

Accretion of Decisions: A Design Strategy

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When we search in the past for answers, we are admitting that we admire what people in the past have done. Whether we are searching for building forms or technology, a design process, aesthetic values, or efficiency in use, climatic response, or site utilization, what we find is the result of the experience of earlier generations. It is the outcome of societal processes and rarely a product of individual ingenuity. The question we should ask of that experience, then, should not be, what in it constitutes good design?, but what were the circumstances that brought about those good designs that were created?

The percentage of individual property owners in Muslim societies was very high. In a capitalist society there are proportionally more owners in the population than in a communist one because properties are owned by corporations, but Muslim societies show the highest rate of all, because of the principles that govern ownership in them. In the case of public spaces, for example, there can be almost as many owners as users. A large number of owners combined with an absence of regulations resulted in a society that depended on discussion, agreement, consensus, and convention to regulate its life. This circumstance has helped to transmit expertise that has been tested and refined over time from builder to builder and thereby to both create and improve good physical forms.¹

The resources of many Muslim countries are not now equal to the needs of their growing populations. If in 1980, 51 percent of the population of Ankara and 45 percent of the population of Tunis were living in informal settlements,² then a design approach that concentrates on the artifacts—the end products such as buildings, ornaments, etc.—without considering the process will not be adequate. Such design strategies can improve only a small fraction of the built environment. What makes the situation even worse is that the limited resources of most Muslim countries are controlled by a small number of decision makers in a political structure that does not allow people to question its investments. These decision makers usually try to impress their societies by constructing monumental buildings and in the process dissipate its wealth. A good example of this is the prestigious Bustan Palace Hotel in Oman built after the removal of a thousand-year-old fishing village.³ Limited resources are all spent on a few elaborately designed buildings that are supposedly inspired by Islamic forms and patterns. The strategy that I am proposing is to search for design tools that will improve the built environment in the Muslim world in ways that would make most efficient use of its limited resources.

Muslim countries cannot overcome poverty solely through applications of natural resources, capital, or infrastructure. The economist E. F. Schumacher argues that “development does not start with goods; it starts with people and their education, organization, and discipline.”⁴ If the role of the architect is to improve the level of built form, then he must first come to grips with the term “efficient

building.” Professionals should learn to built better buildings that consume fewer resources so that the limited resources available will suffice to provide buildings that allow society to function. Only when they begin to prosper will Muslim societies be able to enjoy the luxury of seeking an architectural identity or style.

The Prophet said, “There should be neither harming (*darar*) nor reciprocating harm (*dirar*).”⁵ This tradition was interpreted to mean that one may do anything in the environment so long as that action causes no harm to others. It was used by societies to judge the legality of individual actions in the absence of municipal rules. Any change made was considered on its own merits and judged by referring to this principle.

In practice, however, jurists have differed as to the exact meaning of this tradition and consequently on how it should be enforced.⁶ *Darar* has come to refer to anything an individual benefits from at the expense of others, for example, changing property from domestic use to a factory that produces noise or effluent and will be a nuisance to its neighbors. *Dirar* refers to a change that is a nuisance to others and does not materially benefit the acting individual, for example, cutting a new window that looks out onto a neighbor’s yard.⁷ The tradition has been interpreted by jurists to mean that the individual has complete freedom of action so long as others are not harmed. The only acts that are forbidden are those that affect another’s property, such as knocking or hammering on the neighbor’s wall, or those that affect the residents of the adjacent property—for example, an intrusion on a neighbor’s privacy—even if it is not physical. The tradition involves both physical and moral control.

The freedom of a party to act so long as it does not adversely affect others has led to the principle of the “right of precedence.” A property can carry the right adversely to affect the property of others within certain limits. Situations can arise where, of two adjacent properties, one has the right to affect the other, but not vice versa. For example, if a window in a person’s house did not overlook a neighbor’s house when the first house was built, then the owner of a house built subsequently cannot complain about violation of privacy and have the window sealed. Since the first person’s act preceded the second person’s, it is the second who has to adjust.⁸ The phrase *hiyazat al-darar*, lit. “possessing damage,” means the right of a property owner to inconvenience his neighbor because its owner preceded others in some action. Precedent suggests that “possessing damage” is attached to a property, and not to its owner.

