

Mosques as Emergency Shelters in Disaster Prone Regions

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ABSTRACT

Providing emergency shelter for victims of natural disasters is part of Disaster Risk Reduction (DRR) strategies and in terms proper management of resources in the community. International Organization for Migration (IOM) and Federal Emergency Management Agency (FEMA) among others have proposed framework for appropriate planning and design of emergency shelters. Recent flood occurrences in India, UK and Malaysia showed that the institution of mosque is highly appropriate to be used as emergency disaster shelter. This study analyses if mosques can function as an emergency shelter. The paper adopts the criteria set by IOM and FEMA to design properly functioning emergency shelter. Based on these, the design of common mosques is discussed considering different aspects, such as location, capacity and facilities. The institution of mosque is also analysed from the perspective of Islamic theology where mosques are seen as a place that provide social and welfare services to the community. The study recommends further study in this regard to propose specific guidelines for the mosque so that it can be utilised as an existing structure for providing emergency shelter for disaster victims.

Keywords: Disaster management, emergency shelter, guidelines, IOM, FEMA, mosque

INTRODUCTION

Rapid climate changes have contributed to frequent and unexpected natural disasters. Organisations such as IOM (International Organization for Migration) and FEMA (Federal Emergency Management Agency) among others have proposed new strategies as part of their disaster risk reduction (DRR) to aid victims more efficiently. This paper

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studies the approaches of IOM and FEMA in establishing proper emergency shelters by analysing their proposed planning and design criteria. Moreover, considering the role of mosque in the recent flood occurrences in India, UK and Malaysia, this paper also attempts to establish that mosques can be utilised as emergency shelters during disaster periods. The paper begins with a definition of evacuation centres and mass shelters. The criteria for an emergency shelter are discussed after that. This is followed by an analysis on the utility of the mosque as an emergency shelter. Recommendations are made based on the findings before the paper is concluded by summarising its main content.

Definition of Evacuation Centre and Mass Shelter

Evacuation is the rapid movement of people away from the immediate threat or impact of a disaster to a safer place, also known as a shelter. It is commonly characterised by a short time frame, from hours to weeks, within which emergency procedures need to be enacted in order to save lives and minimise exposure to harm. The evacuation centre is designed to ensure preservation of life. Collective centres, also referred to as mass shelters, are usually transit facilities located in pre-existing structures such as community centres, town halls, gymnasiums, hotels, warehouses, disused factories and unfinished buildings. They are often used when displacement occurs inside a city, or when there are significant flows of

displaced people into a city or town (IOM-OIM, 2013).

The purpose of evacuation is to move people and (where appropriate) other living creatures away from an actual or potential danger to a place that is safer for them. Shelter is a place where evacuees can stay and receive support (HM Government, 2014).

In this paper, the term “Emergency Shelter” refers to both an evacuation centre as well as a mass shelter. Mosque as a gathering point for the community people has the potential to serve as an evacuation centre during disaster. During post disaster recovery period, when people are not ready to move back into their own places, the mosque can serve as the transit facility being a pre-existing communal hub in the locality. Therefore, this paper refers to the institution of mosque as “emergency shelter” having included the notion of evacuation centre and mass shelter.

Criteria for a Properly Functioning Emergency Shelter

The 2014 progress report of International Organization for Migration (IOM) on Design Developments of Evacuation Centers states shelter should take into account considerations such as the victim’s preference to stay as close to his or her home as possible. This will ensure minimum disruption to work, schooling and social arrangements. Shelters should also adhere to existing building code and it must be situated away from potential hazards. Use

of smaller evacuation centres where possible is recommended, as self-regulation within smaller groups is more likely and solidarity may be fostered (IOM-OIM, 2013).

