon dioxide of indoor environment (Torpy et al., 2014); indoor air quality (Osimani et al., 2016) and indoor acoustics” (cited in Sezen et al, 2017).

In addition to providing visual aesthetics, indoor plants can filter and clean the air, absorb excess water and provide sound insulation (Kellert et al. 2008). Green space reduces environmental pollution such as smoke and noise, so it improves air quality and it contributes personal and public health (Pourmohammadi & Ghorbani, 2003). Studies that have been conducted since 1989, where the effects of indoor soft landscaping elements on urban air have also been reported, indicate that soft landscaping features at interior spaces can significantly reduce urban air pollution and reduce levels of gases (Wolverton et al. 1989).

Another study showed that greenery plants can increase relative humidity to more comfortable levels indoors and create a healthier humidity rate (Lohr, 1992). The effect of indoor plants on dust accumulation was also investigated by Lohr and

Pearson - Mims (1996), and it has been found that plants placed around a room significantly minimize the accumulation of particulate matter in the room.

There are studies on the effects of plants on sound isolation. Costa and James (1995) expressed that plants can affect sounds differently depending on the frequency and it is stated that plants can reflect, distribute, or absorb sound. In addition, plants have been shown to absorb noise due to different factors. Indoor plants not only affect indoor air positively but also create different positive effects. As an example, it creates positive psychological effects on the individuals in the environment and contributes to the interior's comfort and health level (Fjeld et al. 1998; Han 2009; Xu et al. 2011). Usage of indoor plants ensure many advantages for people and their environment. Furthermore, there are contributions of non-visual communication with plants to space and human, such as; fragrance and improving indoor acoustics (Costa and James, 1995) (see Figure 23).

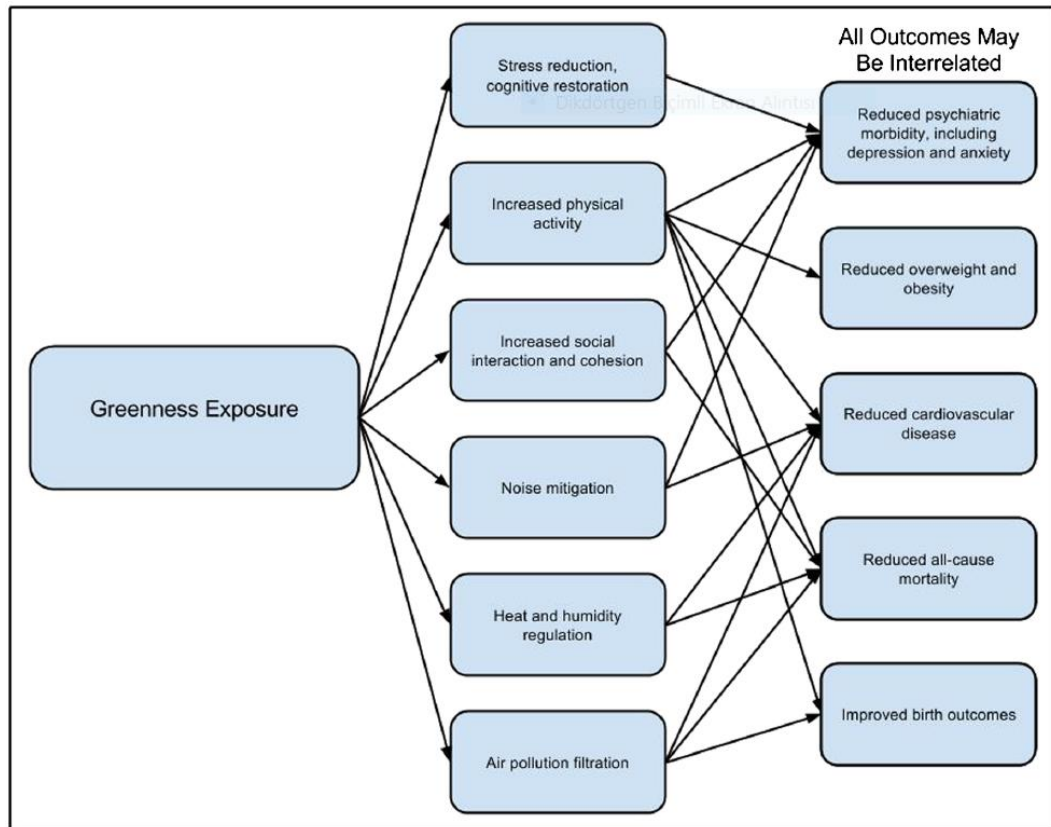


Figure 23: Ways That Greenery Can Affect Health (James et al., 2015, p. 132).

Water is remarkable element and it can take users' attention when it is used indoors as a landscape element. According to Huang (1998); water is important element because of its aesthetical value, sensorial stimulation and mental benefits for landscape architects, psychologists, sociologists, environmental designers and more over. Uzun (1999) states that water creates a focal point of attraction, and reveals the unifying function of water. Therefore, water features have the ability to connect interior spaces. Furthermore, Rubenstein (1992) stated that, water features such as pool and fountains and lighting elements can provide charm to the place at night (see Table 4).

Table 4: Physical Effects of Indoor Landscaping

Physical Effects of Indoor Landscaping
<ul style="list-style-type: none">• Increases attractiveness of the space• Ecological effects• Improves air quality• Air pollution filtration• Reduces humidity• Improves indoor acoustics• Visual aesthetics

b) Psychological Effects of Indoor Landscaping

There are numerous psychological benefits of indoor landscaping on human being. Therefore, integration of these elements into indoor spaces can improve moods, feelings and emotions of a human being. Yin et al. (2019) states that; people's frequency of spending time with nature can be increased by integrating nature into indoor spaces, even when they are at interior spaces. "Emotions represent our most spontaneous and earliest response to nature. Intellectual and cognitive reactions follow. Values and beliefs emerge last" (Kellert, 1997. P.165).

People who spend more time in the closed spaces due to urbanization, their communication with nature are gradually weakening. Long working hours make it difficult to spend time outside, which means more stressed individuals. Indoor spaces have a big role to affect human mental health. Lopez (2012) stated that the quality of people's environments affects their well-being and health. Hartig ve Kahn (2016) suggested that; communicating with natural elements, natural environments and processes has become a common approach to get rid of stressful urban lives.

Many studies have addressed the psychological benefits of interacting with nature. In one research, it was observed that sounds of nature (especially river sound) were having more energy and much more motivation. Additionally, it is found that in this study watching nature with river sounds have had further positive effect than just listening to river sounds (Browning et al, 2014). Water, with its therapeutic feature, can relieve people from stress (Düzenli and Özkan, 2016). Another research on sounds of nature shows that; the usage of water sound with other nature sounds, such as the birds sound, increases the positive and healing effects on individuals (Alvarsson et al., 2010). Thus, connection with water features can provide psychological benefits to human. Rees and May (2002) defines water as exciting element for landscape design. Herzog et al. (2003) suggested that, viewing nature contributes human well-being, renovation and aesthetical pleasure. In this sense, nature integration into the indoor spaces contributes positively to human moods.

For instance, Adamant Hospital is a psychiatric hospital swinging by the river in Paris (Figure 24). This hospital designed by Gérard Ronzatti. The approach of Adamant Hospital design was to obtain a structure that reveals the natural beauty of the weather conditions such as rain, sun or wind. For example, sunlight reflections on the river and shadow-light movements caused by shutters (Silva, 2020) (see Figure 25). Ronzatti suggested that; the strong presence of wood on which the soothing reflections of water play reinforces the warm and domestic aspect (Ronzatti, n.d.). In this sense, this hospital provides unusual experiences with nature and it can help patients relax and recover faster by connecting with nature.



Figure 24: Adamant Hospital in France (URL 20).



Figure 25: Adamant Hospital Indoor with A River View in France (URL 20).

Yin et al. (2020) reported as a result of their study that; when the biophilic space and the non-biophilic space are compared, better recovery responses were found in the psychological anxiety levels and physiological stress levels of the participants exposed to the biophilic environment. Furthermore, some experiments in hospitals have found that patients staying in rooms with tree views recover faster and need less pain killer (Mehaffy & Salingaros, 2015).

Table 5: Psychological Effects of Indoor Landscaping

Psychological Effects of Indoor Landscaping
<ul style="list-style-type: none">• Improves moods, feelings, emotions• Positive effects on well-being and health• Gives energy and motivation• Reduces stress• Relaxing• Recover faster• Increases pain tolerance• Improves cognition

This section has revealed different types of landscape elements integration into various interior spaces and their advantages as a result of their articulation in the indoors or by a particular spatial organization in order to provide stronger links with the immediate outdoor nature. Above documentation has put forward the presence and the advantages of this approach in various spaces so far. Accordingly, the following section of this study will therefore focus on the presence of the above stated matters particularly on the restaurant interiors.

Chapter 3

THE ROLE OF INDOOR LANDSCAPING IN RESTAURANT INDOORS

This chapter consists of two sections. The first section describes and Restaurant Spaces and the second section focuses on the indoor landscaping solutions as a means of ‘Nature in the Space’ concept at and Restaurant Spaces. Accordingly, the first section includes definition and importance of restaurant spaces and the interior design requirements of the restaurant spaces. And the second section encompasses analyses of the selected restaurant spaces based on biophilic design patterns particularly in line with the Nature In The Space category as well as analyses of the types of landscape elements presence in the selected cases. Cases were selected as a result of a systematic filtering of various and restaurant spaces from www.archdaily.com that is mentioned in detail at the beginning of the section 3.2 on p.47.

3.1 Restaurant Spaces

3.1.1 Definition and Importance of Restaurant Spaces

Restaurants play an important role in our daily life. Nowadays, many people prefer restaurants more than their home to eat. The number of restaurants is increasing day by day. The word "restaurant" is French word and can be defined as places that serve food and drink to customers. Walker (2014) stated that, the first cafe was opened in Constantinople (now called Istanbul) in 1550. Later, coffeehouses opened in Oxford and London, thus becoming the pioneer of today's restaurants. France has an

important place in the development of restaurants and the first restaurant has been named a “public dining room” in France (Walker, 2014).

The term 'third place' is used by sociologist Ray Oldenburg to describe places that are out of the home (first place) and the workplace (second place). Oldenburg (1989) states that these places are preferred for socializing with other people, for exchanging ideas, and for having good time. People of different gender, ages, and statuses are users of public spaces. Currently, restaurants are not only eating and drinking places but also people use these places external of their homes and workplaces for socializing and spending time. Furthermore, these places are also preferred for business meetings or celebrations and events.

People use indoors often and restaurants are among them. Godsmark (2005) states that, one in three people eat out at least once a week. According to Plunkett and Reid (2013), it is more economical to eat at home or picnic in the park; however, these places do not provide social interaction. Thus, people prefer to go to restaurant spaces if they want to eat and have a drink or to meet for their socialization needs and more over.

3.1.2 Restaurant Interior Design

The design of the restaurant spaces is a very significant issue. In this sense, making a well thought out and functional design can provide many positive results not only for space but also its users. As similar in all workplaces and living spaces, well planned and organized restaurant design is one of the basic factors that would provide both restaurant employees and also customer satisfaction.

When designing the restaurant spatial organization, it is necessary to ensure that the design and layout are synchronized with the concept and theme of the restaurant. Restaurant design varies for different types of restaurants. For instance, quick-service restaurants are designed to eat faster, while fine-dining restaurants aim customers to sit longer. Piotrowski (2016) states that each restaurant type has its own philosophy of cooking, design concept and idea. According to some factors such as style of the food preparation, menu style, types of food; restaurants can be expressed in different categories, in this sense the most known categories are fine-dining, casual-dining, family-style, fast-casual restaurants, and quick-service restaurants (fast-food) (WebstaurantStore, 2020). Fine dining restaurants offer full-service. Restaurants that are serving good quality in terms of service, atmosphere, design, food quality, and presentation are called fine dining. A casual dining restaurant provides full-service with a comfortable, casual atmosphere and affordably priced menu, bar staff (“What is Casual Dining?”, n.d.). Family style restaurant is a casual dining restaurant with table service (Smith, 2008). According to Consumer Reports on Eating Share Trends (CREST) and the National Restaurant Associations (NRA) family restaurants are classified as mid-scale restaurants (Lee et al., 2006). Fast-casual restaurants offer higher quality food and service than quick-service restaurants. Many fast-casual restaurants prepare their products daily and fresh, so there is a need for more area for refrigerators than the freezer (Baraban & Durocher, 2010). Quick-service restaurants (fast-food) are places where a limited number of dishes are served quickly, usually taken as a self-service or package.

Each space has its special style, character, atmosphere, and every single restaurant design has different requirements. The design of restaurants should reflect the style

of the food preparation and service in the menu, the atmosphere of the place and staff requirements (Lawson, 2015). In addition, according to Lawson (2015), the roles of design in food-service places are; creating a quality ambiance that meets customer expectations, plan layout, design of technical installations and layout of the equipment, and the facility must provide the targets set by the operator. A well-designed restaurant layout requirements are summarized by (“Importance of Restaurant Layout”, 2020) as;

- Well-planned circulation and movement in the indoor space
- The layout of the sub-places of the restaurant and the relationship between them should be considered well. These areas are basically; entry and reception, waiting area, payment point, dining area, restrooms, kitchen, storage, pantry, management office (exemplified in Figure 26).
- Comfort for customers and staff: thermal and indoor air quality, lighting, acoustic.

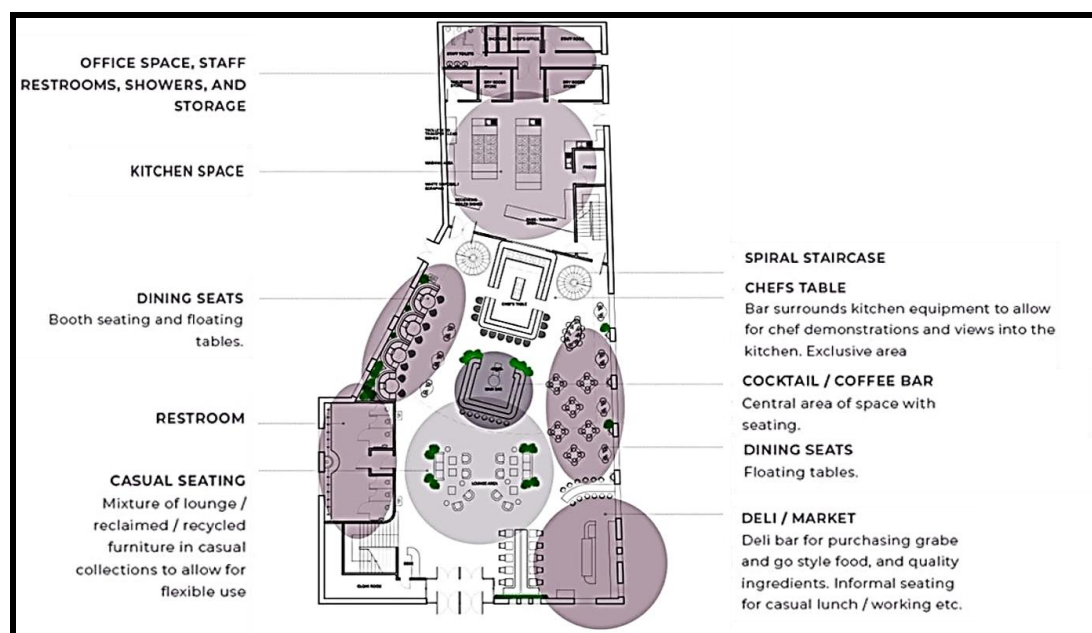


Figure 26: Kailo Restaurant Plan; (URL 21)

The square meter and equipment requirements of areas such as seating area, kitchen, and toilet vary according to the size and typology of each restaurant. While designing restaurants, areas for storage, product take-up and control, preparation of food, cooking, service and dishwashing, entrance, toilets, reception services and bar if required, seating area, payment area and surrounding of the space such as parking should be taken into consideration. Food service planning has an important role in the spatial organization and must be studied well during indoor design process (see Figure 27 for a typical food service planning).