Another well-known principle derived from the Prophet’s tradition is that “if two damages are concurrent, then the less severe should give way to the greater.”⁹ The greater damage is the one that prevents a person from doing something on his property that would greatly benefit him; the lesser damage refers to the objection by the neighbor over some not-too-severe damage caused by that act.¹⁰ Damage can affect either a property or its users; it can be visual, audible, or olfactory. Damage to properties can be direct, such as burning things near a neighbor’s wall; or indirect, such as introducing machinery that causes the neighbor’s house to vibrate. Aside from visual damage,¹¹ almost any damage against a user or property in traditional environments was the result of changing the property’s function or of continuing a damaging situation that already existed.

Cases have been reported where people have increased the height of their buildings, thereby blocking their neighbors’ windows and cutting off their light and air. It was ruled that preventing a property owner from adding to his buildings was a greater damage than the loss of light and air.¹² In another case a person installed a flour mill in one room of his house. His neighbor objected because of the noise; the ruling allowed the milling to continue because noise was not

considered damage severe enough to outweigh the loss of livelihood to the owner.¹³

Noise did not constitute damage, according to Muslim jurists, but vibration of a neighbor's walls caused by querns or millstones did.¹⁴ Ibn Rushd (the qadi of Cordova, d. 1126) states that sounds such as those made by blacksmiths, tailors, and cotton carders (*naddafin*) in plying their trade should not be forbidden. The noise was considered less harmful than preventing a person from earning his living.¹⁵

Muslim jurists considered noxious fumes and smoke to constitute severe damage.¹⁶ In one case the neighbors complained to the judge about the smoke from barley processing in a mill. When the authorities who were sent to investigate reported the smoke as severe, the judge ordered the mill to stop.¹⁷

Although an owner could change a property's function if no harm to others was involved,¹⁸ the things that constituted "harm" or "damage" varied among jurists.¹⁹ Generally, however, it does seem that the risk or threat had to be considerable—building fires against a neighbor's wall, for example, would clearly have constituted damage.²⁰ It also appears that a shift in function would not be forbidden *in toto*, but only the noxious aspect of it.²¹

If no damage was caused at the time the action was taken, it could not be stopped, even if the action might cause damage later on—for example, building a tannery on empty land whose odor would be noxious to inhabitants if the land were later to become settled. I will call this a "damaging precedent" because the damage is inevitable. Potential damages such as cutting a window in a wall that might someday look upon a neighbor's house is a "damaging act". "Damaging acts" could be continued even if they damaged neighbors. Ibn Taymiyya (d. 1328) was asked to judge a case where the drainspout on the roof of one house was directly above another's entrance. Did the owner of the second house have the right to demand the spout be moved? He answered that the drainspout had been installed first, and therefore it had the right to remain there.²²

Jurists' opinions vary regarding precedent. When the neighbors complained about the smoke of a potter's fire, for example, it was allowed to continue.²³ In another case, a jurist was asked to decide a case where houses in Qairawan had been turned into tanneries, and then the tanners had moved out. Thirty years later they tried to move back and use the houses as tanneries again; the neighbors protested on the grounds that the houses had not had that use for thirty years, but the jurist said the tanners had the right to move back in.²⁴ Some jurists, however, would not have allowed the precedent to stay in effect so long. Another jurist was asked to decide a case that involved pounding corn. The activity was forced to move out of the city because there were houses above; when the owner tried to come back, the judge said they could not because of the damage the pounding caused.²⁵ These cases suggest that an owner has the right to damage others, if the action that causes it preceded their arrival, at least so long as the damage was not severe. Let us call this right "the right of precedence."

