

ISLAMIC GARDENS IN THE UK

DYNAMICS OF CONSERVATION, CULTURE AND COMMUNITIES



Sophie Gilliat-Ray and Mark Bryant

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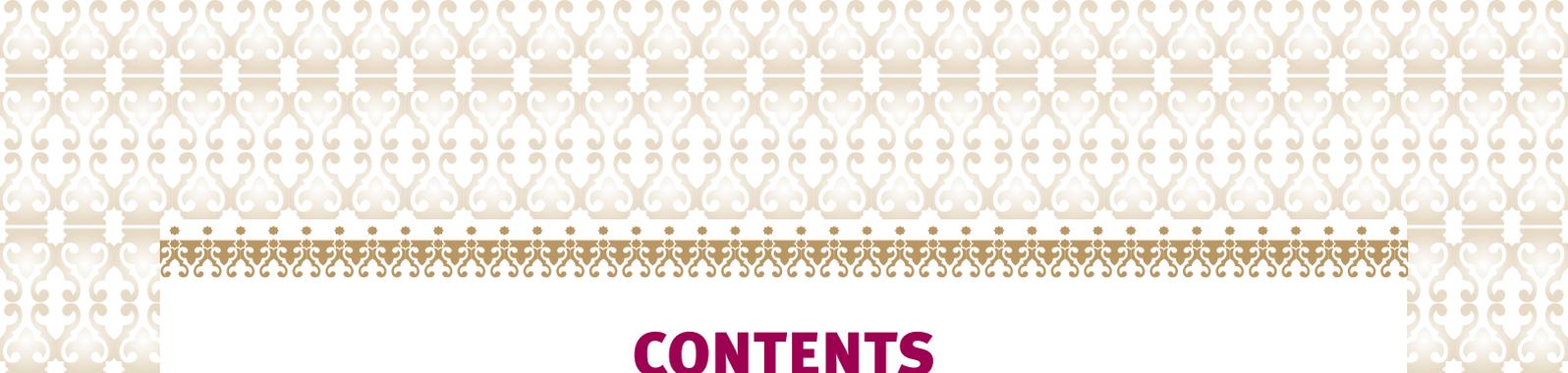
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INTRODUCTION

This report was commissioned by Botanic Gardens Conservation International (BGCI), and funded by the Calouste Gulbenkian Foundation. It documents the main aims, methods, outcomes, and implications of an eight-month research project carried out by the Islam-UK Centre at Cardiff University. The findings were presented at the 4th Global Botanic Gardens Congress in Dublin in June 2010. The main report is 30,000 words in length, and so this short report provides a brief summary. Aspects of the main report will be prepared as articles for submission to international journals, in due course.

In the following pages, we briefly document: the history of the project; the methods used to collect data; the literature that underpins it; and finally, the main findings with recommendations. A short bibliography can be found at the end of the report.

either being proposed or under development. We also examined a range of community gardening projects being undertaken by British Muslims. These case-studies were set in the context of the migration history, demographics, and current socio-economic situation of Muslims in Britain, and the recent development of British Muslim environmental organisations and initiatives.

Our findings demonstrate that many existing Islamic gardens in the UK do not pro-actively promote ideas of biodiversity conservation and environmental sustainability, but do nevertheless provide potential for educating Muslim, but especially non-Muslim, audiences about historic Islamic gardening traditions and heritage. There is considerable scope for existing gardens to make more effective use of passive educational methods to highlight the religious principles of Islam that underpin garden design and planting. Likewise, there is scope for Islamic garden designers to develop their design principles and practices to take account of new ecological and environmental challenges, thereby reflecting the Qur'anic imperative that human beings should act as responsible 'stewards' (*khalifah*) of the earth's resources.

Any efforts that are made towards the practical engagement of British Muslims with the principles of biodiversity conservation and ecological sustainability are most likely to be successful when developed outside botanic gardens, and within Muslim communities, and through the efforts of local grassroots organisations and networks that are able to articulate the principles of conservation embedded in Islamic discourses. There is a role for botanic gardens, with the support of organisations such as BGCI, to pro-actively support faith-based gardening and plant-based conservation projects. Furthermore, BGCI is well-placed to offer strategic advice on how botanic gardens could become more accessible and engaging spaces for British Muslim and other faith-based audiences.

EXECUTIVE SUMMARY

Using a mixed-methods approach, this research sought to demonstrate the 'need, value and viability' of Islamic gardens in the UK, with a view to promoting biodiversity conservation and better inter-religious understanding of Islamic gardening traditions.

Surveys were made of existing Islamic gardens in the UK. These included public park-based gardens, as well private, temporary, and gardens

HISTORY OF THE PROJECT

In 2008, BGCI undertook, on behalf of UNESCO, an evaluation of plans for the design and possible building of 'Qur'anic Gardens' in the Middle East, one in Qatar and one in Sharjah. One outcome of BGCI's work in the region was evidence that important links could be made between Islamic gardening traditions and the principles of environmental stewardship in the Qur'an. If these links were to be achieved successfully, they may significantly enhance the promotion of biodiversity conservation among Muslims, as well as educating people about Islamic gardening heritage and principles.

The UK is home to some 2.4 million Muslims and Islam is the second largest religion in UK. Acknowledging the significance of Islam and the Muslim community in the UK, Julia Willison, BGCI's Director of Education, decided to investigate how these links might be framed in a British context. She invited the Islam-UK Centre at Cardiff University to undertake research on this subject. The Centre's key research focus was to 'evaluate the need, value and viability of establishing Qur'anic gardens' in the UK...with a view to promoting biodiversity conservation'.

Early in the project, we made a collective and strategic decision to change the conceptualisation of the project, so that we were focussing not so much on 'Qur'anic Gardens', but 'Islamic Gardens'. This was for a number of reasons. Firstly, when we began to talk about the project to our colleagues, very few understood what a 'Qur'anic' Garden was (or might be). There didn't seem to be a broad consensual awareness of what might be involved in such a concept. This perplexity gave us cause for concern, in terms of how effectively we might engage external audiences and participants in our research whilst using unfamiliar terminology and concepts. Secondly, we were mindful of the precedent set by Emma Clark in her book *'The Art of the Islamic Garden'* (Clark, 2004). Emma has an international reputation for her work, and her volume was positively reviewed in the British Muslim press when it was first published.

On that basis, we felt it would be preferable for our project to be linked to the more familiar concepts and terms associated with 'Islamic Gardens'. Additionally, an early literature search revealed the absence of an established body of writing on the theme of 'Qur'anic Gardens', whereas we found an abundant literature about the idea of Islamic gardens and Islamic conservation.