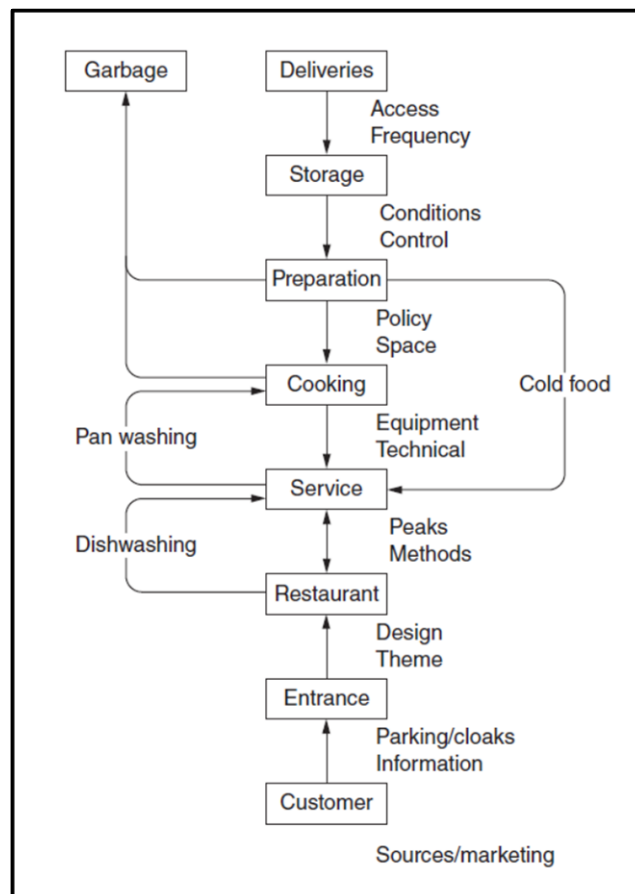


Figure 27: Food Service Planning; (Lawson, 2015)

The entrance area of restaurants is of great importance for the first impression. Lighting, plants and music can help to create an attractive restaurant entrance design (Mealey, 2019). The waiting area is the place with benches/chairs for the customers

to wait comfortably. Not all restaurants have a waiting area, but some restaurants include this area in the bar area (Mealey, 2019). Dining areas can have different sizes, shapes and designs. Table size and shapes, spaces between tables and chairs have an important place for customer and staff comfort in restaurant design. Large dining areas are often divided by partition elements, creating more private areas (Baraban & Durocher, 2010). The full-service restaurants usually have a bar area apart from the dining area. The bars in the restaurants can contain several waiting places, and there are also mega bars where tens of bartenders work.

Restaurants that offer fine-dining experience often have smaller bar areas, but create an inviting atmosphere for drinking at restaurants that offer casual-dining experience (Baraban & Durocher, 2010). Restaurant kitchens should be specially designed for each restaurant, taking into account the required areas for counter lengths, preparation table, storage spaces, and necessary equipment such as dishwasher, sink, chopping board, refrigerator. According to Baraban & Durocher (2010), a well-designed kitchen should allow food to be transferred from the storage areas to the customer, while also facilitating the return of dirty dishes from the dining room to the kitchen. Spatial arrangement is very important in restaurants. The relationship and flow between exterior and entrance area, the entrance area and the dining area, the kitchen and dining area and the bar should be well planned (Baraban & Durocher, 2010) (see Figure 28 for Restaurant Functional Layout).

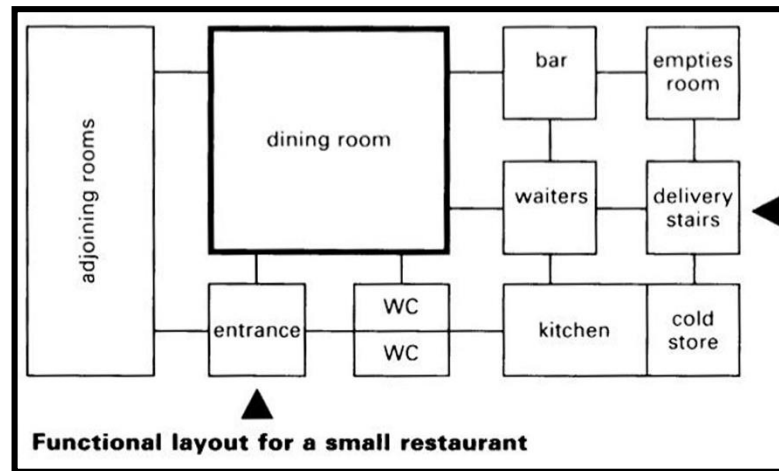


Figure 28: Restaurant Functional Layout (Neufert et al., 2012).

According to Chen and Lee (2018), three factors that are the priority of the customers coming to the restaurant are food, environment and employees. The atmosphere of restaurant spaces can also play a role in customer choice. In this sense, David Schefer stated that “...the usage of lighting in different ways can create intense atmospheres and enhance the architectural elements at restaurant design” (mentioned in Ryder, 2004). Moreover Liu & Jang (2009) emphasize that “it is not only the taste, but also the importance of a unique dining environment which takes customers interest”. Carnee et al. (2010) stressed that “restaurant environments require enthusiasm”. “Environment and atmosphere of restaurant can affect user satisfaction and their emotions as well as produce behavioural reactions” (Yen-Cheng et al, 2019).

Furthermore, Horng et al. (2013) accentuate that the restaurant atmosphere has an impact on customer satisfaction and the desire to come again. And hence, the environment of the building is of great importance in restaurant design. Accordingly, spatial layout and environment can affect restaurant atmosphere (Ryu and Jang, 2007). According to Akın & Gültekin (2015), furthermore the restaurant should be

checked for wind and sun directions, relationship with the surrounding buildings, nice view, and whether there is air circulation. Therefore, in the following section role of environment on the spatial layout of restaurant spaces is put forward with an extensive point of view with a particular focus on the concept of indoor landscaping.

3.2 Indoor Landscaping at Restaurant Spaces

In this section, the role of indoor landscaping at café & restaurant spaces is investigated by the analytical reading method of the selected cases. Cases for the analytical reading is selected as a result of a systematic filtering. Accordingly, the first step of case determination was initiated by choosing Archdaily.com design website as the main source for selecting cases (accessed on 26th May 2020). The second step is to determine sub-category to select cases from which was *'Hospitality Architecture'* in general and then *'Restaurants & Bars'* category in particular where cases were selected under the *'Projects'* category of Archdaily.com, where various restaurant projects are included. A number of 1453 projects have been detected as a result of the above stated steps. Then, this number was reduced as a result of the limitations set for the case selection. For instance, some of these places for example; fall under the categories 'coffee shops', 'bars', and 'fast-food restaurants', so even if they contain indoor landscaping elements, they were excluded from the study. As a result of examining 1453 samples and detecting restaurants that actively use plants/trees indoors as the main limitation, 47 projects have been obtained at the end. Filtering has been made again for the selected 47 restaurants. And during this filtering step; selection of cases were limited to be independent places (such as a not to be like hotel restaurant), not to consist of a single space, and to include strongly visible indoor landscaping integration particularly plants/trees. As a result of this step, 21 places were selected as the cases for the analytical reading. It was observed

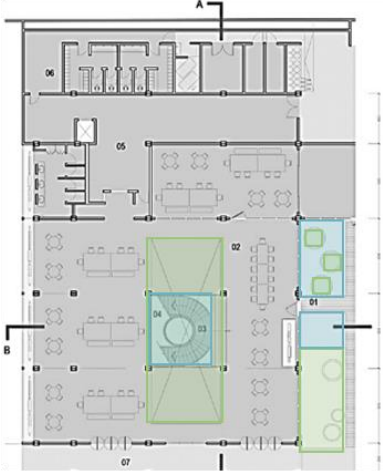
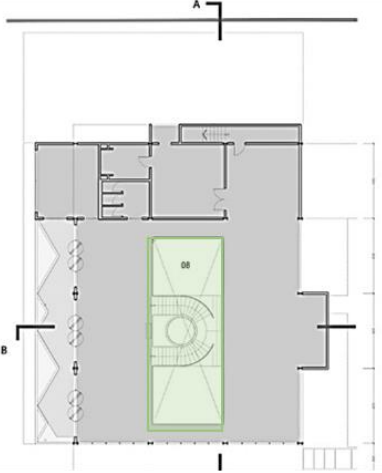
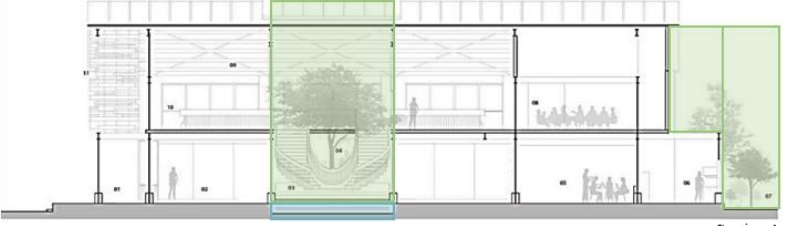



that the selected restaurants are from 16 different countries. As the method of data collection, 21 cases were tabulated one by one and analysed in line with the 'Nature in the Space' patterns.

3.2.1 Investigating Nature in the Space Concept and Indoor Landscaping

Solutions in the Selected Cases

- Case 1: Kayu Kayu Restaurant

Table 6: Investigating Nature in the Space Concept Solutions at Kayu Kayu Restaurant; (URL 22)

CASE 1 : Kayu Kayu Restaurant			
Location: Indonesia	Area: 860 m2	Year: 2017	Architects: W Office
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
<p>Legend</p> <ul style="list-style-type: none"> 01. Entrance 02. Dining Area 03. Main stair 04. Pond 05. Kitchen 06. Toilet 07. Outdoor 08. Void 			
 <p>Section A</p>			
 <p>DDL-VCN DDL-CNS-NRSS PW</p>		 <p>DDL VCN-TAV</p>	
 <p>PW-VCN-NVCN VCN-NVCN</p>			

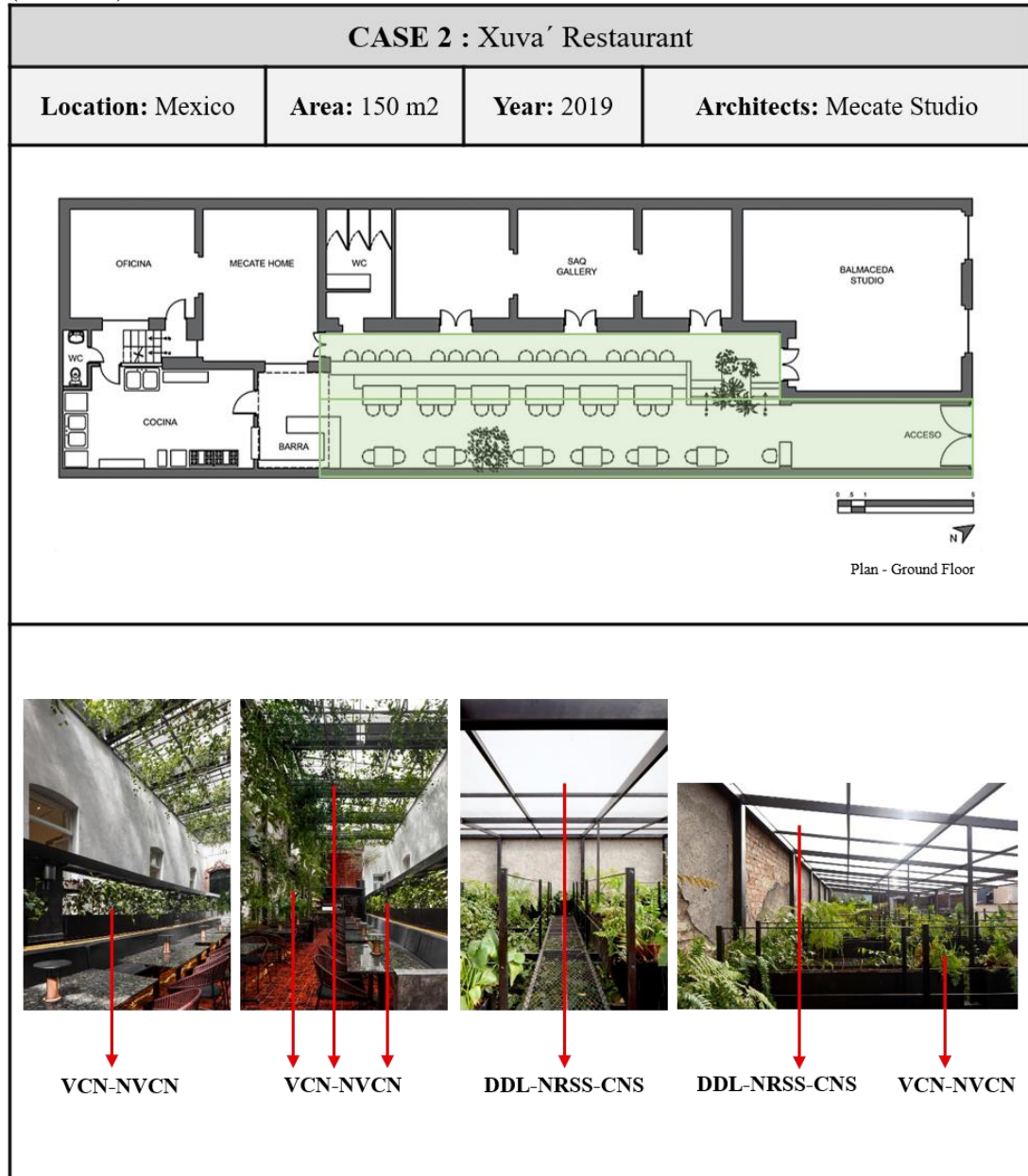
The design of the Kayu Kayu Restaurant includes numerous potted plants and trees.

Also, natural elements used such as wood logs on the ceiling. These landscaping

elements provide *VCN* pattern as well as ensure *NVCN* pattern with the presence of a sense of smell, hear and touch in the restaurant. Openings on the roof can supply patterns of *NRSS* and *DDL*, *TAV*, and *CNS*. Glazed facades give users to interrelate with outdoor nature and weather conditions. Also, *PW* pattern has been achieved with a pond in the dining area and outdoor. It has been observed that landscape elements are mostly used as two-dimensional landscape elements (wood flooring, fish pond) and located horizontally in this space. In addition, Kayu Kayu Restaurant has plural side/vertical openings. There is no visual connection between landscape elements and the kitchen staff. Accordingly landscape and client connection is provided predominantly. Landscape elements have been integrated into the entire restaurant indoor.

