

# Conception, Creation & Corporeality

A Tract on the Louis Kahn designed Buildings at IIM Ahmedabad

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*Between the idea  
And the reality  
Between the motion  
And the act  
Falls the Shadow*

*Between the conception  
And the creation  
Between the emotion  
And the response  
Falls the Shadow*

- T.S. Eliot<sup>1</sup>

This tract is in three parts<sup>2</sup>:

## Part 1: The Identity of an Object

In this section some of the assumptions that restoration architects work with and their validity are examined. An assumption is usually considered to be problematic if it is severe — severity being the impact it has on our way of going about our consideration of an issue if the assumption is not true.

Restoration architects attempt to return a building to a condition where as much as possible of the original condition and appearance and material is preserved. This section of the monograph raises the question as to what extent the origin of an entity is an essential characteristic of its identity. Further, it examines to what extent is the spatiotemporal continuity of a building or an object important for the conservation of its identity. Specifically, we call into question whether a Louis Kahn building can still be identified as one on the completion of its restoration.

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<sup>1</sup> The Hollow Men, written in 1925.

<sup>2</sup> I would like to thank Peter Ronald deSouza for comments. All errors are to be attributed to me alone.

## Part 2: Anekāntavāda – Reality as multidimensional

*Anekāntavāda* is the Jain theory of the many-sided nature of reality. *Anekāntavāda* means that when we observe an object, we comprehend a limited number of its attributes and miss others that are equally deserving of attention. With reference to the spatiotemporal continuity of an object such as a building it indicates that not only is it endowed with different characteristics at the same time but that it is endowed with different characteristics at different points of time.

This section reviews the history of the architecture from conception to its current situation and unravels the different sets of factors that impinged on the resulting differences between the design of the buildings and their material creation and the continued interventions to keep the integrity of the buildings.

## Part 3: Arjuna's Dilemma

In a prominent section of the *Mahabharata*, Arjuna is confronted with a dilemma. He has to wage a war against his own teachers, cousins and extended family members. He tells Krishna, his charioteer, that he is in doubt about his duty as a warrior, and he is not prepared to fight. Should he fight in a battle that will lead to the destruction of his friends and family, or should he drop his bow and withdraw from the battle? What is Arjuna's *dharma*? What is the "right" thing for him to do?

This section examines the choice before a decision maker confronted with the issues of the Louis Kahn complex at the IIM Ahmedabad campus that has a similar dilemma to Arjuna: Should she privilege the connections that generations have had with the poetry of light and shade that is constituted by the architecture of the Kahn designed buildings and restore or should she be giving weight instead to the safety of the current and future users of the buildings given that the residual life of the buildings is over and reconstruct? What is the right thing to do? Is the reconstruction of the buildings in the spirit that Kahn intended better than restoration of the existing structure?

## Part 1: The Identity of an Object

Restoration architects work towards returning a building to its original condition and if that is infeasible returning it to its condition at a point of time and preventing the deterioration of buildings. In the process of doing this they aim as far as possible to not change the function or layout as they work to return it to its original condition. A first principle of restoration is that as much as possible of the original appearance and material be preserved.

This prompts the following questions: Is the origin of an entity an essential characteristic of its identity? Further, how valid is the claim that is widely held that the spatiotemporal continuity of an object is a decisive requirement for establishing the identity of an object? There are problems in accepting these widely held claims that the origin of an object is a necessary characteristic of its identity and that the conservation of this identity requires its spatiotemporal continuity.

Take the case of an ancient piece of pottery with painted motifs that has been found in myriad pieces at the archaeological site of Dholavira, not so far from the Indian Institute of Management Ahmedabad, that dates back to the Indus Valley Civilization. It finds its way to a museum where the technicians restore it and recover the piece of pottery. Most would identify the recovered pottery with the ancient piece. Of course there would be some discoverable difference between the initial and restored states of the pottery such as traces of glue and cracks but that does not detract from the identification of the two as the broken pieces are the medium that is restored by the technicians in the museum. The identity of the original pottery stems from the fact that the *temporarily* destroyed (where temporary is a few hundreds of years) pieces of pottery are the claimants for serving as media for its subsequent preservation.

Is the restored piece of pottery the work of the original potter? Does an artefact survive if it was found destroyed and then reassembled? The pottery is the work of the artisan who originally made it. If it is substantially restored is it not that what we have is not the result of the efforts of the original inventor or potter but that of the restorers?

