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BY
HASLIL RAZIF AMIR HASAN
9912759

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ABSTRACT

Water is the central to all life. Sixty five percent of the human body is water and most of the chemical reactions that occur in the body require it. Human could survive for a week without food but only a few days without water. In fact, even the planning of the Islamic city is determined essentially by the availability of water. For the Muslims, the use of water starts since early in the morning till night before sleep. In the morning it begin with the ablution of Fajar prayer and minor cleaning before sleep.

In Islam water is a symbolism of eternal life. The intersection of water symbolizing the meeting of humanity and the creator It also present as source of life and in a harsh landscape refreshes both body and sprit. To the Muslims, the water that maintain his city of represented both its material economic and spiritual force. At the personal level, the purity made an image of the soul. So in the garden, water was formed the symbolic center and the basis of the design.

This study is focuses on the influence of Islamic in its water features as apart of landscape element. It will cover the historical background, design concept and water element of Islamic water features.

LIST OF FIGURE

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CHAPTER 1

A STUDY ON ISLAMIC WATER FEATURES IN LANDSCAPE DESIGN

1.0 INTRODUCTION

From the conquest of Persia and the Middle East, Islam spread relentlessly Egypt and along the seaboard of North Africa in early century. Although it spread on the eighteen century, The garden of Persian steadily for over thousand years when Islamic Arabs overran the empire 637 AD (G.Plumptre, 1993,pg 5-10).

Traditionally nomad Arabs, were kept on the move by the contrast search for water in the Arabian deserts and journeying from oasis to another oasis. They did not have the integrated and advance cultures that come with along established settlement. Many strands of Persia culture not least their garden design with its emphasis on the importance celebration of water. Struck of an immediate with the Arabs and after the achievement of supremacy the warring religious fanatic of Islam was subdued into what became the rich civilization. With two decades of Arab invasion of Persian teaching of the prophet Muhammad (SAW) were enshrined in the most significantly to the concept of paradise as a garden in which plentiful water fed by the rivers of life and bubbling out of fountain was the key element. (N.W.Donald, 1979)

After the initial Islamic subjected and the subsequent advances and retreats of invaders, Persian waited for centuries until its most spectacular flowering of gardens the creation of the garden city at Isfahan by Abbas the great, the Safavid ruler who lived from 1557 to 1629. Isfahan was a brilliant example of town planning around the traditional Persian formal water garden, (L.Jonas, 1980).

The backbone of the garden was the Chahar Bagh Avenue. It stretches for a mile through the city from the bridge over the river. Along the centre of avenue, flowed continuous canal, which widened out at internal into octagonal and square pool with fountain. From these waterways other canal and irrigation pipes fed off on both side. Each building dominated bye a major feature such as rectangular pools.

1.1 Research background

Water is the primary element of the landscape architecture, where water features can attracts people because of their diverse recreation. It is a way to introduce live and movement of water by adding water in the garden. Since the ancient period, water has become the focus of the main element in the garden, (G. Plumptre, 1999)

The Muslims societies have always displayed a great affinity with the garden architecture. This is influence by the Quran where garden is mentioned as paradise and it play an important role as several and yet super sensory images of paradise. There are many reasons for this. First and foremost is the fact that in Quran, gardens play a prominent role as a sensual and yet super sensory image of paradise.

The other fact is the existence of oasis within the dry and empty desert are inherit parts and fill with perception experience by the Arabs. Thus, by the situations that water is part of paradise has mentioned in the Al Quran as well as the main elements within the oasis, water is appreciated as a most valuable, life giving

resource, as well as the prevailing regards for the early garden, (B.Stefano, 2001).

Stefano (2001) also mentions that water captured the Muslims imagination not only the precious physical commodity but also in its spiritual dimension as a symbol of the divine power and presence. Its combined practical and symbolic value is highlighted by the fact that Islam prescribes ritual ablution to be carried out by believer several times day before prayer. This very rite endows water with the quality not only for cleaning the exterior of the body but also the reinstating man's primordial state of purity as precondition for his communication it god.