- **Case 2: Xuva' Restaurant**

Table 7: Investigating Nature in the Space Concept Solutions at Xuva' Restaurant; (URL 22)



The restaurant is designed as a courtyard. Xuva' Restaurant has many indoor plants that were used on walls and ceilings. Semi-transparent roof brings daylight to the indoor environment and this roof provides *DDL*, *CNS* (eg. weather conditions), *NRSS* (eg. unexpected nature movements) patterns. *VCN* and *NVCN* patterns were obtained

by using abundant plants. Landscape elements are mainly used as two-dimensional landscape elements and both vertically(live wall), horizontally(green plane on the ceiling) in the restaurant. In addition, Xuva Restaurant has a translucent roof. There is no connection between landscape elements and the kitchen staff, but nature connection provided with the bar staff. Therefore, landscape and client connection has been achieved mainly. Landscape elements have been integrated into the entire restaurant indoor.

- **Case 3: GYRE.FOOD Restaurants & Shops**

Table 8: Investigating Nature in the Space Concept Solutions at GYRE.FOOD Restaurants & Shops; (URL 22)


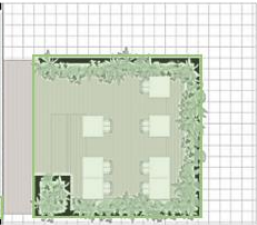
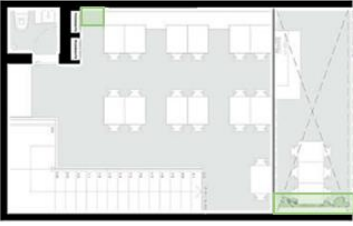
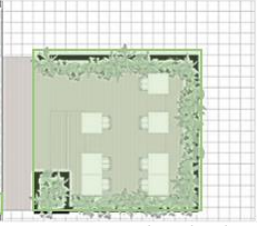






CASE 3 : GYRE.FOOD Restaurants & Shops									
Location: Japan	Area: 1000 m2	Year: 2019	Architects: Atelier Tsuyoshi Tane Architects						
 <p style="text-align: right;">Plan - Ground Floor</p>									
 <p style="text-align: right;">Section</p>									
									
VCN-NVCN		VCN-NVCN		VCN-NVCN		DDL-CNS-NRSS		VCN-NVCN	

This restaurant includes numerous plants and trees in interior design that provide *VCN* and *NVCN* patterns. Similarly, the floors and walls of the space designed as a 'cave' were covered with soil. Thus, *VCN* and *NVCN* patterns were achieved. *DDL*, *CNS*, and *NRSS* patterns have achieved by glass facades. Three-dimensional

landscape elements (big trees, wood boxes) are used mostly and vertically in the restaurant. It has been observed that there are plural side/vertical openings. There is a connection between landscape elements and the kitchen/bar staff, client. Landscape elements have been integrated into the entire restaurant indoor.

- **Case 4: FITFISH Restaurant**

Table 9: Investigating Nature in the Space Concept Solutions at FITFISH Restaurant; (URL22)

CASE 4 : FITFISH Restaurant					
Location: Brazil	Area: 94 m2	Year: 2019	Architects: Studio Bloco Arquitetura		
					
					
					
					
					
DDL-CNS-NRSS	VCN-NVCN	DDL-CNS-NRSS	VCN-NVCN	VCN-NVCN	VCN-NVCN

A vertical garden can be seen from three dining areas and provide *VCN* and *NVCN* patterns to the users at FITFISH Restaurant. Glass front façade allows connection with outdoor (sunlight, unexpected natural movements, and changes in weather), hence *DDL*, *CNS*, and *NRSS* patterns have observed. Two-dimensional landscape elements (vertical garden, wood material) are used by a majority and vertically in the restaurant. It has been observed that there is only one-side/vertical opening. There is a connection between landscape elements and the kitchen/bar staff, client. Landscape elements have been integrated into the entire restaurant indoor. From every point of the restaurant, the connection can be provided with the natural elements.

- **Case 5: Ello Restaurant**

Table 10: Investigating Nature in the Space Concept Solutions at Ello Restaurant, (URL 22)

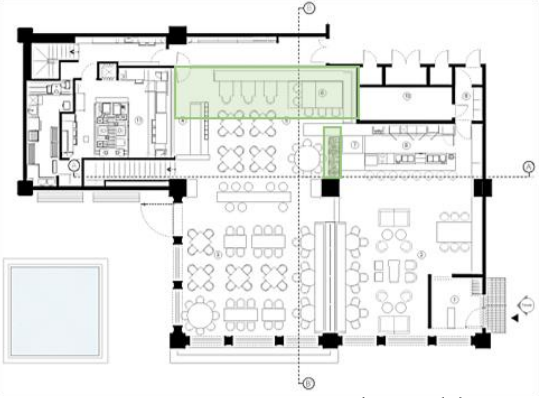

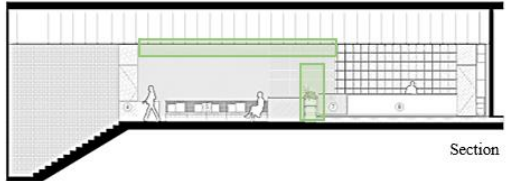

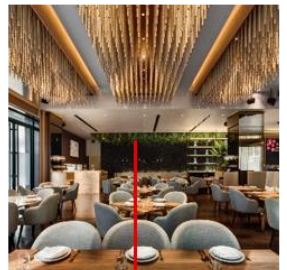



CASE 5 : Ello Restaurant			
Location: Brazil	Area: 290 m2	Year: 2019	Architects: Mareines Arquitetura
<p>Plan - Ground Floor</p> <p>Plan - First Floor</p>			
<p>Section</p>		<p>Elevation</p>	
<p>VCN-NVCN DDL-CNS-NRSS-TAV VCN-NVCN-NRSS VCN-NVCN-NRSS</p>			

It is of great importance to use plants and natural materials to obtain *VCN* and *NVCN* models in Ello Restaurant. Furthermore, openings can provide fresh air, breezes, connection with the weather, and movements of sunlight and shadow which support *DDL*, *CNS*, *NRSS*, *TAV* patterns. Two-dimensional landscape elements (vertical

garden, wood material) are used by a majority and vertically in the restaurant. It has been observed that there is a roof opening. The connection with landscape elements has been achieved with the kitchen/bar staff, client. Landscape elements have been integrated into the entire restaurant indoor. From every point of the restaurant, the connection can be provided with the natural elements.

- **Case 6: Peyote Dubai Restaurant**

Table 11: Investigating Nature in the Space Concept Solutions at Peyote Dubai Restaurant, (URL 22)

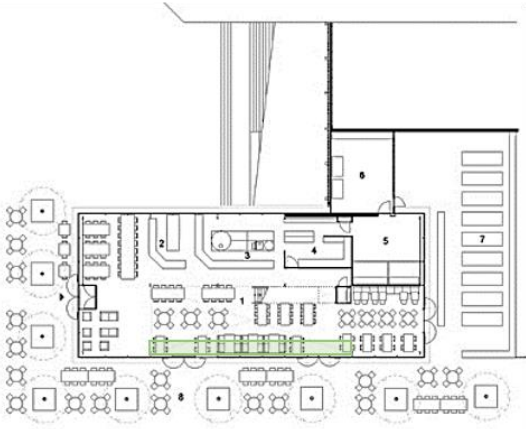
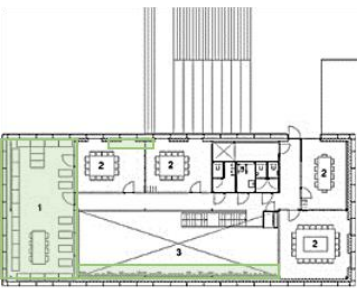





CASE 6 : Peyote Dubai Restaurant			
Location: United Arab Emirates	Area: 328 m2	Year: 2017	Architects: Sordo Madaleno Arquitectos
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>Section</p>		 <p>Section</p>	
 <p>VCN-NVCN</p>		 <p>VCN-NVCN</p>	
		 <p>VCN-NVCN</p>	
		 <p>VCN-NVCN</p>	

Live ceiling plane and trees support *VCN* and *NVCN* patterns at Peyote Dubai Restaurant. In addition using natural materials such as wood flooring, black clay wall can contribute to achieve *VCN* and *NVCN* patterns. Two-dimensional landscape elements (green plane, wood flooring) are used by a majority and horizontally in the

restaurant. There is a two side/vertical opening. The connection with the landscape elements was mostly provided with the clients. Landscape elements have been integrated into the sub-space of the restaurant.

- **Case 7: The Green House Restaurant**

Table 12: Investigating Nature in the Space Concept Solutions at The Green House Restaurant, (URL 22)

CASE 7 : The Green House Restaurant			
Location: The Netherlands	Area: 680 m2	Year: 2018	Architects: Architectenbureau Cepezed
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>DDL-CNS</p>		<p>Section</p>	
 <p>VCN-NVCN</p>	 <p>DDL-CNS-NRSS</p>	 <p>VCN-NVCN</p>	 <p>VCN-NVCN</p>

The design of The Green House Restaurant includes vertical gardens and an upstairs greenhouse. Therefore, *VCN* and *NVCN* patterns were observed in this space. In addition, large glass windows support daylight and connectivity with the outdoors, enabling *DDL*, *CNS*, and *NRSS* patterns. Two-dimensional landscape elements (vertical gardens) are used mostly and vertically in the restaurant. Plural-side/vertical openings have been observed. The connection with the landscape elements was mostly provided with the clients and all staff. Landscape elements have been integrated into the entire space of the restaurant.

- **Case 8: L28 Culinary Platform Restaurant**

Table 13: Investigating Nature in the Space Concept Solutions at L28 Culinary Platform Restaurant, (URL 22)

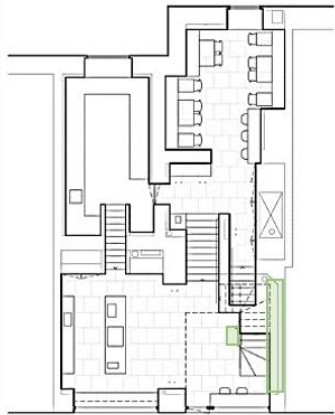
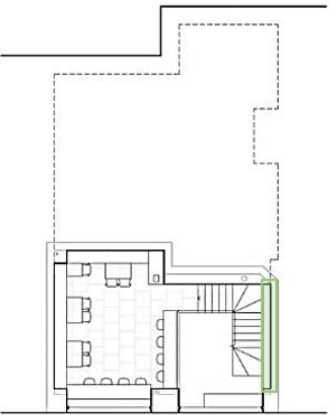

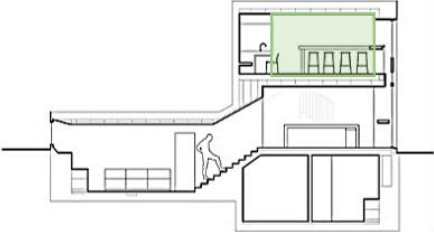

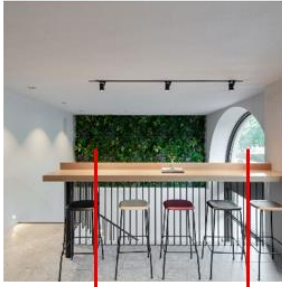



A large vertical garden is effectively integrated into the wall of the restaurant. Moreover, there are potted plants on the shelves. These greenery and glass windows provide *VCN*, *NVCN*, *DDL*, *CNS*, *NRSS* patterns as can be seen. Two-dimensional landscape elements (vertical garden, wood) are used mostly and vertically in the

restaurant. Plural-side/vertical openings have been observed. The connection with the landscape elements was mostly provided with the clients and all staff. Landscape elements have been integrated into the entire space of the restaurant.

- **Case 9: Kale & Crave Restaurant**

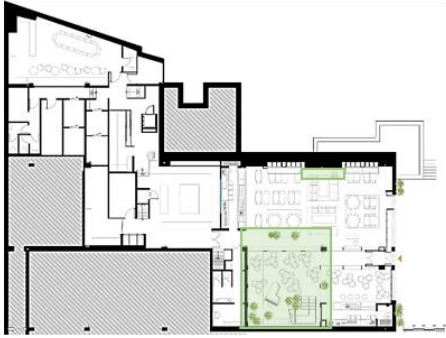

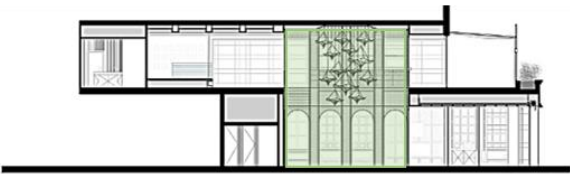
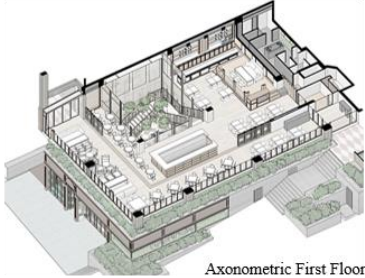



Table 14: Investigating Nature in the Space Concept Solutions at Kale & Crave Restaurant, (URL 22)

CASE 9 : Kale & Crave Restaurant			
Location: Sweden	Area: 200 m2	Year: 2018	Architects: Matteo Foresti
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>Section</p>		 <p>Section</p>	
			<p>VCN-NVCN DDL-CNS-NRSS VCN-NVCN DDL-CNS-NRSS VCN-NVCN</p>

It has been observed that sunlight and the vertical garden stand out in this place. Accordingly, *VCN*, *NVCN*, *CMS*, *NRSS*, and *DDL* patterns have been detected in this restaurant. In the restaurant, mostly vertically located two-dimensional landscape elements (vertical garden) are used. one-side/vertical openings have been observed. The connection with the landscape elements was mostly provided with the clients. Landscape elements have been integrated into the limited part of the space but the visual connection provided from every point of the restaurant.

- **Case 10: Habanera Restaurant**

Table 15: Investigating Nature in the Space Concept Solutions at Habanera Restaurant, (URL 22)

CASE 10 : Habanera Restaurant			
Location: Spain	Area: 1050 m2	Year: 2016	Architects: Proyecto Singular
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>Section</p>		 <p>Axonometric First Floor</p>	
 <p>VCN-NVCN DDL-CNS-NRSS</p>		 <p>VCN-NVCN</p>	
		 <p>VCN-NVCN DDL-NRSS (fireplace)</p>	

Many trees and plants have been observed in Habanera Restaurant and this supports *VCN* and *NVCN* patterns. *DDL* and *NRSS* patterns are provided by the use of a fireplace in the space. At the same time, windows that provide a visual connection with the outdoor area provide *DDL*, *NRSS*, and *CNS* patterns. In the restaurant, mostly vertically located three-dimensional landscape elements (big trees and plants,

wood) are used. Plural-side/vertical openings have been observed. The connection with the landscape elements was mostly provided with the clients and all restaurant staff. Landscape elements have been integrated into the entire space.