However, our most substantial concern was that the concept of a 'Qur'anic Garden' could be rather restrictive, especially if narrowly interpreted. At the International Seminar held at the Alhambra Palace in Spain in 2009, a Professor of ecology from Cairo University, Prof. K.H. Batanouny made a presentation on Islamic and Qur'anic Gardens. According to Prof. Batanouny

The Qur'anic Botanical Garden means a garden that gathers all the plants mentioned in the Holy Qur'an and those mentioned in the Hadith of the Prophet or his Sunnah (Batanouny, 2009).

Plans for such a Qur'anic Botanic garden have been developed in Qatar in the Middle East, and the concept of a 'Qur'anic Garden' was exhibited at Kew Gardens in London in 2010. But aside from these developments, the idea remains novel. In our initial discussions with key experts, concerns were expressed regarding the botanical suitability, ecological sustainability, and theological underpinnings of Qur'anic Gardens (on the lines being proposed by Prof. Batanouny), within a British context. For example, both Emma Clark and Prof. Charles Stirton (former Director of the National Botanic Garden of Wales) indicated that focusing exclusively on plants from the Qur'an and Hadith represented a restrictive view, indicative of a particular, literalist interpretation of Islam that does not necessarily reflect the diverse views of Muslims in Britain today. As Fazlun Khalid, Director of the Islamic Foundation for Ecology and Environmental Sciences in Birmingham noted:

“I think it is wrong to make the assumption that for an Islamic garden to be viable only plants mentioned in the Qur’an should be used. The Qur’an says this: “the herbs and the trees bow in adoration (to the creator)”. It doesn’t say which herbs or which trees”.

While the Qur’an makes reference to a variety of specific plants, this quotation indicates the principle that all of nature is in some sense ‘in submission’ to the Creator. Although the ecological sustainability of ‘Qur’anic Gardens’ in the Middle East still needs considered thought, at least the majority of Muslims in places such as Sharjah and Qatar, are following broadly the same Islamic religious school of thought. In contrast, Britain’s Muslims are a minority group who represent a variety of different Islamic traditions and viewpoints, making it probably one of the most diverse Muslim populations in the world (Baksh *et al.*, 2008). Establishing a consensual view about the religious principles that might underpin a ‘Qur’anic Garden’ in a UK context (and indeed, how these might be expressed in practice) would probably be complex, if not impossible. Furthermore, in a Middle Eastern context, by forming a collection made up exclusively of plants mentioned in the Qur’an and the traditions of the Prophet, one is essentially representing the biodiversity of *that* region. However, in the British context, focusing too narrowly on plants from the Middle East will not necessarily give British Muslims the opportunity to represent or even appreciate the biodiversity of their own locality. In addition, a focus on the Middle East is counter intuitive to contemporary ideas about community cohesion, since this would reinforce the assumption that Islam is about ‘elsewhere’, rather than an integral part of British life and history.

Having discussed these initial issues with BGCI, the project proceeded to investigate how, and to what extent, ‘Islamic Gardens’ in the UK might contribute to greater British Muslim involvement in biodiversity conservation and sustainability projects (especially in relation to plants), and increased public understanding of Islam and inter-religious dialogue.

METHODOLOGY

In order to undertake this feasibility study, we wanted to hear views and gather experiences and expertise from a wide range of audiences, both Muslim and non-Muslim. This meant that a mixed-methods approach was important, and to that end, we wanted to benefit from the contributions and input of a number of different experts and activists, especially those working in the fields of Islamic garden design and Islamic environmentalism. We also felt that it was important to talk to members of regional British Muslim environmental groups. The individuals associated with these groups were likely to be able to offer insights and advice derived from the experience of local ‘grassroots’ activism. Alongside these contacts, we also made connections with those associated with existing (and proposed) Islamic gardening and park-based garden projects in the UK. Quite simply, we wanted to hear their response to our research questions, and to find out more about their own experiences and visitor feedback. Finally, we wanted to talk to members of conservation and horticultural organisations, and directors of botanic gardens: how might they respond to the idea of ‘Islamic gardens in the UK?’. Would they view the building of such gardens positively, negatively, or with caution? In order to ascertain views from such a wide range of individuals and organisations, we conducted semi-structured interviews (some in person, some by phone), an online survey, a focus group, and a series of case-studies. Many of these case-studies involved a fieldwork visit. The range of cases that we surveyed included:

- seven traditional ‘Islamic’ gardens, or parks containing gardens associated with Muslim cultures, in most cases designed by *non-Muslims*, but rarely with regard for environmental sustainability or plant conservation
- four British Muslim gardening projects (including a cemetery) and one ‘Islamic garden’, in all cases designed by *British Muslims*, and often concerned with aspects of biodiversity conservation and environmental awareness
- four traditional ‘Islamic’ garden projects under development (two of which are associated with future mosque building plans), and in all cases initiated by *British Muslims*, but not necessarily with explicit regard for conservation principles
- finally, we looked at two temporary Islamic/Qur’anic garden exhibitions, one designed by a British Muslim, the other not, but neither having particular regard for plant conservation or environmental sustainability.

From this range of case-studies, we felt we could ascertain the ‘need, value, and viability’ of establishing Islamic gardens in the UK’.

THE BACKGROUND AND DEMOGRAPHY OF MUSLIMS IN BRITAIN

The degree to which the development of Islamic gardens in the UK might be viewed positively, negatively, or with caution among British Muslims, will be directly related to their migration history, and current socio-economic circumstances. However, it is important to emphasise at the outset that when we talk about 'British Muslims', we are speaking about a religious community that is linguistically, spiritually, ethnically, and racially very diverse (Gilliat-Ray, 2010). In fact, it would be more accurate to talk not so much about the Muslim community, but about Muslim communities – in the plural. Although Muslims in Britain might have a shared belief in the basic tenets of Islam, the degree to which this is meaningful, or finds expression in actual practice, is highly variable. What is the current demography and socio-economic situation of British Muslims?

Muslims have been in the British Isles for centuries, but the post-Second World War period was distinctive in terms of the scale of new migration to Britain, especially of South Asians. About 75 percent of Britain's approximately 2.4 million Muslims are of Pakistani, Bangladeshi, or Indian origin, with the remainder being Arabs, Turks, Africans, Malaysians, Bosnians, and so on. About half of all British Muslims have been born in the UK, and compared to the rest of the population the Muslim community is demographically very young. About half of all British Muslims are under the age of 25. Many South Asian Muslims came to Britain from rural towns and villages in the Indian sub-continent, and to some extent, the perceptions that some of them may have about green spaces or gardening are shaped by that history, as one of our interviewees noted:

"The vast majority of these people came from rural areas where they struggled to survive as subsistence farmers. When arriving in the UK many turned their backs on anything to do with agriculture or horticulture. Land was considered the cause of their deprivation and misery and they wanted nothing else to do with it" (interviewee, Crosshill Tennis Club garden project, Blackburn).