1.2 Research issue

Currently, numerous of Islamic water features around us, the question do the design comply with the criteria and characteristic of Islamic water design

1.3 Research Goal

This study aims to provide a set of information on the criteria and characteristic of Islamic water feature in landscape design

1.4 Research objectives

To achieve the goal of the study, there are 5 objectives highlight below in order to achieve the research goal.

- To determine the criteria and characteristic of Islamic water features.

- To study the general historical background of Islamic water feature.
- To identify the design principles used in most of Islamic water feature.
- To identify the supportive landscape element designed supportively in Islamic water feature.
- To understand the relationship between human and water.

1.5 Methodology

In this study, the process of gathering information is based on the qualitative method. This method is primarily to describe the criteria and characteristic of Islamic water features as a part of landscape design in selected case studies. This study has used 4 research stages namely literature review, case study, data collection and data analysis. These stages will thoroughly discuss in the following paragraph.

1.5.1 Literature review

As a part of the theoretical framework, this literature review is a part of identifying and reviewing on related literature of Islamic water feature. It will cover most of the aspect in study such as type o water design, principles, history and others.

1.5.2 Case studies

In order to achieve a relevant research, there are two case studies were reviewed and analysed in term of its design. The case studies that area water features at Petronas Twin Tower and *As Syakirin* Mosque emphasizing on the Islamic water features design characteristics.

In case study 1, it focuses on water feature of the Petronas Twin Tower that was design by NAR Architect. This case study is chosen because of its physical design that is using geometrical form as well as portraying a few criteria of most Islamic water feature design.

Case study 2 is the *As Syakirin* Mosque, which is located Next to the Suria KLCC. The water feature design is basically seem as to incorporate the mosque motif, which is geometrical form.

Both of the case studies are generally portray geometrical form and emphasis the criteria of most Islamic water feature and the detail of theses analysis of each water feature will be discuss in chapter 3.

1.5.3 Data collection. And Analysis

Data collection and analysis will be based on the listed method as follows;

I. Literature review

Literature review will help in term of identifying the characteristic and criteria of Islamic water features that is mostly found in famous Islamic water feature design. The

characteristic, criteria and related information will be used as reference for analysing the case study

II. Case study

Explorative method used at both case studies by determining the physical design of each water features, as well as the water characteristic, type of water flow, the effects created by the water feature design. The study will look the symbolism of each water feature design.

III. Physical observation

Physical observation will help in identifying the design criteria in both case studies. From the observation, the physical aspect of the case studies will be described. It will look on the how the both case studies been design in term of concept, criteria, design elements and principles.

IV. Photography

Photography method is used in order to describe the water features character and design of the case studies. This will help in term of recording on the on site design.

V. Interviews

An interview enables this study to collect related information f each case studies. The sampler are the random sample that visit the both site of case study

1.6 Thesis structure

This thesis is structure by 6 chapter, Start from chapter 1 as an introduction, chapter2 as literature review, chapter 3: case study, chapter 4: finding, chapter5: recommendations and chapter 5:conclusion.

Chapter 1 discusses on the early stage of the study. It describes the study background, issue, objective and etc.

Chapter 2 comprises with literature review of the study, Mainly emphasis on the criteria and characteristic of Islamic water design. Several famous water features in Islamic garden such as Nishat Bagh are used as reference.

Chapter 3 will contain the case studies and data analysis on each site. This chapter will describe the both case study and analyse using the information from the literature review.

Chapter 4 present the finding of the both case study. From the finding, the result will show either the design have the criteria of Islamic water design.

Chapter 5 will cover the recommendation for the future development. In this chapter, several guidelines will be outline as a guide for the Islamic water features design development.

Chapter 6 is the conclusion of the overall study. It is the summary of the research. It will describe more or less about the research study.