- **Case 11: Restaurant of Shade**

Table 16: Investigating Nature in the Space Concept Solutions at Restaurant of Shade, (URL 22)

CASE 11 : Restaurant of Shade			
Location: Vietnam	Area: 1375 m2	Year: 2018	Architects: NISHIZAWAARCHITECTS
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
			
 <p>VCN-NVCN</p>	 <p>TAV-DDL-CNS-NRSS</p>	 <p>VCN-NVCN</p>	 <p>TAV-DDL-CNS-NRSS</p>

Featuring various trees, gardens, and plants the Restaurant of Shade reflects *VCN* and *NVCN* patterns. *TAV*, *DDL*, *NRSS*, *CNS* patterns have been provided with semi-open terraces and wide glass windows. By a majority horizontally located two-dimensional landscape elements (gardens, plants) are used in the restaurant. Two-side/vertical openings have been observed with roof opening. The connection with the landscape elements was mostly provided with the clients and all restaurant staff. Landscape elements have been integrated into the entire space.

• **Case 12: No.1986 Coffee & Restaurant**

Table 17: Investigating Nature in the Space Concept Solutions at No.1986 Coffee & Restaurant, (URL 22)

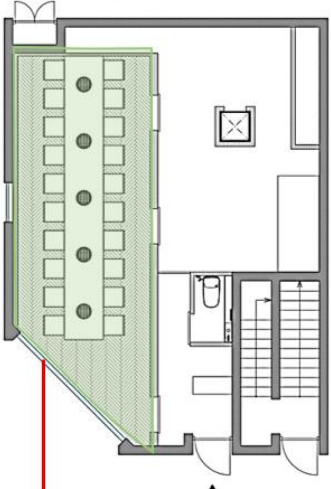
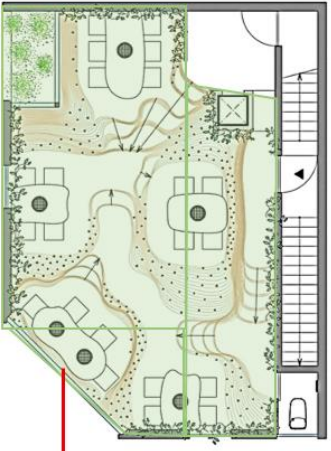


CASE 12 : No.1986 Coffee & Restaurant			
Location: Vietnam	Area: 1000 m2	Year: 2017	Architects: Le House
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>Plan - Second Floor</p>			<ol style="list-style-type: none"> 1. Entrance 2. Lobby 3. Grasses & Tree zone 4. Lake 5. Bar 6. Storage 7. Courtyard 8. WC Lady 9. WC Gentlement 10. Cascades 11. Kitchen
 <p>Section</p>			
 <p style="text-align: center;">VCN-NVCN-PW</p>		 <p style="text-align: center;">VCN-NVCN-PW</p>	
 <p style="text-align: center;">DDL-CNS-NRSS-TAV</p>			

Patterns *VCN* and *NVCN* have been achieved with the use of indoor gardens, trees, plants, and water features. In addition, the use of the indoor pool provides Presence of Water pattern. *DDL*, *CNS*, *NRSS*, and *TAV* patterns have been observed with full glass ceiling and walls. In the restaurant, two-dimensional landscape elements (pool,

gardens, plants) are mostly placed horizontally. The entire roof opening was observed. The connection with the landscape elements was mostly provided with the clients. Landscape elements were integrated into the entire space.

- **Case 13: Nikunotoriko Restaurant**

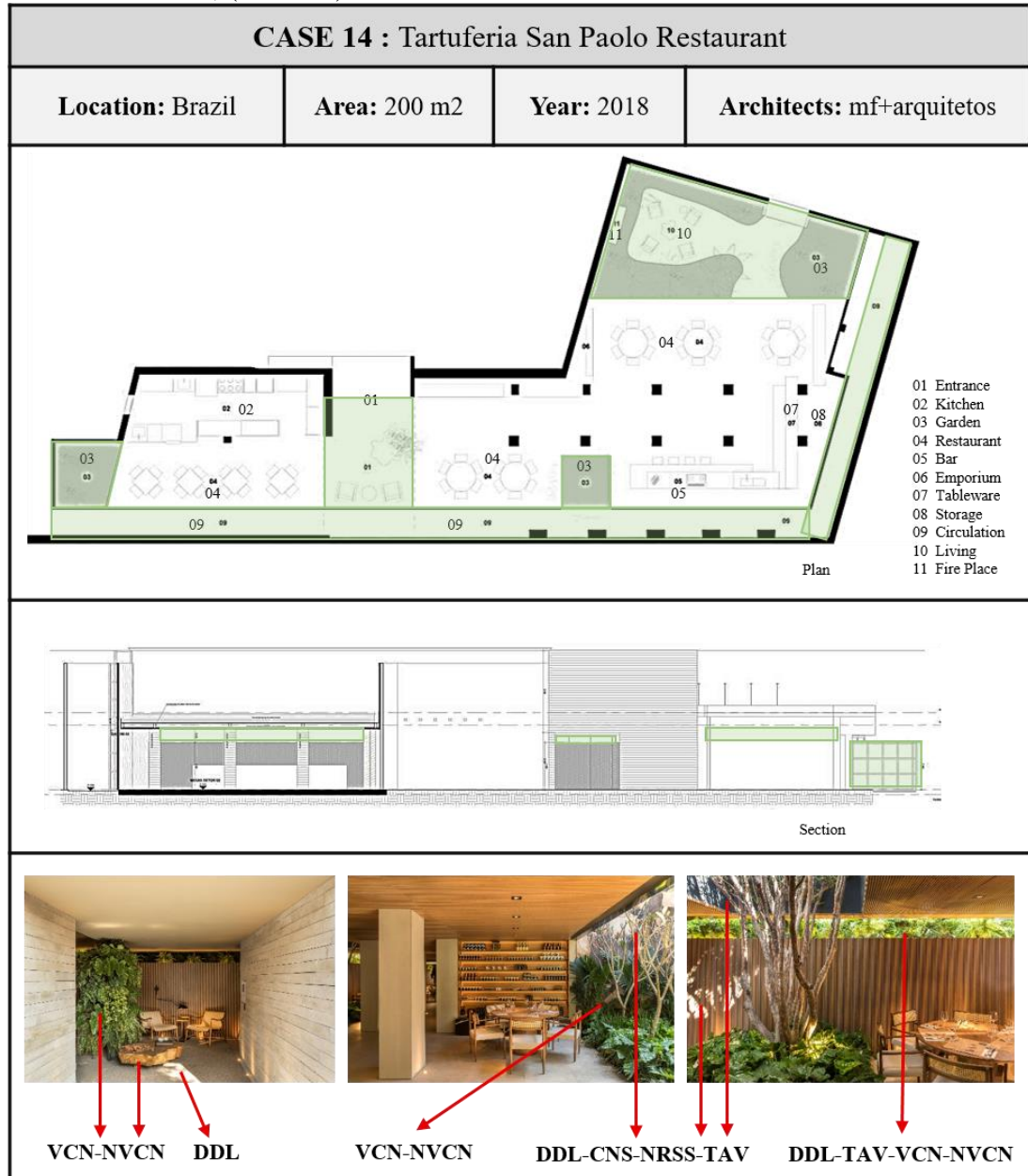
Table 18: Investigating Nature in the Space Concept Solutions at Nikunotoriko Restaurant, (URL 22)

CASE 13 : Nikunotoriko Restaurant			
Location: Japan	Area: 112 m2	Year: 2016	Architects: Ryoji Iedokoro Architecture Office
 <p style="text-align: center;">Plan - Ground Floor</p> <p style="text-align: center;">DDL-CNS-NRSS</p>		 <p style="text-align: center;">Plan - First Floor</p> <p style="text-align: center;">DDL-CNS-NRSS</p>	
 <p style="text-align: center;">VCN-NVCN</p>		 <p style="text-align: center;">VCN-NVCN</p>	

VCN and *NVCN* patterns have been detected with the 'Cave' dining room, trees, and vertical gardens. Natural materials providing *VCN* and *NVCN* patterns are widely used in this restaurant such as; walls of the cave dining room, wood flooring with organic forms, and bamboo sticks. Two-dimensional landscape elements (green wall, wood finishes) are used mostly and placed both vertically and horizontally in the restaurant. One side/vertical opening has been observed. The connection with the landscape elements was mostly provided with the clients. Landscape elements were integrated into the entire space.

- **Case 14: Tartuferia San Paolo Restaurant**

Table 19: Investigating Nature in the Space Concept Solutions at Tartuferia San Paolo Restaurant, (URL 22)


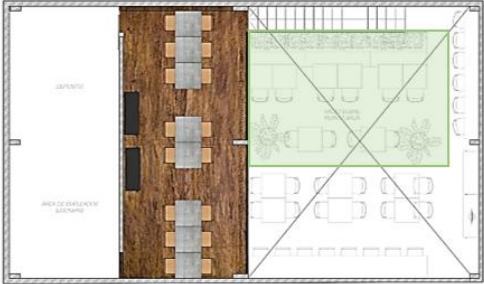
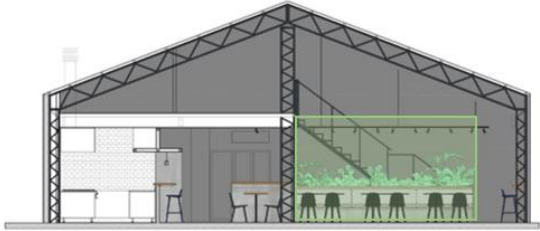







Tartuferia San Paolo Restaurant has semi-open places and it ensures interaction with gardens, weather changes, breezes and more. The breezes provide the *TAV* pattern, while the green areas provide the *VCN* and *NVCN* patterns. Moreover, *DDL* (eg. plays on sunlight and shadow), *CNS*, and *NRSS* have been observed in this

restaurant. It has been observed that landscape elements are mostly used as two-dimensional landscape elements (gardens, wood) and located horizontally in this space. In addition, the restaurant has plural side/vertical openings. The connection is provided between landscape elements and the clients and all staff. Landscape elements have been integrated into the entire restaurant indoor.

- **Case 15: STANDARD 69 Restaurant**

Table 20: Investigating Nature in the Space Concept Solutions at STANDARD 69 Restaurant, (URL 22)

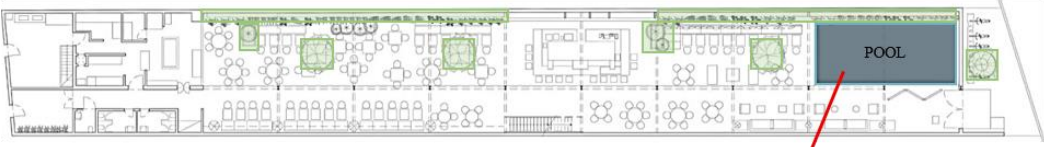
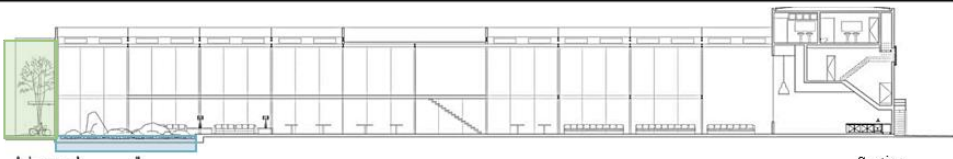





CASE 15 : STANDARD 69 Restaurant			
Location: Argentina	Area: 149 m2	Year: 2017	Architects: CAPÓ estudio
 <p>Plan - Ground Floor</p>		 <p>Plan - First Floor</p>	
 <p>Section</p>		 <p>Section</p>	
 <p>VCN-NVCN</p>	 <p>VCN-DDL-CNS-NRSS</p>	 <p>VCN-NVCN</p>	 <p>VCN-NVCN</p>

Trees and plants provide *VCN* and *NVCN* patterns. Panoramic glass window ensures; connection with outdoor plants, being aware of natural systems, and natural sunlight. Accordingly, *NRSS*, *DDL*, and *CNS* patterns have been achieved. It has been observed that landscape elements are mostly used as two-dimensional landscape

elements (plants and trees) and located vertically in this space. In addition, the restaurant has one side/vertical opening. The connection is provided between landscape elements and the clients and all staff. Landscape elements have been integrated into the sub-space of the restaurant.

- **Case 16: KAA Restaurant**

Table 21: Investigating Nature in the Space Concept Solutions at KAA Restaurant, (URL 22)

CASE 16 : KAA Restaurant			
Location: Brazil	Area: 612 m2	Year: 2008	Architects: Studio Arthur Casas
 <p style="text-align: right;">Plan</p> <p style="text-align: center;">PW-VCN-NVCN</p>			
 <p style="text-align: right;">Section</p>			
 <p style="text-align: right;">Section</p>			
 <p style="text-align: center;">VCN-NVCN</p>	 <p style="text-align: center;">VCN-NVCN-DDL-TAV-NRSS-CNS</p>	 <p style="text-align: center;">DDL-TAV-VCN-NVCN</p>	 <p style="text-align: center;">PW-VCN-NVCN</p>

KAA Restaurant has a semi open dining areas. *TAV*, *DDL*, *NRSS*, and *CNS* patterns have been achieved with semi open places. Water pond provide *Presence of Water* pattern as well as *VCN* and *NVCN* patterns. Patterns of *VCN*, *NVCN*, and *NRSS* patterns have been achieved with use of wide vertical gardens and trees. It has been observed that landscape elements are mostly used as two-dimensional landscape elements (live wall and pool) and located dominantly on the vertical plane at the restaurant. Moreover, the restaurant has one side/vertical opening with a roof opening. The connection is provided between landscape elements both with the clients and with all staff. Landscape elements have been integrated into the entire space.

- **Case 17: Kitty Burns Restaurant**

Table 22: Investigating Nature in the Space Concept Solutions at Kitty Burns Restaurant, (URL 22)

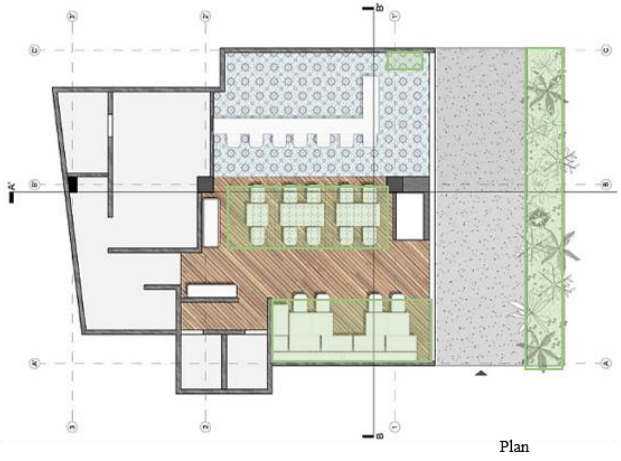



CASE 17 : Kitty Burns Restaurant			
Location: Australia	Area: 360 m2	Year: 2015	Architects: Biasol
 <p style="text-align: center;">Plan</p>			
 <p style="text-align: center;">Section</p>		 <p style="text-align: center;">Section</p>	
			
VCN-NVCN	DDL-NRSS-CNS	VCN-NVCN	VCN-NVCN

Green walls, potted plants, and outdoor nature view include the following patterns, VCN, NVCN, NRSS. In addition, DDL pattern observed with natural light, and CNS pattern has been detected with large glass facades that allow users to contact natural systems. It has been discovered that landscape elements are mostly used as two-

dimensional landscape elements (live wall, wood surfaces) and located dominantly on the vertical plane at the restaurant. Moreover, the restaurant has plural side/vertical opening. The connection is provided between landscape elements and the clients and all staff. Landscape elements have been integrated into the entire space.