In the same report, IOM proposed design specification for a mass shelter where their construction must take into account the livelihood of local community. The shelter is supposed to be cost effective in construction and maintenance. Ample natural ventilation and lighting are required for the mental wellbeing of the victims. The building may be self-sufficient, with rainwater tanks and potential for integrated solar power. The shelter must also be accessible, preferably within walking distance to the affected community. Design of the shelter needs to promote vernacular architectural typologies and it should be contextual. It must also support local community Disaster Risk Reduction (DRR) initiatives as well as programme requirements for other community activities. (IOM-OIM, 2013)

The ADA (Americans with Disabilities Act) Checklist for Emergency Shelters requires that shelters need accessible entrances, routes to all services/activity areas, routes within toilet rooms, passenger drop off and pick up areas, parking, sidewalks and walkways, shelter entrances, hallways, and corridors, check in/information areas, sleeping areas, restrooms, showers, and toilet stalls, including portable toilets, public telephones, drinking fountains, eating areas, medical first aid areas and recreation areas (FEMA, 2010).

In terms of capacity, 20 and up to 40 square feet per person should be available

for short-term and long term shelter residents (longer than 72 hours). People who use wheelchairs, lift equipment, a service animal, and personal assistance services can require up to 100 square feet. The American Red Cross recommends that, on average, there should be one toilet for every 20 persons in the shelter (FEMA, 2010).

Role of Mosque during Flood Disaster

This section discusses the role of mosques during the recent flood occurrence in different parts of the world. Two of these occurrences were in northern and southern part of India, one in Malaysia and another in the Northern England, UK. Reports indicate that during these calamities, humanity trumped other aspects such race, religion, beliefs and culture. For instance, the flood occurrence in Kashmir and Chennai, India brought together Hindu, Sikh and Muslim communities together to help each other and the Mosques welcomed people of all races to take shelter inside as well as provided food and drinking water. Similarly, during the floods in Sungai Pahang, Malaysia, Muslims and the Chinese worked hand in hand during the critical period of recovery. In Northern England, the Muslim minority offered help and protection through the Mosques for the victims during periods of black out and food-water shortage. These incidents are discussed below for better understanding of the particular situations.

Kashmir valley flood - 2015, India. As reported in “The Indian Express”. *It is evening time and the maulvi here just*

sounded the 'azaan', the call for prayer and devotees rush inside to offer 'namaaz'. Shortly thereafter, scores of people assemble in the tented courtyard of the mosque to have food. This is Jama Masjid in Hyderpora area which has turned into a major relief centre for those affected by the devastating floods in the Kashmir valley, housing hundreds of people, including women and children. Significantly, in this hour of tragedy, this mosque has become a symbol of communal harmony as a number of Hindus, who had come from outside the state for work, are also taking shelter here (PTI, 2014).

At the mosque premises, community kitchen is being run and donation of clothes is pouring in. The inmates are housed in the three-storeyed building. Around 2400 people eat food every day at the masjid, says Haji Ghulam Nabi Dar, president of the Hyderpora Jama Masjid Committee (PTI, 2014).

Sungai Pahang, SJK (C) - 2015, Malaysia.

As reported in "The Star Online". *When the floods hit, a neighbouring mosque and Chinese school here worked hand in hand to help more than 400 stranded flood victims in a selfless display of harmony. Located right next to each other by the bank of Sungai Pahang, SJK(C) Khee Chee and the Abu Bakar mosque have coexisted peacefully for more than 50 years.*

Overwhelmed by the unexpectedly large number of victims and scope of the floods, the mosque's management and school did what good neighbours would. School headmaster Lai Teck Pin assigned his

staff to buy medicine for families suffering from fever, cold and cough until additional supplies arrived. Badrulhisham Mohd Zaki, the imam of Temerloh's main mosque built in 1963, agreed to lend the school the mosque's large cooking stoves, pots and mattresses.

The mosque also opened up its toilets and bathrooms for use by the victims due to the limited amenities at the school. "The cooperation between us was not planned in advance, but during a natural disaster all you tend to think of is how to help all the victims, regardless of who they are," Badrulhisham, 41, said (Ghani, 2015).

Chennai flood- 2015, India. The Chennai flood incident also showed the role of the mosque during the time of emergency in a multicultural and multi-religious society. As reported in "The Milli Gazette", there are 500 mosques in Chennai. The Indian Union Muslim League Tamil Nadu state committees, too have opened their doors and have emerged as critical shelters, particularly for poor flood victims, irrespective of their religious beliefs.