Those South Asian Muslims who came to Britain in the post war period settled in towns and cities that offered the best prospects for unskilled and semi-skilled employment. At the time, this mainly meant the large industrial cities in Yorkshire and Lancashire, the Midlands, and London, and this settlement pattern means that today Britain's Muslims are unevenly distributed around the UK. Many post-war migrants found accommodation in inner-city, often deprived run-down areas, characterised by high levels of housing deprivation. Relatively few had a garden, or easy access to natural open space and greenery. Even today, Census data shows that Muslims suffer a higher level of poor housing compared to any other faith group, and associated with this are higher rates of ill-health.

Many post-war South Asian Muslims came to Britain to work in textile mills and factories, and so the decline of these industries in the 1970s and 1980s had a significant impact on the economic prosperity of Muslim communities. Younger South Asians have had to find alternative means of income, particularly in the service sector (catering, market-trading, taxi-driving). These are of course occupations with relatively few prospects for career progression. Compared to all other faith groups, Muslims in Britain are less economically active, and there is a particularly high rate of youth unemployment. Rates of unemployment are, unfortunately, a reflection of educational underachievement.

The general picture that emerges from Census data is that British Muslims suffer from a range of cumulatively disadvantaging socio-economic circumstances to a greater extent than all other faith groups in the UK (Beckford *et al.*, 2006). This is especially the case in some towns and cities. Clearly, this is a generalisation that masks the economic prosperity and educational success of many others. But, the grim reality of multiple deprivation was important for us to take into account as we considered how British Muslims might be encouraged to engage with gardening, horticulture or botanic gardens, via their own religious heritage and planting and gardening traditions.

ISLAMIC ENVIRONMENTAL ETHICS

The Islamic environmental ethic is becoming a viable alternative to current and predominant Western scientific responses to the environmental crisis. As the environmental crisis deepens, Muslims are increasingly looking to Islamic sources for possible answers (Mohamed, 2007). For Muslims, the ultimate source of guidance on all ethical questions, including the principle of environmental responsibility, is the Qur'an. It contains the basis for understanding ecological issues, the role of science, the correct way to interact with the environment, and the responsible use of the earth's resources. For example, the Qur'an directly addresses and anticipates the tendency that humans have for environmental irresponsibility, as well as highlighting the imperative to take care of the earth's resources.

Corruption has flourished on land and sea as a result of people's actions and He will make them taste the consequences of some of their own actions so that they may turn back (Surah 30:41).

At the heart of the Islamic environmental ethic are two central tenets of Islam. The first of these is *tawhid* which is the principle of absolute monotheism—the unity and uniqueness of God as creator and sustainer of the universe. This central tenet represents one half of the *shahadah*, the Muslim declaration of belief: "There is no deity but God, and Muhammad is the Messenger of God". *Tawhid* expresses the unity of an uncreated God with what he has created. People can only really experience God through his creation. Therefore, for Muslims, nature is respected as part of God's creation and as a sign of his greatness, and indeed, existence. According to the Muslim philosopher Seyyed Hossain Nasr:

"the cosmos itself is in fact God's first revelation, and upon the leaves of trees, the faces of mountains, and features of animals, as well as in the sounds of the winds and the gently flowing brooks, are all to be found signs of God"(Nasr, 2003: 95).

For Nasr, nature is sacred, but not divine. We worship only God, but respect his creation. Significantly Islamic environmentalists see no distinction between nature and humankind.

The second central tenet of Islam is humanity's role as *khalifa* (stewards). As well as respecting nature as part of creation, Muslims have also been entrusted with the task of acting as *khalifa*, or vice-regents on earth - guardians of nature. The Quran says:

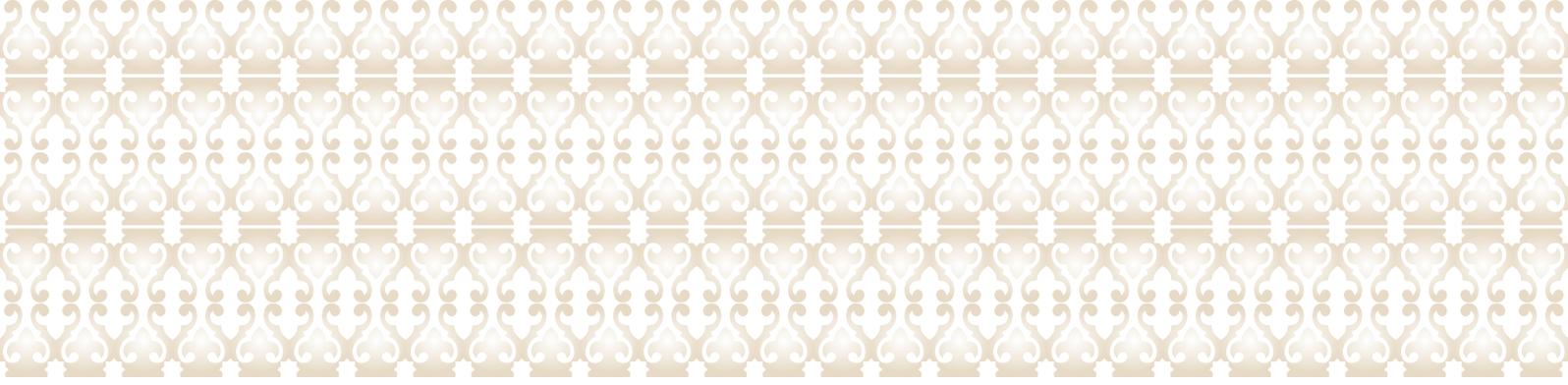
Thus We have made you to succeed one another as stewards on the earth, that We might behold how you acquit yourselves (Surah 10:14).

We can see that this responsibility is in two parts: first, humans have been entrusted to act as guardians of nature; second, people will be held accountable for the degree to which they have fulfilled their duties on earth. Humanity, having particular talents, has the role of 'nature's caretaker', but humans have no superiority over nature for in Islam, all of creation equally worships the creator.

Don't you see that to Allah bow down in worship all things that are in the heavens and on earth - the sun, the moon, the stars, the mountains, the trees, the animals, and a great number among mankind? (Surah 22:18).

Related to the concept of *tawhid* is the notion of balance. The balance of nature reflects the balance between God and His creation. The following verse from the Qur'an establishes the balances in nature and that the responsibility of the *khalifa* is to keep that balance.

The sun and the moon follow their calculated courses; the plants and the trees submit to His designs; He has raised up the sky. He has set the balance so that you may not exceed in the balance: weigh with justice and do not fall short in the balance (Surah 55: 5-9).