- **Case 18: La Condesa Restaurant & Bar**

Table 23: Investigating Nature in the Space Concept Solutions at La Condesa Restaurant & Bar, (URL 22)

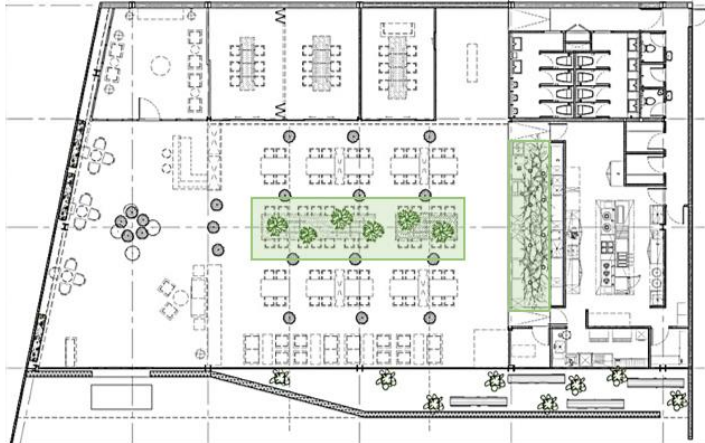
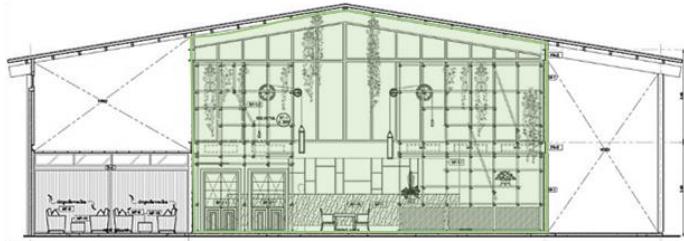

CASE 18 : La Condesa Restaurant & Bar			
Location: Colombia	Area: 100 m2	Year: 2015	Architects: Plasma Nodo
 <p style="text-align: right;">Plan</p>			
 <p style="text-align: center;">Section A-A</p>		 <p style="text-align: center;">Section B-B</p>	
 <p style="text-align: center;">VCN-NVCN VCN-NVCN VCN-NVCN</p>			

Ceiling garden and potted plants in the dining area ensure the patterns of *VCN* and *NVCN*. Use of natural materials can also contribute to the *VCN* and *NVCN* patterns in La Condesa Restaurant & Bar. In addition use of natural materials provides same patterns to the users. Landscape elements are mostly used as two-dimensional

landscape elements (green ceiling, wood) and located dominantly on the horizontal plane at the restaurant. Furthermore, the restaurant has plural side/vertical opening. The connection between landscape elements and clients and bar staff is provided. Landscape elements have been integrated into the sub-space of the restaurant.

- **Case 19: Vivarium Restaurant**

Table 24: Investigating Nature in the Space Concept Solutions at Vivarium Restaurant, (URL 22)

CASE 19 : Vivarium Restaurant			
Location: Thailand	Area: 600 m2	Year: 2015	Architects: HYPOTHESIS + Stu/D/O Architects
 <p style="text-align: right;">Plan</p>			
 <p style="text-align: right;">Section</p>			
 <p style="text-align: center;">VCN-NVCN VCN-NVCN VCN-NVCN</p>			

VCN and *NVCN* patterns have been detected with various potted plants, and branches hanged on the ceiling at Vivarium Restaurant. Landscape elements are mostly used as one-dimensional landscape elements with potted plants and these elements are located dominantly on the vertical plane at the restaurant. Furthermore, the restaurant has a one-side/vertical opening. The connection between landscape elements and clients and bar staff is provided. Landscape elements have been integrated into the sub-space of the restaurant.

- **Case 20: SHIFT Restaurant**

Table 25: Investigating Nature in the Space Concept Solutions at SHIFT Restaurant, (URL 22)

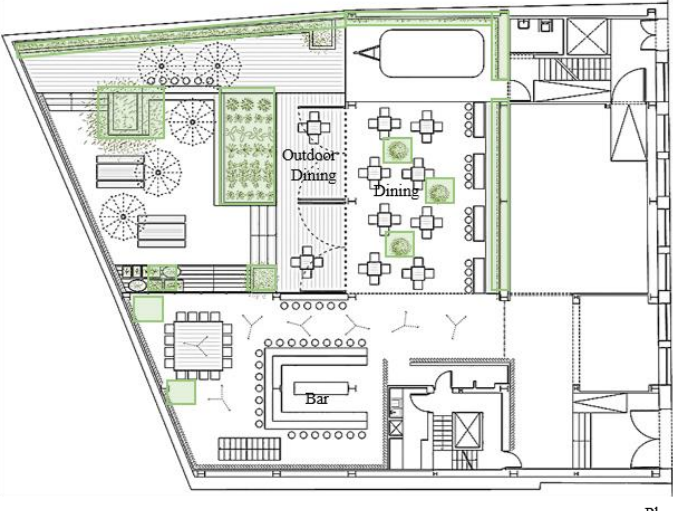

CASE 20 : SHIFT Restaurant			
Location: Romania	Area: 165 m2	Year: 2015	Architects: Lama Architectura
 <p>Plan</p>		 <p>Plan</p>	
			
<p>DDL-TAV-CNS-NRSS</p>		<p>VCN-NVCN</p>	
 <p>VCN-NVCN</p>	 <p>VCN-NVCN</p>	 <p>VCN-NVCN</p>	

The use of moss wall and natural wood can provide *VCN* and *NVCN* patterns in the Shift Restaurant. In addition, with operable windows *TAV* (eg. breezes), *DDL* (eg. changes on the daylight angles), *CNS* (eg. being aware of the weather), and *NRSS* (eg. unexpected movements of the nature) patterns have been detected. Two-

dimensional landscape elements (moss wall, natural wood) are used mostly and positioned vertically in the restaurant. It has been observed that there is a one-side/vertical openings and not strong connection with outdoor environment. There is a strong connection between landscape elements and clients. It has been observed that; kitchen staff have no connection with landscape elements in the restaurant. Landscape elements have been integrated into the entire restaurant indoor.

- **Case 21: 48 Urban Garden Restaurant & Bar**

Table 26: Investigating Nature in the Space Concept Solutions at 48 Urban Garden Restaurant & Bar, (URL 22)

CASE 21 : 48 Urban Garden Restaurant & Bar			
Location: Poland	Area: 190 m2	Year: 2014	Architects: AK-A
			
			
<p>DDL-CNS-NRSS-TAV-VCN VCN-NVCN VCN-NVCN DDL - CNS-NRSS - TAV VCN-NVCN</p>			

The Semi-open dining area with plants covering all the walls of the restaurant, and the garden view provide *VCN* and *NVCN* patterns. Breezes can provide *TAV* pattern and connection with outdoor ensures *CNS*, *NRSS*, *DDL* patterns. Two-dimensional landscape elements (live green wall, wood material) are used mostly and located

vertically in the restaurant. It has been observed that there is a two-side/vertical opening. There is a strong connection between landscape elements and clients and also bar staff. It has been observed that; kitchen staff have no connection with landscape elements in the restaurant. Landscape elements have been integrated into the entire restaurant indoor.

In this chapter, indoor landscaping solutions at restaurant indoors were indicated as a result of an analytical reading of the selected 21 restaurant cases based on the NITS concept one by one. As a result of this analysis, indoor landscaping solutions based on the presence/existence of NITS concept and landscaping articulation in the spaces have been determined. Accordingly, these analysis results were evaluated in-depth and tabulated in the following chapter in order to attain which ones of the NITS patterns were preferred at such public indoors as well as to indicate how indoor landscaping solutions were articulated in this type of public indoors.

Chapter 4

EVALUATING THE PRESENCE OF INDOOR LANDSCAPING SOLUTIONS AT THE SELECTED CASES AND THEIR EFFECTIVENESS ON USERS

This chapter encompasses 2 part. The first part is the evaluation of the investigation results that were already stated in the Chapter 3 - section 3.2. Results of the investigation of nature in the space concept at the determined 21 cases were collated in a general table in order to reveal what kind of interior landscape solutions are present in restaurant interiors. Then, in the second part, investigation, comparison and evaluation of the user opinions and reactions regarding indoor landscape solutions in the designated cases that were gathered from various digital platforms are presented.

4.1 Interior Landscaping Solutions at the Selected Restaurant Indoors

This section includes evaluation of the NITS category existence and evaluation of the articulation of indoor landscaping at the selected restaurant indoors.

4.1.1 Evaluating NITS Category Existence at the Selected Restaurant Indoors

Interior landscaping solutions based on the 7 patterns of *NITS* category has been defined, and selected cases have been analysed based on these solutions as it was already stated earlier. And then in order to reveal the one of the aims of this study, results of the analyses of the selected 21 cases have been summarized in the Table

28. Accordingly, analyses results have revealed that all 21 selected restaurant interiors contain plants/trees. Hence, they include (VCN) and (NVCN) patterns. VCN with plants and trees, NVCN with the presence of plant scents and sense of touch, NRSS with unexpected movements of nature, DDL and CNS patterns with wide glass facades were obtained in the majority of the cases.

On the other hand, findings put forward that the Thermal and Airflow Variability (TAV) pattern has been detected in about half of the cases. As it could be seen from the findings, the water feature is not widely used in the selected restaurant interiors. Only 3 cases used the water feature as an interior landscaping element. Thus, it has been achieved that Case 1 (Kayu Kayu Restaurant), Case 12 (No.1986 Coffee & Restaurant) and Case 16 (KAA Restaurant) support Presence of Water (PW) pattern (Table 28).

Accordingly, tabulated results of the analytical reading have revealed that the majority of the determined cases were designed in line with the NITS pattern. And hence it could be said that achieved results revealed that these cases are proper cases which exemplifies how nature in the space concept could be achieved as a result of indoor landscaping solutions. Existence of visible soft landscaping elements such as trees, potted plants, vertical garden and live ceiling as well as use of natural material and strong connection with the outdoor spaces are the evidences of this concept. Furthermore, different solutions in various parts of the interior spaces have exemplified many different possibilities of landscape integration to the indoors. Spatial solutions and articulations of these elements and patterns in different sub-spaces have been detected. These articulations provide alternating solutions to the know spatial organization of the restaurant interiors. Therefore, these cases with their

altering solutions could be assigned as the proper examples to conduct a further investigation in order to achieve the latter objective of the study.

4.1.2 Evaluating Articulation of Indoor Landscaping at the Selected Restaurant Indoors

Research findings have revealed different articulations of interior landscaping at the selected cases. Accordingly, these findings can be grouped into 5 main categories as they are listed below:

- 1- Spatial Articulation of Landscape Elements:** Research findings state the plural dimensional perception of the landscape elements used in the space. These are single dimensional elements (point), two-dimensional Elements (2D) or three-dimensional elements (3D).
- 2- Locational Articulation of Landscape Elements:** Findings indicate the positioning of landscape elements on different planar surfaces in the space; either horizontal or vertical.
- 3- Visual Connection Through Space Articulation:** It defines the presence/intensity of openings in the space in order to provide visual communication with the outdoor space. Findings of the study detect various articulations as: Roof Opening, One-Side/Vertical Opening, Two-Side/Vertical Opening, Three-Side/Vertical Opening, Plural-Side/Vertical Opening.
- 4- Visual Connection with Landscape Elements:** It refers to the intensity of establishing visual connections of users with the landscape elements articulated in the space. Findings indicated two ways of visual connection as clients and restaurant staff (can be kitchen staff, bar staff, service staff) with the landscaping elements.

5- Integration Intensity of Landscape Elements: It revealed the intensity of integrating indoor landscape elements into the interior as integrated into a limited area, integrated into an entire sub-space or integrated into the entire space.

Based on the findings of the Spatial Articulation of Landscape Elements, it has been found that *two-dimensional elements* are commonly used in the selected cases. As a result of the evaluation of the Locational Articulation of Landscape Elements, it has been determined that *vertical use of landscape elements* in selected cases is more than horizontal use. Examinations on the Visual Connection Through Space Articulation have shown that the use of *wide/entire facade openings* has been observed in many restaurants besides findings of the most preferred solution as the 'Plural Side Vertical Openings' in selected cases. Some of the restaurants do not provide a connection between the kitchen staff and the outdoor nature. However, it has been found that there is a *strong connection between clients and landscaping elements* at all selected restaurants. In addition, most of the cases provide this connection to the kitchen and bar staff. Hence, 'Client Connection' is the mostly attained sub-category in the category of Visual Connection with Landscape Elements. Furthermore, the findings of the analysis have revealed that the most of the spaces integrate landscape elements into the entire space. Accordingly as a result of the analysis it has been achieved that the sub-category of '*Integrated Into the Entire Space*' is the frequent type at the selected cases as a result of the Integration Intensity of Landscape Elements category (see Table 27).

Table 27: The Intensity of Articulation of the Indoor Landscaping at Selected Cases

1. Spatial Articulation of Landscape Elements			
Single Dimensional Elements (Point)	Two-Dimensional Elements (2D)	Three-Dimensional Elements (3D)	
2. Locational Articulation of Landscape Elements			
Vertical	Horizontal		
3. Visual Connection Through Space Articulation			
Roof Opening	One Side/Vertical Opening	Two Side/Vertical Openings	Plural Side/Vertical Openings
4. Visual Connection with Landscape Elements			
User Connection			
Client Connection	Staff Connection		
5. Integration Intensity of Landscape Elements			
Integrated Into A Limited Area	Integrated Into A Sub-Space	Integrated Into the Entire Space	

Table 28: Summary of Interior Landscaping Solutions at Selected Restaurant Indoors

RESTAURANTS		7 PATTERNS OF THE NATURE IN THE SPACE						
		Visual Connection with Nature (VCN)	Non-Visual Connection with Nature (NVCN)	Non-Rhythmic Sensory Stimuli (NRSS)	Thermal & Airflow Variability (TAV)	Presence of Water (PW)	Dynamic & Diffuse Light (DDL)	Connection with Natural Systems (CNS)
Case 1	Kayu Kayu Restaurant	✓	✓	✓	✓	✓	✓	✓
Case 2	Xuva Restaurant	✓	✓	✓	✓		✓	✓
Case 3	GYRE.FOOD Restaurant	✓	✓	✓			✓	✓
Case 4	FITFISH Restaurant	✓	✓	✓			✓	✓
Case 5	Ello Restaurant	✓	✓	✓	✓		✓	✓
Case 6	Peyote Dubai Restaurant	✓	✓					
Case 7	The Green House Restaurant	✓	✓	✓			✓	✓
Case 8	L28 Culinary Platform Restaurant	✓	✓	✓			✓	✓
Case 9	Kale & Crave Restaurant	✓	✓	✓			✓	✓
Case 10	Habanera Restaurant	✓	✓	✓			✓	✓
Case 11	Restaurant of Shade	✓	✓	✓	✓		✓	✓
Case 12	No.1986 Coffee & Restaurant	✓	✓	✓	✓	✓	✓	✓
Case 13	Nikunotoriko Restaurant	✓	✓					
Case 14	Tartuferia San Paolo Restaurant	✓	✓	✓	✓		✓	✓
Case 15	STANDARD 69 Restaurant	✓	✓	✓			✓	✓
Case 16	KAA Restaurant	✓	✓	✓	✓	✓	✓	✓
Case 17	Kitty Burns Restaurant	✓	✓	✓			✓	✓
Case 18	La Condesa Restaurant & Bar	✓	✓					
Case 19	Vivarium Restaurant	✓	✓					
Case 20	SHIFT Restaurant	✓	✓	✓	✓		✓	✓
Case 21	48 Urban Garden Restaurant & Bar	✓	✓	✓	✓		✓	✓

4.2 User Reactions Towards Indoor Landscaping Solutions at the Selected Restaurant Indoors

This research has been carried out by focusing on the opinions/reactions of users on the indoor landscaping solutions in restaurant interiors within the scope of integrating nature into interiors. User comments/reactions towards indoor landscaping solutions/methods in the identified cases were obtained from digital platforms including social media platforms (Instagram, Tripadvisor, Google Comments) and the design website archdaily.com where examples were determined. After determining the indoor landscaping solutions in the selected cases, research continued with the step of gathering user opinions/reactions and examining them. Various user opinions upon nature integration in the selected cases were detected one by one and collated and tabulated in order to achieve how users react to this interior design approach in the analysed type of public indoors (See Figure 29) for exemplification of how users opinions were find in the stated digital platforms as the first step of the data collection of this stage of the research.