"Mosques are not only places to perform prayers. They are cultural centres and sometimes, as it now happens, shelters for the persons in need," KM Khader Moideen, former MP and Indian Union Muslim League (IUML) Tamil Nadu state president told TwoCircles.net.

The doors of the mosques have been opened for the flood victims and the verandas of these mosques bear a scene, which is first of its kind in Chennai – and perhaps whole country – where people from

various localities, irrespective of their faiths or castes are hurdling together in this time of grief.

Besides shelter, these mosques are also providing them food, water, mats and clothes. Triplicane Mosque tops the list with providing food for more than 3000 people a day while other mosques do their bit by feeding more than 1000 per day. Water bottles, biscuit packets, bread and packet foods are distributed in most of the mosques (Hudawi, 2015).

Flood in Northern England - 2015, UK.

Mosques were mobilised to help those affected by floods in Northern England. In messages posted on social media, mosques have offered shelter to those whose homes have been devastated by the flooding in Northern England. They have also prepared food and drink to be distributed to the local community no matter their faith.

The Jamia Masjid Hanfia Mosque in Bradford prepared food and drink for the local community. Following a power outage, the Golden Mosque in Rochdale appealed for candles to be distributed to homes. And in true British fashion, the Golden Mosque also made sure emergency supplies of tea was made available. The Golden Mosque posted in the social media, “We’ve got tea, coffee, & biscuits at the mosque for anyone that’s still out of electricity and water, come down and warm yourself up we’ll be here till late.” (Feed, 2015).

It is well established from the Islamic perspective that mosques are a social and welfare centre within the community.

There is ample historical evidence for mosques being the hub of welfare for the community it serves. The incidences described above endorse this statement and shows the significance of mosque within the community for all races, religions and ethnic groups.

Compatibility of Mosque as Emergency Shelter

From the foregoing, it is clear regardless of country or region, the mosque functions as a social and communal institution during periods of disaster. This section discusses the role of mosques as an emergency shelter. The first part highlights the Islamic perspective of mosques being a centre of social and welfare activities. The second part focuses on the potential of modern mosques to act as ready-made emergency shelter among the Muslim communities.

The role of religious buildings and places of worship during disaster periods have not been discussed extensively. First, mosques aside from being a place of worship, is also a centre of welfare activities within the community to foster the relationship among people. Second, Islam commands the Muslims to help one another in times of need, undertake various charitable activities including taking care of the poor. Third, mosque acts as the gathering point for people during five times a day for prayers and to facilitate this, the mosque is usually located at a very convenient place which is easily accessible. Hence, worshippers often partake in its activities as a part and parcel of their lives. This practice is voluntary

and which is rendered to victims within the community.

As stated in the Evacuation and Shelter Guidance, the voluntary sector and community organisations (including faith-based organisations) play a significant role in managing an evacuation and in providing humanitarian assistance during an emergency. Experience shows that active engagement of the voluntary sector and community organisations in emergency preparedness, such as planning, training and exercising enable them to be more effective in the event of an emergency. The roles that voluntary organisations play range from offering practical and emotional support, assisting with rest centres, supplying food and refreshments, helping with animals and providing equipment. Community groups and leaders can also promote self-help within affected communities and among vulnerable members of the community (HM Government, 2014).

Mosque is the nucleus of a Muslim community all over the world. And this institution is not only known for the religious rituals practices inside it, but also for the social and communal activities that take place within its premise. Wardak stated that while the social organisation of the mosque is, in some important ways, a response to and shaped by exclusionary practices in the wider society, it plays a central role in the maintenance of order within the Muslim community (Wardak, 2002).

On portraying the importance of mosque as a central institution for the Muslims, Omer combined its spiritual and social role

in order to guide Muslim communities to have a holistic life.

“And let there be (arising) from you a nation inviting to (all that is) good, enjoining what is right and forbidding what is wrong, and those will be the successful.”