Many Muslim environmentalists see the current environmental malaise as an imbalance in the natural order resulting from a dependence on the prevailing western scientific model which, to them, secularises nature. As anyone who has visited the 1001 Inventions Exhibition or watched the BBC programme 'Islam and Science' would know there is an increasing awareness within the west of Islam's scientific heritage. In contrast to Western scientific principles, the motivation for Islamic scientific enquiry is to explore creation in order to better understand the greatness of its Creator by revealing the seemingly endless signs found in nature.

The modern world largely looks to scientific and technological solutions for the current environmental crisis. But Islamic environmentalists argue that science separated from God, and humankind detached from nature, represents the core of the problem. For many, the solution requires a rejection of the modern Western-based scientific paradigm and a return to an awareness of the sacred dimensions of nature. It is the prevalence and dominance of Western science in the modern world that has made the environmental crisis a global phenomenon. The pervasive nature of modern Western culture may explain the failure, up to now, of many Muslims to embrace the environmental ethic rooted in their religion

ISLAMIC ENVIRONMENTAL MOVEMENTS IN THE UK

Islamic environmental movements in the UK are promoting the Islamic environmental ethic outlined previously to constructively engage British Muslims with issues of biodiversity conservation and sustainability. Our research revealed five regional Islamic environmental groups (Reading, London, Sheffield, Wales, and Birmingham, West Midlands) and one international body (Islamic Foundation for Ecology and Environmental Sciences, IFEES) also based in Birmingham. These environmental groups are primarily organised by and for Muslims, and are inspired by the principles of conservation and environmental awareness embedded in Islamic sources. While these groups are headed by enthusiastic individuals, there is a common struggle against apathy within their local communities. Having said this, there is evidence of successful initiatives such as ‘clean-up campaigns’ (collecting rubbish from local streets). These events go further than promoting environmental awareness amongst local Muslims as they often produce opportunities for bridge building between communities.

Many of those that we spoke to in the British Islamic environmental movement indicated that one of the challenges of promoting environmental awareness was getting religious leaders involved. However, there are some mosques and imams who are pioneering changes in this area. For example, the South Woodford Islamic Centre in London has implemented a number of energy saving measures and claims to be the first carbon-neutral place of Islamic worship in Britain. Members of the congregation are encouraged to offset their personal carbon footprint by donating money to tree-planting projects.

We found a tendency amongst those involved in Islamic environmentalism to be open to interfaith initiatives and dialogue. For example, members of the Swansea-based Islamic environmental group have worked with ‘Interfaith Wales’, giving talks about Islamic environmental issues. Inter-religious environmental organisations in turn disseminate information about Islamic environmentalism. For example REEP (Religious Education and

Environment Programme) is a non-denominational charity that provides pupils and teachers with free online resources on topics concerned with spirituality and the environment. With the strap line “Promoting links between religions and the environment”, their website has a comprehensive section on Islamic Gardens.

Non-faith-based organisations concerned with landscapes, green space and public engagement have become interested in the question of widening access and engaging with faith communities. For example ‘Forestry Commission England’ (FCE) initiated a project to develop what they called a ‘faith woodland’ in Luton in 2007 (Hand, 2007). According to the project leader the Faith Woodlands initiative aims to investigate the involvement of faith communities in developing, designing and using special areas within existing woodland which have meaning to them, which are accessible to all, and which help to involve and educate those from all sections of society.

ISLAMIC GARDENS

According to James Wescoat there are 166 references to gardens in the Qur'an (Wescoat, 2003). The Qur'anic descriptions of paradise are of walled sumptuous cool gardens with shade, fruit trees, sweet scents and running water - a tranquil oasis of peace. One can see the appeal of such a vision of heaven to those living in the arid lands from which Islam emerged. Indeed, the Arabic word 'jannah' means both garden and paradise.

As the Islamic world expanded it reached into areas such as Persia and North India, where a tradition of formal garden architecture already existed. Utilising this existing know-how, gardens emerged that were designed to be reflections of heaven on earth filled with the symbols of paradise as described in the Qur'an (Clark, 2004).

The cultural heritage of Islam has long been evident in European science, art, literature and architecture. Islamic colonisation of parts of Europe and the later colonisation of Islamic countries by European powers has produced rich historical exchange of ideas. Islamic gardens have played their part in this dynamic. Andrew Watson goes as far as to argue that botanic gardens may not have been a European invention, as was previously thought.

Evidence is now appearing from many different regions which suggests very strongly that early Muslims made gardens that were the sites of serious scientific activity and may thus be considered true botanical gardens. Some might even be called experimental farms (Watson, 1995: 105).

The next section of this summary report outlines the development of Islamic gardens and British Muslim gardening projects.

ISLAMIC GARDENS AND BRITISH MUSLIM GARDENING PROJECTS

We noted above the range of gardening projects surveyed for this study. Below, we have identified the specific sites surveyed:

- seven traditional 'Islamic' gardens, or parks containing gardens associated with Muslim cultures, in most cases designed by *non-Muslims*, but rarely with regard for environmental sustainability or plant conservation. These included:

- Sezincote House, the Cotswolds
- Kensington Roof Gardens, London
- Mughal Garden, Lister Park, Bradford
- Arif Muhammad Memorial Garden, Shah Jahan Mosque, Woking
- Carpet Garden, Highgrove House, Gloucestershire
- The Alhambra Garden, Roundhay Park, Leeds
- St Mary the Virgin Primary School, Cardiff

- four British Muslim gardening projects (including a cemetery) and one 'Islamic garden', in all cases designed by *British Muslims*, and often concerned with aspects of biodiversity conservation and environmental awareness:

- Ismaili Centre Roof Garden, London
- Community Garden, Wapping Women's Centre, Tower Hamlets, London
- Gardens of Peace, Ilford, Essex
- Community Garden, Crosshill Tennis Club, Blackburn

- four traditional 'Islamic' garden projects under development (two of which are associated with future mosque building plans), and in all cases initiated by *British Muslims*, but not necessarily with explicit regard for conservation principles:

- Gulshan-e-Wycombe, High Wycombe
- British Muslim Heritage Centre, Manchester
- Oxford Centre for Islamic Studies
- Cambridge Mosque and Islamic Centre

- finally, we looked at two temporary Islamic/Qur'anic garden exhibitions, one designed by a British Muslim, the other not, but neither having particular regard for plant conservation or environmental sustainability:

- Reep – temporary Islamic Garden at Islam-Expo, 2008, London
- Qur'anic Garden Exhibition, Kew, London, 2010

SELECTED CASE-STUDIES



Photo: Dr Edward Peake

Sezincote House, Gloucestershire

Sezincote is an early 19th century house in the Cotswolds built in the 'Indian style' (Malins, 1980) by Sir Charles Cockerell (1755-1837). It includes a large formal Islamic style 'Persian' garden. The website for the house and garden says:

It was in 1795 that Col. John Cockerell grandson of the diarist Samuel Pepys's nephew, John Jackson, returned from Bengal. John Cockerell died in 1798, leaving as heir his youngest brother Charles, who had been with him in the service of the East India Company. Charles Cockerell (created a baronet in 1809 and a member of Parliament for Evesham) employed another brother, Samuel Pepys Cockerell, to build a house in the Indian manner. S. P. Cockerell was already an architect of some standing, and surveyor to the East India Company.