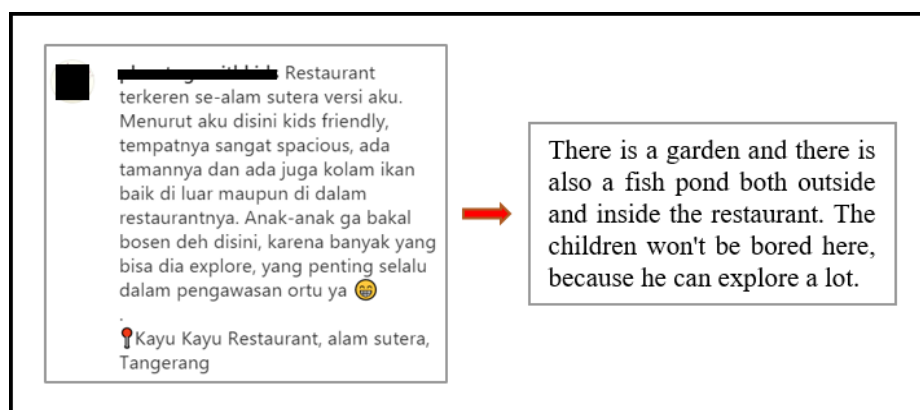


Figure 29: Example of User Opinion from Instagram

According to the research findings, it could be said that many positive reactions and opinions have been obtained towards the indoor landscaping elements. Numerous

positive reactions such as *"Nice place"*, *"Amazing atmosphere"*, *"Gorgeous"*, *"Loved"* have been detected for each restaurant based on their visuals published in the digital platforms. Particularly, it has been achieved that there are many positive reactions and opinions on the use of greenery such as trees, vertical gardens, potted plants, and green outdoor view. For example, *"Lovely green atmosphere."* for Case 1 (Kayu Kayu Restaurant), and *"Love the green living wall."* for Case 8 (L28 Culinary Platform Restaurant). In addition, various interpretations have been found which were stating that the place has a comfortable and spacious atmosphere. For instance, *"Relaxing atmosphere"* for Case 17 (Kitty Burns Restaurant) and for Case 5 (Ello Restaurant), *"It's so refreshing to sit in front of the huge vertical living plant wall. Relaxing atmosphere."* for Case 16 (KAA Restaurant), and *"Bar and restaurant in a huge garden, relax and enjoy."* for Case 21 (48 Urban Garden Restaurant & Bar).

Moreover, there are also comments stating that the use of natural materials in the indoors of the selected cases adds warmth to the space atmosphere. These are; *"It makes a warm ambiance by preserving timber/wood natural look in its furniture."* for Case 1 (Kayu Kayu Restaurant), *"Natural and warm materials are used, such as the slatted wood panels, leather upholstery. A green wall is incorporated at the back of the restaurant, while shelves planted with herbs and spice plants are placed in front of the bar and kitchen."* for Case 8 (L28 Culinary Platform Restaurant).

The integration of water features into the interior is detected as a striking feature for users. Although it is not common to use water elements such as ponds, pools, indoor fountains in the selected case interiors; positive reactions to use of water features have been detected. For example, *"Love the atmosphere of this restaurant with its waters and gardens."* and *"Restaurant with a modern and fresh architecture with*

natural plants and the sound of a beautiful waterfall." for Case 16 (KAA Restaurant), "I like the ambiance. In the middle there is a stairs with big trees and waterfall." for Case 1 (Kayu Kayu Restaurant). Moreover Presence of water and animals are also took attention of users as they were stated that "Great decor with fish ponds surrounding eating area." for Case 1 (Kayu Kayu Restaurant) as well as opinions such as, "Nice terrace for sunny days." for Case 9 (Kale & Crave Restaurant), and "Design restaurant "Tartuferia" in Brazil filled with sunlight and green space." Case 14 (Tartuferia San Paolo Restaurant), and "I will come back to enjoy the sun and Yarra River." for Case 17 (Kitty Burns Restaurant) shows that the importance of DDL pattern in restaurant indoors. In addition, Case 17 has a river views unlike other cases, thus users have been found to have positive comments on the visual connection with the water (see Figure 30).

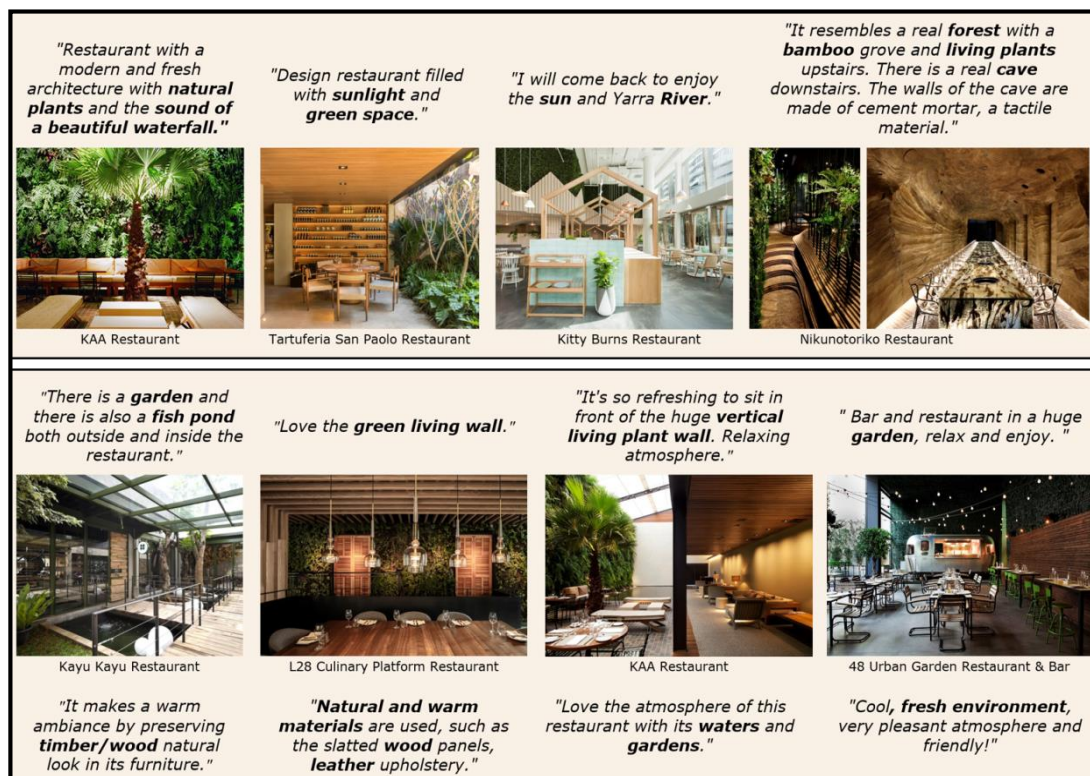


Figure 30: User Views For the Selected Cases

Consequently, according to the research, and data obtained, the integration of nature into the interior spaces and the interaction of the users with nature indoors particularly at restaurant spaces can create positive effects. Unbiased reactions/opinions from numerous users of 21 cases shows the importance and effectiveness of indoor landscaping elements at restaurant indoors on their users (see Table 29).

The further investigation put forward that these reactions are mainly on appreciative reactions firstly and reactions towards spatial articulation consecutively. Evaluation findings of user reactions obtained from the digital platforms show that; *Appreciative Reactions* ("Nice", "Lovely", "Amazing", "Beautiful" and more) have been detected for most of the selected cases. All the comments have been evaluated and several reactions have been detected that can be grouped as reactions towards *Landscape Elements, Materials, and Spatial Quality* under the category of *Reactions Towards Spatial Articulation*.

Comments on Landscape Elements show that there are various positive reactions on the use of living plants ("plants", "green", "big trees") at the selected restaurants. In addition, the integration of nature as gardens into the restaurants attracted the attention of users, and various positive reactions on 'gardens' were found. A small number of restaurants used water features, but the use of water elements ("water", "pond", "river") as indoor landscaping elements received positive reactions. Furthermore, reactions such as ("natural lighting", "sunshine", "sunny") show that the existence of natural light at the selected restaurants caught attention of the users.

Most of the selected restaurants have included the use of natural materials in their designs. Accordingly, many reactions and comments on the use of Materials (wood, leather, clay, etc.) in the selected restaurants have been identified. Also, comments such as "relaxing atmosphere", "warm ambiance" "peaceful" "calming space", "fresh environment" were frequently detected and they were indicating that such solutions have an impact on the Spatial Quality as well as on the user psychology, feelings, and mood (see Table 30 for analytical information).

Table 29: User Reactions Towards Indoor Landscaping Solutions at Selected Restaurant Indoors

RESTAURANTS		USER REACTIONS FOR SELECTED CASES
Case 1	Kayu Kayu Restaurant	So cool! (4), Nice (5), Very nice (3), Cozy (2), Good design (2) and lush looks, Nice ambiance (3), Really good place, This place is really nice, This is a good place, Love the place (2), Such a good vibes, Fabulous!, Awesome!, This looks brilliant! (reclaimed wood decor), Fantastic ambiance/atmosphere (2), Laidback atmosphere, Comfortable place, Very interesting interior, Lovely green atmosphere,
		There is a garden and there is also a fish pond both outside and inside the restaurant. The children will not be bored here, because he can explore a lot.
		The interior is comforting with wooden furniture. They give attention to details with plants and artsy ornaments. I can't stop my eyes from enjoying every corner of the restaurant.
		It makes a warm ambiance by preserving timber/wood natural look in its furniture.
		The decor is unique, the use of reclaimed wood is also quite authentic.
		Great decor with fish ponds surrounding eating area.
		I like the ambiance. In the middle there is a stairs with big trees and waterfall.
		Interior design is special with a wooden theme.
		Cozy restaurant with the wood atmosphere.
		Feel very welcomed when you entered.
		Warm atmosphere with wooded setting.
		Glass walls with potted plants, wood tables and partitions made indoor space feel both rustic and modern.
Case 2	Xuva Restaurant	Nice place (2), Lovely, Gorgeous, Amazing, How beautiful (3), I love the warmth of the place, Calm and beautiful place, Lovely atmosphere (2), Great place, Just fantastic, perfect atmosphere, beautiful place, Cozy atmosphere, Unique and innovative design.
		A garden and same time restaurant. It's important to consider all the ways places can stimulate the sense, and since we have 5 (6) why not nourish them all.
		It is incredible and highly recommended.
		The best little secret in the neighbourhood.
		The restaurant is very pretty, it is their take on a stream bed underneath a forest canopy.
		XUVA 'is a unique experience for the senses.
		The place is gorgeous and the atmosphere is very pleasant.
		An environment with many flavours, plants, and lighting make you feel part of the environment.
City's most beautiful secrets. In a very special area and different from what you find in other themed restaurants.		
Case 3	GYRE.FOOD Restaurant	Forest in the city, Calming space (3), Great atmosphere (3), Quiet place (2), Stylish interior, Beautiful place
		A secret space that feels nature is green and covered with soil.
		A place where you can relax.
		Elegant botanical atmosphere. The terrace is comfortable, the wind is super cool.
		Spacious and calm, feel-good terrace.
		Wood boxes stairs-like is mysterious.
		There are hills on the opposite side of the restaurant.
		There aren't many places like this.
		A place where earth, green, and light roam. I feel very comfortable and free.
Absolutely amazed by the place!		
Case 4	FITFISH Restaurant	Nice ambiance (4), What a beautiful place, Beautiful and comfortable environment, Nice place (2), Great surreal ambiance.
Case 5	Ello Restaurant	Beautiful design (6), Perfect place (3), Comfortable place, Relaxed atmosphere, Perfect atmosphere (2), Perfect and different environment, Amazing restaurant (4), Nice place (2), Amazing project, Charming, Beautiful wood ceiling,
		The ambiance is outstanding. Tall and wide, wood and plants.
		This restaurant is amazing, and very well decorated, with taste and fits well with the vibe and atmosphere of nature.
		The restaurant's architecture is brilliant, attention to detail is unforgettable.