[Surah Ali-Imran: 104] (Sahih International, 2004)

This divine commandment is based on the fact Islam is a tradition that is oriented towards community and Muslims are commanded by Allah to establish goodness and justice within the community. Islam started with a philosophy and doctrine that encouraged solidarity and integration of people into one community. According to Islamic principles, Muslims are required to gather at one common place during five times a day and also occasionally several times within a year (Hamid, 1973). Omer further stated that the mosque is accommodative of every beneficial activity concerning worship, education, politics, economy, security and social relation, which enabled the nascent and ambitious society to make civilisational headway (Omer, 2010). From the foregoing, it is clear Muslims are encouraged to participate in welfare works within the society like aiding people during disaster. From planning and design perspective, the suitability of the institution of mosque depends on several issues which are discussed below.

Location. Generally, mosques are established at strategic localities in order to

facilitate easy access for Muslims to perform their prayers five times daily. However, the location of mosques also depends on the growth of the community and expansion of the area. Hamid (1973) explained the developmental phases of mosques where the location of mosque in a given community changes with the passage of time as the community and its surrounding area grow.

Mortada (2003) looked at categories of mosque in respect to its accessibility, location and service zone. Originally developed by the Arab Urban Development Institute, this categorisation refers to three types of mosques, Masjid al-jami which is accessible by walking (daily mosque), Masjid al-jomah (Friday mosque) which is also accessible by walking but the distance is comparatively further, and Musalla which is situated out of the cities and residential boundaries.

The IOM on Design Developments of Evacuation Centers states that victims prefer to stay as close to their homes as possible. Figure 1 shows how mosque of different scales are located in focal points of Muslim communities. It makes the mosque suitable as an emergency shelter during disaster. Added benefit is the practice of people gathering in this institution at regular intervals, which becomes a training ground for them to reach the gathering point within short warning during emergency periods.

Capacity. The capacity of a mosque depends on its size. The small-scale community mosques are modest in scale, thus, they have

low capacity while the large Friday mosques have a bigger capacity. Imam (2000) has classified mosques into three major classes: Small (3-200 people, usually serves low density small community), medium (201-2000 people, usually serves high density communities), large (2001-above, usually serves high density community or a city).

According to Imam, the average space required for prayer is approximately 11 square feet per person. According to ADA checklist on its Shelter Capacity, 20 square feet per person should be available for short-term or evacuation shelters and up to 40 square feet per person for long term residents (longer than 72 hours).

It must be noted that, people who use wheelchairs, lift equipment, a service animal, and personal assistance services can require up to 100 square feet. As there are several small mosques within any community, the capacity to accommodate victims would be higher compared with any other buildings that could be used as emergency shelter. For the large mosque, its capacity will depend on the level of damage by the disaster and the number of displaced people.

Layout and facilities. The layout of mosque usually depends on the facilities it provides. Some mosques only provide prayer facilities having a large mono space with additional ablution and toilet facilities while other mosques provide multipurpose spaces along with the prayer hall. For both cases, there are some spaces which are compulsory to be

included and there are some spaces which are optional and depend upon the practices and culture of particular communities.

Spaces within the mosque and its surroundings can be divided into two types: sacred/ prohibited space and multipurpose space. The sacred space is only designated for prayer ritual; hence, no other functions are allowed within this space. Usually the

main prayer hall of a mosque is considered as sacred/ prohibited space. However, during the Kashmir flood emergency, it could be seen that even the main prayer hall was utilised to accommodate the victims irrespective of their faith. This shows the flexibility of using the mosque in times of emergency.