It would seem that the house and garden are designed to reflect more of a sense of India without any particular attention to Islamic religious heritage. For example, where Mughal gardens are designed as a representation of heavenly gardens, filled with the symbolism and spirituality inspired by the Qur'an, the design of the garden at Sezincote reflects a religious hybridity. It conforms to the layout of an Islamic garden in many respects, but also includes dissonant elements, such as a temple to the Hindu goddess Sourya and bronze 'Brahmin' bulls, all suggesting an interest primarily architectural and aesthetic in nature. Reducing Mughal culture to such a simplified romanticised image, whilst ignoring factors such as the religious underpinnings of the style, can be said to be an example of what Edward Said describes as Orientalism (Said, 2003).

The Mughal Garden, Lister Park, Bradford

The Mughal Garden in Lister Park, Bradford, was designed and built in 2001 to reflect the culturally diverse population of the area. As we can see from the picture below, these gardens are no longer the preserve of an exclusive elite. The renowned British Muslim photographer Peter Sanders said of this garden.

“It was not the quiet place of meditation that I had imagined, but buzzing with life and children of many ethnic groups playing together (Sanders, 2007)”

The context of the site conditions – the diversity of the local community, project finances, local climate and available materials, shaped the design of the garden. These were seen as

“positive and necessary...[building] meaning, depth, integrity and value into the Lister Park Mughal Garden. Indeed this is how all of the Mughal gardens evolved their unique and world-renowned individual characters – by trying to create a certain kind of garden out of the particular local conditions inherent with each site – materials, craftsmen, climate, finances, and....architecture” (Parks and Woodlands Manager, Bradford City Council).

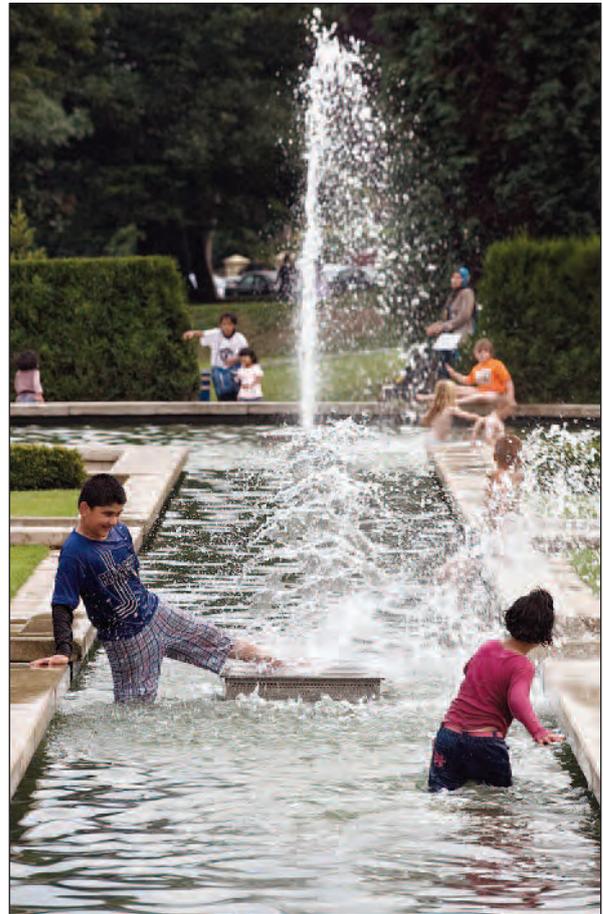


Photo: © Peter Sanders
www.artofintegration.co.uk

Wapping Women's Centre, Community Garden, Tower Hamlets

Much of the important, effective work of exposing British Muslims to their religious obligations towards the environment through horticulture has come from local, community initiatives. For example, the Wapping Women's Centre in the East End of London has set up an inner-city 'community garden' in Tower Hamlets. According to Sufia Alam, Manager of the Women's Centre, it had been observed that large numbers of women were using planters on their balconies to grow 'beneficial' plants more associated with Asian cultures (typically for medicinal or culinary use). An opportunity was seen to encourage gardening as a means of fulfilling the desire to grow these plants, while addressing the need to encourage women from the Bangladeshi community "out of their flats and into the wider community". In addition the programme has actively promoted the Islamic environmental ethic. At a recent meeting with Tower Hamlets Council it was said that there had been a 40% reduction in waste as a consequence of the actions of Muslim women in the locality.



Photo: The Wapping Women's Centre

Gardens of Peace Muslim cemetery, Ilford



Photo: Gardens of Peace
www.gardens-of-peace.org.uk

The 'Gardens of Peace' cemetery in Ilford is the largest dedicated Muslim burial ground in Europe. The picture above shows how the sparse graves traditional in Islamic cemeteries are bordered by a park-like garden. The garden includes crescent shaped beds and plantings consisting of many of the plants and trees mentioned in the Qur'an along with many quintessential English species. The garden has collected as many plants mentioned in the Qur'an, or close relatives, as was practical. With sustainability in mind only plants able to be grown outdoors are used. There is a synthesis of elements typical of an English garden of remembrance with symbols from Qur'anic descriptions of paradise. Plantings and signage are designed to inform visitors about Islamic environmental ethics as well as to connect Muslims with their spiritual heritage.

OTHER RESEARCH DATA AND FINDINGS

In addition to our case-study research, we circulated an on-line survey to a range of organisations, including British Muslim environmental networks, and horticultural networks. The response rate was (n= 157).

We found that among those who responded to the survey via Islamic networks (n=99):

- The most significant barriers in terms of visiting botanic gardens, in their view, are in order of frequency:
 - Lack of publicity and an associated unfamiliarity with what a botanic garden might have to offer
 - Geographic distance
 - Lack of prayer facilities
 - Expense, both in terms of travelling but also admission charges

One respondent additionally noted that:

I'm not sure that many Muslim people would view a botanic garden as a place of interest – they have forgotten their heritage in terms of Islamic gardens and the younger generation have nobody to teach them about this side of Islam. British botanic gardens may also be regarded as the type of place frequented by middle class native British people and not the kind of place at which they might feel at home.

- Just under half of our respondents had visited an 'Islamic garden', but for the vast majority, this had been overseas, not in the UK.
- If an Islamic garden were to be incorporated into a botanic garden in the UK, nearly 82 percent felt it would make them 'likely' or 'very likely' to visit. Many felt that such sites could have a role to play in biodiversity conservation, particularly in educating visitors about the link between Islam and the environment.
- Among our respondents, the 'green space' that they visit most frequently is a public park (36.6 percent visiting at least once a week).