The damage allowed by precedent can also apparently continue indefinitely into the future. However, the right of precedence did not result in a dominant relationship between properties but rather ordered the relationship between neighbors and created social bonds. In a Tunisian case neighbors fell into a dispute because a drainage ditch leaked into a neighbor's well. Because the drain was built before the well, the well owner had to deal with the damage.²⁶ The right of precedence also holds regardless of whether the property is individually or collectively owned. One of the properties abutting a collectively owned cul-de-sac, but having no access to it, had a disused septic tank in the dead end itself. The

owner of the septic tank decided to use it again, and the owners could do nothing about it because the septic tank had preceded the dead-end street.²⁷

An owner can also do something that can cause damage if the other buildings around him are already causing similar damage. For example, an owner can install a forge in his building if most of the adjacent properties already have similar equipment.²⁸ This is the principle that has led similar industries ending up in the same quarter of the city.

Right of precedence is established by action, not by building. If owner B puts a door someplace and owner A does not object, then owner B has the right of precedence; if owner A for some reason decides to object later on, he will lose the case.²⁹ In a narrow, dead-end street two of the three houses were converted into hotels and the third owner did not object. Gradually the street became so crowded that the third house was no longer usable as a residence. The owner then did object, but his protests were overruled since the change had been made so long ago.³⁰

To determine the time needed to gain the right of precedence, some jurists have referred to the Prophet's tradition which says that the one who possesses something for ten years has the right of precedence if within that period the person lodging the complaint has not protested. Others take each case individually and use no set period of time.³¹ All seem to agree, however, that in cases, such as latrines and tanneries, where the noxiousness of the damage will increase over time, there is no right of precedence, regardless of time, unless the owning individual established the function before the person lodging the complaint was there.³²

These principles make all property owners very aware of their rights. When neighbors protested after a lime-kiln owner built a second fireplace because it caused even more smoke, the new fireplace was declared illegal.³³ If property changes hands, and the buyer is not informed of the prior rights of his neighbors, he still does not have the right of protest, though if the damage is under litigation when the property changes hands the new owner does have the right to pursue it. Ibn al-Rami reports a case in which a person bought a house; after he had lived in it for a while, his neighbor asked permission to enter the house to clean the drainage ditch which ran under it. The new owner refused on the grounds that he had not been informed of this right of precedence. They appealed to the judge Ibn 'Abd al-Rafi' (d. 1333), who ruled that the neighbor did have the right to clean his ditch, but that the purchaser had the right to sell the house back to the original owner and that the original owner had to return the purchase price, which he did.³⁴

The right of precedence defined the relationship between owners in terms of a series of constraints. Each succeeding owner has to deal with all the decisions made by his predecessors. When a man built a room in the courtyard where a drainspout of his neighbor's house was located, the judge ruled that he could not stop the person from building the room but he could require that the builder allow the drainspout's owner into the room and that he could bring witnesses with him to confirm that the spout was still there. The owner of the drainspout had the right of precedence, and the builder had to deal with that constraint.³⁵ In order to offer complete freedom to builders, the environment should be seen as a series of constraints. "Damaging acts" and "damaging precedents" resulted in the "right of precedence" which ordered the relationship between owners as a series of constraints resulting in an "accretion of decisions."

The accretion of all these decisions dealing with windows, doors, party walls, passageways, water spouts, cisterns, overpasses, and the like, produce in these built environments a network of relationships between each owner and his neighbors. Water was a particularly common source of decision and constraint. Ibn al-Barra',

for example, was asked to judge a dispute in al-Mahdiyya that arose when a man who had bought the ground floor of a house on condition that he could collect the water for his cistern from a drain on the upper floor then sold it. The owner of the upper story soon tried to put the drain in another place, but the new owner of the ground floor was able to stop him through right of precedence.³⁶ In another case, when a person bought a house the seller told him that the rainwater from the neighboring house would drain onto his property. Later, however, the buyer was able to stop the water draining onto his house by arguing that it must include washing water since it was draining constantly, while rainfall was rare, and that the precedent only allowed for rainwater.³⁷

The sophisticated conventions that governed the traditional Muslim environment resulted from these principles that gave such importance to freedom of action and to precedent.³⁸ They also influenced regional architectures, explaining, for instance, why wooden screens are to be found all over the façades of buildings in old Jeddah and few on the façades in old Riyadh. Each type was based on a few rules that every user and builder followed and that had a simple spatial organization that was easy to understand but that could become rich and complex when it was repeated according to the conventions that governed form making. These conventions were of two types: those governing the creation of spaces and those governing building materials and their assembly.

