

ESSENCE OF THE ALHAMBRA

**A PHENOMENOLOGICAL ACCOUNT OF THE NASRID PALACES THROUGH
THE LENS OF TWELFTH CENTURY ANDALUCIAN ISLAMIC PHILOSOPHY.**

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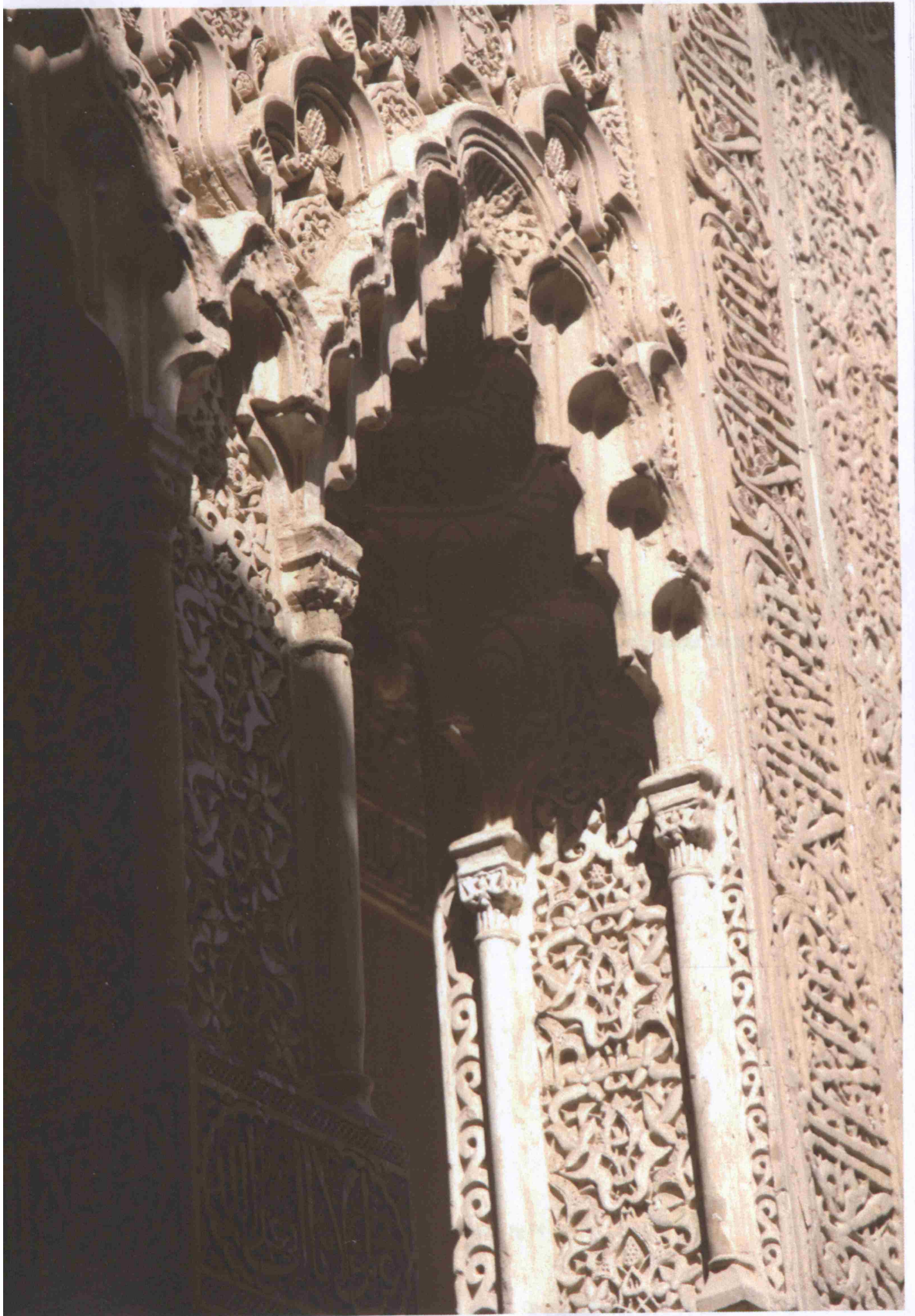
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“Such is the Alhambra – a Moslem pile in the midst of a Christian land, an oriental palace amidst the Gothic edifices of the West, an elegant memento of a brave, intelligent, and graceful people who conquered, ruled and passed away.”¹



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Introduction

Alhambra managed to inspire contemplation within my self and brought to the forefront of my consciousness the aesthetics and nature of harmony. I was overwhelmed by a sense of complete tranquillity, inspired to take my shoes off and walk with direct connection to the essence of these palace grounds. My everyday understanding of the home was brought into question, as even without all the amenities of everyday life I felt welcome, safe and contented.

This excerpt from my journal during my last visit to Alhambra, Spain, was the starting point for this exploration. I was inspired to enquire into the reality of what made me so 'content' within the grounds of the Nasrid Palaces. I needed to know more about the foundations of such a sensually strong piece of architecture. How could a building speak to me so powerfully and simultaneously evoke such tranquillity? To discover the essence of this architectural solace was going to involve a phenomenological undertaking. So as to understand this fully, I needed to return to the time in which Alhambra was constructed and unravel the intellectual capacity of its pioneering scholars, whom I believed must have been inspirational and representational of the community and artisans of its time.

Overview

"There are as many ways to God as there are human beings". This famous Islamic saying is testimony to the individuality our rational soul embodies but also the implication that we all, in our own, way seek knowledge leading to Him. For this reason although our experiences of Alhambra may be different there is a unifying thread of consciousness that binds us all. Architecture relates, mediates and projects meaning. Although not always successful, the ultimate meaning of all buildings is beyond architecture; as with the Alhambra, it manages to direct our consciousness back to the world and towards our own sense of being.

The intellectual landscape for the Muslim scholars of twelfth century Islamic Spain was based on

the search for truth; to know the Divine. Their method involved phenomenological undertakings that unveiled a vocabulary through which truth was made apparent. A key prophetic narration gives us the starting point of this search for truth; “*Whoever knows himself (his soul) knows his Lord*”.

These Western Muslim scholars were not alone on their quest, as it is the personal striving of every Muslim to draw eternally closer to their Lord. The intellectual understanding of knowing one’s self, so as to understand and draw closer to the Divine, took the scholars of Al-Andalus (Andalucia)² back into the depths of classical philosophy. Their quest transcended all practical professions and therefore became apparent within all levels of society including architecture.

My research sets out to understand how the knowledge retrieved by key Islamic scholars through phenomenological means is manifested in the architecture of its time, specifically the Nasrid Palaces of Alhambra. Through scholarly discussions on an array of topics including perception, aesthetics and the nature of the intellect, I hope to show that the architecture of the Nasrid Palaces can stand as a physical embodiment of the phenomenological exploration of one’s self dating back to classical antiquity. Focusing on the architectural detail alongside the overall site planning, the recurring concept of *plurality in oneness and oneness in multiplicity* on both a spiritual and architectural level becomes apparent.

With the aid of *History of Islamic Philosophy* edited by renowned philosophers Seyyed Hossein Nasr and Oliver Leaman the works of three key Spanish Muslim scholars, Ibn Bajjah, Ibn Tufayl and Ibn Rushd, will be examined through their contribution to the scholarship of soul phenomenology. Drawing from the works of Plato and Aristotle, whilst maintaining a firm monotheistic axis, these scholars are the lenses through which the essence of the Nasrid Palaces will come into view.

2 *Al-Andalus* is the Arabic word used by the Muslims for present-day Andalusia, referring to the land occupied by the Muslims, under Islamic rule.

Described as a heroic piece of Islamic architecture, the Alhambra has been the subject of several literary works, for example, the romantic *Tales of The Alhambra* by Washington Irving³ alongside the scholarly, mathematical commentary of *The Alhambra* by Antonio Fernandez-Puertas. It is, however, rare to find Alhambra as part of a philosophical discussion let alone within spiritual and phenomenological parameters. The works of Titus Burckhardt⁴ - a key art historian and exponent of the 'traditionalist' school of twentieth century thinkers and writers – discusses, Islamic art and architecture within a spiritual and philosophical context. Although not specifically about Alhambra, Burckhardt is fundamental to my discussions linking the heart, intention and *Active Intellect* of the architect to the sensuous experience of the inhabitant of space.

The Active Intellect describes the link by which our soul connects to the Ultimate Source of all being. The intellect consists of the pure act of recognition, and never itself becomes the object of perception. Therefore, whilst for man the soul is his inner being, the intellect is the innermost part of that being. The goal of wisdom (*hikma*) to which the philosopher (*al-hakim* – he who possesses wisdom) aspired was union with the Active Intellect. Both Ibn Bajjah and Ibn Tufayl, as we will later see, attempted to describe the spiritual ascent of wisdom as the key to higher knowledge.

The Arabic language, used by the Islamic philosophers, is instrumental in understanding their mind-set. The tri-lateral root nature of the Arabic language⁵ is phenomenological in its own right; from this three-lettered root, derives every physical, mental and spiritual application of the same

3 Washington Irving, was North American Diplomat, historian and traveller who in 1829 lived for some time in the Alhambra.

4 Dr. Titus Burckhardt (Ibrahim 'Izz ud Din) Born in 1908 in Florence is the son of the Swiss sculptor Carl Burckhardt. Although he first followed in his father's footsteps as a sculptor and illustrator, he was since his childhood always strongly attracted to oriental art. This led him to a theoretical study of eastern doctrines and repeated sojourns in Islamic countries. After some years of studying the history of art and oriental languages, he became director of a publishing house, the Graf-Verlag, which specialised in facsimile editions of ancient manuscripts. In 1972 he was appointed to UNESCO for the preservation of Fez.

5 Every Arabic verb (usually) has a three-letter core, which is the basis for all its derivatives.

idea.⁶ The root is the essence for all derivatives and meaning. The Arabic tri-lateral root *n-f-s*, for example, is the essence of the word *nafas* (breath) and *nafs* (soul/self). This does not simply refer to the breath consisting of air but rather the breath of spiritual life, representing the bridge between body and soul. It is the instrument of the soul, when working on latent forces present in the body, preserving the equilibrium between the natural elements (earth, fire, water and air). The physical breath is, to some extent, the external image of this relationship, causing the rigid body, inclined to solidification, to remain in contact with the quickening force of the atmosphere.

The Arabic word for physician is the same as philosopher - '*al-hakim*'. Ibn Bajjah and Ibn Rushd were both. According to them, human nature does not simply divide itself into two distinct constituents of the body and spirit as Descartes claims.⁷ The physical world outside man is received and transferred into something inward by the sensory and corresponding mental powers of human nature. Our common sense collates the external impressions of the physical world and translates them into images. It is then our intelligence that sifts through them and presents them to the intellect, which with the aid of our Active Intellect distinguishes between truth and falsehood. The nature of aesthetics, therefore, needs to be raised in relation to the impressions we gather from the physical world, and how, phenomenologically, these affect our speculations about God and the Divine world.

Nature of phenomenology

Although the term 'phenomenology' was coined in the twentieth century, it was a philosophical practice for many centuries dating back to ancient classical civilisations. The Islamic philosophers I reference were central to the phenomenological debate in unearthing the nature of our self/

6 Burckhardt, Titus, 1997, *Moorish Culture in Spain*, Lahore, pg. 130

7 Burckhardt, Titus, pg. 131

soul and the role our bodily faculties had in aiding our connection to the Divine. It is, therefore, my intention, by orientating the discipline of phenomenology within Islamic philosophy, to illuminate the beauty, timelessness and multidimensionality of the architecture of The Nasrid Palaces of Alhambra. Only through the philosophical discipline of phenomenology, can the underlying nature of the Nasrid Palace architecture be revealed.

The literal, contemporary, definition of *phenomenology* is the study of phenomena; the appearance of things as they appear in our experiences or as we experienced them. This in turn enables us to understand the nature of our consciousness; how conscious experience and mental representations and intentionality are grounded in brain activity. Providing the tools to understanding the *essence* of something in relation to the conditions of our consciousness. This type of phenomenology enables us to explore the means by which experience is given intentionality. As with my experience in Alhambra, when applying the question of my own consciousness and perception to the architecture of the Nasrid Palaces, this underlying question of intention was raised. The experiential qualities in the perception one has of a built work, be it disturbing, intriguing or boring can change once intent is articulated. This search for intention can relate back to the Islamic philosophers and their search for the intention of their souls, which led them back to the Divine source. The process of peeling back the layers of consciousness, and understanding, is aided by the intellect, which activates a perception that reveals itself in varying degrees and in multiple forms of understanding. The phenomenology of both contemporary and medieval philosophers is one in the same; the search for truth and the means by which it is made possible.