		Setting beautiful and pleasant. All are beautifully decorated to bring you closer to nature in a very comfortable way.
		The restaurant has an architecture with organic shapes, natural materials, design furniture, and super present nature. Combined with the restaurant's gastronomy make dining an incredible experience.
		The roof and the design of the restaurant are inspired by the dunes of Jericoacoara (Brazil). (2)
Case 6	Peyote Dubai Restaurant	Great ambiance, Decor and ambiance is stylish, Great place (2), Nice place (2), Forest atmosphere (2), Amazing decor and ambiance,
Case 7	The Green House Restaurant	Restaurant with a green garden. Green restaurant, Great atmosphere (5), Nice place (3), Nice terrace, Amazing, Special place, Nice decor, Large terrace, Nice concept, Nice place to chill., Fresh atmosphere
		There is a greenhouse and a green room upstairs.
		What an amazing inspirational space! See it and feel amazing, green garden wall is amazing.
		They grow their own plants(herbs) upstairs (3)
		High ceilings, vibrant green walls and stylish wooden tables and floors.
Case 8	L28 Culinary Platform Restaurant	Great ambiance/atmosphere (3), Modern and cool atmosphere, A nice, clean, comfortable, cozy restaurant., Beautifully decorated, Very nice place (2), Great designed, Plants lover place, Awesome (2), Good,
		The restaurant is wonderful and pleasantly designed, the lighting is warm and comfortable.
		Excellent restaurant with great concept.
		My favourite thing about this restaurant is its "roof farm". This place has a rooftop terrace where they grow their own produce!
		Natural and warm materials are used, such as the slatted wood panels, leather upholstery. A green wall is incorporated at the back of the restaurant, while shelves planted with herbs and spice plants are placed in front of the bar and kitchen.
		Love the green living wall
		Getting a tour of the rooftop garden during a perfectly timed sunset.
Case 9	Kale & Crave Restaurant	Comfortable place, Very enjoyable and interesting, Cool place, Great place, Nice place, Beautiful design (2), Stunning,
		A fresh and beautiful place.
		Nice terrace for sunny days.
Case 10	Habanera Restaurant	We loved this restaurant, Perfect environment, Great ambiance (5), Nice atmosphere, Nice Place (4), Beautiful decorated (4), Incredible interior, Filled with tropical vegetation, Ventilated and bright place, Extraordinary place, Designed with vegetation, Amazing environment, Tropical courtyard, Tropical atmosphere (2), Covered with greens, So cool, Aesthetic, Great place (4), Forest, Such a nice place, Special place, Magical, Beautiful (3), Fantastic, Summer feeling!, Liked this place,
		The tropical atmosphere, resembles a garden with a dining area filled with palm trees.
		Greenery matches the indoor colors.
		Striking decor; I felt like I was stepping on the greenery.
		How beautiful! It inspires us a lot.
		The rack and the plants are nice.
The most beautiful place in Madrid.		
Case 11	Restaurant of Shade	Love this, Green and black, Tropical architecture, Loved this place, Stunning, Very amazing and creative, Great concept, Awesome, Great, Very nice,
		A greenfield in the middle of the hot summer sun. There are trees, and agricultural nets made of polyethylene to create a shade suitable for the typical sweltering weather of the region.
		The design allows diners to comfortably sit outside, despite the region's intense heat and sun.
Case 12	No.1986 Coffee & Restaurant	Relaxing atmosphere, Great view and unique decor, Really nice cafe/place (4), Enjoy the view and the decor,
		A hidden gem in the heart of the city.
		From architecture to decor, it is both simple and luxurious, and there are green trees.
		Nice place to spend some time. Enjoy the view. Good atmosphere.
		Wow, the design of this cafe is really really good. I really enjoy the view. I Will definitely come back again.
Case 13	Nikunotoriko Restaurant	Perfect interior, Good atmosphere (2), Nice place (2), Forest (2), Unique ambiance, Gorgeous, Indoor cave restaurant,
		An elegant restaurant with bamboos.
		The atmosphere is extraordinary. We sat downstairs in the "cave" and it was magical. The forest seating area upstairs is even more amazing.
		Very glamorous luxury atmosphere.
		A luxurious one of a kind cave haven. Cement-solution rocky cave walls, river glass herringbone floor tiles, mimicking nature surrealistically. Upstairs is a private forest with living plants.

		<p>It resembles a real forest with a bamboo grove and living plants upstairs. There is a real cave downstairs. The walls of the cave are made of cement mortar, a tactile material.</p> <p>Unique design, pulling the outdoors inside, merging nature with architecture in a way that is both inspiring and also hugely inventive. This design features a realistic cave and steel pipes resembling trees. The room is blanketed in greenery and the floors contoured to give a feel of nature underfoot.</p> <p>Design studio crafted a wholly visceral experience to stimulate the human senses.</p>
Case 14	Tartuferia San Paolo Restaurant	<p>Very comfortable place, Good/great atmosphere (2), A nice and cozy restaurant, Friendly atmosphere, Warm atmosphere, Nice project, Perfect (3), Good/Nice (7), Gorgeous (6), Cute (2), Elegance, simplicity and sophistication!, Love it (2), Very nice feeling,</p> <p>Its a small and whimsical, modern, and sophisticated feel.</p> <p>Integration with exterior. I love it.</p> <p>Which trees were used in the background?</p> <p>Congratulations, the space was sensational!</p> <p>Amazing design and so tropical.</p> <p>This project, with these natural, receptive, and welcoming characteristics, reminds us of the feeling of living.</p> <p>Design restaurant "Tartuferia" in Brazil filled with sunlight and green space.</p> <p>The green of the garden welcomes, and stimulates the senses. Many architecture and decoration projects arouse emotions and activate the senses such as the Tartuferia Restaurant.</p> <p>Plants are real therapy giving me a sense of peace.</p> <p>One of the highlights is the vegetation that grows and spreads in the space.</p>
Case 15	STANDARD 69 Restaurant	<p>Awesome ambiance (2), Nice ambiance, Very cool, Beautifully decorated (2), Amazing (2), Cute place, Very good place, Good atmosphere, Pleasant atmosphere, Beautiful place (3), Nice environment (2), Great,</p> <p>The outside seating and ambiance is awesome.</p> <p>This is a very smart, comfortable and peaceful decor.</p> <p>This is beautiful! How green!</p> <p>How I miss sitting there!</p>
Case 16	KAA Restaurant	<p>Wonderful place, Superior environment, Perfect atmosphere(2), Gorgeous decoration, Nice(2), Elegant atmosphere, Place is charming, Warmly designed, Beautiful, Excellent decor, Extraordinary ambiance,</p> <p>Great atmosphere with nice green area.</p> <p>Beautiful place with pool and many plants</p> <p>The architecture is stunning, a long green wall ending in a water pool is quite relaxing.</p> <p>Love the atmosphere of this restaurant with its waters and gardens.</p> <p>There is a natural plant wall.</p> <p>It's so refreshing to sit in front of the huge vertical living plant wall. Relaxing atmosphere.</p> <p>The aim of the project is to provide relaxing environments for clients to escape from chaotic urban stress.</p> <p>Amazing architecture including a pond and a large green wall.</p> <p>Beautiful, one of the most beautiful greenery environments in the city.</p> <p>Restaurant with a modern and fresh architecture with natural plants and the sound of a beautiful waterfall.</p>
Case 17	Kitty Burns Restaurant	<p>Beautiful space (2), Looks cool! (2), Beautiful (4), Nice (6), Love this space (2), Love it (6), Beautiful venue (2), Your interior is outstanding, Stunning (3), A great place, A lovely place! (3), So pretty! (2), Magnificent, Gorgeous (4), Awesome venue (3), Fantastic! (2), Looks amazing (3), Great ambience! (3), Elegant design, Relaxing atmosphere, Great vibe, Comfortable & tranquil. Pleasant views, Love the ambience, Beautifully designed interior., I like the natural light.</p> <p>I will come back to enjoy the sun and Yarra River.</p> <p>Literally every inch of the cafe has been carefully detailed. Amazing.</p> <p>Such a beautiful decoration and interior installation.</p> <p>Beautiful! Is the greenery real?</p> <p>Such beautiful natural light in this space; what a beautiful atmosphere.</p> <p>So much natural lighting.</p> <p>There is so much sunshine.</p> <p>So pleasing on the eyes.</p>

		Awesome cafe next to the Yarra River.
		Beautiful location on the river.
		One of my favourite cafe interiors.
Case 18	La Condesa Restaurant & Bar	Very nice place (2), Lively atmosphere, Very nice atmosphere (2), Gorgeous interior, Comfortable place, Pleasant atmosphere (2), Gorgeous, Super and relaxed atmosphere, Wonderful, Looks comfortable,
		It is a beautiful place, very nicely decorated and has large spaces.
		An interior restaurant with inviting patio, plus impressive ambiance.
		The interior of this restaurant looks great.
Case 19	Vivarium Restaurant	Great atmosphere, Glass garden(3), Nice decorated, Live a green life, Old ware house and nature, Nice, Lovely place, Love this place, Amazing space, Cozy and relaxing place, Great place, The restaurant has a unique style,
		Dining in a high ceiling glass house decorated with a lot of greenery. Such a nice vibe.
		A truly unforgettable experience dining in a terrarium-like ambiance.
		Food atmosphere is very good. Very well organized.
		Theme park style cafe in a beautiful, shady greenhouse.
		I liked restaurant environment. Good combination of black structure and green (plants).
Case 20	SHIFT Restaurant	Nice place (3), Cozy place (3), Enjoyed the atmosphere, Very nice (2), Nice terrace, Comfortable place for summer, Nature in my city, Dreamy place, Beautiful place, Amazing atmosphere, There is wonderful garden, Nice atmosphere, Liked the interior design. Really warm and friendly, Warm decor, Great atmosphere,
		The design is beautiful, and I love the smallest terrace resembling a garden. Filled with greens and lights.
		Intimate place, nice terrace and great food, perfect atmosphere.
		Inside, the interior is very beautiful and simple and light colors and a beautiful moss wall. Perfect design.
		This place has a very pleasant and relaxed atmosphere. Its interior design is very special and modern. Outside the garden, although small, it is really beautiful.
		Great atmosphere, wonderful and very well designed renovated building, very sweet. This place is such a beautiful soul!
		You can sit inside or outside, inside is a very beautiful garden and special decoration.
		We had a nice evening, garden, this place is really beautifully decorated, cozy and intimate. Perfect place.
		The interior is comfortable and warm. Also, the terrace is great.
Case 21	48 Urban Garden Restaurant & Bar	Looking good, Wonderful (3), Pretty incredible!, Beautiful place (2), Bright and sunny, Great summer garden, Amazing, So fresh and so beautiful, Awesome, Loved the decor and ambiance, Nice place (4), Very beautiful place (2), Good place for every season, Beautiful patio (2), Hidden garden (2), Quite hidden garden, aesthetically nice and trendy, stylish decoration, unique space, Nice atmosphere (4), Great environment, Nice bar with a cool yard, Very nice garden, Light and casual atmosphere, Sunny brunch, Enjoyed the atmosphere, Very relaxing atmosphere, The garden is gorgeous, Like a hidden gem!, Great design and great looking restaurant.
		Bar and restaurant in a huge garden, relax and enjoy.
		Unique decoration. It has a big garden like a really nice summer season.
		The decoration is very comfortable and welcoming.
		Cool, fresh environment, very pleasant atmosphere and friendly! Perfect choice!
		The atmosphere of this restaurant is really nice and stylish.
		Great garden for spring / summer months.
		A stylish trailer in the middle of a green garden area.
		An interesting concept: modern decoration with an open garden and a food truck makes it original.
		Nice place with good garden. The design is so fancy.
		In this garden you will not know where to start: In the huge square bar, next to the herb garden or maybe near the food truck in case you get hungry?

Table 30: Evaluating User Reactions Towards Indoor Landscaping Solutions at Selected Restaurant Indoors

RESTAURANTS		USER REACTIONS FOR SELECTED CASES	APPRECIATIVE	REACTIONS TOWARDS SPATIAL ARTICULATION		
			REACTIONS	Landscape Elements	Materials	Spatial Quality
Case 1	Kayu Kayu Restaurant	So cool! (4), Nice (5), Very nice (3), Cozy (2), Good design (2) and lush looks, Nice ambiance (3), Really good place, This place is really nice, This is a good place, Love the place (2), Such a good vibes, Fabulous!, Awesome!, This looks brilliant! (reclaimed wood decor), Fantastic ambiance/atmosphere (2), Laidback atmosphere, Comfortable place, Very interesting interior, Lovely green atmosphere,				
		There is a garden and there is also a fish pond both outside and inside the restaurant. The children will not be bored here, because he can explore a lot.				
		The interior is comforting with wooden furniture. They give attention to details with plants and artsy ornaments. I can't stop my eyes from enjoying every corner of the restaurant.				
		It makes a warm ambiance by preserving timber/wood natural look in its furniture.				
		The decor is unique, the use of reclaimed wood is also quite authentic.				
		Great decor with fish ponds surrounding eating area.				
		I like the ambiance. In the middle there is a stairs with big trees and waterfall.				
		Interior design is special with a wooden theme.				
		Cozy restaurant with the wood atmosphere.				
		Feel very welcomed when you entered.				
		Warm atmosphere with wooded setting.				
		Glass walls with potted plants, wood tables and partitions made indoor space feel both rustic and modern.				
Case 2	Xuva Restaurant	Nice place (2), Lovely, Gorgeous, Amazing, How beautiful (3), I love the warmth of the place, Calm and beautiful place, Lovely atmosphere (2), Great place, Just fantastic, perfect atmosphere, beautiful place, Cozy atmosphere, Unique and innovative design.				
		A garden and same time restaurant. It's important to consider all the ways places can stimulate the sense, and since we have 5 (6) why not nourish them all.				
		It is incredible and highly recommended.				
		The best little secret in the neighbourhood.				
		The restaurant is very pretty, it is their take on a stream bed underneath a forest canopy.				
		XUVA 'is a unique experience for the senses.				
		The place is gorgeous and the atmosphere is very pleasant.				
		An environment with many flavours, plants, and lighting make you feel part of the environment.				
Case 3	GYRE.FOOD Restaurant	Forest in the city, Calming space (3), Great atmosphere (3), Quiet place (2), Stylish interior, Beautiful place				
		A secret space that feels nature is green and covered with soil.				
		A place where you can relax.				
		Elegant botanical atmosphere. The terrace is comfortable, the wind is super cool.				
		Spacious and calm, feel-good terrace.				
		Wood boxes stairs-like is mysterious.				
		There are hills (view) on the opposite side of the restaurant.				
		There aren't many places like this.				
		A place where earth, green, and light roam. I feel very comfortable and free.				
Absolutely amazed by the place!						
Case 4	FITFISH Restaurant	Nice ambiance (4), What a beautiful place, Beautiful and comfortable environment, Nice place (2), Great surreal ambiance.				
Case 5	Ello Restaurant	Beautiful design (6), Perfect place (3), Comfortable place, Relaxed atmosphere, Perfect atmosphere (2), Perfect and different environment, Amazing restaurant (4), Nice place (2), Amazing project, Charming, Beautiful wood ceiling,				
		The ambiance is outstanding. Tall and wide, wood and plants.				
		This restaurant is amazing, and very well decorated, with taste and fits well with the vibe and atmosphere of nature.				
		The restaurant's architecture is brilliant, attention to detail is unforgettable.				