The broken piece of pottery performed the function of pottery till it was temporarily destroyed. After coming into the museum technician's workshop it was restored and

it emerged again as a piece of pottery. It is numerically identical to the broken piece of pottery but there are questions about its origins. Did the piece of pottery come to be when the original potter brought it into existence or when it is restored by the technician?

Consider a prefabricated piece of furniture such as sold by Ikea. The furniture which includes many compact styles is ready to be assembled at any location. Since it is prefabricated, it comes into existence whenever it is assembled. Whenever it is dismantled and reassembled it is the same identical piece of furniture that comes into existence. But each time it is a new assembly and even though the furniture is one and the same each time it is assembled, each assembly has a different and new origination of the furniture.

Is the identity of the object then not of importance when we consider the origin of the object? Some would claim that the origin of the object is in fact the initial time it came into being and subsequent instances of restoring or reassembling it are not originations of the object. The origin of the piece of pottery was in the workshop of the potter who first brought it into being or of the furniture it was in the workshop where it was prefabricated. The subsequent assembly or restoration is a new enactment where the object again comes into being. When it is disassembled into its constituent pieces or is destroyed due to the ravages of time it ceases to be the object but when subsequently reassembled or restored it again comes to be the object.

In this case if the origin of the object is essential to its existence, then two objects – the one that is temporarily destroyed or disassembled and the one that is assembled or restored – are the same object if and only if the *parts of the object remain spatiotemporally continuous* throughout. Between two erections of the Ikea furniture the parts that constitute the furniture remain spatiotemporally continuous in the different phases of its existence – the knocked down disassembled phase and the subsequent assembled phase. This is clearly distinct from the *form* of the object being spatiotemporally continuous where its origin is its construction when it was originally conceived and brought into existence rather than a subsequent restoration or reassembly of it. Clearly there is a period of time in between the first phase of the object and its second when it ceased to exist. When the Ikea pieces of furniture are disassembled and stored for subsequent usage the furniture ceases to be and when it is reassembled it is identical to the previous form it took but in the interval it was

not spatiotemporally continuous with its earlier form of existence. Similarly, the initial piece of pottery and the restored one are identically one and the same but yet there is a period of time during which the piece of pottery did not exist, except in its parts. It is common sense that the concept of an object is that it does not have gaps in its existence in time or space and that it is spatiotemporally continuous. In these cases, for the identity of an object to have spatiotemporal continuity it is clear that it is the parts of the object that remain spatiotemporally continuous and not the form. Between two erections of the furniture the parts are spatiotemporally continuous and not the form.

Spatiotemporal continuity as a concept then can have different connotations when we consider the identity of an object. Take the case of Shinto shrines in Japan. They are rebuilt every twenty years with entirely “new wood”. In the case of the Ise Jingu’s Naiku shrine the continuity of the shrine comes from the source of the wood which is harvested from an adjoining forest that is considered to be sacred. The shrine has been rebuilt 62 times. Adjacent to the main sanctuary where the sacred palace of Amaterasu-Omikami<sup>3</sup> stands is a site of exactly the same size where a new building with the same dimensions as the current one is constructed every twenty years. The divine treasures to be placed inside the sacred palace are also remade and once this process is complete the sacred mirror which is the symbol of Amaterasu-Omikami is moved to the new sanctuary by the Jingu priests. This ritual is called Shikinen Sengu.

Interestingly the document on the official website of the shrine<sup>4</sup> states: “Shikinen Sengu is a temporal and spatial return to origins that spans generations.”. The transfer of the shrine maintains the architectural heritage and artistic tradition. After the Shikinen Sengu the previous sanctuary building is disassembled and the timber is granted to other jingu across Japan<sup>5</sup> to be reused.

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<sup>3</sup> It is said that the divine couple, Izanagi-no-kami and Izanami-no-kami gave birth to the Japanese islands and various other *kami* in the time after heaven and earth became separated. Among their descendants were three venerable *kami*. The first *kami* Amaterasu-Omikami, whose name is a title meaning “great *kami* who lights the heavens”, is associated with Takamano-hara, the Celestial Plain. The second, Tsukiyomi-no-kami is associated with the moon and the night and the third, Susano’o-no-kami is associated with the sea. Amaterasu-Omikami is considered the most revered ancestor of the Tenno – the Emperor of Japan – and symbolizes the unity of all *kami*.