A phenomenological undertaking of the soul is inspired through human consciousness that the 'stuff' of which his soul is made is different from that of his own body, and that for all its ties to the physical world, the soul possesses qualities that the body does not have such as

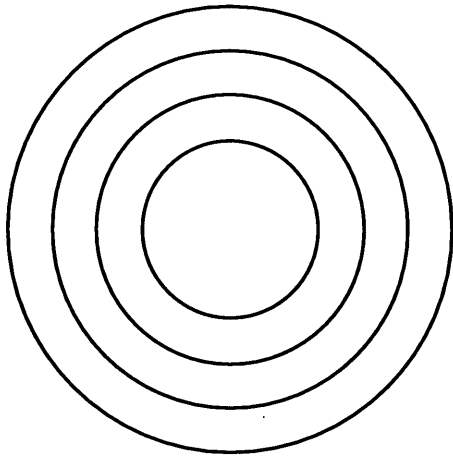


Fig. 1

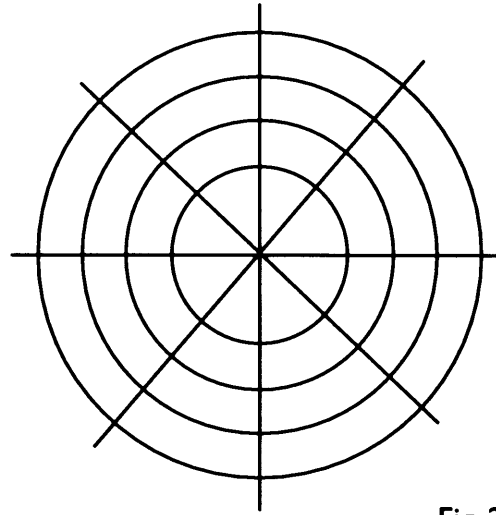


Fig. 2

perception, thought and independent action.⁸ This journey of self-discovery, undertaken by the Islamic scholars, refers back to the works of Plato and Aristotle. Aristotelian thought applies chiefly to the logical order or continuity of a certain level of existence, while the Platonic view is to observe the symbolic character of a thing, through which it is connected to the realities of higher planes. It is upon this, Platonic view, that the philosophies of Ibn Bajjah and Ibn Rushd are based.⁹ The nature of our basic realities and their ties to its Creator, discussed by Aristotle and Plato, can be illustrated by a series of concentric circles. Aristotle considers each of the different circles, or that which they represent, as *separate* entities, making the centre also separate from the rest (Fig. 1). The Platonic view is to consider analogies which link all the different levels of reality, such as rays or radii on whatever circle they are situated on allowing each reality to be related, like traces of the same essence on different levels of existence (Fig. 2).

This essence and universal objective of any phenomenological undertaking is therefore to reveal the fundamental nature of the soul. Medieval scholars understood that the soul is not the only non-physical condition of human existence. For the soul, with its constant changes is, by its very nature, an object of recognition, therefore presupposing that there is something like an inner eye (*al-ayn al-batinayya*) that sees the soul whilst it remains constant.¹⁰ Although the rational soul – the principle by which individual identity is determined – is unique even without a body, it is at one with all other souls by virtue of its contact with the *Active Intellect*. The path of self-discovery cannot be separated from the aims of phenomenology. It is for this reason that although phenomenology has taken many guises over its course of history, it has always been in search of the hidden truth that sustains us all.

To successfully give a phenomenological account of the Nasrid Palaces it is important to first contextualise Alhambra within the philosophical and intellectual framework of its time. By

8 Burckhardt, Titus, pg. 132

9 Burckhardt, Titus, pg. 129

10 Burckhardt, Titus, pg. 81

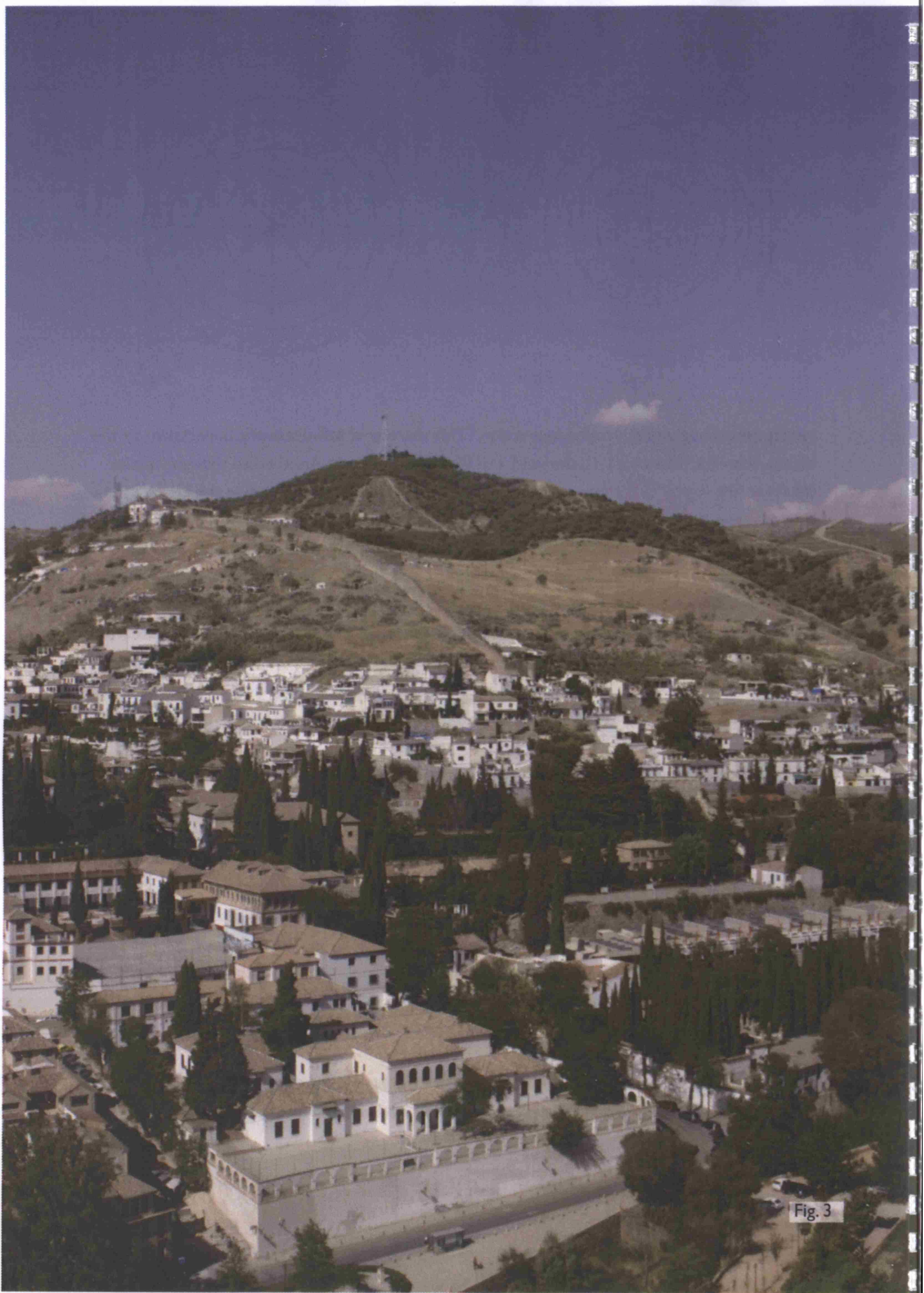


Fig. 3

1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025



Fig. 4



Fig 5

presenting an overview of the intellectual status and key thoughts of my scholars of choice, the advancement of Islamic Spain, and the genius of Alhambra slowly becomes more apparent. Once the setting of Alhambra is clear, my focus turns to the Nasrid Palaces specifically, relating the detailing the architectural motivations and cosmic significance of the plan, elevation and ornamentation. It is only once Alhambra has been contextualized and examined symbolically that I can apply the phenomenological findings of the Islamic scholars. The vocabulary they devised as a means to draw closer to the Divine will be illustrated through the architecture of the Nasrid Palaces.

The significance of such a correlation between intellectual and philosophical thought and the production of architecture is timely whilst we find ourselves in an age of mass consumerism and temporary architecture. It has always been my belief that architecture can provide an insight into an architect's intention, and therefore have had an ongoing fascination with sacred architecture. However it was only through my readings on the philosophical discipline of phenomenology that I recognised it to be a primary tool in unveiling architecture; a means of grasping that hidden intention I so ardently longed to know.

A Walk Through The Nasrid Palaces.

The first encounter one experiences on approaching the Nasrid Palaces within the *madina* (city) of Alhambra is the view of Granada city and the lush hills beyond (Fig. 3). On entering the *Mexuar* (administrative function rooms) one is drawn to the same landscape that can be seen through the framed windows of the *Oratory* (usually a space dedicated for worship) (Fig. 4). Drawing in the natural landscape creates an instant union between built construction and the laws that govern it. All transitions between domestic and official spaces give you a view of the ornate *mukarnas* (stalactites) arches silhouetted against the sky above. (Fig. 5) This sense