		Setting beautiful and pleasant. All are beautifully decorated to bring you closer to nature in a very comfortable way.				
		The restaurant has an architecture with organic shapes, natural materials , design furniture, and super present nature . Combined with the restaurant's gastronomy make dining an incredible experience.				
		The roof and the design of the restaurant are inspired by the dunes of Jericoacoara (Brazil). (2)				
Case 6	Peyote Dubai Restaurant	Great ambiance, Decor and ambiance is stylish, Great place (2), Nice place (2), Forest atmosphere (2), Amazing decor and ambiance,				
Case 7	The Green House Restaurant	Restaurant with a green garden . Green restaurant, Great atmosphere (5), Nice place (3), Nice terrace , Amazing, Special place, Nice decor, Large terrace , Nice concept, Nice place to chill., Fresh atmosphere				
		There is a greenhouse and a green room upstairs.				
		What an amazing inspirational space! See it and feel amazing, green garden wall is amazing.				
		They grow their own plants (herbs) upstairs (3) High ceilings, vibrant green walls and stylish wooden tables and floors.				
Case 8	L28 Culinary Platform Restaurant	Great ambiance/atmosphere (3), Modern and cool atmosphere, A nice, clean, comfortable , cozy restaurant., Beautifully decorated, Very nice place (2), Great designed, Plants lover place, Awesome (2), Good,				
		The restaurant is wonderful and pleasantly designed, the lighting is warm and comfortable.				
		Excellent restaurant with great concept.				
		My favourite thing about this restaurant is its " roof farm ". This place has a rooftop terrace where they grow their own produce!				
		Natural and warm materials are used, such as the slatted wood panels , leather upholstery . A green wall is incorporated at the back of the restaurant, while shelves planted with herbs and spice plants are placed in front of the bar and kitchen.				
		Love the green living wall Getting a tour of the rooftop garden during a perfectly timed sunset.				
Case 9	Kale & Crave Restaurant	Comfortable place, Very enjoyable and interesting, Cool place, Great place, Nice place, Beautiful design (2), Stunning,				
		A fresh and beautiful place.				
		Nice terrace for sunny days.				
Case 10	Habanera Restaurant	We loved this restaurant, Perfect environment, Great ambiance (5), Nice atmosphere, Nice Place (4), Beautiful decorated (4), Incredible interior, Filled with tropical vegetation . Ventilated and bright place, Extraordinary place, Designed with vegetation , Amazing environment, Tropical courtyard , Tropical atmosphere (2), Covered with greens . So cool, Aesthetic, Great place (4), Forest . Such a nice place, Special place, Magical, Beautiful (3), Fantastic, Summer feeling! , Liked this place,				
		The tropical atmosphere , resembles a garden with a dining area filled with palm trees .				
		Greenery matches the indoor colors.				
		Striking decor; I felt like I was stepping on the greenery .				
		How beautiful! It inspires us a lot.				
		The rack and the plants are nice. The most beautiful place in Madrid.				
Case 11	Restaurant of Shade	Love this, Green and black, Tropical architecture, Loved this place, Stunning, Very amazing and creative, Great concept, Awesome, Great, Very nice,				
		A greenfield in the middle of the hot summer sun. There are trees , and agricultural nets made of polyethylene to create a shade suitable for the typical sweltering weather of the region.				
		The design allows diners to comfortably sit outside, despite the region's intense heat and sun.				
Case 12	No.1986 Coffee & Restaurant	Relaxing atmosphere, Great view and unique decor, Really nice cafe/place (4), Enjoy the view and the decor,				
		A hidden gem in the heart of the city.				
		From architecture to decor, it is both simple and luxurious, and there are green trees .				
		Nice place to spend some time. Enjoy the view. Good atmosphere. Wow, the design of this cafe is really really good. I really enjoy the view. I Will definitely come back again.				
Case 13	Nikunotoriko Restaurant	Perfect interior, Good atmosphere (2), Nice place (2), Forest (2), Unique ambiance, Gorgeous, Indoor cave restaurant,				
		An elegant restaurant with bamboos .				
		The atmosphere is extraordinary. We sat downstairs in the " cave " and it was magical. The forest seating area upstairs is even more amazing.				
		Very glamorous luxury atmosphere. A luxurious one of a kind cave haven. Cement-solution rocky cave walls , river glass herringbone floor tiles, mimicking nature surrealistically. Upstairs is a private forest				

		with living plants.				
		It resembles a real forest with a bamboo grove and living plants upstairs. There is a real cave downstairs. The walls of the cave are made of cement mortar, a tactile material.				
		Unique design, pulling the outdoors inside, merging nature with architecture in a way that is both inspiring and also hugely inventive. This design features a realistic cave and steel pipes resembling trees. The room is blanketed in greenery and the floors contoured to give a feel of nature underfoot.				
		Design studio crafted a wholly visceral experience to stimulate the human senses.				
Case 14	Tartuferia San Paolo Restaurant	Very comfortable place, Good/great atmosphere (2), A nice and cozy restaurant, Friendly atmosphere, Warm atmosphere, Nice project, Perfect (3), Good/Nice (7), Gorgeous (6), Cute (2), Elegance, simplicity and sophistication!, Love it (2), Very nice feeling.				
		It's a small and whimsical, modern, and sophisticated feel.				
		Integration with exterior. I love it.				
		Which trees were used in the background?				
		Congratulations, the space was sensational!				
		Amazing design and so tropical.				
		This project, with these natural, receptive, and welcoming characteristics, reminds us of the feeling of living.				
		Design restaurant "Tartuferia" in Brazil filled with sunlight and green space.				
		The green of the garden welcomes, and stimulates the senses. Many architecture and decoration projects arouse emotions and activate the senses such as the Tartuferia Restaurant.				
Case 15	STANDARD 69 Restaurant	Plants are real therapy giving me a sense of peace.				
		One of the highlights is the vegetation that grows and spreads in the space.				
		Awesome ambiance (2), Nice ambiance, Very cool, Beautifully decorated (2), Amazing (2), Cute place, Very good place, Good atmosphere, Pleasant atmosphere, Beautiful place (3), Nice environment (2), Great.				
		The outside seating and ambiance is awesome.				
Case 16	KAA Restaurant	This is a very smart, comfortable and peaceful decor.				
		This is beautiful! How green!				
		How I miss sitting there!				
		Wonderful place, Superior environment, Perfect atmosphere(2), Gorgeous decoration, Nice (2), Elegant atmosphere, Place is charming, Warmly designed, Beautiful, Excellent decor, Extraordinary ambiance,				
		Great atmosphere with nice green area.				
		Beautiful place with pool and many plants				
		The architecture is stunning, a long green wall ending in a water pool is quite relaxing.				
		Love the atmosphere of this restaurant with its waters and gardens.				
		There is a natural plant wall.				
Case 17	Kitty Burns Restaurant	It's so refreshing to sit in front of the huge vertical living plant wall. Relaxing atmosphere.				
		The aim of the project is to provide relaxing environments for clients to escape from chaotic urban stress.				
		Amazing architecture including a pond and a large green wall.				
		Beautiful, one of the most beautiful greenery environments in the city.				
		Restaurant with a modern and fresh architecture with natural plants and the sound of a beautiful waterfall.				
		Beautiful space (2), Looks cool! (2), Beautiful (4), Nice (6), Love this space (2), Love it (6), Beautiful venue (2), Your interior is outstanding, Stunning (3), A great place, A lovely place! (3), So pretty! (2), Magnificent, Gorgeous (4), Awesome venue (3), Fantastic! (2), Looks amazing (3), Great ambience! (3), Elegant design, Relaxing atmosphere, Great vibe, Comfortable & friequil. Pleasant views, Love the ambiance, Beautifully designed interior., I like the natural light.				
		I will come back to enjoy the sun and Yarra River.				
Literally every inch of the cafe has been carefully detailed. Amazing.						
Such a beautiful decoration and interior installation.						
Beautiful! Is the greenery real?						
Such beautiful natural light in this space; what a beautiful atmosphere.						
So much natural lighting.						
There is so much sunshine.						

		So pleasing on the eyes.				
		Awesome cafe next to the Yarra River.				
		Beautiful location on the river.				
		One of my favourite cafe interiors.				
Case 18	La Condesa Restaurant & Bar	Very nice place (2), Lively atmosphere, Very nice atmosphere (2), Gorgeous interior, Comfortable place, Pleasant atmosphere (2), Gorgeous, Super and relaxed atmosphere, Wonderful, Looks comfortable.				
		It is a beautiful place, very nicely decorated and has large spaces.				
		An interior restaurant with inviting patio, plus impressive ambiance.				
		The interior of this restaurant looks great.				
Case 19	Vivarium Restaurant	Great atmosphere, Glass garden(3), Nice decorated, Live a green life, Old ware house and nature, Nice, Lovely place, Love this place, Amazing space, Cozy and relaxing place, Great place, The restaurant has a unique style,				
		Dining in a high ceiling glass house decorated with a lot of greenery. Such a nice vibe.				
		A truly unforgettable experience dining in a terrarium-like ambiance.				
		Food atmosphere is very good. Very well organized.				
		Theme park style cafe in a beautiful, shady greenhouse.				
		I liked restaurant environment. Good combination of black structure and green (plants).				
Case 20	SHIFT Restaurant	Nice place (3), Cozy place (3), Enjoyed the atmosphere, Very nice (2), Nice terrace, Comfortable place for summer, Nature in my city, Dreamy place, Beautiful place, Amazing atmosphere, There is wonderful garden, Nice atmosphere, Liked the interior design. Really warm and friendly, Warm decor, Great atmosphere,				
		The design is beautiful, and I love the smallest terrace resembling a garden. Filled with greens and lights.				
		Intimate place, nice terrace and great food, perfect atmosphere.				
		Inside, the interior is very beautiful and simple and light colors and a beautiful moss wall. Perfect design.				
		This place has a very pleasant and relaxed atmosphere. Its interior design is very special and modern. Outside the garden, although small, it is really beautiful.				
		Great atmosphere, wonderful and very well designed renovated building, very sweet. This place is such a beautiful soul!				
		You can sit inside or outside, inside is a very beautiful garden and special decoration.				
We had a nice evening, garden, this place is really beautifully decorated, cozy and intimate. Perfect place.						
		The interior is comfortable and warm. Also, the terrace is great.				
Case 21	48 Urban Garden Restaurant & Bar	Looking good, Wonderful (3), Pretty incredible!, Beautiful place (2), Bright and sunny, Great summer garden, Amazing, So fresh and so beautiful, Awesome, Loved the decor and ambiance, Nice place (4), Very beautiful place (2), Good place for every season, Beautiful patio (2), Hidden garden (2), Quite hidden garden, aesthetically nice and trendy, stylish decoration, unique space, Nice atmosphere (4), Great environment, Nice bar with a cool yard, Very nice garden, Light and casual atmosphere, Sunny brunch, Enjoyed the atmosphere, Very relaxing atmosphere, The garden is gorgeous, Like a hidden gem!, Great design and great looking restaurant.				
		Bar and restaurant in a huge garden, relax and enjoy.				
		Unique decoration. It has a big garden like a really nice summer season.				
		The decoration is very comfortable and welcoming.				
		Cool, fresh environment, very pleasant atmosphere and friendly! Perfect choice!				
		The atmosphere of this restaurant is really nice and stylish.				
		Great garden for spring / summer months.				
		A stylish trailer in the middle of a green garden area.				
		An interesting concept: modern decoration with an open garden and a food truck makes it original.				
Nice place with good garden. The design is so fancy.						
		In this garden you will not know where to start: In the huge square bar, next to the herb garden or maybe near the food truck in case you get hungry?				

Chapter 5

CONCLUSION

5.1 Summary and Concluding Remarks

Decrease in greenery and natural areas in cities emphasize the significance of nature integration to the interior. The integration of nature into restaurant interiors and the interaction of humans and nature in interiors have gained more importance recently. Within the scope of NITS category of Biophilic Design, indoor landscaping solutions provide guidance on the integration of nature into interior spaces. Studies have been done on biophilic design and interior landscaping before. However, there are no studies focusing on user opinions and reactions for restaurant indoors within the scope of this subject. Thus, this resource will guide future researchers and interior designers on the integration of nature into interiors.

In this study, first of all, concepts of biophilia and biophilic design which deals with the relationship between humans and nature, and indoor landscaping are clarified. And in this direction, importance, physical and psychological effects of indoor landscaping, and indoor landscaping solutions as a Nature in the Space concept have been investigated. Investigations have shown that the integration of nature into the interior can be applied systematically according to NITS category within the scope of biophilic design. After that, café restaurant spaces have been examined. Importance of restaurant spaces and interior design of these places investigated in the literature.

As a result of this researches, it has been found that restaurant spaces are of great importance in terms of socializing and being eating places.

This thesis has stated 2 main aims from the beginning. Firstly, it aimed to investigate the integration of nature into restaurant interiors, which are one of the most preferred places for socializing nowadays. Accordingly, 21 cases were selected which interior landscaping solutions were used in these spaces and were analysed one by one in order to determine how indoor landscaping solutions were articulated and nature in the space concept were achieved (Table 6 to Table 26) and then results of the analyses have been tabulated in order to attain the intensity of the Nature in the Space patterns (Table 28). As a result of the evaluation, it has been seen that plants/trees are used as indoor landscaping elements in all selected restaurant interiors. Hence, the *(VCN)* and *(NVCN)* patterns are perceived in all the selected cases as biophilic patterns. Usage of wide glass windows in the selected restaurant interiors brought sunlight inside, and ensure the connection with the exterior to the user, so it is providing *(DDL)*, *(CNS)*, and *(NRSS)* patterns. *DDL*, *CNS*, and *NRSS* patterns have been seen in almost all cases. *(TAV)* pattern is not integrated into the restaurant spaces commonly. Use of water features not observed commonly. The pattern of *(PW)* was rarely seen in these cases.

Secondly, the other aim of this study that is the unbiased opinions and reactions of different users based on evaluating indoor landscaping solutions were obtained through digital platforms and tabulated (Table 29). As an outcome of this study many positive opinions and reactions were identified by the help of digital platforms which are *Instagram*, *Google Comments* and, *Tripadvisor* and *Archdaily* design website. No negative opinions/reactions were encountered for any indoor landscaping solutions

during this research. Numerous positive reactions were detected according to the result of Table 30 (such as *"Nice"*, *"Good"*, *"Gorgeous"*). Similarly, many positive opinions were also detected upon indoor landscaping solutions. In direct proportion to the widespread use of greenery in spaces, many positive comments were identified that support visual connection with greenery (for example; *" Forest in the city "*, *"Lovely green atmosphere "*, *" Green garden wall is amazing"*). Although the use of water features was observed in only 3 cases, many positive comments were detected. For example, *"...water pool is quite relaxing"*, *"...the sound of a beautiful waterfall"*, *"Great decor with fish ponds..."*. Opinions showed that the presence of animals in restaurant indoors such as fish took the attention of users. At the same time, comments stating that the landscape elements used in the interior are *"Relaxing"* and *"Comfortable"* were determined. In this regard, it is obvious that nature integration as indoor landscaping into restaurant spaces was preferred by the users.

As mentioned in the previous sections, the use of indoor landscaping elements provides various positive effects on the user and space. Using indoor landscaping solutions at restaurant spaces can make these spaces more preferable and create more special spaces at restaurant while using as a partition, filter the air pollutants, absorb the noise, give the charm to space as well as give people positive feelings such as raising the mood of them, and more.

According to the findings, designers should take these into consideration when designing restaurant spaces. Considering the user comments, appreciative reactions and positive comments were found on the use of indoor landscaping elements in the restaurant interiors. Thus, when designing a restaurant; integrating nature into the interior can be welcomed by the users. As a result of evaluating the user reactions; it

has been revealed that the use of landscape elements such as potted plants, trees, live vertical gardens, and water features at restaurant indoor design can provide a fresh, alive environment to space, and also can attract attention of users, hence could develop a will to visit this space again. Furthermore, the use of natural materials at restaurant spaces like wood, soil, and leather can create a natural environment. In addition use of indoor landscaping at the design of the restaurants can contribute to human psychology, mood, and feelings as mentioned previously and user reactions support these findings. Natural materials can provide a warm atmosphere and relaxing environment to the user at the restaurants.

Consequently, the comments of the users on the use of landscape elements in 21 selected restaurant spaces were examined and positive results were obtained. Thus, this resource will guide the designers while designing a restaurant and draw attention to the importance of this issue.

5.2 Recommendation for Further Study

The integration of nature into interior space has a significant place today, and studies on this subject need to be expanded. During this study, it has been observed that; although spaces were designing for users, their opinions are given inferior attention while designing restaurant indoors. Accordingly, in order to integrate users to the process of design, it could be useful to apply a questionnaire to the potential users of restaurant spaces and to determine which interior landscaping elements they prefer or not in these spaces. Accordingly, the questionnaire can help to measure various users (culture, age, gender, etc.) views/opinions in order to determine user preferences upon detailed/specific landscape solutions (types, intensity, spatial articulations, biophilic design solutions and so far). Hence, conducting an in-depth study could

help in generating a guideline that would be used by interior designers and could be a useful source for conducting further studies on the nature related subjects.

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