CHAPTER 2

2.0 Water Features in Landscape Design

2.1 Introduction

Water may be used in the landscape design feature for purely aesthetic element or utilitarian function such as cooling the air, buffering sound, irrigation the soil or providing a recreation place. (K.B.Norman, 1999)

Water possesses several physical properties that may also influence the purpose that can be used in landscape design through characteristic of plasticity motion, sound and reflectivity. The general use of water in landscape design a more to utilitarian requirement rather than the visual aspect for examples water are use for consumption, irrigation, climatic controlled, sound controlled and recreation. As a visual aspect, water can be found in a form of flat and static water. It is a quite water body in a form of pool or pond. It may be used as a plane of reflection for the nearby element or sky. Other form of water is flowing water. It is moving water that flows in well-defined channel. It is the element that expressed the movement, direction and energy. Falling water is another form of water. The falling water portrays the force of gravity and noticeable focal point in the outdoors environment. In fourth fundamentals form of water is water jet. Forcing the water up into the air through a nozzle creates a fountain jets.

Even though visual quality of water body depend by the uncontrolled element such s sun, wind and temperature, the addition these special characteristic of water will give a meaning and a sense of life to outdoor spaces.

2.2 Islamic Garden Concept.

The idea of including the concept of paradise in Islamic garden is mainly to symbolize the imagination of paradise in the Quran.

"The image of paradise that will reward the God fearing; there will be a stream of water that does not go stale and streams of milk whose does not change and stream of wine that is delicious to drink and stream of honey; and there will also find all kind s of fruit and forgiveness from their lord"

Qur'an 47:15

The word paradise come from the root of "paradezia" that means enclosure. The Persian imagine that the paradezia is full of greeneries with the fruits and fragrance flower and been residence by a tame fauna with the refreshment climate. One can only imagine the physical atmosphere of the paradise that is mentioned in the Quran (47:15). However, one can only transform the ayah to the physical development of it, called "Paradise Garden" through their limited imagination and symbolism, (N.W.Donald, 1979).

There is no perfect understanding on exact material were used in the paradise. Thus, most of the Islamic gardens are produced from the basic symbolism of the paradise where water and fruit trees were including in the garden. The simplicity of basic design is an idealized form a pattern of irrigation symbolically and physically as a source o life, (N.W.Donald,1979,pg 3-5).

The pattern of irrigation is designed as the four-water channel of life dividing the rectangular into four quarters. The river is raised above the surrounding levels in order to irrigate the land. On each side of the channels and irrigated by their water, are straight line of trees, while the quarters may also be filled with trees or flower. (Refer figure 2.1)