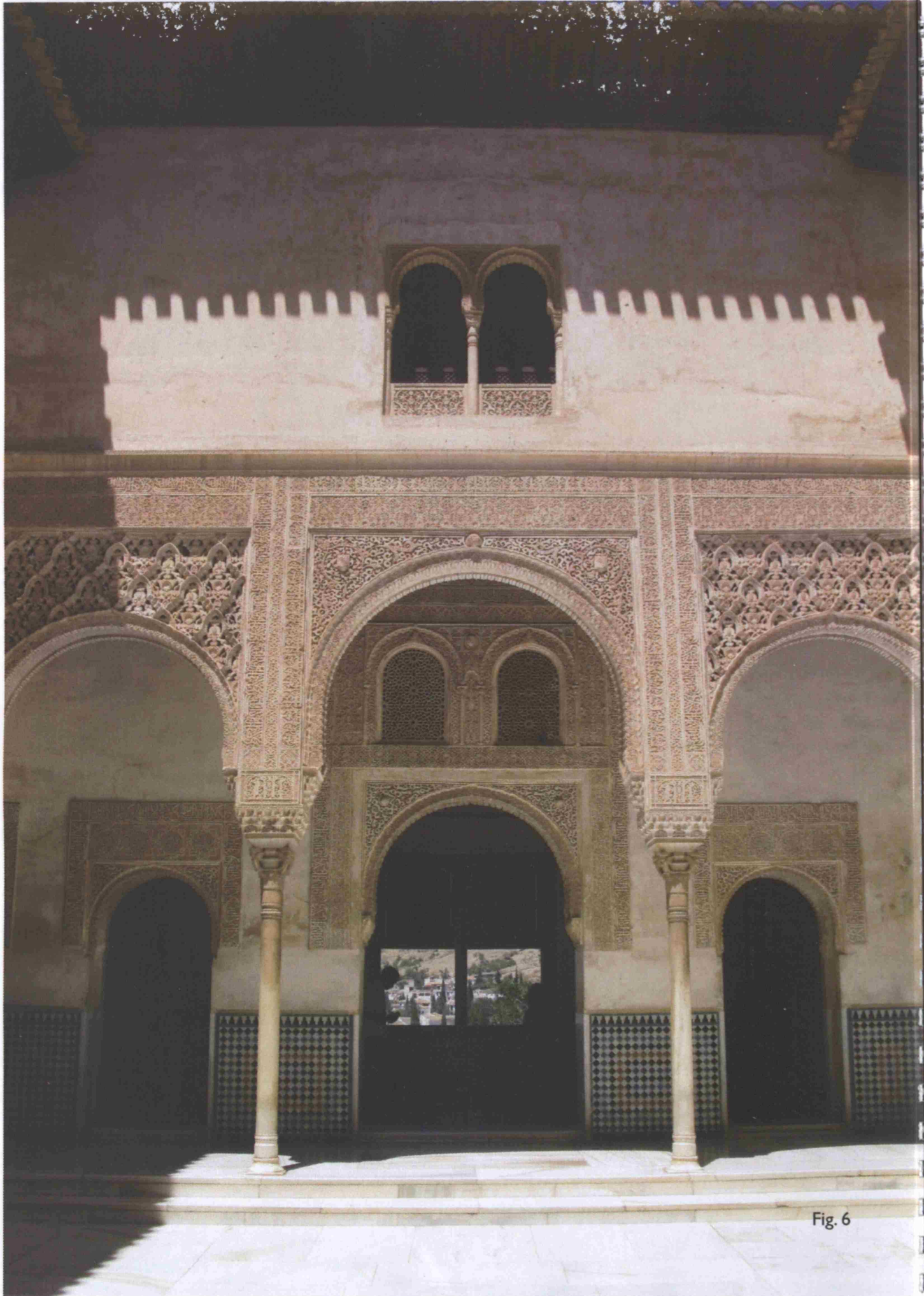


Fig. 6



Fig. 7

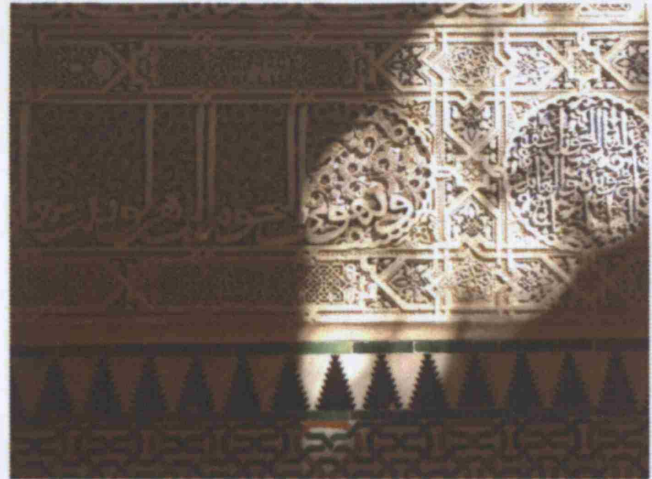


Fig. 8

of opening and exposure to the elements within the confines of the walled garden gives one a sense of protected freedom. The *Patio de Cuarto Dorado* is one's first encounter with the external elevational proportions of the palaces' architecture (Fig. 6). Reflecting on the ornate nature of the elevation detailing and the consideration in the texture and materials (tile on lower half to maintain a cool temperature) evokes an immediate sense of comfort and tranquillity.

As you move through the various sequences of spaces you slowly become aware that there is a slow increase in the volume of ornate decoration and scale as if preparing you for the culmination of what you seek to know. The poetic frieze inscriptions declaring 'there is no majesty save God' and 'there is no conqueror save God', for those that can read it adds a dimension of humility to the original Royal occupants (Fig. 7). As the courtyard increases in the *Palacio de Comares* the internal rooms that feed off it emanate a sense of light that was too subtle to experience in the *Patio De Cuarto Dorado*. Knowledge has become analogous with clear vision and light is regarded as truth; this is expressed in the illuminating effect the sunlight has in highlighting the intricacy of the wall ornamentation as if instructing you to read what is being revealed (Fig. 8). The nature of sunlight, in that it is a moving point source, adds to the individuality of everyone's sensory experience. The perceptual spirit and metaphysical strength of these palaces are driven by the quality of light and shadow, determining the eventual perception created by our senses. One of the Islamic philosophers to be discussed later, Ibn Rushd, draws a parallel between the soul and light:

*"The soul is closely similar to light: light is divided by the divisions of illuminated bodies, and is unified when the bodies are annihilated, and this same relation hold between soul and bodies"*¹¹

The courtyard of the *Palacio de Comares* is enhanced by the full length pool of water which,

11 Hughes, Aaron W., 2004, *The Texture of the Divine*, Indiana University Press, USA.

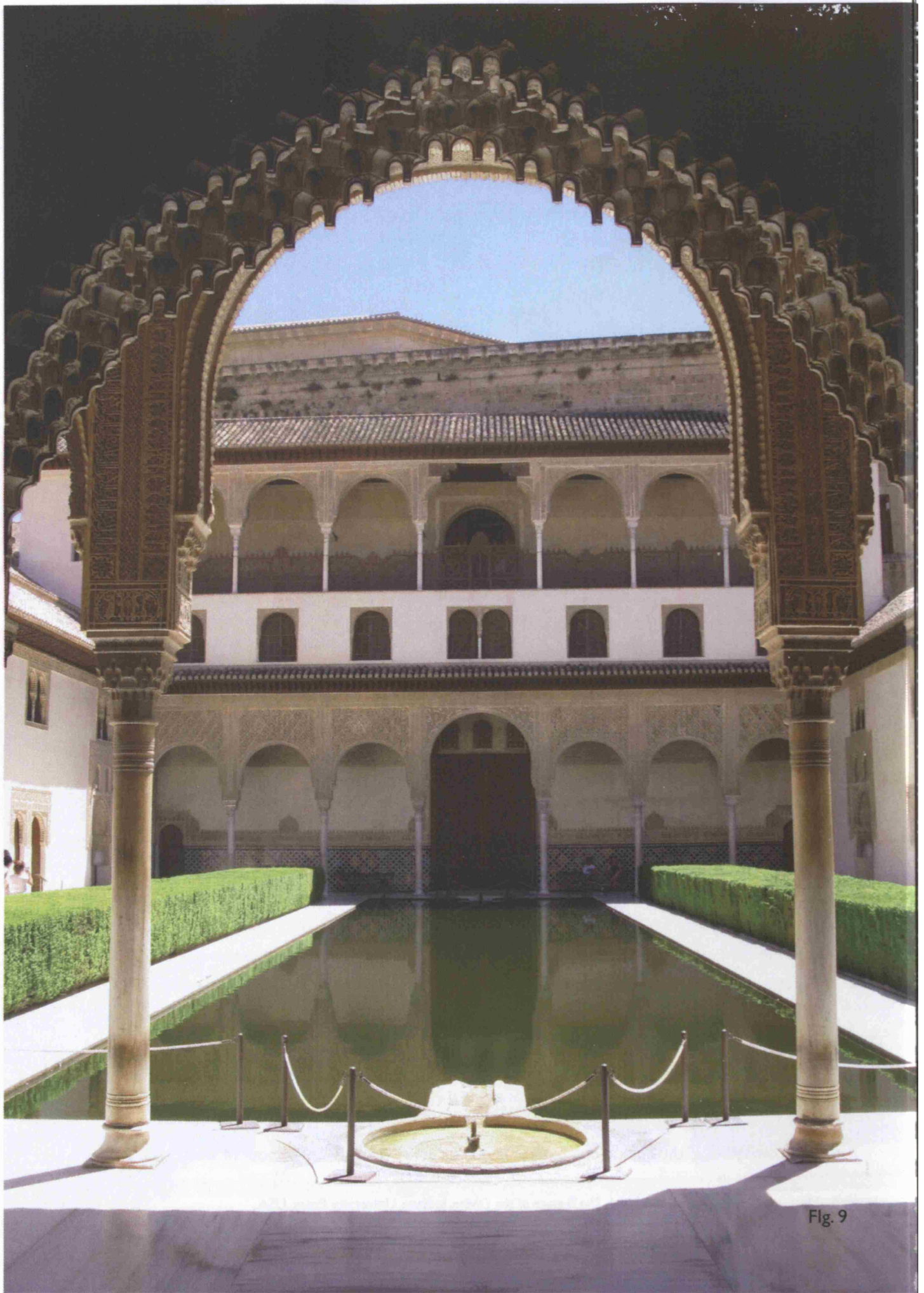


Fig. 9

aided by the nature of light, becomes a phenomenal lens with powers of reflection, spatial reversal, refraction and the transformation of rays of light (Fig. 9).

The embodiment of certain geometric proportions, harmony and balance is most evident in the *Palacio de Riyad* (Leones), (Fig. 10) which seems to point beyond itself evoking a celestial non-materiality and intellectual beauty. These harmonious proportions, that our senses perceive, are our building blocks to know phenomena. Our body is instantaneously relating to the natural scale and proportion of this forest of columns and arches. Once again, the presence of water breaks the potential intensity of the court, while simultaneously directing you to the four pavilions and halls of sanctuary. Following the flow of water into the halls you reach a small pool that symbolises the end of your path. However, it reflects a luminous image of circumbulating rings of precious jewels, that seem to resonate into infinity, symbolising the eternal nature of our journey. On looking up, one is in the presence of a cosmic structure, (Fig. 11) when the soul contemplates an object, a symmetry is created between the knower and the object known.

The culmination to such a sensuous encounter can only be that of nature itself, and with that the final exit of these palaces of cosmic essence is the lavish gardens of the *Patio de Lindaraja*.

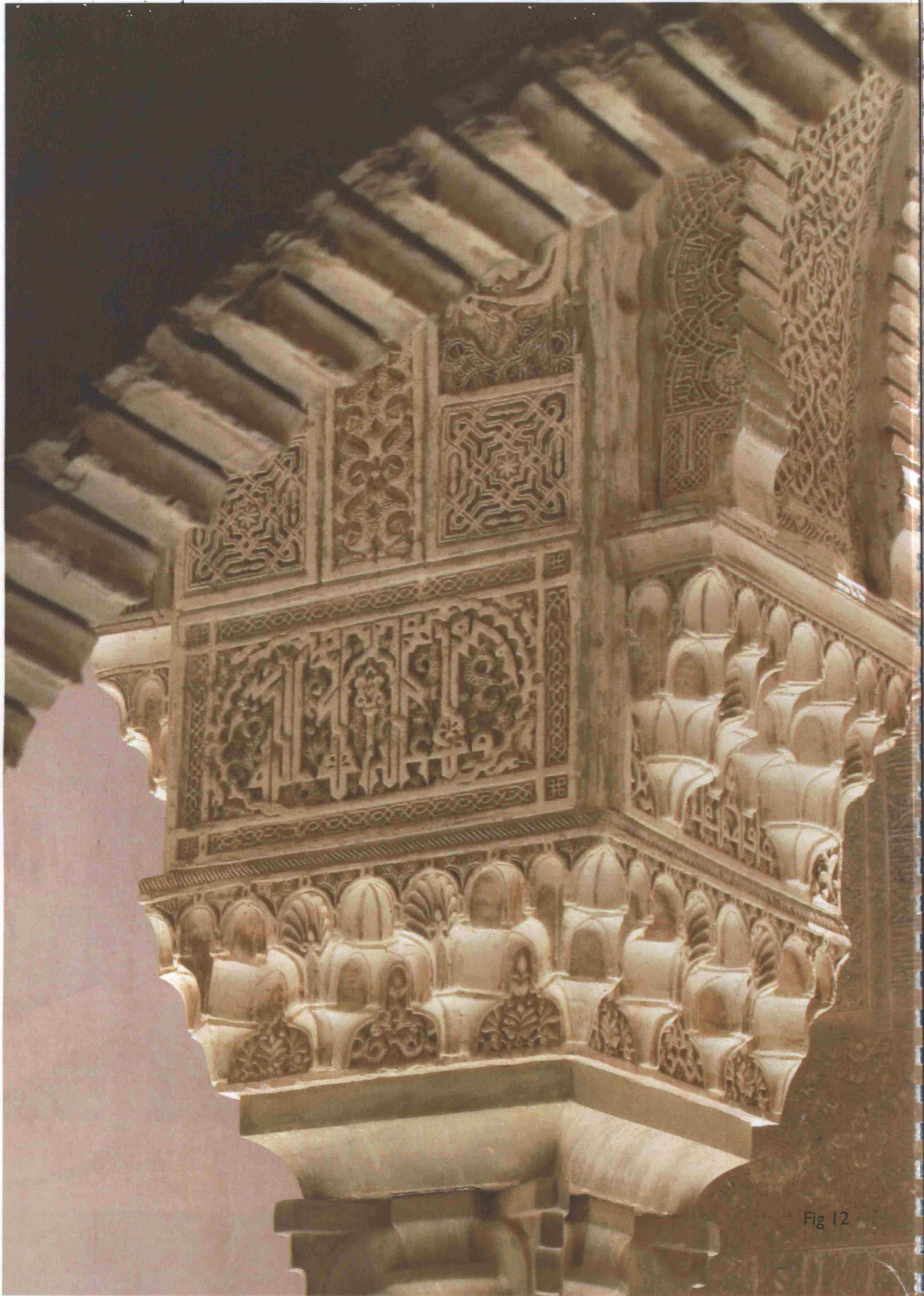


Fig 12

Alhambra and The Pursuit of Harmony

The Islamic conquest of Andalusia, Spain, during the eighth century AD brought a new intellectual light to the West. Under the Umayyad Caliphate (929), Cordoba became Europe's greatest intellectual centre fostering libraries and schools that the rest of Europe was yet to establish.¹² Al-Andalus, rivalling the Abbasid intellectual centre of the East (Baghdad), was to host an Islamic Renaissance, an Islamic Golden Age, whereby it became the intellectual heart for science, philosophy, medicine and education.

