

MOVEMENT PATTERNS WITHIN TRADITIONAL MOSQUES

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My study is of the relationship between the space in the *Al-Azhar Mosque* (972-) in *Cairo* and the *Umayyad Mosque* (706-) in *Damascus* and human movements within the space.

The background for these studies was previous studies of the same relationship in the great mosque in *Córdoba, Spain: La Mezquita* (784-). Here I observed and recorded a dynamic relationship between the open yet dense space and human movement within it that made me curious about how the relationship appeared in other similar mosque-spaces.

Topic:

"Parts are not fragments of whole, but simply parts. Unlike the idea of closed unity enforced in western classical architecture, the structure can be added onto without substantial morphological transformation." This is how the architect Stan Allen (1999) describes the hypostyle hall of *La Mezquita* and compares it with a traditional western view of what makes architecture successful: "Beauty is the consonance of the party such that nothing can be added or taken away" as described in the Renaissance by Alberti (1485).

You can possibly describe the spatial principle of *La Mezquita*, and also other traditional hypostyle hall mosques, as a **heterogeneous structure** rather than the ideal of western architecture, which then can be described as a **homogenous figure**.

If the spatial principle of *La Mezquita*, and other traditional mosques, is a heterogeneous structure, how does it then affect the way one moves in the space of the mosque? What is the relationship between the structure of the room and the movements within it?

La Mezquita

The heterogeneous structural principle is happening quite literally in *La Mezquita*, as it includes recycled building components together with new ones.

In addition e.g. the arches between the columns appear to be of smaller units through a combination of design, color and ornamentation. With these instruments the experience of major building components is being repealed and the effect is a flickering and restless space full of contrast between the many separated and equal parts.

This turbulent appearance as well as the proportional relationship between the columns set the scene for diagonal movements in the room, and I observed, how people were "drawn" into this direction. In contrast, the guards of the building chose not to be "seduced" by the dynamics of the room, and instead their trajectories were along the length of the room where they were able to clarify other people's movements.

Al-Azhar

Al-Azhar has, as *La Mezquita*, undergone several changes since its construction. Its way of growing has however, been more irregular and resembles more additions of new buildings, where the building structure of *La Mezquita* seem more able to incorporate new parts. One reason may be that the structure of *Al-Azhar* does not appear to be broken down into smaller parts. Arches and columns here appears as all parts, and the room seems more "finished" and without the riots and dynamics, as seen in *La Mezquita*.

The columns are recycled here from earlier buildings, and their proportions are close to the ones in *La Mezquita*. However where there in *La Mezquita* is added two arches between the columns in order to increase the room's height, then a more simple solution has been chosen in *Al-Azhar* with just one arch.

The proportion between the columns in *La Mezquita* is approx. 7 x 3, where it is approx. 4 x 5 meter in Al-Azhar. This approximate square contributes to more predictable "tunnel"-views diagonally between the columns, where the rectangular proportionate relationship between the columns of *La Mezquita* seemed to contribute to the dynamics. Few of the visitors in Al-Azhar go exploring in the building. Instead, they settle to study, read, talk and perhaps simply unwind from the hectic metropolis outside.

The impression then becomes a more static space, which probably comes from other kinds of users than the curious tourists in *Córdoba*, however the room's design also contributes to a more peaceful use, due to the lower height of the room, the more approximate quadratic relation between the columns and that the structural parts that defines the space are not contrasted and visually broken down into smaller parts.

Umayyad

Al-Azhar is still being used as a mosque which means that everyone moves around without shoes mostly on pray rugs, making movements rather quiet and less aggressive. This is also the case with the *Umayyad* Mosque.

In contrast to both *La Mezquita* and *Al-Azhar* it has not undergone major changes since the construction, but is in turn highly influenced by the history that precedes the construction.

The site was already used for religious worship before it was taken over by the Romans, who then expanded the existing building to an enormous temple of Jupiter. After Christianity was legalized as the states religion a church was erected in the center of the temple and this was the building ensemble the Islamic army found when they conquered Damascus in 636.

After the church for 70 years were used by both the Christians and the Muslims, the ruling Umayyads chose to construct a new congregational mosque instead. However this new Umayyad mosque retained the walls of the inner courtyard of the existing Jupiter Temple, as the demarcation of the new building.

As in *La Mezquita* and *Al-Azhar* the columns amongst other building parts in the mosque are recycled from former buildings, but the spatial proportions are significantly different. The room is much higher and the distances between the columns are here approx. 4 x 12 meters.

With only two column rows and three arcades, this is the minimum number to form a hypostyle hall and it makes the space resembles a three-ship-basilica, but there is two crucial differences: The spatial orientation happens in the breadth of the room and there is no hierarchy between the three arcades.

Movements within one of the three arcades provide a great unobstructed view and once steps are to a small degree affected by the column rows. In here the column rows is perceived more as pierced walls.

However if one moves diagonally the rather close location of columns within the two column rows will obstruct ones view, and in contrast to the calm movement within the arcades, then the space here challenges ones movement and provide some dynamic.

Since the entrance to the prayer hall happens from a side where you have to move diagonally into the room, your starting position will be rather dynamic. Furthermore, men and women are to be divided into two sections immediately after they have entered the room. Here the posterior arcade is reserved for women, while the two anterior ones are for men. This division reinforces the dynamics at the entrance in a manner that provides both congestion and confusion, and also solid work for guards trying to make males and females move the right way.

After you have been led into and are moving within one of the three arches your movement gets detached from the structure of the space. The wide space within the arcades does not provide the same opportunity as in *La Mezquita* and *Al-Azhar* to move around according to the columns. The division of space within genders enhances this fact as you only have one or two of the three arcades to move around in.

There are more users of this mosque than *La Mezquita* and *Al-Azhar*. The impression is that the users of the mosque also are more differentiated and diverse. They range from some lying and relaxing while others move quickly around with a specific target they pursue. Studies of people's movements showed that they were unpredictable and varied depending on who they were and what they wanted to do. On the other hand, rather predictable trajectories were created by the structure of the building with the three wide arches, and the division of males and females.

A common characteristic of the users of the mosque users were that they often moved in groups e.g. families and tourist groups.

Conclusion

The hypostyle hall of traditional mosques allows for many different kinds of movements and the density of the columns provides inspiration to ones movement. This I observed and registered in both *Al-Azhar* and *Umayyad* as I did in *La Mezquita*, however the predictability of the movements and the dynamics of them are different. The reason for this is the different spatial structures, but it also has to do with the different kinds of people using the space.

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