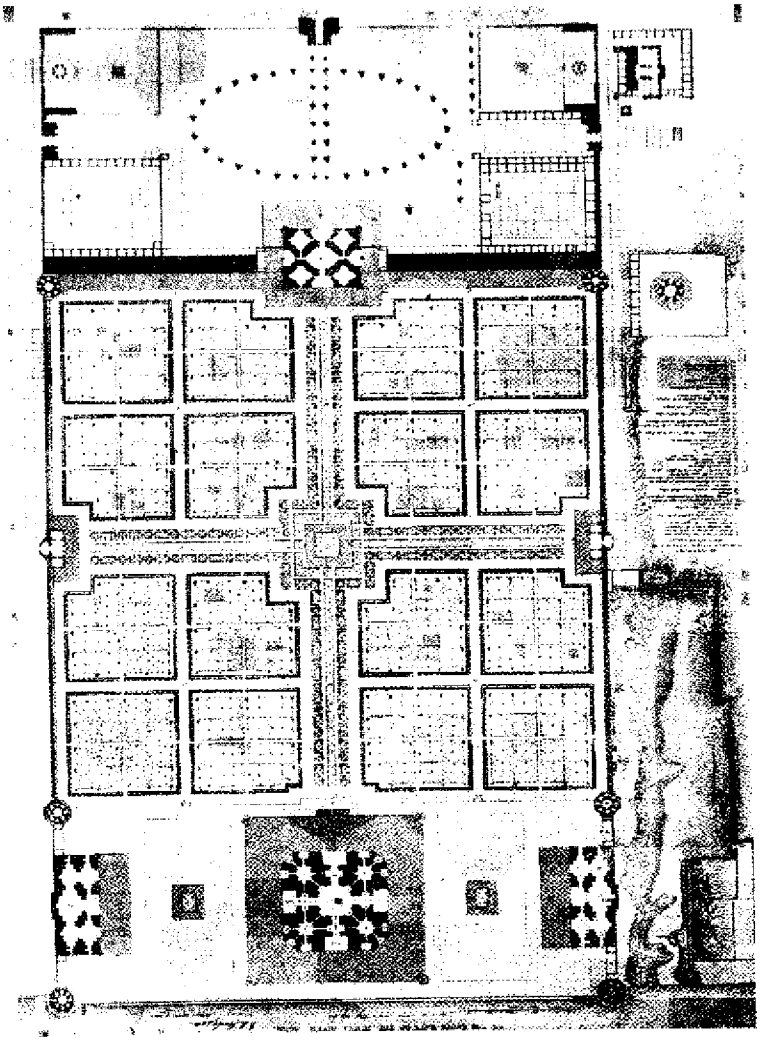

Figure 2.1 the concept of four water channel in Persian garden

The whole of the garden were surrounded an enclose wall from the surrounding in order to achieve a range of privacy and protection. A pavilion may be set at the intersection of the channels, to experience the

coolness and nice view. Besides, the sound of running water promotes the soothing effect from water canal.

There are many instance when the squares are further split into 4 more square, producing the 16 squares, each of these 16 squares recursively into 4 more squares, little paradise nestle inside bigger ones. The groves of trees or pavilions provide shaded from the blazing sun, spouting of falling water cooling the air, flower chosen for their colors, scent and to attract birds whose plumage will compete with the flowers and whose songs will be counter point the splash of water.

The examples of paradise garden on the flat terrain found in Persian garden. The flatness of the terrain in Persia allowed for the folding of the squares into as many square as possible. Often the symmetry of the square was often reduced to lesser symmetry of rectangle and the canal was often widened into a reflective pools.

The characteristic of Islamic garden was described by Sebastian Manrique (1630) who visited the royal garden in Patiala State of Mughal Empire as "*I took the opportunity to visit the Royal garden at this place, belonging to a Mogul Emperor…. One passes to it along a most lovely road, rather avenue, some forty feet wide and ornamented on the both sides with fresh green willows planted at regular intervals. Along one side of this pleasant avenue flows* ***a stream****….*