With its long history and geographic spread throughout the East, Islamic art inevitably became subjected to a wide range of styles and influences; however, it always managed to retain an intrinsic quality and unique identity. The consistency in quality and identity is firmly rooted in the role seeking knowledge has in Islam, which is seen as *'incumbent upon every Muslim'*.¹³ Such a duty led to the development of this distinctive Islamic style and culture manifested in its own unique artistic language reflected in both its art and architecture. The Great Mosque in Cordoba (785) marked the beginning of Islamic architecture in Spain, which peaked with the construction of Alhambra in 1338 (Fig. 12). Throughout the centuries that passed between the constructions of these two landmark pieces of architecture, scholarship advanced with the rise of philosophical thought.

Within this rich academic environment, some of the first translations of the great works of antiquity were undertaken. *'The ink of a scholar is more holy than the blood of martyrs'* is a famous Prophetic narration of which Islam of the mediaeval period aimed to fulfil. This period in Islamic history produced some of the greatest scholars, that were influential in contemporary medicine, astronomy and western philosophy. It was these translations of Arabic philosophical literature

12 By the 10th century, Cordoba had over 700 Mosques, 60,000 palaces and 70 Libraries.

13 Prophetic tradition (*hadith*) narrated by the Prophet Mohammed - "Seeking 'ilm' (knowledge) is incumbent on every Muslim." (Ibn Hahar Al-'Asqalani, Al-Matalib al 'Aliyah)



Fig. 13

into Hebrew, Latin and Ladino¹⁴ that contributed to the development of modern European philosophy.

The Nasrid fortress of Alhambra is a labyrinth of palaces, *qalahurras* (royal military tower-dwellings), mansions for nobility, a district for craftsmen, a mosque and all the amenities to sustain a small city.¹⁵ Originally constructed as a military defence compound, the *madina* of Alhambra is situated on the western tip of the Sabika hill dominating the city of Granada, (Fig. 13) the last political capital of Islam in the West. The political history of Islam in Al-Andalus spans three main periods across six centuries (711-1492),¹⁶ with Granada being the final city surrendering to Christian rule.¹⁷ Constructed under Nasrid Rule (1232-1492) work began shortly before the Christian *Reconquista*¹⁸ of the original Almohad capital of Cordoba in 1236. These conquests of Muslim territories drove many Almohad Muslim artists to seek refuge in Granada, where the locals gradually adopted the Almohad artistic traditions.

The Nasrid artistic tradition can be identified through four key periods that are evident in the construction of Alhambra. The first period - under Muhammad I, his son Muhammad II and his two sons Muhammad III and Abu I-Juyush Nasr - saw the construction of early palaces in Granada and the perimeter walls and fortification of the Sabika Hill site with the completion of towers and gates. It wasn't until the second period under the reign of Muhammad II's grandson Isma'il (1314-1325) that monumental construction occurred with the completion of the *Palacio de Comares*, the introduction of *armaduras* (wooden ceilings) (Fig. 14) and its geometric decoration attaining its greatest complexity (Fig. 15). Nasrid architecture is considered to have

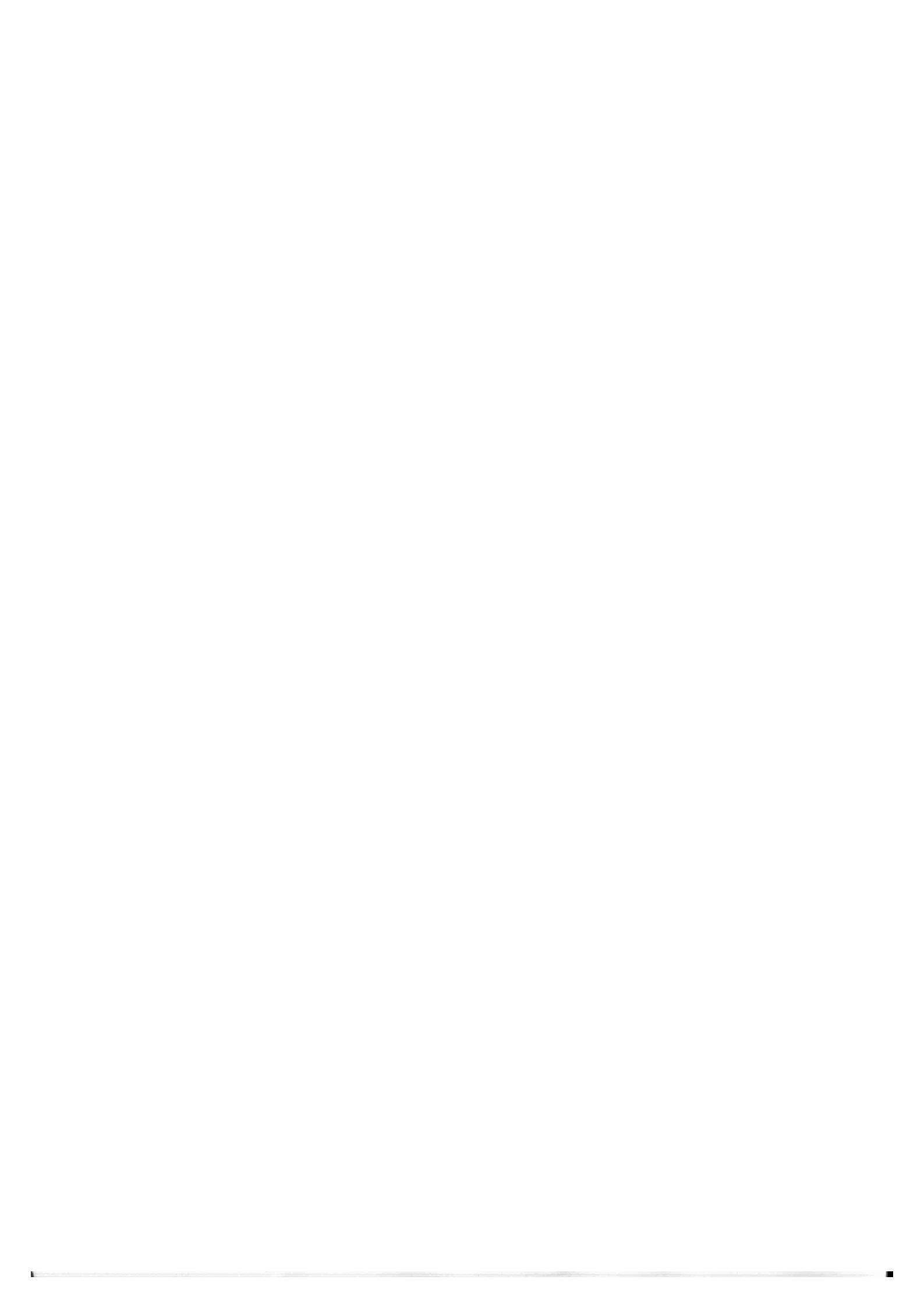
14 Old dialect of Spanish, mainly spoken by Jews – it was neither Hebrew nor Arabic.

15 See Appendix, *Plan of The Alhambra*.

16 See Appendix, *Islamic Spain Timeline*.

17 The fate of Granada was sealed with the marriage of Ferdinand of Aragon and Isabella of Castile in 1469 – they took hold of Alhambra in 1492.

18 Re-conquest - the Christian king Fernando III conquered Cordoba in 1236 and Jean in 1246, he turned Muhammad I into his vassal obliging him to help in the Christian reconquista of Seville in 1248



reached its peak, under the rule of Isma'il's second son Yusuf I (1333-1345). Each Caliph made his own addition and contribution to the *madina* of Alhambra, adding or reconstructing the site to reflect their administrative needs.¹⁹ Nasrid Architecture and decoration reached their final evolution in the third period under Muhammad V (1354-1359, 1362-1391). During his long rule Muhammad V managed to build the entire *Palacio del Riyad*, which I will focus on in detail later, supervising complex ground plans and elevations with the appearance of *Mukarnas* (stalactite) now covering entire vaults (Fig 16). The fourth period under Muhammad VII (1392-1408) and Yusuf II (1408-1417) saw the slow decline and end of any Islamic additions to the Alhambra and subsequent end of Nasrid rule with the *reconquista* of Granada.

With the encouragement of their Caliphs, Al-Andalus, as we shall see, had the foundations to master its knowledge and translate it architecturally. The Royal fortified city of Alhambra is the final product of a long uninterrupted tradition of sacred, scientific, and philosophical knowledge.

Pioneering this tradition was Ibn Rush (1126-1198) – named *Averroes* in the West – is known for his translation of and commentary on the works of Plato and Aristotle, and had an impact on the rise of secular thought in Western Europe. The preservation of Plato and Aristotle's works was seen as a duty to the Arab philosophers who recognised the classical philosophers as being among the first monotheists. The Arabs, however brought a new spirit of enquiry, inspired new methods of investigation, experimentation, observation and a development of mathematics unknown to the Greeks.²⁰ The sudden and powerful source of this new spirit came in the form of Islam and was introduced to the European world by the Arabs. With this flourishing Islamic environment and the Muslim pursuit for knowledge a greater need to understanding themselves and their association to the Divine was sparked. It was the classical works of antiquity in conjunction with the Islamic Revelation (Qur'an) that inspired the phenomenological approach

19 The aim of each Muslim sovereign was to build his own palace and enjoy it during his lifetime, much as a Bedouin sets up and inhabits his own tent.

20 Briffault, Rob, 1928, *The Making of Humanity*, G. Allen & Unwin Ltd

of these Islamic scholars. This approach to know one's self and our cosmic relationship can be recognised in the aesthetic production of art and architecture dating back to antiquity. Within these contexts, the Muslims of Spain produced some of the greatest examples of Islamic architecture. Is it possible that this can be attributed to their philosophical and scientific awareness/knowledge that advanced beyond any scholarship known at that time? I believe that by investigating the philosophical and intellectual landscape in which Alhambra was constructed - and that preceding it - can lead to a greater appreciation and reverence of its architectural sophistication.

'An aesthetic pleasure arises when the soul finds its own inner harmony duplicated in its object'.²¹ Philosophy sought to understand and define that 'inner harmony' mentioned here by Umberto Eco. Ibn Rushd and his teacher Ibn Bajja and mentor Ibn Tufayl were the first of the Western Islamic philosophers to undertake such a phenomenological approach to understanding the soul. For the contemporary phenomenologist of the twentieth century there is less mention of the Divine but more of the nature of Being as presented to us through our consciousness. The philosophical tradition of the Islamic West not only depended on the works of classical philosophers but also on the prominent Eastern figures of Baghdad such as Al-Farabi and Ibn Sina (Avicenna). As Ibn Tufayl says:²²

Before the spread of philosophy and formal logic in the West, all native Andalusians of any ability devoted their lives to mathematics. They achieved a high level in that field but could do no more. The next generation surpassed them in that they knew a little logic. But study logic as they might, they could not find in it the way to fulfilment.