<sup>4</sup> <https://www.isejingu.or.jp/en/pdf/soul-of-japan.pdf>

<sup>5</sup> Ise Jingu, or officially “Jingu” includes 125 jinjas centred around Kotaijingu (Naiku) dedicated to Amaterasu-Omikami and Toyouke-daijingu (Geku), dedicated to Toyouke-no-Omikami. In land area Jingu is roughly 100 square km.

It should be clarified that I am not considering works of art in this discussion though much of what is being stated may be applied in that medium too. There may be a case to be made there that for a work of art the original artist's work is critical to its identity. If Amrita Sher-Gil's Self Portrait were ever to be considerably restored, then one could argue that the result is the work of the restorers and not of the painter. One may also state that when considering a work of art, we are not as much bothered about its utility as we may be for the case of an object like a piece of pottery. To the extent that a work of art involves conceiving the structure of what is intended to be presented and then embodying it in something physical we can consider that the painter's work is done not just at the stage of conception but when the work is conveyed through the materiality of its presentation. Till then the work has only been ideated and has not yet been presented to an external audience and is work that is unfinished or has ceased to become.

What of an artefact where restoration involves not a putting together of the pieces of the original object but of replacing parts with new ones? Is it the same artefact? What if there is a vintage watch like a Patek Philippe 1920's Officers Cushion gold watch? It stops working and goes for repair. It is dismantled at the watchmaker's facility and it is ascertained that one of the myriad pieces need to be replaced for it to be in working condition again. The owner of the watch agrees to have the part replaced and takes the watch back. It had ceased to be a watch till it went to the watchmaker's facility where it was restored. Suppose now the watchmaker later finds a way to restore what was the faulty part and finds it can be used in another watch. What then would we make of the statement that the relevant part is a part of (not was a part of) the original owners watch. Or of the statement that it is a part of the watch it is now fitted into and is in that sense a part of another watch. There are myriad interpretations that are possible as to whether a part belongs to an object where it was deployed earlier, or, part of the object where it currently is placed, or, is a part of both, or, *even more a part* of one of one of those objects than the other.

Some would maintain that when the original part has been removed from an object and replaced by a new part it is now the new part that is a part of the object. The old part was a part of the object but it is no longer so. However, it may also be proposed that it is a matter for consideration whether the new part has become a part of the object (watch) where it has been placed or whether the watch (object) has been

partially dismantled and continues to retain its old part as a part even when that part has been disassociated from it. For when the watch was dismantled in the repair facility the faulty part was separated out from the watch and would be identified as belonging to the original watch. We have to provide a more plausible argument to conclude that it discontinues that association when it is used as part of another watch altogether. If we maintain that an object is the spatiotemporal continuity of its parts, then the dismantled part may be construed to constitute the object.

One way to summarize the spatiotemporal continuity of parts as being the essential characteristic of an object is to say that it is a matter constant object which can exist even after it is disassembled and later on reassembled, but the continuity of the object is in question if any of its parts are replaced.

But there is another way to think about the continuity of an object and that is to consider that to be the case when the *form* of the object remains spatiotemporally continuous. Here the object survives the replacement of its parts but cannot be said to be existing after its parts have been disassembled even if those parts are subsequently reassembled. An object that is rebuilt part by part until all the parts have been replaced is an example of an object where its form remained spatiotemporally continuous throughout the initial phase since it was brought into being, the restored phase when parts are replaced, and the period in between. The parts have not been spatiotemporally continuous since they were replaced by others. Thus, if a building is rebuilt brick by brick what stays spatiotemporally continuous is the form of the building whilst the bricks which replace it have no continuity with the earlier bricks that were a part of the building.

This – form continuity – is the sense in which architects usually approach the restoration of a building. As parts of a building that have deteriorated or lost their functionality are replaced the restored building is considered to be identical to the building that existed prior to the replacement of those parts. Some may state that a building is a sum of its parts and so denotes both its form constant and part or matter constant versions. That would be troublesome to sustain as a way of thinking about the building though. For it entails that if we were to repair any of the parts of the building then since parts of the building are required to be spatiotemporally contemporaneous we have destroyed the building. And if the form of the building is to remain spatiotemporally continuous then it appears we can repair it without

damage to its identity but would have to accept that those parts that replace the existing ones, were a part of the building even before they were made a part of the building, and so somewhat superfluously the building in its current form is more than the sum of its existing parts and includes those that replace those parts. Let us examine this statement in more detail.