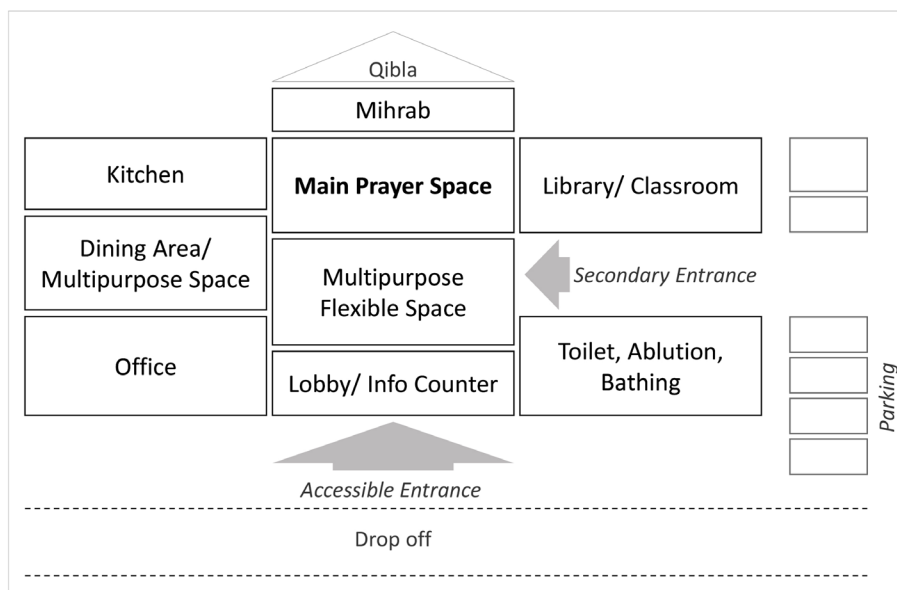


Figure 1. Basic layout of mosque
Source: Authors

Apart from the main prayer hall, all other spaces associated with mosque are considered to be multipurpose. These spaces can be easily utilised as emergency shelter during a disaster. The veranda, shaded spaces outside the main mosque building, classrooms attached with mosque, hall rooms, dining areas, the courtyard and parking lots among others are suitable to accommodate people when needed.

Among the facilities usually provided in mosques are the ablution and toilet facilities. The ratio of toilet facilities differs from mosque to mosque. Some mosques also provide bathing facilities for the people. Majority of the community mosques have kitchen and dining services attached to them and the latter are important when people take shelter here. Additional classrooms, food courts, lobby space, offices are also

found in some mosques especially in large mosques. These spaces are flexible enough to be used as accommodation for disaster victims.

The necessary spaces for an emergency shelter (according to ADA checklist) are generally available in the institution of mosque (Figure 1). These spaces are accessible entrances, routes to all services/ activity areas, routes within toilet rooms, passenger drop off and pick up areas, parking, sidewalks and walkways, shelter entrances, hallways, and corridors, check in/ information areas, sleeping areas, restrooms, showers, and toilet stalls, including portable toilets, public telephones, drinking fountains, eating areas, medical first aid areas and recreation areas.

RECOMMENDATION AND CONCLUSION

The discussion above point to the role mosques can play as emergency shelter during disaster occurrence. However, depending on the types of disaster, the planning of mosque is recommended to be customised. For example, in a flood prone area, the mosque must be situated at an elevated site to protect from rising water level. If elevated land is not available, then the plinth or ground level of the mosque should be built higher than the usual height. For cyclone prone areas, the structure of the mosque must be solid enough to withstand strong wind and turbulence. Earthquake is another type of disaster which require the structure of the mosque to be built in earthquake-safe manner.

Mosques in the urban and suburban areas usually receive water supply from the government/ municipality supply line which is vulnerable during disaster. It is highly recommended that mosques have their own rainwater catching system installed within their premises or other alternative source of water supply must be ensured. The same recommendation goes for electricity supply. Passive energy sources like solar panels etc are suitable during disasters when main line electric supply could be damaged. Toilet, ablution and bathing facilities must follow an appropriate ratio to serve people sufficiently during disaster. Other facilities, such as kitchen and classroom are important for long term stay.

Every Muslim community establishes mosque as the centre of its settlement. There are many mosques all over the world, especially in Muslim majority countries. If these mosques can be utilised during the time of disaster as emergency shelter, it would benefit the community. The recent disasters cited in this study showed the potential of mosques as emergency shelters. It is now the task of governing bodies, academics and professionals to explore the utility of mosques further as a potential shelter during disasters to save lives and cost.

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