The most efficient solutions were of course those arrived at by the people who lived on a site and knew what its constraints and advantages were. Each had his own unique situation to deal with. As a result the urban environment became a huge laboratory for trying out a vast variety of solutions. When others saw that a solution worked, they adopted it too and in the process improved on it. In this way, the accretion of decisions that came to govern each property became the generator of affordable innovative solutions. In contemporary cities, in contrast, municipal rules and regulations have produced organized environments that are not based on such an accretion of decisions and that involve neither the social bonds nor the user's contribution to the conventions of creating space.

In the past, then, the principles governing the actions of property owners led to the development of better solutions which in turn refined the conventions. When an owner decided to make a change, he did not ask for permission, but simply made the change. Only if the neighbors made a complaint was there a judgment as to whether the change should be permitted. When a judge ruled against a property owner, he only told him what he could not do. How he obeyed the ruling and how it affected his house were his problem. Owners gained experience in building from these critical situations, and this added to the store of solutions as well.

Building materials and their assembly were also generated by builders and users in response to particular technical problems. Unlike users, however, builders were controlled by an authority. One of the duties of the *muhtasib*, or market inspector, in a traditional city was to control the manufacture of building materials and keep builders from cheating users and owners. Manuals of *hisbah* are full of these regulations.³⁹ But society controlled building only insofar as it concerned materials and their assembly; it did not interfere in the organization of spaces. The two, one controlled and one not, combined to form a type which was adaptable to all sorts of situations including those created by rights of precedence while still resulting in a homogeneous but adaptable environment.

That it was adaptable can be seen by visiting any traditional quarter today and seeing the many different crafts and other businesses housed in the same type of building. Goitein remarked that almost any function could be found in any quarter of Fustat—a street of cobblers could still include some perfumers' shops; a

physician might have a sugar refinery in his house.⁴⁰ The historian al-Maqrizi (d. 1441) tells us that the quarter that housed the Khan al-Warraqa (the caravanserai of the stationers) also had a mill and some houses. He described other houses transformed into schools or monasteries, a market that had dwellings in its upper floors, and another for selling books that was turned into a tannery. All this evidence tells us that function was regarded as a variable and not as essential to the construction of a building.

When we talk about a type or about a convention that generated a type, we are not talking about function but only about spaces that are arranged according to certain rules. The functions can always change; function is the variable within the form. Today, in contrast, designers start with the function and tailor the form to fit it. Even those who argue that “function should follow form” are talking in terms of a single function. They do not explore forms to find what different functions they might fulfill, nor do they deal with functions as variables. We need to explore the potential forms have and improve the conventions that generate the forms rather than relying solely upon functionalism. I do not think that function should follow form or vice versa, but I do believe that functions should fit into forms.

Any architect can easily arrange the furniture in his apartment on a drawing board, but when he actually moves in he spends a great deal more time rearranging it because the situation is real. Accretion of decisions as a design strategy has a distinct advantage: each decision made is comparatively small and based on the realistic constraints of the site by those who experience the realistic constraints of the site; it is no longer hypothetical as it was on the board. The only drawback to accretion of decisions is that it is so very intricate and interconnected. Once it has been broken no one can put it back together again.