Ibn Bajjah (died 1138) was an instigator of what is known as the Andalusian Revolt where in

21 Eco, Umberto, 1986, *Art and Beauty in The Middle Ages*, Yale University, USA. Pg 10

22 Goodman, Lenn E., *Ibn Bajjah*, ed. Sayed Hussain Nasr, Oliver Leaman, (2007) *History of Islamic Philosophy*, Routledge, New York.

agreement with Ibn Tufayl (1105-1185), he believed that there is great ‘wisdom in metaphysics’ and a ‘trivial immediacy in mathematics’.²³ Both of these prominent scholars – although they were never formally introduced – were aware of each other’s work and undertook responsibility for advancing the intellectual status of Al-Andalus through philosophy. Both Ibn Bajjah and Ibn Tufayl identified religion as the core of culture and saw Islamic religiosity and law as symbolic entryways into philosophy.²⁴ The work of Ibn Bajjah shows a keen and living responsiveness to the philosophical problems of Plato and Aristotle. Through his own commentary on Aristotle’s *Physics* Ibn Bajjah was inspired to undertake his own study of astronomy, epistemology and metaphysics of the soul. It is his unfinished treatises on soul phenomenology that has gained him most acclaim. It was his belief like those in Baghdad, Al-Farabi and Ibn Sina, that knowledge is not acquired by the senses alone, but reached through the aid of the Active Intellect.²⁵ This notion is first mentioned by Aristotle in *De Anima* 3.5 where he discusses ‘active intelligence that moves our potential for thinking to activity’ and later on in *Eudemian Ethics* ‘thought cannot simply start itself up by thinking but, like any process, requires a prime mover, which is indeed divine’. Ibn Bajjah’s phenomenological treatise on the soul discusses the preservation of the identity of the human soul where the unity of the rational soul is the principle of individual identity. He goes on to say that although the rational soul remains unique and individual even without its body. It is continuously at one with other souls, by virtue of its contact (*Ittisal*) with the Active Intellect. The Active Intellect (*Ittisal*) of Ibn Bajjah is our intellectual contact with the Divine through the mental process of acquiring knowledge and understanding through thought, experience and the senses. The Active Intellect enables us to know – communicates to us – the forms that order nature, those permitting the mind to follow the hints of sensory images and therefore constructing concepts on the basis of experience.²⁶

23 Goodman, Lenn E., *Ibn Bajjah*,

24 Goodman, Lenn E., *Ibn Bajjah*,

25 ‘Active Intellect’ Ibn Bajjah Believed was a universal and necessary judgement – the foundation of all apodictic reasoning about nature.

26 Goodman, Lenn E., *Ibn Bajjah*,



Fig. 17

The architecture of Alhambra is a palimpsest of historical but more importantly of the sacred, cosmic knowledge of this great Royal city, its builders and their community. I will show the foundations of Alhambra's harmony and how the intellectual, philosophical and scientific advancement of its time enabled its architecture to maintain a constant proportional relation down to its most intimate details.

The Craftsman, The Poet and The Architect

During this Golden Age of Islamic scholarship it was believed that spiritual knowledge was the highest aim of the individual, the most nourishing for any soul, achieved through the use of the Active Intellect and therefore connecting with the Divine. Like Aristotle, Ibn Bajjah believed that the best way of *knowing God* is to *know as God does*. This philosophy of investigation, allows the language of the Divine to be revealed. Spiritual knowledge could be found within the close examination of nature and its cosmos, through which a geometrical vocabulary surfaces that we shall see within the architecture of the Nasrid Palaces.

*"A sun dwells in this palace and even its shadow is blessed.
In this palace a multitude of pleasures capture the eye and suspend the intellect.
Here a crystal world teaches marvels.
Everywhere Beauty is carved, opulence is manifest."*²⁷

This inscription from a wall of the Nasrid palaces, by the poet Ibn Al-Khatib, is evidence to the cosmic knowledge the architecture of these palaces sought to manifest. The high ranking of the poet within the Nasrid court draws into question the nature of the architect and their autonomy in the design of the Palaces. All information regarding construction can be derived from the wall inscriptions, (Fig. 17) yet there is no mention of any named architects only those of the poets themselves. The positions attributed to poets within the Nasrid court such as *talib*

(apprentice), *katib sirri-hi* (personal secretary), *ra'is* (chief of department) and *vizier* (chief adviser to the sultan) all belonged to the governmental department *diwan al insha* (writing office in charge of handling bureaucratic affairs and official correspondence).²⁸ This office had a crucial cultural role in the architectural design and inscriptions of Qur'anic verses and poems on the walls of the Alhambra. The *katibs* and *ra'ises* cooperated with the *'arifs* (architects) and *mu'allims* (master craftsmen) in the formation of the architecture and its decoration. Ibn Al-Khatib and his contemporary Ibn Zamrak – both *katib sirri-his*, *ra'ises* and *vizirs* to the Nasrid courts – therefore contributed to the artistic aesthetic of the palaces not only as a poet but also as bureaucrats.

The Alhambra has been described as being one of the most luxurious books of poems ever produced, with poetic and religious epigraphic texts engraved on the walls, detailed accounts of the ruling sultanate and room functions pulled further into focus the world for which the Royal city was created. Many lines of poetry by Ibn Zamrak, in the *Palacio del Riyad*, are dedicated to architectural descriptions of the palaces:

*...How many joyful comforts for the eyes are found in it,
It rekindles the passions for even a sedate man's soul!...
The luminous stars would love to be fixed in its vault
Rather than traverse the vault of heaven...
It has a portico of surpassing beauty,
Through which the palace vies in beauty with the vault of heaven...
And how many arches rise up in its courtyard supported by columns
Which all night long are adorned with light,
Till you think them celestial spheres that have revolved in their orbits
Overshadowing the pillars of dawn that shone dimly through the night...²⁹*

28 Sumi, Akiko Motoyoshi, 2004, *Description in Classical Arabic Poetry*, Boston, USA

29 Sumi, pg. 169 - Ibn Zamrak's *Qasidah*, translated by Akiko Motoyoshi Sumi and Suzanne Sterkevych

These poems symbolically represent the Nasrid kingdom as the heavenly polity in which everyone desires to live. The inscribed verses not only have a visual, aesthetical effect but also a verbal, perceptive effect, acting as a commentary to the built text (architecture). The rich language of Arabic played an important role in the impact of these inscriptions both visually and aurally; enabling the voice of these walls to possess the symbolic means of understanding each section of the palace and its whole.

None of the Nasrid architects are known by name, considered as mere craftsman in the eyes of society, they could never gain the high ranks attributed to poets and writers (*ahl al-kalam* – *people of the pen*). Many Muslim architects started out specialising in one or more crafts such as masonry, carpentry and the like, which makes perfect sense for such a decorative architectural tradition.³⁰ Although attributed with a low rank within the artistic hierarchy, this did not reflect the intellectual capacity and knowledge of the Moorish craftsman, who concerned himself with perfecting his working methods.³¹ It was of spiritual significance that certain professional activities, such as architecture, produced the impulse to introspective wisdom, as with the philosophers, the craftsman was perfecting himself together with the external work he was creating. The geometry of Alhambra is that referred to by Plato when he says, “...*without it no one can enter the house of wisdom.*”³² The essential basis of Islamic art was that it held universal meaning, as outlined by Burckhardt:

“...*Throughout the cosmos there are essential forms that express themselves to a greater or lesser degree depending on the matter in which they are clothed... 'form' did not merely mean an outline, a spatial, or other kind of limitation but the stamp of essential unity...*”³³

30 Ed. Kostof, Spiro, 1977, *The Architect*, Oxford University Press, New York

31 Burckhardt, Titus, pg 13

32 Burckhardt, Titus, pg 206

33 Burckhardt, Titus, pg 206

'Essential unity' for the Muslim is the doctrine of the Oneness of God, the axis to which all the Islamic philosophers and scholars of Al-Andalus referred their fundamental views of reality. Although many of the Arabs were aware of this doctrine from the third century metaphysics of Plotinus,³⁴ its essence is set out in the Qur'an. One fundamental ingredient of this doctrine is the hierarchical structure of the universe; *plurality in oneness and oneness in multiplicity* (the law of hierarchy) and our soul's relation to the One. In his book *The Textures of the Divine* Hughes describes Plotinus's view regarding the soul and its responsibilities;

*"The soul is a reflection of Higher Being. When the soul is functioning properly – that is, according to its higher nature – the lower parts are subsumed into the higher. The higher parts, which include imagination, are responsible for the upward progression of the individual. But the imagination is problematic. If left to its own devices, it will further enmesh the individual in this world. The imagination therefore needs to be harnessed and its subversive potential redirected so that it may be used for the philosophical enterprise."*³⁵

In contrast to Ibn Bajjah's alienation from his society, Ibn Tufayl was very much involved, acting as a cultural Minister and adviser to the Almohad Caliph Abu Ya'qub Yusuf. A trained physician Ibn Tufayl served under the Caliph until he died in 1185. The young Caliph Abu Ya'qub Yusuf was a lover of books and learning and took pride in assembling more scholars and thinkers within his court than any other previous monarch in the Muslim West. By order of the Caliph and due to their close relations, Ibn Tufayl was instructed to seek out and bring to court men of erudition and science. It was through him that a young Ibn Rushd was presented and introduced to Caliph Abu Ya'qub in 1169. Through the command of the Caliph, Ibn Tufayl commissioned Ibn Rushd to

34 Plotinus (c. 205-270), philosopher of Roman Descent and founder of Neoplatonism

35 Hughes, Aaron W. pg 89

translate the works of Aristotle. As narrated by Ibn Rushd himself:

Abu Bakr Ibn Tufayl summoned me one day and told me that he had heard the Commander of the Faithful complaining about the disjointedness of Aristotle's mode of expression – or that of translators – and the resultant obscurity of his intentions. He said that if someone took on these books who could summarise them and clarify their aims, after thoughtfully understanding them himself, people would have an easier time comprehending them. "If you have the energy" Ibn Tufayl told me, "you do it. I'm confident you can, because I know what a good mind and devoted character you have, and how dedicated you are to the art."³⁶

Ibn Tufayl excused himself from the task, which was to become Ibn Rushd's monumental three-tiered commentary on the Aristotelian corpus, as well as his effort to reconcile scriptural religion and philosophy. Ibn Tufayl, however, is remembered for his epic tale of *Hayy Ibn Yaqzun*³⁷ where he traces the inquiries of an unguided mind, unblinkered by tradition. Ibn Tufayl believed that such minds could elucidate the truths of philosophy and mysticism helping the century-old quarrel between religion and philosophy in the Muslim lands. He believed that all pathways of knowledge sought the same goals, and through his fictional character, Hayy Ibn Yaqzun, he developed a thought experiment.

Substantiality of the human soul, its independence or self-sufficiency – conceive yourself suspended in the air, isolated from all sensations, even from all sensory contact with our own bodies – we'd still have 'self-consciousness'... Since one conceives of one's own awareness without positioning the body or any bodily sensation, the idea of the self is not logically dependent on that of any physical thing: the soul, then, is not to be thought of in merely relative terms but as a primary given, a substance.³⁸

36 Ed. Dozy, R., 1968, *The history of the Almohades*, Amsterdam, pg. 174-5

37 Ibn Tufayl's fictional character, born and raised on a deserted island alone with nature. Inspirational to the conception of Robinson Crusoe.

38 Goodman, Lenn E., *Ibn Tufayl*, ed. Sayed Hussain Nasr, Oliver Leaman, (2007) *History of Islamic Philosophy*, Routledge, New York. pg. 315

Ibn Tufayl, active in his society, gave his argument a social twist by transposing the mind from sensory deprivation to cultural isolation. The human mind, when left alone, has many ways to travel. It advances along its journey guided by the reason that carried it to this point, and the 'meanings of its discoveries left to the interpretation of reason, guided by Divine grace and the virtue of humility.'³⁹ The requisite emotion for Hayy Ibn Yaqzun is rooted in his God-given interests, curiosity and eagerness for perfection. However, Ibn Tufayl believes that for the mass of mankind such roots are clouded by spiritual laziness and moral complacency.⁴⁰ Like Aristotle when he stated, "*all men by nature desire to know*", Ibn Tufayl's fictional character believes that knowledge is obligation, and '*to know what manner of being he is and where he is situated in the cosmos is to know how he must live.*'⁴¹ This was the search of all these great philosophers; it is a phenomenological approach to defining ourselves in relation to our natural surroundings. There is an interesting parallel that can be drawn between the 'unguided' questioning of Hay Ibn Yaqzun and his yearning for Divine Presence and that of the architectural intent of the Nasrid Palaces. Every architectural motivation, as we shall see, seeks to evoke the remembrance of the Divine so as to encapsulate His presence within the palace walls. The Palace surrenders itself to the Almighty in its quest for complete beauty inspired and manifested only by Him.

The Royal Almohad commissioned translations of Aristotle's work by Ibn Rushd laid the foundation for a society that was determined to know and eager to learn. Ibn Rushd as a trained and practicing lawyer, physician and philosopher, gave him contact with a dual reality of public life, enhancing his philosophical mind from a social perspective. His great attachment to Greek thought was inevitably encouraged with his commission to translate the works of Aristotle. It is important to note that the Almohad government gave way to a new generation of thought, and their encouragement for such manner of philosophical scholarship was instrumental to the success and advancement of these scholars. For several decades Ibn Rushd held the position of

39 Goodman, Lenn E., *Ibn Tufayl*, pg. 318

40 Goodman, Lenn E., *Ibn Tufayl*, pg.315

41 Goodman, Lenn E., *Ibn Tufayl*, pg.315

qadi (judge) in both subsequent capitals of Al-Andalus - Seville and Cordoba. In 1179, however, he succeeded Ibn Tufayl in becoming the sultan's physician and therefore a close and active member of Prince Ya'qub's court.

