

Abstract

Preserving sacred space: A microclimate study of the Shrine of the Báb, a Bahá'í holy site.

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The Bahá'í Faith is an independent world religion whose followers are striving for world unity based on the principle of the oneness of the humanity. Bahá'ís are followers of the teachings of Bahá'u'lláh (1817-92), who, like Christ, Muhammad, and others before Him, brought God's teachings to humanity. The world's five million Bahá'ís are of many ethnic and racial backgrounds and they live in nearly every country in the world. According to the Encyclopedia Britannica, the Bahá'í Faith, the youngest of the world religions, is the second-most geographically widespread religion, after Christianity.

The Bahá'í community's collective life is administered by nine-member consultative councils that are democratically elected at the local, national and international levels. There is no clergy in the Bahá'í Faith.

The international governing body, the Universal House of Justice, meets at the Bahá'í World Centre in the Haifa-Acre area of northern Israel, where the Founder of the Bahá'í Faith, Bahá'u'lláh, was exiled in 1868 and where He passed away in 1892. The Faith's most sacred shrines, the resting places of both Bahá'u'lláh and His Forerunner, the Báb, are located there. The Shrine of Bahá'u'lláh is outside the city of Acre and the Shrine of the Báb is on Mt Carmel in the nearby city of Haifa.

The Báb (1819-50) attracted tens of thousands of followers in Persia (now Iran). He foretold the coming of Bahá'u'lláh and laid the foundations for His arrival. He was executed in Persia for His religious teachings. His followers hid the sacred remains of the Martyr-Prophet until they were brought to the Holy Land in 1899 and interred 10 years later by 'Abdu'l-Bahá, the eldest son of Bahá'u'lláh. The original mausoleum was a massive six room stone building with underground vaults.

In 1921, 'Abdu'l-Bahá passed away and was buried in the Shrine in a room next to the Báb. Three more rooms were added later and then, between 1948 and 1953, a superstructure was erected, blending design elements from the east and west. With its graceful design and golden dome, the Shrine of the Báb has become the symbol of Haifa and it has attracted thousands of visitors annually during the past half century (Photographs 1 & 2).

The beauty of the Shrine, illuminated at night, is now enhanced by 19 garden terraces that stretch one kilometer from the base of Mount Carmel to its summit. The terraces, which were opened in May 2001, have so far attracted more than two million visitors.

However, the Shrine of the Báb is more than an exquisite building set in a garden of great beauty. For Bahá'í pilgrims who come from the ends of the earth to pray and meditate in the Shrine, this is the holiest site on earth after the Shrine of Bahá'u'lláh.

In view of the spiritual importance of the Shrine of the Báb to the worldwide Bahá'í community, its preservation and maintenance is highly requisite.

The Shrine of the Báb has been afflicted with moisture problems for many years. The excess moisture is damaging the carpets that decorate the floor of the interior as well as moving water-soluble salts within the building materials, causing considerable damage to the tile floors when the salts re-crystallize. The source of this moisture is unknown and among the many possibilities are natural groundwater, rain, irrigation, human activities (visitors, cleaning, etc), condensation of moisture from the air, or a combination of these. Determination of the major water sources is central to solving the moisture problems.

For this reason, a year-long microclimate study of one of the dampest rooms, the inner Shrine of 'Abdu'l-Bahá, was undertaken. The goal of the study was to generally increase our understanding of the building's response to the environment and specifically to investigate the role that the atmosphere plays in the moisture problem. In the experiment, air temperature and relative humidity were monitored with six electronic data loggers distributed in different locations within the room.

This paper presents the results of an analysis of these measurements using time series, average diurnal cycles and histograms. These methods were chosen because they each reveal different patterns in the data on different time scales. Time series shows the data in its raw form, as it was collected during the year; diurnal cycles draw attention to the persistent diurnal variations on a monthly or yearly scale; and histograms focus on the frequency of certain events, clearly distinguishing between typical and rare conditions.

The time series analysis shows that although the humidity is often high, it does not appear high enough to cause bulk condensation. The diurnal cycles characterize the microclimate around each sensor and show that the most likely time for condensation to occur would be at night during the summer months. The histogram analysis indicates that the humidity is high enough to allow bacterial growth for more than half of the year and to cause condensation for about one month out of the year. The presence of hygroscopic salts on and within the building materials makes the analysis of the data more complex.

The information derived from the analysis suggests that the moisture from the air is unlikely to be the main source of water although it may be a contributing factor to the moisture problem. The most practical accomplishment of this study is that it surveys the current physical state of the Shrine, uncovers previously undocumented complexities, and suggests areas for further study.



Photograph 1 – The Shrine of the Báb



Photograph 2 – The Shrine of the Báb and the terraces as viewed from Ben Gurion Avenue.