In today's large schemes, some initial decisions are realistic, but what follows is necessarily hypothetical, since the effects of each stage will not be known until after it is built. The larger the scheme, the more obscure the reality of the constraints becomes and the less realistic the ultimate design will be. Accretion of decisions, on the other hand, means a small number of decisions according to established conventions of form making

The most promising path leading to an efficient adaptable environment lies in investigating the potential of forms by improving the conventions for creating spaces. Functions should become a variable; the conventions related to building materials and their assembly should be improved. Accretion of decisions means the applications of these conventions by users on smaller levels of scale. But these conventions should not be imposed on users but explored by professionals to be adapted by them. Design should be viewed as a process that involves social interactions among users, for users can contribute to its improvement on all levels. But this will involve a total about-face in current design philosophies and municipal policies.

Notes

1. This argument is summarized in my forthcoming *Crisis in the Built Environment The Case of the Muslim City* (Singapore: Concept Media, 1988).
2. *Journal of the American Planning Association* 53,2 (Spring 1987): 178.
3. The hotel cost approximately £200,000,000. It was built on the sultan's orders to house the Gulf Co-operation Council conferences and to act as a guest palace (*Interior Design* [London], July-August 1986, p. 40).

4. E F Schumacher, *Small Is Beautiful Economics as if People Mattered* (New York, 1973), p 168.
5. Another translation is, "There is no injury nor return of injury." Inam Malik, *al-Muwatta* (Beirut 1981), p. 529; translated by A al-Tarjumana and Y Johnson (s.l.: Diwan Press, 1982), p 346. See also E Ibrahim and D Johnson-Davis, *al-Nawawi's Forty Hadith* (Damascus, 1977), p 106
6. Ibn Habib (d 940) explains that no *dara* means that no person should harm another person, while no *dira* means no person should be harmed by others; al-Wansharisi, *al-Mi'yaru al-Mu'ab*, 12 vols , Ministry of Endowments and Islamic Affairs, Morocco (s 1, 1981), vol 9, p. 46
7. Ibn 'Abd al-Rafi' (judge of Tunis, d 1333) relates that *dira* is "to harm yourself, so others will be harmed"; Ibn al-Rami, "Kitab al-'Ilan bi Ahkam al-Bunyan, ed A al-Dawdi, *Majallat al-Fiqh al-Maliki*, Ministry of Justice, Morocco (s 1, 1982), issues 2, 3, 4, p 299 See also Ibn 'Abdin, *Rad al-Muhtar 'ala al-Du' al-Mukhtar*, 8 vols (s 1: Dar al-Fikr Press, 1966), vol 6, p 593
8. Many cases were reported where the second person was asked to adjust; Ibn al-Rami adds that no jurists ruled differently, "Kitab al-'Ilan," pp 315-16
9. *Ibid* , p 408; see also al-Wansharisi, *al-Mi'yaru al-Mu'ab*, 9:60.
10. Ibn al-Rami, "Kitab al-'Ilan," p 299
11. For detail of visual damage, see Akbar, *Crisis in the Built Environment*, chaps. 5-6.
12. Ibn al-Rami related that this is very common in Tunis, and he did not come across a judge who ruled differently; *ibid* , p 314, 315
13. Al-Wansharisi, *al-Mi'yaru al-Mu'ab*, vol 9, p 60
14. This is derived from Malik's ruling regarding the blacksmith who hammered iron day and night, while his neighbor, separated from him by only a wall, could find no peace (Ibn al-Rami, "Kitab al-'Ilan," pp. 304-7.
15. Ibn al-Rami relates that the jurists of Toledo used to forbid the *kammadin* (hammerers) from working if the neighbors protested. The reason for preventing this was that when they all worked at the same time, the sound was very loud (Ibn al-Rami, "Kitab al-'Ilan," pp 303, 307; al-Wansharisi, *al-Mi'yaru al-Mu'ab*, 9:60
16. Ibn Qudama, *al-Mughni*, 9 vols., ed. M Harras (Cairo, n d.) vol 4, pp 572-73; Ibn al-Rami, "Kitab al-'Ilan," p 301.
17. Ibn al-Rami related that no one could build bath fires without the consent of the damaged neighbors, "Kitab al-'Ilan," pp. 301-2
18. For example, Ibn al-Qasim was asked about a man who had built a mosque and then built himself a home on its upper floor He answered that he did not favor this, although the caliph Umar b Abdul-Aziz (d 720) used to live in the top of a mosque during the summer in Medina He added that women would not feel comfortable in such a house because how can a man make love to his wife above a mosque. This example indicates the great degree of freedom that parties enjoyed with respect to using their properties Sunnun, *al-Musdawwana al-Kubra*, 8 vols. (s.l.: Dar al-Fikr Press, 1979), vol. 3, p 399
19. For example, A Y. Hanbali stated that if a change caused damage and neighbors objected as a consequence, then the neighbors would have the right to prevent such action Abu Ya'la al-Hanbali, *al-Ahkam al-Sultaniyya* (Cairo, 1966), pp 301-2. On the other extreme, al-Mawardi from the Shafi'i rite, stated that the owner of a house had the right to change functions even if its neighbors were damaged and objected (al-Mawardi, *al-Ahkam al-Sultaniyya* (Cairo, 1960), p. 255