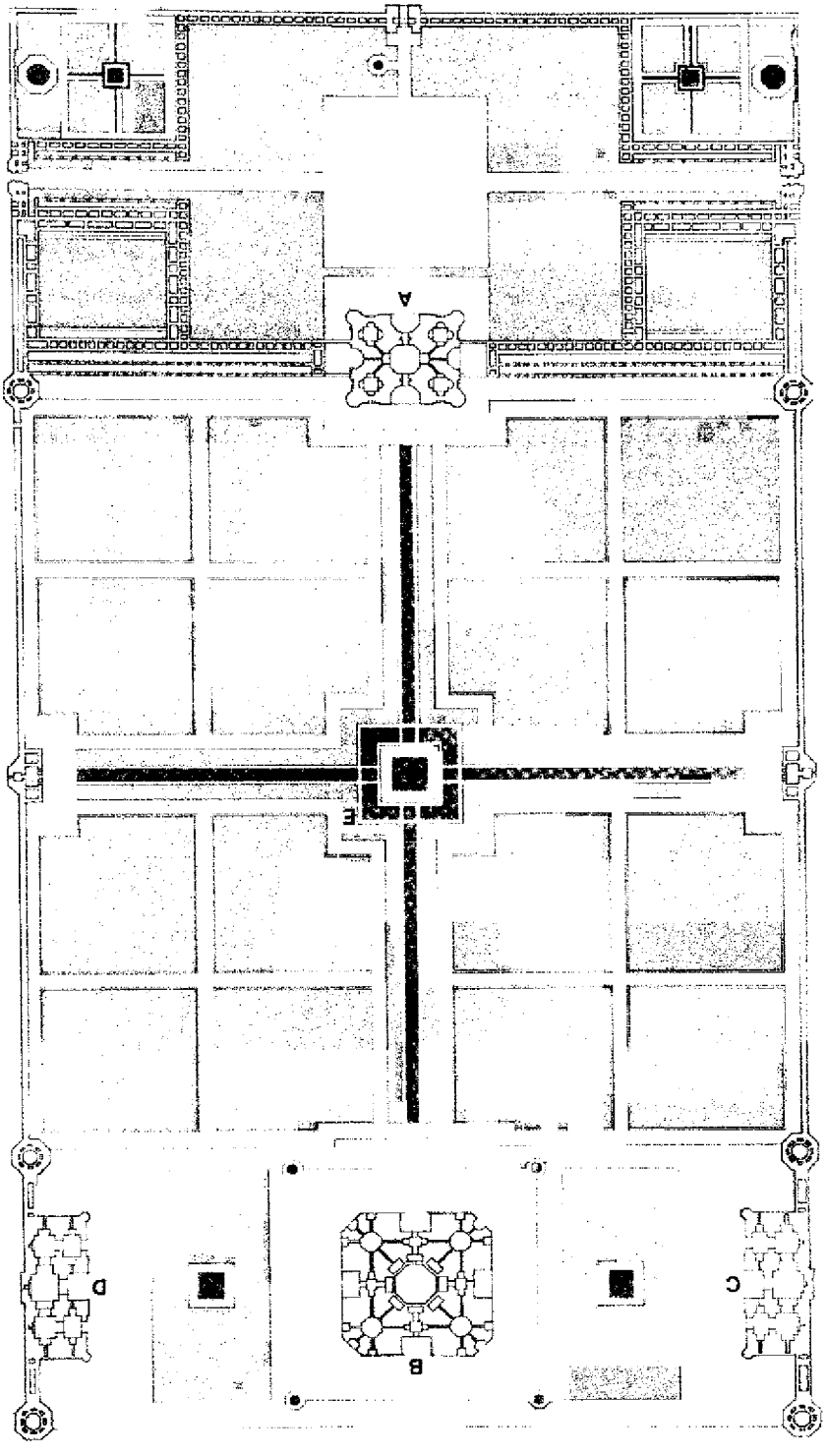

Figure 2.2 Mughal Emperor Royal Garden

In the Islamic Garden concept, water is one of the importance symbolisms of life and eternal. The intersection of water channel

symbolizes the meeting of humanity and ALLAH S.W.T. It also symbolizes rejuvenating which a seasonal growth of plant material. The size of tank or reservoir that feed the garden usually was 10 cubic by 10 cubic, the minimum amount of water for a Muslims to perform ablution.

For examples the Nishat Bagh, it based on the paradise garden, which it designs, is divided into a four part by channel. The point of intersection was marked by a fountain or pavilion that symbolized the cosmic center of the world. The four canals symbolized the four cardinal point of paradise. The four river of paradise are carrying water, milk, honey and wine.