Other kinds of 'green space', such as 'nature reserves' or 'gardens open to the public' are more likely to be visited on an annual basis. This is an important finding in relation to any *potential* visit to an Islamic Garden. If their visiting behaviour in relation to other kinds of 'green space' is used as an indicator, then hypothetical future visits to Islamic gardens, although more *likely*, are probably also going to be *infrequent*.

- Our respondents are not all gardeners. Only 45 percent were engaged in regular gardening activity, and only 15 percent had an allotment.
- Less than one third of our respondents were members of Islamic environmental groups, though there were also some respondents who were members of other environmental organisations. The general picture suggests that our respondents are not expressing their activism through membership-based organisations.
- However, recycling is practiced by 95 percent of respondents, largely driven by a sense of environmental responsibility and an associated sense of religious responsibility.
- In relation to *other* British Muslims, our respondents felt that where they are aware of environmental issues, this is largely driven by the efforts of secular/mainstream initiatives (64 percent), rather than Islamic principles and obligations (12 percent). Islamic religious leaders could have an important role in reversing this balance, and 94 percent of respondents would like to see Friday sermons addressing this issue.

Among the responses from horticulturalists (n=58) the general picture that emerges is:

- A much greater degree of clarity about the location of their nearest botanic garden. So, where 14 percent of Muslim respondents were 'unsure' as to whether there was a botanic garden within a 40-mile radius of their home, only 2 percent of horticulturalists were 'unsure' about this.

Likewise, where 73 percent of horticulturalists 'often' went to visit a botanic garden, only 43 percent of Muslim respondents did so.

- When it comes to barriers to access, horticulturalists also identified 'lack of publicity' and expense (travel and cost of entry) as significant. Perhaps the only distinguishing feature between the two groups of respondents was in relation to the availability of a prayer room – clearly important to potential Muslim visitors, but less so for others.
- Surprisingly, more horticulturalists (56 percent) had visited 'Islamic gardens' that had the Muslim respondents (41 percent). Where this visit had predominantly taken place *overseas* for Muslims, there was a noticeable contrast among the horticulturalists - from those who had visited an Islamic garden, in 50 percent of cases this was in the UK. It is difficult to speculate on the reason for this difference, but one possibility is that members of UK-based horticultural organisations have visited especially notable Islamic gardens (such as the Carpet Garden at Highgrove) as part of organised excursions. If British Muslims are not expressing their interest in environmental issues through membership of plant or conservation organisations – which may be key for enabling access to 'prestigious' Islamic gardens – they are indirectly excluded from the opportunity to enjoy British 'Islamic gardens'.
- If an Islamic garden were to be built within a botanic garden, 54 percent of horticulturalists would be 'likely' or 'very likely' to visit (in contrast to 82 percent of Muslim respondents). But this is in a context of higher rates of visiting to botanic gardens anyway.
- Like their Muslim counterparts, the horticulturalists felt that Islamic gardens could play an important potential role in educating the wider public about the conservation and environmental principles contained in Islamic sources.
- There are observable differences in the frequency and type of green spaces that Muslims and horticulturalists visit regularly. The general picture is that the latter visit green spaces more frequently overall, and whilst the general distribution in terms of types of spaces is broadly similar, 30 percent of horticulturalists claimed to visit a 'garden open to the public' at least once a week (compared to only 9 percent of Muslims). Likewise, where 38 percent of horticulturalists visited other kinds of green spaces at least once a week, only 14 percent of Muslims were doing the same. In many ways, these trends provide quantitative evidence for some of the qualitative interview findings.
- Likewise, there is a notable difference when it comes to gardening activities. Nearly 80 percent of horticulturalists are engaged in regular gardening, compared to only 45 percent of Muslim respondents, and it is evident that many of the horticulturalists are able to do their gardening outside the confines of an allotment.
- Based on the general findings so far, it is not surprising to find that, compared to the Muslim respondents, a greater proportion of horticulturalists have joined organisations to support their interests in relation to general conservation/environmental action as well as more specific bodies (such as The National Trust).
- Rates of reported recycling are identical between Muslims and horticulturalists, and both groups are motivated by a general concern for the environment. But the horticulturalists are far less inclined to justify their behaviour on the grounds that it is also 'a religious responsibility', compared to Muslims.
- In terms of promoting environmental awareness, where 94 percent of Muslim respondents were likely to look to religious leadership for direction and support, only 69 percent of horticulturalists felt that religious leaders should be more pro-actively involved in educating their congregations about the issues.

The findings from telephone interviews with the Directors of a small sample of botanic gardens revealed a number of opportunities and constraints when it comes to widening access and the possible development of 'Islamic gardens' within their sites. In terms of positive strengths and opportunities, they could see the value of increasing (Muslim) visitor numbers (thereby increasing the profitability of their gardens), and one valued the prospect of bringing about a better social balance in the visitor population. He noted that visitors were predominantly white, middle-class, and of an older generation, and he welcomed the idea of more social diversity in order to reflect the diversity of society at large. One garden had started to host "Asian" weddings, with commercial interests uppermost. Theoretically, the inclusion of an 'Islamic Garden' could increase the popularity of the botanic garden for functions of this kind, particularly among Muslims. However, the wedding events "had not been without controversy", and some of the staff and management of the garden had feared being "swamped by Asians".

All the interviewees could see difficulties and threats associated with the idea of developing Islamic Gardens, certainly within the parameters of their own sites. They spoke of the fact that their botanic gardens carried 'listed' status and that any significant changes would be complex. They also noted the practical constraints of space and funding when it came to new developments. From a horticultural perspective, one of the directors was emphatic that traditional Islamic gardens were "by definition unsustainable...they are designed to produce an unnatural situation...biodiversity doesn't spring to mind when I think of an Islamic garden". Another noted that even if an Islamic garden were to be established, attracting Muslim visitors could be difficult because "there is not a strong Muslim tradition of visiting gardens...it's not really counted as a leisure activity".

Aside from these scientific and practical constraints, a consensual theme running through their comments was the idea that botanic gardens should not be

seeking to appeal to any one particular social group, whether blind people (a sensory garden) or Muslims (an Islamic Garden). One interviewee said: "we try to tailor most of our events to appeal to anyone", whilst another felt that in relation to an 'Islamic Garden', "I feel religion is a bit of a no-no in the garden". One noted that "neutral" spaces carry the possibility of multiple meanings for a wide range of visitors: "a quiet area of reflection for one person, an intimate space for a courting couple, or a place of remembrance for someone else".