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- 20 Abu Yusuf, *Kitab al-Kharaj* (Beirut, n d), pp 99, 104
- 21 For example, a case was brought before Assuyuri involving a person who kept a cow in his house and pounded grain to feed it. The neighbor asked that the pounding be stopped as it would damage his walls, but the cow could remain (al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 8:445; Ibn al-Rami, "Kitab al-'Ilan," pp 481-82
22. The second owner did not own the land when the first owner installed the drainspout; Ibn Taymiyya, *Mahjmu' Fatawi' al-Shaykh Ibn Taymiyya* (s 1 : Maktabat al-Ma'arif Press, s d), vol 30, p 7.
23. Ibn al-Rami, "Kitab al-'Ilan," p. 301.
- 24 Al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 8:412; 446
- 25 Ibid , 8:457.
- 26 Ibn al-Rami, "Kitab al-'Ilan, p 375.
- 27 Al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:32.
- 28 Stated by Ibn 'Abdin, *Rad al-Muhtar 'ala al-Du' al-Mukhtar*, 5:237
- 29 For cases, see Ibn al-Rami, "Kitab al-'Ilan," pp 322-23
- 30 What made the situation worse was that these hotels were the only ones in town and were quite busy (al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:41).
- 31 The tradition is narrated by Ibn al-Musayyab; Ibn al-Rami, "Kitab al-'Ilan," p 339. Other opinions, e.g., that of Asbagh, give twenty years as the required period for gaining the right of precedence; the son of Suhun found four to five years sufficient between neighbors (al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:42)
- 32 Ibn al-Rami, "Kitab al-'Ilan," p 340; al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:9
- 33 al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:9
- 34 Ibn al-Rami, "Kitab al-'Ilan," pp 342, 352
- 35 There are many similar cases. Ibn al-Rami, for example, reports a case in Qairawan in which a person tried to stop water from coming into his house from his neighbor's roof spout. The judge Ibn Talid stopped him; al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 9:38-39; 8:432-32; Ibn al-Rami, "Kitab al-'Ilan," 376-77, 410
36. Al-Wansharisi, *al-Mi'yarū al-Mu'rab*, 8:428-29; for other cases, see 9:67; Ibn al-Rami "Kitab al-'Ilan," pp. 379-80
- 37 Ibn al-Rami, "Kitab al-'Ilan," p. 352
- 38 In *Crisis in the Built Environment*, chap 8, I argue that centralized policy by states destroys conventions. The fewer the regulations, the stronger the conventions
- 39 For details, see *ibid* , chaps 5 and 8.
40. The Cairo Geniza documents are in Hebrew and date from the tenth through the thirteenth century; they include both official papers and private correspondence. They were analyzed by S. D. Goitein, "Cairo: An Islamic City in the Light of the Geniza Documents," in *Middle Eastern Cities*, ed. Ira M. Lapidus (Berkeley: University of California Press, 1969), pp 86-87.