It is best to highlight the issue with a thought experiment and it is my contention the thesis being made holds even without this way of demonstrating it. Suppose that somewhere on the IIM Ahmedabad campus a museum is decided to be built in honour of Louis Kahn. The curator of the museum goes overboard and decides to have a replica of the Vikram Sarabhai Library (VSL) as a part of the museum and goes ahead and orders for the identical bricks and other parts that were used in the construction of the existing library building. After finding out about this misadventure on the part of the curator the Board of Governors decides to not proceed further with the museum and closes it. The bricks and other material that were ordered are kept piled up in the barricaded museum because stringent government policies make it difficult for the institute to dispose of capital goods that have been procured. The structural steel, bricks, timber and other construction material in the closed down museum could technically be used to make a duplicate of the original VSL on the campus. A disassembled duplicate version of the VSL exists in the museum.

As time goes by the institute finds it has to replace worn-out bricks at various locations. The job is given to a contractor who knows about the perfect duplicate that is locked up in the museum that has not been visited for years and is out of bounds. The devious contractor in the dead of night decides to break into the museum, removes the bricks and other material required to patch up the dilapidated part of the building and uses those for the restoration project. This goes on each time there is a requirement for maintenance or repair in bits and in bulk when a full-scale restoration project is undertaken. At that time most of the construction material in the museum that constituted the duplicate VSL has been used up and most of the original brick and structural material that is replaced and was used to construct the original VSL has been destroyed.





The south face of the VSL during restoration. Many of the bricks were replaced. Can we identify it as a Louis Kahn building when the restoration is complete?





The roof slab of the VSL. The entire slab was removed and a new slab laid. Earlier the outer window flat arches visible here were reconstructed as their condition was precarious. Can we identify the VSL as a Louis Kahn building when the restoration is complete?

At this juncture there is the VSL that is considered to be a Louis Kahn building that is standing even though none of the original construction materials that were used to make the building have ceased to exist. And the matching construction material that was procured to make a duplicate of the VSL has become an integral part of the VSL. Which building stands? The Louis Kahn original VSL or the duplicate VSL which is a spitting image of the original? If we go by the identity of an object as being that the form of the object remains spatiotemporally continuous then the building that stands is the original VSL. If it is the case that the identity of an object is established if the parts of that object are spatiotemporally continuous then the building that stands is the duplicate VSL. There is a conflict as both the original VSL and the duplicate VSL cannot be in the same place at the same time.

We could contend that when the first few bricks were taken from the duplicate VSL and used to replace those in the original VSL the duplicate VSL loses some parts and the original VSL still has the credentials to be called as the original VSL. But if we cut to the end of the account we know that the VSL is made up of all the parts of the duplicate VSL. Thus when the last few parts of the construction material are taken from the duplicate VSL in the museum and placed at the VSL where it was originally built it is actually no longer the duplicate VSL that is losing parts but rather it is gaining the last few parts that belonged to it. The first transfers of construction materials from the museum result in it losing parts at the location of the museum but the last transfers result in the parts from the museum that have gone in to replace the original parts of the VSL now gaining the parts which they were associated with when in the museum.

It is logical that at some point in the process the construction material parts move from the museum to the original location of the VSL. The process that is executed is that a part of the original VSL is removed and it is non-functional thereafter and may be treated as discarded or destroyed. A part from the museum is brought to replace it and the parts of the original VSL that are still intact have a more suitable claim to be constitutive of the original VSL than the part that is removed which has no claim at all. In addition, the parts of the original VSL that are intact would have a better claim to constitute the VSL than the same very parts *and* the part removed. If another part is removed from the original VSL and replaced the parts left behind because they are intact will have a better claim to be considered as the original VSL than the sum of those parts and this second part that is removed. This process of course

cannot prolong limitlessly. At some point the parts left behind do not meet the requirement of wholly constituting the original VSL for most of the parts that constituted it are no longer in existence. The original VSL no longer exists. What exists in its place is the building that resembles it which is made up of duplicate parts and which may be construed to be the duplicate VSL. Initially we have the original VSL appropriate parts to replace those which are no longer functional. Eventually the building no longer constitutes the original VSL<sup>6</sup>. Restoration architects have no response to this problem and mistakenly take it that the building they are restoring will result in its return to a condition it was in when it originated. Our contention is that it is simply not the same building.