However, space is rarely 'neutral', because much depends on what counts as 'neutral', and who decides what the criteria for this 'neutrality' are. What might appear 'neutral' to someone who is middle class, educated, male, and white, could look very different when seen from the perspective of someone of a different ethnic background, gender, or social class. Furthermore, the idea that events in botanic gardens are "designed to appeal to anyone" fails to take into account the structural (economic, practical, and social) barriers that make botanic gardens more accessible to some groups, rather than others. In general, whilst our interviewees seemed to welcome the idea of inclusion and diversity in principle, few seemed inclined to explore ways in which to make this a reality, and there was particular resistance to the idea of singling out a particular social/religious group for special efforts. Towards the end of one interview, we were advised that a more positive way forward may be the idea of "community-based projects with an emphasis on a hands-on approach".

The inevitable conclusion that emerges from these interviews is that pro-active efforts to encourage the incorporation of Islamic Gardens in botanic gardens are likely to face a range of practical, financial, and principled objections. However, at least one of the botanic garden directors we spoke to was enthusiastic about the idea of bringing the temporary 'Qur'anic Garden' exhibition at Kew, to his garden. He thought it would be "an excellent idea...this is the sort of project that would encourage local Muslims to the gardens". Perhaps.

OUTCOMES AND IMPLICATIONS OF THE PROJECT

When we were invited to evaluate the ‘need, value, and viability’ of Islamic gardens in the UK, with a view to how and in what ways they might promote biodiversity conservation, and inter-religious understanding, we focussed our research efforts in two principle directions. We located and evaluated *existing* and *proposed* Islamic gardens in the UK, in order to ascertain the degree to which they were *already* meeting (or could potentially develop) some of the objectives of BGCI. Alongside this, we sought to establish how and to what extent British Muslims were already engaged in projects that involved biodiversity conservation, horticulture, and environmental awareness, and the scope for extending their work in the direction of gardening (and potentially the development of ‘Islamic’ gardens, either within or outside of botanic garden sites). Through our research, we were essentially seeking to establish the feasibility of bringing Islamic gardening traditions, and faith-based environmentalism, *together*. We sought to evaluate both attitudes and opinions which might make this possible (or not) *theoretically*, as well as actual existing projects which could tell us the actual likelihood of success.

We defined ‘Islamic gardens’ broadly, in order to encompass both formal, traditional, self-contained Islamic gardens (such as the Carpet Garden at Highgrove House), as well as urban parklands that had developed gardens/spaces to reflect traditional Islamic garden design (such as the Mughal Garden in Bradford). Likewise, our efforts to map the broad contours of Islamic environmentalism in Britain incorporated a wide range of institutions, including mosques, local community projects, as well as formal and informal organisations.

It became clear from our research that traditional Islamic gardens in the UK are part of a shared British-Muslim history, shaped by colonialism. But along with Islamic art, architecture, and science, Islamic gardens (which to some extent embody all these things) carry the potential for educating *all*

British people about the long-standing and beneficial relationship that Britain has had with the Islamic world. Islamic gardens could therefore have a significant role to play in promoting Muslim heritage, which could be valuable for inter-religious understanding and social cohesion. Where these sites have an existing visitor base, there is potential for developing their information resources, going beyond the aesthetic and historic attributes of the gardens, and emphasising the particular *religious* significance of their features and perhaps also Islamic environmental ethics. Passive educational methods (posters, pamphlets, film) could be effective in enabling visitors to appreciate the link between Islam and conservation, and the strong historic ties between Britain and the Muslim world.

However, our research makes it clear that many existing traditional Islamic gardens in the UK, while being aesthetically beautiful spaces do not, at present, seem to further the cause of environmental awareness, biodiversity conservation, or ecological sustainability, and some of them are almost entirely inaccessible to the general public. In some cases, the gardens perpetuate an association with wealth and exclusivity, and thus have little real or potential resonance for many British Muslims. An exception to this might be the ‘Gardens of Peace’ in Ilford, which is both accessible and takes account of environmental conservation.

In relation to British Muslim environmentalism, we noted the success of practical, grassroots, community-orientated, inexpensive, ‘bottom-up’ gardening and conservation projects that reflect the composition and dynamics of local communities. What has been especially notable about the success of some of these projects is the extent to which they have sought to ‘sacralise’ environmentalism by making reference to the Qur’an and Hadith. These projects signal the enormous potential for faith-based initiatives that go beyond merely informing or educating, but lead to real change in behaviour.

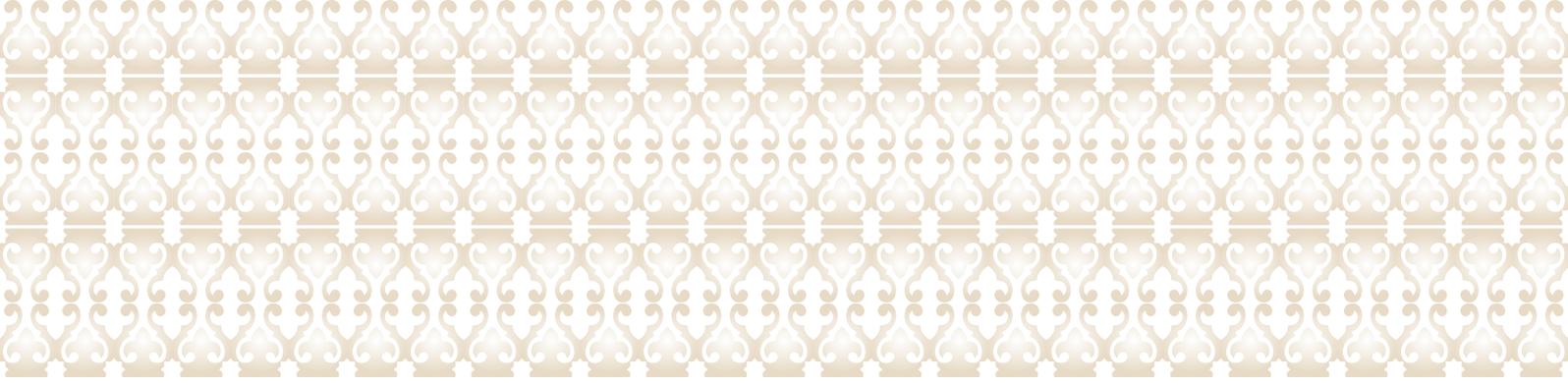
Religion plays a pivotal role in shaping one's worldview and its teachings on nature produce an environmental ethic that could be harnessed to influence behavioural change. The greening of the world's religions is undoubtedly on the rise (Mohamed, 2007).

Some of the successful projects that we have surveyed have drawn upon a powerful combination of resources, both social and human, and religious, and have been shaped by a regard for the internal dynamics of British Muslim communities and appropriate consultation with key stakeholders in a locality. Our research makes clear that community projects and initiatives hold the key to engaging Muslims with the environment and their particular religious relationship to it. Existing local institutions, such as mosques, schools, women's networks, and inter-faith organisations, provide the essential social capital to make conservation projects successful. When this is allied to the expertise and religious credibility of Islamically-inspired environmental education organisations there is considerable scope for positive change.