Throughout Ibn Rushd's life, many of his personal writings focused on law and medicine. However, these were always pursued alongside his philosophical commentaries. A master of the Arabic language, Ibn Rushd, was able to resolve many philosophical problems through comprehensive linguistic analysis. Many of his own works on physics, cosmology and the natural sciences are '*added and presented through the works of Aristotle*'.⁴² However his most original and independent works produced in 1178, after making a trip to Marrakech dealt with religious issues discussing the intellect and correcting problems he saw in the works of his teacher Ibn Bajjah. Departing from the Aristotelian idea that '*real science is knowledge of the universal*', Ibn Rushd, as a physician and philosopher, insisted that in medicine the general is to be found beyond observation, in the linking of '*phenomena to causes*'.⁴³ As a faithful Muslim, Ibn Rushd believed that ordinary religion is more than enough for the masses whereas the addition of philosophy is necessary to satisfy a '*cultivated person*'. He believed that everything culminates in the affirmation of the unity of the intellect, which in turn embodies the stability of thought; '*...the intellectual faculties have, as in Aristotle, their seat in the heart, but not being proper organs their 'places' are in the brain where they 'appear'...*'⁴⁴

Awareness that reality embraces countless different levels of existence was common to all the cultures of classical antiquity and the Middle Ages.⁴⁵ The phenomenological approach of these great thinkers was inspirational to the culture and society of twelfth century Andalusia, Spain. The vastness and scope of intellectual thought spanned across all art mediums and inevitably

42 Urvoy, Dominique, *Ibn Rushd*, ed. Sayed Hussain Nasr, Oliver Leaman, 2007, *History of Islamic Philosophy*, Routledge, New York. pg. 331

43 Urvoy, Dominique, *Ibn Rushd*, pg. 337

44 Urvoy, Dominique, *Ibn Rushd*, pg. 340

45 Burckhardt, Titus, 1976, *Art of Islam – Language and Meaning*, World of Islam festival Trust, pg 63

into the lives and practices of architects. Alhambra as a masterpiece of Islamic aesthetics could be key to illustrating these philosophical principles so ardently discussed and philosophised by the Umayyad and then Almohad scholars enabling the masses to understand their connection to the cosmos and discover the virtues of the Active Intellect.

The architecture of Alhambra is a science: "...designs in the Alhambra mirror the universe and therefore an infinity which goes beyond the geometry of Euclid..."⁴⁶ the mathematics are exact and more importantly consistent.

Proportionality

There is a sensitive perception of proportional harmony that can be felt throughout the Alhambra that I believe visitors usually experience intuitively. Ibn Bajjah would argue that it is our *Active Intellect* speaking to us, highlighting the existence of the same proportional harmony within ourselves that our senses recognise in the Nasrid architecture. This relates back to the notion discussed by the Islamic scholars that our soul relates beyond ourselves, connecting to the celestial spheres by which natural proportions are governed.

*Aesthetics – a theory of beauty that is primarily interested in delineating the pleasure that arises in the soul of an individual upon viewing an object or hearing a poem or harmony. This pleasure, according to the medieval Islamic philosophers occurs because physical beauty (often defined by order and harmony) is regarded as participating in a higher order.*⁴⁷

From the Islamic composition for aesthetics; composition (*ta'rif*), harmony (*i'tidal*) and order (*nizam*) - similar to Aristotle's form, order and proportion - derives the model for not only

46 Fernandez-Puertas, Antonio, pg x
47 Hughes, Aaron W.

creativity or artistic activity but for our life and behaviour too.⁴⁸ These aesthetic compositions are experienced and integrated architecturally through spatial sequence (proportion), texture (arabesque, mukarnas), material and light. Through these experiences - and for architecture to be significantly effective in enabling us to experience ourselves as complete, embodied, spiritual beings - all the senses need to be addressed simultaneously. The body has a significant role in being the locus of perception, thought and consciousness enabling the process of our sensory responses.

The harmonic principle consistent within the mathematics of Alhambra consists of ratios and proportional relationships.⁴⁹ It is a system that relates one part to another, as a component of a *General Whole*. The Golden Age of Granada re-elaborated past Islamic achievements in mathematics, medicine, astronomy and astrology allowing the Nasrid architects to apply this knowledge of the cosmos (General Whole) and how we relate back to it in one part to another, step by step until our own sensory perception is in harmony with our Creator.⁵⁰ The Greeks of antiquity had defined a similar understanding of proportion with Pythagoras himself admitting that there could only be *one* Creator of such pure geometry, proportion and harmony. Ratios - a numerical philosophy ascribed to Pythagoras, upon which Plato's philosophy was based -⁵¹ cannot be measured or quantified by whole numbers but rather in fractions (1/2, 1/3, etc.). Ratio, refers to the quantitative relation between magnitudes, in architecture, for example, between the width and height of a building. These ratios are perceived by the viewers who are usually unable to define them and are therefore sometimes described as the *proportion of equality*.⁵²

48 Hughes, Aaron W.

49 Proportion of 'equivalence' or equality, between two or more magnitudes.

50 Fernandez-Puertas, pg. 16

51 Bangs, Herert, 2007, *The Return of Sacred Architecture*, Inner Traditions Rochester, Vermont, pg. 150 When Plato and Pythagoras studied in Egypt, they learned their philosophy from a living tradition.

52 Fernandez-Puertas, pg. 16

The Nasrid method of proportioning is based on a system of progressive diagonals. The diagram (Fig. 18) shows the Nasrid proportional system based on Pythagoras' theorem of a simple relation between the side of a square with a value of unity ($= 1$) and its diagonal ($= \sqrt{2}$). If the side of the square ($= 1$) is then taken to be the short base of a rectangle, and its longer side is given the diagonal of the square; a proportional $\sqrt{2}$ rectangle is achieved. This $\sqrt{2}$ rectangle in turn will have a diagonal value of $\sqrt{3}$. By repeating the operation we obtain a $\sqrt{3}$ rectangle and by further repetition we obtain a $\sqrt{4}$ rectangle (double square)⁵³ and so on. From the double square, the mysterious function of *Phi* (Φ) can be developed. *Phi* represents the only way in which a line segment of any given length can be divided so that the ratio of the smaller part to the larger is equal to the ratio of the larger part to the whole. The unique, harmonious ratio of *Phi* (1:1.618) is described as the *golden ratio/proportion* and can be found throughout nature. The presence of the *golden ratio* in natural phenomena inspires reflection upon our relation to the world of numbers and the unseen form that lies beneath the surface of visible things, tying us directly to the language of the Creator.

As mentioned earlier, Ibn Bajjah, like Aristotle believed the best way to attain the goal of knowing God is to know as He knows; understanding all things through their universal ideas. To enable the understanding of universals, all considerations must pass through the imaginative faculty, which concerns itself with the nature of aesthetics. The imagination (faculty for the creation of images and symbols) enables us to grasp that which exists without matter. Plato in *Philebus*, mentions that the senses bring in the data of our experiences, and that the memory recalls this data in such a way that images arise; Plato describes this as an achievement of

53 Bangs, Herert, 2007, pg. 157

The two-to-one ratio of the double square is related to music through the octave. If a note is sounded on a stretched string, and that string is then divided in half, the note sounded on either section of the string will be the same note, only an octave higher; in other words, as the length is halved, the frequency vibration is doubled. This two-to-one ratio was considered to be the most important, next to that of unison (one-to-one), by Saint Augustine, who was himself a musician.

the 'workmen in our soul'⁵⁴ who paint pictures for us. It is the particulars of *sense perception* specifically, when working with aesthetics and our imagination, that enable the structures of the sensual world to reveal the immateriality of the Divine world. The notion that aesthetics is concerned with how particulars reflect a universal beauty is instrumental in our readings of the Nasrid Palace's architectural intentions and motivations. The beauty found in an object points beyond itself, therefore taking on the responsibility in directing the soul, of the individual, to its true home in the celestial world. This couldn't be more the case than the experience of looking up to the pulsating *mukarnas* vaults in the halls of the Nasrid Palaces, where all sense of space is transcended.

The classical philosophers worked within a symbolic universe in which beauty was one of the characteristics of the intelligible world. As articulated by Ibn Tufayl's fictional character, Hayy Ibn Yaqzun, it is this intelligible world that the soul is naturally drawn to when it observes and contemplates physical beauty. Islamic philosophers believed the sole function of art and beauty was to help the individual transcend his or her materiality, enabling an awakening in the human soul, and allowing it to recognise its relationship to the immaterial world. Philosophers speculated on beauty and in the process conceived of an intimate relationship between it and the access to truth, phenomenology being important to the recovery of this truth. Beauty is what gives significance to the form of a material object. When one appreciates beauty, one is able to take pleasure in the object. Islamic philosophical aesthetics is ultimately based on the premise that one encounters in physical objects an unmediated reflection of a metaphysical reality. With the discussions on aesthetics by the Islamic philosophers God now became associated with the realm of beauty.

As discussed by the Muslims, aesthetics as with harmony defines unity – always relating back to The One - and therefore a proportionally constructed ground plan implies a correspondingly



Fig. 19

proportional elevation and all the internal structural elements down to minute details in the decoration and ornamentation⁵⁵ as will be illustrated in the *Palacio del Riyad*, which will be discussed later in the chapter.

*The individual who does not take the time to contemplate and observe beautiful objects fails to realise his or her full potential as a human. This is tied to the concept that our 'senses' intimately tied to our bodies; provide a gateway to philosophical activity. The phenomenal world and how this world reveals the structure of the divine.*⁵⁶

For the Muslims, now that God became part of the aesthetic discussion, the constant reminder of the Divine within the Nasrid Palaces makes sense. The architectural foundations, as we shall see, mirror the exact mathematical proportions found in nature, which are consistent throughout down to the ornamentation.

Arabesque

The arabesque ornamentation found throughout the Alhambra denotes the notion of 'Unity of Being' (*wahdat al-wujud*) and is developed in an infinite variety, however, is always expressed in two different ways (Fig 19): being woven from one single band or radiating from many identical centres. Geometric roses or stars that continuously run into one another and develop out of each other are the purest simile for the manifestation of divine reality (*al-hakika*). Each centre creates a cosmos of its own creating an unending reflection of centres in each other. These spiders web of God - as discussed by Burckhardt – symbolically denote the sense of satisfaction such work has for the Muslim artist, as such geometry is a constant reflection and remembrance of the Divine.⁵⁷

55 Fernandez-Puertas, Antonio, pg. 18

56 Hughes, Aaron W.

57 Burckhardt, Titus, 1997, pg. 207

*“The arabesque of Alhambra combine abstract palmettes with stylised flowers and geometric interweavings – tongues of flame, jasmine blossom, and snow flakes, unending melody and divine mathematics – or spiritual intoxication and spiritual sobriety combined, to use the terms of the mystics.”*⁵⁸

These rhythmic repetitions serve a different artistic purpose to that of pictorial art. In contrast to pictorial art it seeks not to capture the eye leading it into an imaginary world but *liberates it from the preoccupations of the mind like the view of flowing water.*⁵⁹ It doesn't transmit specific ideas but a state of being. This is the true sense of abstract art – no subjective, semi-conscious tentativeness about it – just pure conscious rules; the arabesque belongs to the laws of pure rhythm. The Muslim finds peace in the remembrance (*dhikr*) of God, heard in their repetitive mystical chanting, as does the *'pulsating patters achieve tranquillity by suggesting infinity'*.⁶⁰ This is recognised by Ibn Al-Khatib who states in an inscription on the wall in the Hall of Ambassadors/ Throne room:

*“...the fountain in my Midst, is like the soul of a believer, immersed in the remembrance of God...”*⁶¹

Mukarnas

This rhythmic beat of the arabesque, is also found in the *mukarnas* (stalactites, known in Al-Andalus as *mocarabes*) for which Alhambra is famous. These *mukarnas*' are the Islamic solution to the age-old aesthetic problem of a dome and square base combination. The Romans solved this problem by putting in spherical triangles as a smooth transition (Fig. 20). Islamic architecture chose a clearer arrangement by bridging the four corners under the dome using simple niches