One needs to come to terms with an important indeterminacy very much as occurs when one considers how many grains of sand are required to make a heap. One could begin with the proposition that a grain of sand does not make a heap. Then one could claim that if one grain does not make a heap, then two grains do not. Similarly, if two grains do not make a heap, then three grains do not. Continuing in this way we could come up with the proposition that 1 million grains do not make a heap. Starting out with flawless reasoning we end up with a falsehood. Similarly, when the parts of a building are no longer structurally sound and are replaced there comes a time when the resulting building no longer has the identity of the original building – it is another building. The restored VSL is no longer a Louis Kahn building.

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<sup>6</sup> While replacing one part does not yield a different building replacing one part after the other in the long run eventually does so. The principle of transitivity requires to be moderated for us to be able to make this claim. If we judge  $b_0$  to be the same building as  $b_1$  that is the result of  $b_0$  having one part of it replaced by another one, and  $b_1$  as being the same building as  $b_2$  which comes from replacing another part of the building  $b_1$ , and so on, then transitivity would imply that we deem  $b_0$  to be the same building as  $b_n$  where all the parts  $n$  of the building that make up  $b_0$  have been replaced. However, as we demonstrated the greater the difference between  $b_i$  and  $b_j$  in the number of parts that have been replaced the lower would be our predisposition to judge  $b_i$  and  $b_j$  to be the same building. That is to say our judgment about the spatiotemporal continuity of the form of the building is a monotonically decreasing function of the distance between  $b_i$  and  $b_j$  – the larger the distance the less is it the case that  $b_i$  and  $b_j$  are the same building. A series of apparently minute changes add up to a large and very consequential or appreciable change. Transitivity applies only in the close neighbourhood of the existence of the form of a building at any point in time and space.



## Part 2: Anekāntavāda – Reality as multidimensional

The IIM Ahmedabad campus is located in a part of the world where there is a notable following of Jainism, and which draws pilgrims from all over the world to some of the ancient temples in the region<sup>7</sup>. The central philosophy of Jainism is *anekāntavāda* – “the theory of the many-sided nature of reality”<sup>8</sup>.

*Anekāntavāda* means in essence that whenever we observe a thing, we only grasp a limited amount of its attributes, missing others that would be equally deserving of attention. Similarly, if we describe an object, we only express a very limited amount of the whole truth that is out there<sup>9</sup>.

The Jains hold that a particular object can be viewed from different points of view. It possesses infinite facets. The term *anekānta* indicates the ontological nature of reality through which every object possesses infinite number of qualities (*anantadharmātmakam vastu*), each of which can only be affirmed in a particular sense. The Jains further hold that all things are *anekānta*, i.e., *na-ekānta* which means nothing can be affirmed and negated absolutely, because all affirmations and negations are true only under certain conditions and limitations.

With reference to the spatiotemporal continuity of objects that we have focused on, *anekāntavāda* is of two types, viz., *krama-anekānta* and *akrama-anekānta*. *Krama-anekāntavāda* is that where a thing is endowed with different characteristics at different points of time. On the other hand, *akrama-anekāntavāda* is that where a thing is endowed with different characteristics at the same time.

Objects are comprehended differently from different points of view. Of these numerous perspectives the cognizance of reality from a particular standpoint is called *naya*. The Jains maintain that knowledge is to be known in two ways,

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<sup>7</sup> These are located in Palitana, Taranga, Sankheshwar, Idar, Ahmedabad, etc.

<sup>8</sup> Matilal, Bimal Krishna (1981) - *The Central Philosophy of Jainism (Anekāntavāda)*. Ahmedabad: L.D. Institute of Indology. (L. D. Series, 79.). Some such as Jayendra Soni, have taken exception to this, describing *anekāntavāda* as “a small, albeit basic, part of Jain thought”. See Malvania, Dalsukh & Soni, Jayendra (ed.) (2007) - *Encyclopedia of Indian Philosophies, X. Jain Philosophy (Part I)*. Delhi: Motilal Banarsidas.

<sup>9</sup> The famous story of the blind men and the elephant is the favourite tale to illustrate the argument.

viz., *pramāṇa* and *naya*. These two are the different ways of knowing reality. *Pramāṇa* is the valid knowledge of an object endowed with many features, while *naya* is the valid knowledge of an object from the standpoint of one part or aspect. Thus, *pramāṇa* comprises all the parts of a thing, but *naya* refers to only one part of a thing. Jains reject the absolutist “either/or” that is a typical feature of a considerable portion of Western logic, taking instead the relativist stance that for every question there are many “right” answers that indicate from contrasting angles and in differing degrees the one truth, *satya*.