The summer 2010 issue of the National Trust magazine carries an interview with the Iranian-born British Muslim, Shappi Khorsandi. She describes her early impressions of the National Trust thus: "I'd always seen the Trust as a posh organisation for ramblers" (Summer 2010, p94). Botanic gardens also seem to be regarded as rather socially conservative formal places, with particular appeal for educated, middle-class people who can afford to pay the entry price. This makes them inhospitable places for many British Muslims, especially those who do not relate to gardening and visiting gardens as a leisure activity. However, the directors of botanic gardens to whom we spoke showed an awareness of the economic and social value of being more outward-facing, and this signals potential for more positive change in the future.

The UK government is a signatory to the Convention on Biological Diversity which includes the Global Strategy for Plant Conservation (GSPC). Target 14 of the GSPC requires that everyone understands the importance of plant diversity and the need for its conservation. This of course includes British Muslims. The idea of temporary Islamic gardens or exhibitions might provide a means of bringing about an incremental change while at the same time demonstrating that botanic gardens welcome British Muslims. BGCI could have an important role to play in encouraging botanic gardens to critically examine their current visitor profile and look at ways of becoming more inclusive of faith communities. For example, some of the gardening projects surveyed in our research are seeking to grow plants mentioned in the Qur'an, or plants associated with traditional culinary or medicinal use in climatic and soil conditions which make this a complex process. The expertise held by botanic garden staff could be of valuable assistance in supporting and enabling these projects, and BGCI could help botanic gardens to develop a more outward-facing, collaborative orientation to faith-based community gardening initiatives.

The overall conclusion to our work is that if new Islamic gardens are to be built in the immediate future in the UK with principles of biodiversity conservation and ecological sustainability in mind (and with a view to *practical engagement* and *behaviour change*), they are most likely to be successful when developed outside botanic gardens, and within Muslim communities, and through the efforts of local grassroots organisations and networks that are able to articulate the principles of conservation embedded in Islamic discourses.



It is paradoxical that the extensive references to conservation and environmental stewardship in the Qur'an and Hadith are not reflected in the actual behaviour of many Muslims in Britain. This is a reflection of the cumulative impact of migration history and socio-economic levels, education, and historical circumstances. However, what is also evident from our research is that the environmental messages of Islam are slowly being taken up by a new generation of British-born activists who have the credibility and knowledge to demonstrate in practical ways that being a 'good Muslim' necessarily involves environmental responsibility and biodiversity conservation. Developing traditional 'Islamic' gardens is therefore just one means by which Muslims might be engaged in horticulture and projects related to plants and gardens.

Traditional Islamic gardens have not, typically, promoted ideas of biodiversity conservation and environmental sustainability (largely because they first evolved at a time when ecological challenges were less pressing). Our research seems to suggest that there is considerable scope and indeed necessity for Islamic gardening design to take account of, and incorporate, the contemporary realities of climate change and other ecological challenges, if they are to truly reflect the messages of environmental 'stewardship' inherent in Islamic sources.

REFERENCES

- Baksh, N. Cattle, T. Lempriere, J. and Kaur, D. 2008, 'Understanding and Appreciating Muslim Diversity: towards better engagement and participation'. Coventry: Institute of Community Cohesion
- Batamouny, K. H. 2009, 'Islamic and Qur'anic Gardens: differences and similarities', Granada, The Andalusian Experience: an example of biodiversity conservation
- Beckford, J. Gale, R. Owen, D. Peach, C. and Weller, P. 2006, 'Review of the Evidence Base on Faith Communities'. London: Office of the Deputy Prime Minister
- Clark, E. 2004, *The Art of the Islamic Garden: an introduction to the design, symbolism and making of an Islamic Garden*, Marlborough: Crowood Press
- Gilliat-Ray, S. 2010, *Muslims in Britain: an Introduction*, Cambridge: Cambridge University Press
- Hand, K. 2007, 'Faith Woodlands: Dec 2006-March 2007 - The First Phase'. Luton: Forestry Commission England
- Malins, E. 1980, 'Indian Influences on English Houses and Gardens at the beginning of the 19th century', *Garden History* 8 (1): 46-66
- Mohamed, N. 2007, 'Islamic Ecoethics: from theory to practice (paper presented at the World Environmental Education Congress, Durban, 4th July 2007)', <http://www.facebook.com/topic.php?uid=7192390478&topic=3246>, (accessed, 4/7/2007)
- Nasr, S. H. 2003, 'Islam, the Contemporary Islamic World, and the Environmental Crisis. ', in Foltz, R. C., (ed.), *Islam and Ecology: a bestowed trust*, Massachusetts: Harvard University Press, pp. 85-105
- Said, E. 2003, *Orientalism*, London: Penguin
- Sanders, P. 2007, 'The Art of Integration', *Saudi Aramco World* 58 (1)
- Watson, A. 1995, 'Botanic Gardens in the Early Islamic World', in Robbins, E. and Sandahl, S., (eds.), *Corolla Torontonensis: Studies in Honour of Ronald Morton Smith* Toronto: University of Toronto Press, pp. 105-111
- Wescoat, J. 2003, 'From the Gardens of the Quran to the Gardens of Lahore', in Foltz, R. C., Denny, F. M. and Baharuddin, A., (eds.), *Islam and Ecology: a Bestowed Trust*, Massachusetts: Harvard University Press, pp. 511-526

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Botanic Gardens Conservation International links more than 2,500 botanic gardens in 120 countries, catalysing them to conserve threatened plant species and raise awareness of the importance of plants as the earth's greatest natural resources. At a policy level, BGCI has been instrumental in developing the Global Strategy for Plant Conservation and has developed several major reports that have influenced policy and decision-making. BGCI also provides information and technical support to botanic gardens and runs on-the-ground conservation projects. BGCI's Education Programme is highly regarded and plays a significant role in supporting botanic gardens to effectively engage with their public. It publishes regular journals and newsletters and every three years organises an international education congress. BGCI also runs regular training courses and works with botanic gardens to develop education projects. Further information about BGCI can be found at www.bgci.org



The Calouste Gulbenkian Foundation is a charitable foundation with its headquarters in Lisbon and offices in London (the UK Branch) and Paris. Established in Portugal in 1956, with cultural, educational, social and scientific interests, the purpose of the Foundation in the UK is to help enrich and connect the experiences of people in the UK and Republic of Ireland and secure lasting and beneficial change in their lives. Calouste Gulbenkian Foundation has been a pioneering funder for over 50 years and aspires to be innovative, international and independent yet involving. Further information about the Foundation can be found at www.gulbenkian.org.uk



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