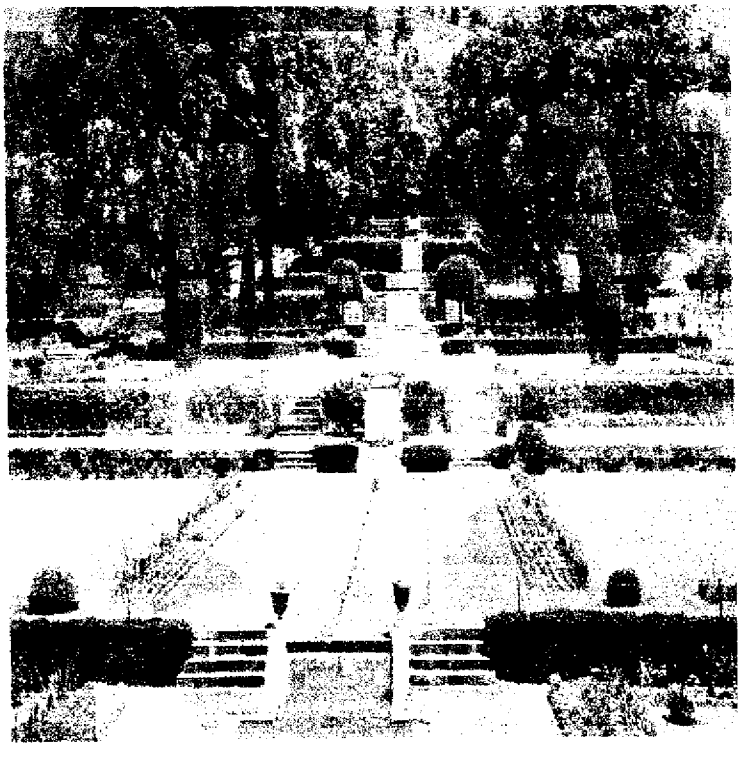

Figure 2.3 Nishat Bagh; the multi level in Islamic garden.

Beside water has it own symbolism in paradise garden, every plant material has it own symbol and meaning. For instant, the cypress were the

symbol of eternal life, pomegranate trees were the symbol of fertility while the rose jasmine and myrtle gave a forecast of the pleasure paradise.

"However those who believe and do the right thing, we shall take into the garden, crossed by a streams where there can stay for evermore"

Quran 4:57

From the ayah above, describe that the paradise is place of ever after for those follow and fear to god. It shows that he paradise is a place full of pleasure and enjoyment. That is the concept that inspired the designer of Islamic garden, to create an imagination of Paradise.

2.3 Water In Islamic Garden

In the Islamic garden, the precious of water did not spout from the rushing fountain as European does but flowed as gently through channel in flat catchments basins or it formed a fine transparent curtain when descending over incline stone slab vertical walls with recessed niches. It has been said that in the Arabs world, the soft bubbling of water produced the same feeling as well as a crackling fire in the northern countries, (C.V. Hantelman, 2001).

In the book of Earthly Paradise, L. Jonas, (1980) reports that the water used for ablutions, was the symbol of purity and was found in tanks in the courtyards of mosque or madersas. Thus to symbolizes that the paradise overflowed with water, water in these tanks always reached the brim; this

require an overflowed channel, which turn formed part of the overall design.

The choice of the site, not only the garden depended primarily the availability of water. Stemming from the mountains or from the wadi or an artificial reservoir, water could be led through an open or underground canal, aqueduct or clay pipe to tank. Within the courtyard or the garden channel of clay stone or occasionally marble distribute water to the flowerbed. On the flat terrain, the watercourses divided the garden into four by radiating from the central pool. A part of the earthly symbolism, the form of the Islamic garden was determined to a large degree of the irrigation technique.

In the Islamic water features, there are two source of water in their garden whether from the mountain or the river. That's why most of the Islamic garden was built near to the river or at the hillside of the mountain. For example the Garden of Generalife was built on the Hillside of the Cerro del Sol and near to the Darro River. Another best examples are the Mughal garden where it near to the river of Tigris and Euphrates. These rivers become the source of water to feed the plant in the garden.

Every element in Islamic water feature has their own symbolism that shown the relation between man and creator. Each of the elements has its own functionality.

Water was used creatively to contribute to architecture and landscape design. It offered the qualities or tranquility and depth, coolness and

moisture. Pool sometimes contain fish or duck and encourage the growth of plant. Tank or channel contain fountain possibly introduced original to clear insect from the surface of water but soon found the delight the eyes and ears. The falling spray generates ever-expanding ripples.

In fact, water is an element that provides a welcome contrast to the solidity and stability of the architecture. Fountain, cascade channel and brimming pools cool and moisten the dry air and add extra dimension of scintillating movement, sound and light to the courtyard and garden environment. When the waterfall, it can provide a continuous background of the sound, masking outside traffic noise or when placid, dense silence. It can produce an effective physical and visual two-dimensional barrier, both horizontally and vertically. It can slide like a sheet of curved glass over the edge of waterfall.

In the garden or courtyard fountain, the effect of water depends on its velocity and on the shape of the nozzle. After it leaves the opening it become freer, subjected only to friction and gravity and held together by surface tension. Islamic fountain bases were often carved and even the fountain basin was carved in a lotus shapes.

In the old Islamic era, Muslims tent to used the formalized water features dictating a design within a close space. Most of the water features were formed from the basic principles of rectangles and subdividing by water feature.