58 Burckhardt, Titus, 1997, pg. 206

59 Burckhardt, Titus, 1997, pg. 206

60 Fernandez-Puertas, Antonio, pg. xi

61 Burckhardt, Titus, pg. 209

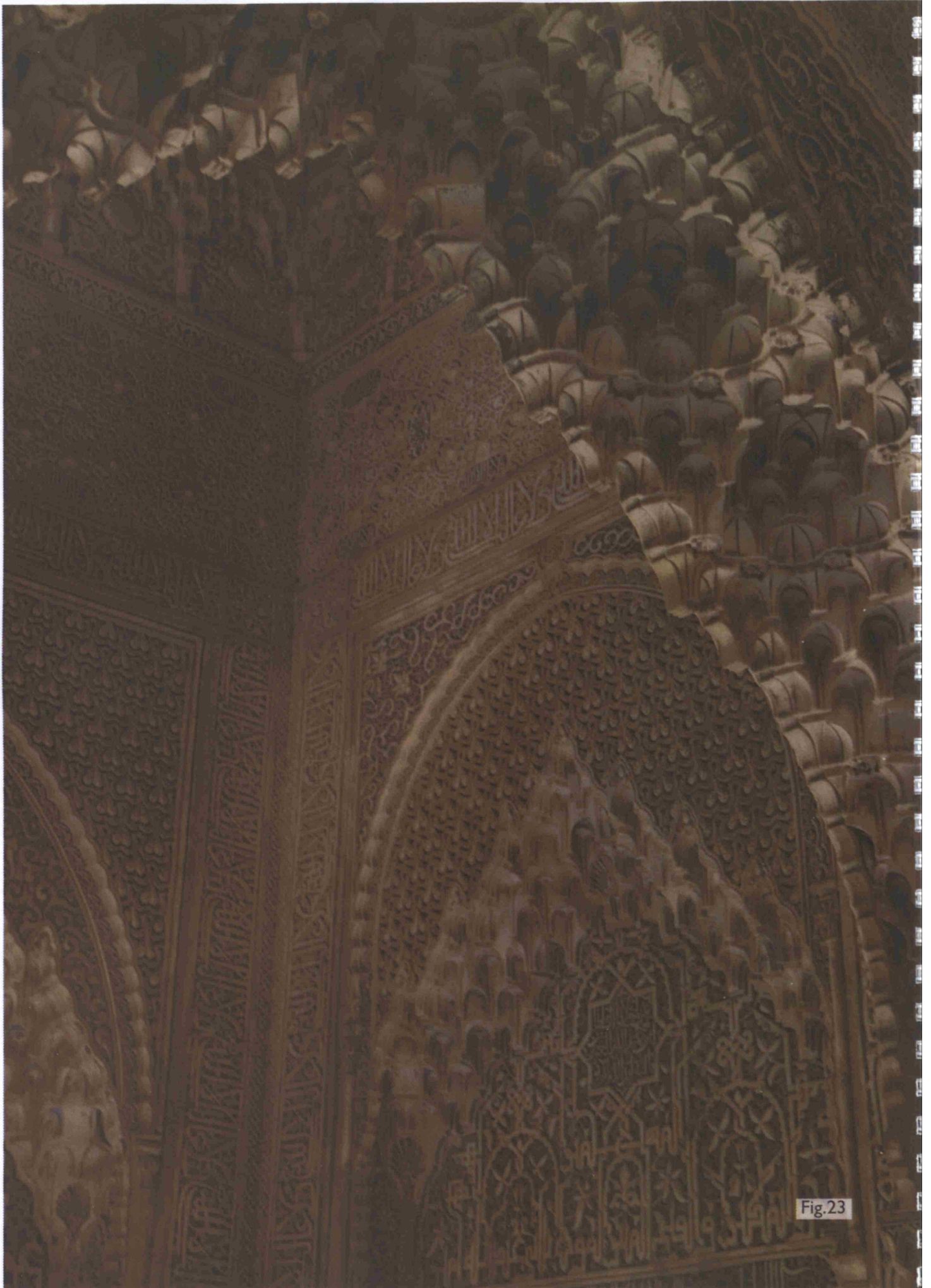


Fig.23



Fig. 24

(fig.21). The mukarnas is constructed out of singular plaster modules/cells, (Fig. 22) achieving infinite alternative arrangements, which in turn, produce denser transitions when combining several niches together creating a honeycomb effect. Cosmologically the round dome represents the eternally rotating sky while the square of the walls below corresponds to the earthly world dominated by contrasts.⁶² The *mukarnas* cells allow for the flowing ether of the sky to freeze into a firm earthly form.

The Granadan craftsmen divide entire domes into *mukarnas* described as *honeycomb cells whose honey was light*.⁶³ The magical effect experienced by these formations is attributed to the way in which they catch and filter light giving it a delicate luminous quality. Light stands to represent unity in that it ties nature directly back to the structure creating a balance and harmony between both external elements of nature and the architecture inspired by it. Muslims believe that paradise is created from Divine light, as is Alhambra; all of its friezes, trelliswork, stalactites and arches are brought to life through the nature of light. (Fig. 23) The secret of this art is to be found in the alchemy of light. Alchemy aims to *transform the body into spirit and spirit into body*. Islamic art of Alhambra manages to dissolve the solid bodies of the structure into a mass of *shimmering light transforming the light into immobilized crystal*.⁶⁴

Enclosed Gardens

Outside the grounds of the Nasrid Palaces but still within the medina of Alhambra is the summer palace and gardens known as the *Genrelife* (Fig. 24). It is interesting to note that the name – *Genrelife* - attributed to this serene piece of land, built for contemplation and reflection is a derivative of the Arabic *Jannat-al-'arif* (the garden/paradise of those who know/architects). Only a community on a path of sincere knowledge could chose to name a garden

62 Burckhardt, Titus, pg. 70

63 Burckhardt, Titus, pg. 70

64 Burckhardt, Titus, pg. 211

– a manifestation of natural beauty – as the abode of those who ‘know’. The architecture of Alhambra is blessed with an addition to the usual Islamic enclosed garden in that it is framed by panoramic views of a natural landscape that extends out to the horizon. It was a major achievement to associate the abstract rigid architecture of a garden with the untrammelled nature and flowing water (Fig. 25); a sensory pleasure enjoyed here on earth, one such as is promised in the Qur’an.⁶⁵

There is no essential difference between spiritual and secular art in Islam. The *Patio de los Leones* (Court of Lions) is an example of some of the advanced cosmic, astrological, knowledge attained by the scholars and craftsmen of Al-Andalus. On a basic level it holds all the symbolic attributes of the Qur’anic image of paradise; walled garden with the four rivers of paradise flowing towards the four corners of heaven. The word for paradise in Arabic is *al-janna* which means both *garden* and *concealment*: hence, walled garden. The 12 lions fountain (Fig. 26-7) is an ancient symbol whereby a lion represents the sun from which life springs forth. The lions each represent the 12 suns of the zodiac and the 12 months – supporting a ‘sea’ like the 12 brazen bulls in the temple of Solomon.⁶⁶ The stone canopies at the opposite ends in the east and the west of the garden reflect the high canopies/tents mentioned in the Qur’an. The Alhambra, like Granada itself, was densely carpeted with green gardens, as described by Ibn Al-Khatib, “...the clear coloured stone of its so many tall towers shone amidst the dark greenery like the most brilliant of stars in the midst of an evening sky.”⁶⁷

The combination between water and gardens is important in adding luminosity to the palace architecture. Pools act as a reflector allowing the architecture and sky to be mirrored back up to heaven.

65 Fernandez-Puertas, Antonio, pg. 85

66 Burckhardt, Titus, pg. 210

67 Jacobs, Michael, 2005, *Alhambra*, Frances Lincoln, London, pg. 44

“...reality becomes confused with reflection causing the sensation of an ethereal and unreachable architecture, full of radiance, following the visual planes of depth.”⁶⁸

The Nasrid population from the humblest subjects to the sovereign himself always maintained an intimate harmony in their architecture, their private inner gardens and the distant natural landscape beyond. This modesty and humility is inherent in all levels of Islamic architecture and daily life. The contrast can be felt in the Renaissance addition to the Alhambra - Palace de Carlos V - and its open official public garden.

Palacio del Riyad (Leones)

What finer proportional calculation could be asked of any building design when even its central fountain was constructed and carved in perfect proportional relation to its rectangular patio? With the Palacio del Riyad, the empirical knowledge of proportion inherited from antiquity reaches one of its highest peaks in the world of Muslim palace art.⁶⁹

The design of the *Palacio del Riyad* (meaning ‘Garden Palace’) is unique in that it was built as a complete unit under the instruction of a single anonymous architect throughout the reign of one sovereignty, Emir Muhammad V. It is therefore an ideal architectural example that illustrates the unifying, proportional continuity between plan, elevation and ornamentation detail mentioned earlier.

Working within tight site restraints with two streets running along the east and south sides of the site and the then built *Palacio de Comares* to its west, (Fig. 28) the precision and determination to maintain the precise laws of proportion practiced by the Islamic architect was a challenge before construction even began. Starting with the ground plan, the architect’s first

68 Burckhardt, Titus, pg. 85

69 Fernandez-Puertas, Antonio, pg. 72

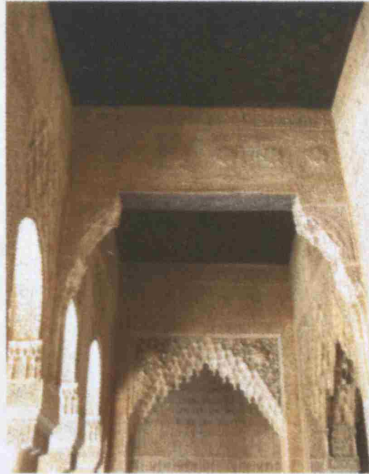


Fig. 32

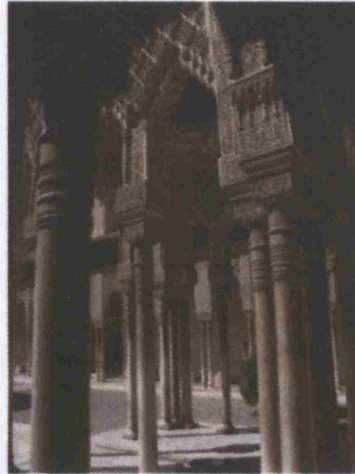


Fig. 33

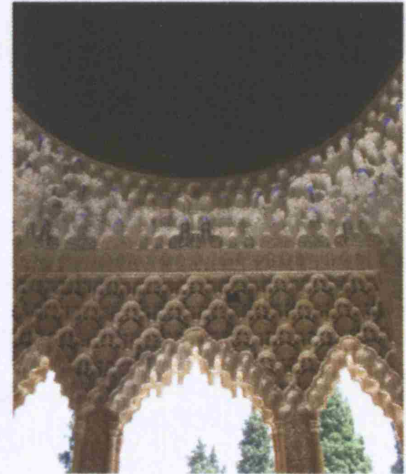


Fig. 34

aim was to organise the available space so as to determine the overriding geometrical proportions that would then govern the proportions of the surrounding rooms. By measuring the distance between two existing buildings on the site (M) (Fig. 28); the cistern and the wall of the *Comares wood store*, he then tried to find the mean between these existing buildings so as to obtain a well aligned central longitudinal axis (L) (Fig. 28). The relationship between M:L is 1:2 (double square; $\sqrt{4}$ rectangle).⁷⁰ Two corridors of conventional width were created to the north and south of the patio (Fig. 29); the architect could now obtain the palace's longitudinal axis through the centre of the patio and was therefore ready to design two large end rooms for the new palace.

The first of the large end rooms *Sala de los Mocarabes*; had a determined width due to the north and south corridors and the fixed boundary of the *Comares*. The architect divided the space into 5 (4x4m) squares (Fig. 32) creating an overall 1:5 ratio of the entire space. Along the central axis is the room's central *mocarabes* arch that gives onto the patio (Fig. 30).

The central patio, *Patio de los Leones* (Court of the Lions) was determined through a similar method as the ground plan. By projecting a line at 60°, through the right angle created by the *Sala de los Mocarabes* and the southern corridor, to the edge of the north corridor, the perimeter of the court is defined (Fig. 31). This creates a right-angled triangle and the foundations of another double square, $\sqrt{4}$ rectangle. Once this process was repeated on the opposite side, the central horizontal north-south axis (H) and location for the central fountain was determined, leaving the second large eastern end room to be designed; *Sala de los Reyes*.

To design the patio pavilions and galleries (Fig.33-4), the architect first obtained the square of the western pavilion. He did this by projecting 45° lines out from the internal corners of the *Sala de los Mocarabes*. Where they intersected, along the central axis of the patio, determined the centre of the pavilion and its respective fountain. The same was done for the eastern

⁷⁰ The longitudinal axis does not meet the ratio to the exact centimetre but evidence proves this was the intended ratio.



pavilion. The ground plan continues in a similar unifying manner through line projections creating square and double square rectangles.

This method of proportioning used by the Nasrids is inherent within its elevations also. In the case of the gallery and pavilion elevations the height of the gallery arcade is determined by taking the side of the base of the square pavilion ($= 1$) and elevated upon it a $\sqrt{2}$ rectangle. It then projects up into a $\sqrt{3}$ rectangle so as to determine the height of the upturned eaves of the pavilion (Fig. 37). The north and south galleries are identical in their arrangements of arches, with the central arches standing on the central north-south axis. Everything is a reflection back onto itself and ultimately a symbol of unity as a whole.

The complex plaster mukarnas (*mocarabes*) vaults and ceilings are the dominant decorative feature of the two *Qubbas* (halls) in the *Palacio del Riyad*. Creating stalactite, honeycomb effects enhanced by the natural phenomena of light. The geometry behind the cell divisions is again based on ground and elevation plan line projections using the base unity value ($= 1$) (Fig. 38). The tile work ornamentation is focused on the lazo-of-eight (eight pointed star) fundamentally based on two unity proportioned squares and their subsequent proportional axis's that reverberate off into infinity (Fig. 39-40).

Although the depth into which one can descend in explaining the proportional coherence is endless, this brief description of the *Palacio del Riyad*, is evidence in itself to the undisputable unity of individual elements to a unifying One.

Conclusion

Although the craftsmen and architects of the Alhambra were not philosophers in the sense that Ibn Bajjah, Ibn Tufayl and Ibn Rush were, they still found themselves inspired to search and manifest the Divine through their craft. The scholars and their philosophies were not alienated within their society but active members, encouraged by their Caliphs; allowing all members of society direct access to their inquiries. The significance of Arabic as the language of sciences, state administration and town markets is instrumental to the success of the Nasrid architecture and ornamental inscriptions. It represents the sacred language of Islam and is the original and oldest preserved languages of the Semitic group. Al-Andalus was the first of the Islamic West to establish *madrasas* (educational institutes) where both language and sacred sciences were preserved. With such an intellectual landscape such as twelfth century Al-Andalus, it is inevitable that knowledge of the Divine transcended all levels of society, to be found embodied in its crafts and architecture.

Proportion can be considered to be the essence of architecture. Unearthed through a proportional investigation of Alhambra - governed by mathematics, studied through geometry - the unseen truths of the Creator's language becomes manifest. Alongside this phenomenological approach to unveiling the secrets of Alhambra, the philosophical discussions of Ibn Bajjah, Ibn Tufayl and that of Ibn Rushd showed us that with the aid of our Active Intellect, the Alhambra speaks to us. Our intellect manages to activate all means of perception, illuminating our consciousness; it reveals itself to each of us individually in varying forms of understanding, although our lesson is one and the same. It was the striving of the Islamic philosophers to know their Lord that is evident in the harmonious geometry of Alhambra that speaks the mathematical language of the Divine.

Within all these layers of geometry, proportionality and aesthetics, the most significant aspect of the Nasrid Palace experience is the one perceived by our own consciousness. As

individuals this intrinsic quality - achieved by the craftsmen, through their understanding of harmony as manifested in nature, and their belief in the Active Intellect spoken of by the Islamic Philosophers - is that the true essence of the Nasrid architecture is the journey our soul is inspired to take, beyond ourselves, and into the presence of the Divine.

Appendix

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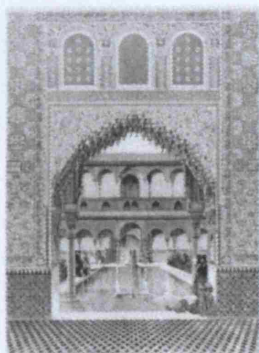
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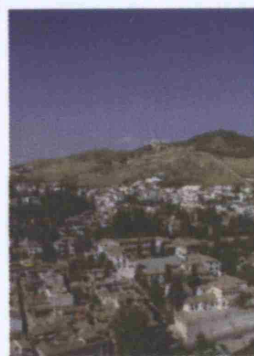
Detail of *mukarnas* arches in the *Palacio de Riyad*.
Digital photograph, by Nisreen Moustafa 2008.



Tile detail from the *Patio de Cuarto Dorado*, inscribed with 'God's Succour'.
Digital photograph, by Nisreen Moustafa 2008.



Etching of the *Patio de Cuarto Dorado*, taken from Fernandez-Puertas, Antonio, 1997, *The Alhambra I*, Saqi Books, England.



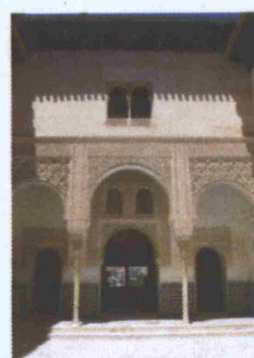
The view looking north from the Nasrid Palaces.
Digital photograph by Nisreen Moustafa, 2008.



Northern view from the *oratory*.
Digital photograph by Nisreen Moustafa 2008.



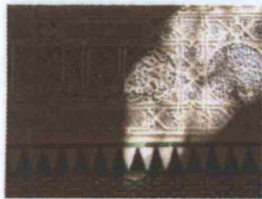
Detail of arches in the *Patio de Cuarto Dorado*.
Digital photograph by Nisreen Moustafa 2008



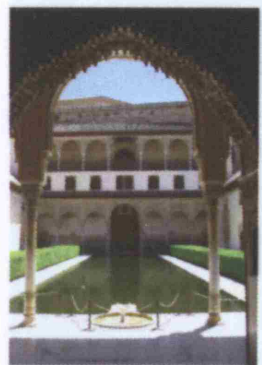
North elevation of the *Patio de Cuarto Dorado*.
Digital photograph by Nisreen Moustafa 2008



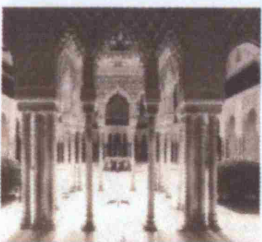
Tile detail from the *Palacio de Comares*, inscribed with 'No conqueror save God'. Digital photograph by Nisreen Moustafa 2008.



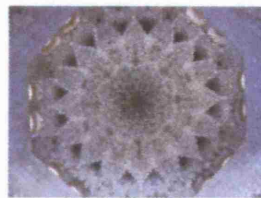
Wall detail from the Hall of Ambassadors. Digital photograph by Nisreen Moustafa 2008.



View looking south of the *Patio de Comares*. Digital photograph by Nisreen Moustafa 2008.



Authentic 19th century photographic replica by Duo Tone Photography.



Ceiling view of the *Hall of Abencerrajes*. Digital photograph by Nisreen Moustafa 2008.



Arch and column detail in the *Patio de Comares*. Digital photograph by Nisreen Moustafa 2008.



View of the Nasrid Palaces taken from the *Genrelife*. Digital Photography by Nisreen Moustafa 2008.



Wooden ceiling detail in the *mexuar*. Digital photograph by Nisreen Moustafa 2008.



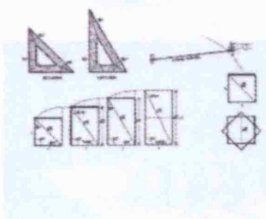
Arabesque tile detail taken from: Burckhardt, Titus, 1976, *Art of Islam – Language and Meaning*, World of Islam festival Trust, England.



Hall of Ambassadors ceiling detail taken from: Jacobs, Michael, 2005, *Alhambra*, Frances Lincoln, London



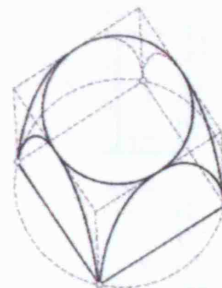
Detail of frieze inscription found in the Patio de los Leones. Digital photograph by Nisreen Moustafa 2008.



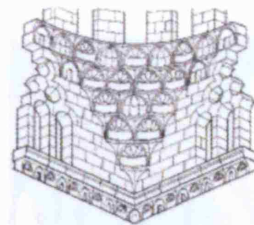
Measuring unit diagram taken from: Fernandez-Puertas, Antonio, 1997, *The Alhambra I*, Saqi Books, England.



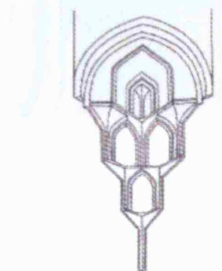
Arabesque tile detail taken from the Hall of Kings. Digital photograph by Nisreen Moustafa 2008



Roman solution to 'square base - dome relationship' taken from: Burckhardt, Titus, 1976, *Art of Islam – Language and Meaning*, World of Islam festival Trust, England.



Two Islamic solution to 'square base - dome relationship' taken from: Burckhardt, Titus, 1976, *Art of Islam – Language and Meaning*, World of Islam festival Trust, England.





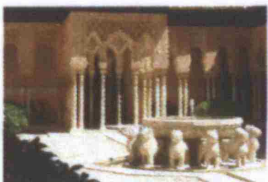
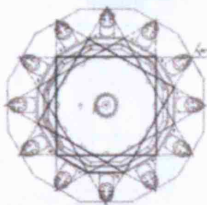
Arch detail from the *Palacio de Comares*.
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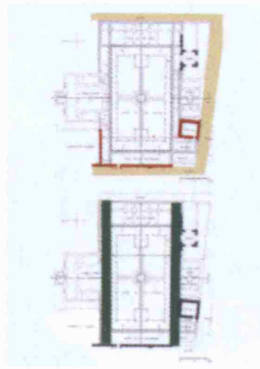
Genrelife
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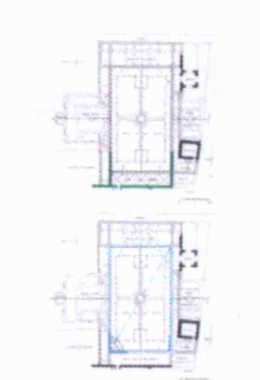
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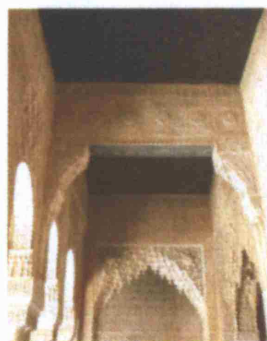
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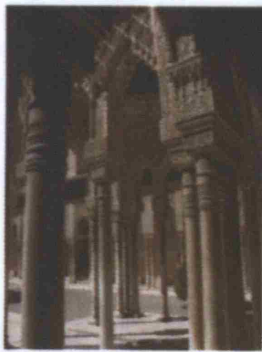
Plans of Palacio de Riyad with my own colouring from: Fernandez-Puertas, Antonio, 1997, *The Alhambra I*, Saqi Books, England.



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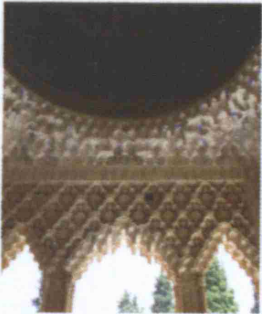
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Forest of columns in the *Patio de los Leones*. Digital photograph by Nisreen Moustafa 2008
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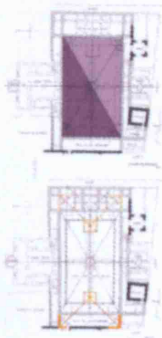
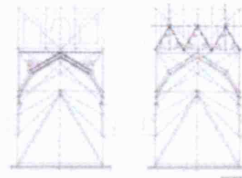


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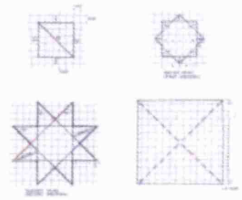


Detail of Western Pavilion vault in the *Patio de los Leones*. Digital photograph by Nisreen Moustafa 2008

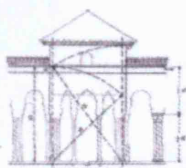
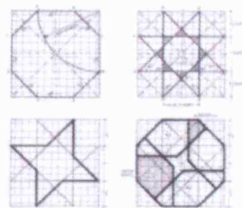
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conqueror