Our lives are affected differently by something taking place at a distance than when it is immediate and impacts known people with who we have a social relationship. Behavioural scientists have grappled with the question as to whether we are affected more by feeling with regard to a distinct situation or event that is under consideration when we are at a distance from it and how does that diminish or amplify with distance. It is difficult to know exactly what is transpiring when something is at a distance and even when we do know we may not fully understand the nature and extent of its impact on the lives of those who witness the situation first hand. The history of the buildings is in part a story of how geographical distance led to decisions that were responsible for the deterioration of the structures.

Louis Kahn was appointed as a Visiting Consultant (Teacher) for a period of three years from 1962 to 1965 for the IIM Ahmedabad project where he was to formulate the concept and guide the Indian team during the various phases of the construction project. His involvement was envisaged to be from a geographical distance as his contract was to make three to four visits for a duration of four weeks each during this period. Later, on the realization that Kahn’s presence was important for the success of the project, the number of visits was increased to six times. Kahn requested for a weekly reimbursement of \$200 but was offered the India rate of \$18 and since he could not be stationed in Ahmedabad for the duration of the project it was considered that a way around was to depute an Indian architect to go to Philadelphia to work and be trained under him. Kahn made his first visit for two weeks in November of 1962 where he drew charcoal sketches, the functional requirements of the offices and classrooms of the management school, the dormitories and the residences were discussed, and the layout presented to the Building Committee of IIM Ahmedabad. The layout design was continuously checked for its conformity with the construction cost as was available in the budget. At the

time of the contract the estimate was for ₹ 400,000. The masterplan provided in August of 1963 put the estimate at ₹ 14,200,000, which was an increase of 255 per cent<sup>10</sup>. The Building Committee made suggestions for saving spaces and provided for an estimated cost of ₹ 7,850,000. The local team of architects made changes and listed out their notes on the margins of the graphic works and these were then sent by post to Kahn. The delay in communication for the finalization of the drawings led to the institute suggesting that an architect be deployed to Philadelphia to work in Kahn's studio from mid-November, 1963, to June, 1964. This enabled the tender for the construction of the first buildings — 6 residential houses of three types and four dormitories — to be put out in April 1964 and construction began in October 1964.

However, the design of the principal part of the school – the classroom complex, library, and faculty blocks – did not progress much and again the institute decided to consider having one of the domestic architects to be located in Philadelphia<sup>11</sup> between mid-1964 and the first quarter of 1965. Kahn would make sketches, the domestic architect would make drawings out of them, and Kahn would then provide an indication of the direction to be taken. Incorporating those directions, the drawings would be sent to Ahmedabad where they were worked on further by the local project architects. Though the Indian architect stayed in Philadelphia for about 10 months he did not return to Ahmedabad with an exhaustive set of drawings for the principal academic part of the school. After his return the Indian architect found he would not get replies to his letters or drawings<sup>12</sup>. The institute again sent its architect<sup>13</sup> to Philadelphia in October 1965 to complete the details for the library and other buildings and to obtain the final working drawings. The campus was supposed to be completed by mid-1966 and there were cost and time overruns that jeopardized the academic programs that the institute had planned for. The institute found increasingly that it was short on financial resources to the extent that its architect was provided an allowance of just \$9 per day for all-inclusive expenses and it could no longer afford the cost of a trip to Ahmedabad by Kahn. Kahn therefore did not

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<sup>10</sup> This large increase was justified on the grounds that many new structures that were not a part of the earlier plan had been included.

<sup>11</sup> This was Chandrasen Kapadia who was the Junior Architect for the project. Earlier during Nov 1963 to mid-1964 it was M.Y. Thackeray, the Senior Architect, who had gone to Philadelphia along with B.V. Doshi, who had been appointed as Local Architect of the project to associate with Kahn.

<sup>12</sup> Kahn was busy during this period with the National Assembly Building in Dhaka and ostensibly away from his studio for long periods.

<sup>13</sup> This time it was Junior Architect, M.S. Satsangi, accompanied again by B.V. Doshi. Doshi stayed till the end of the third quarter of 1967. Satsangi stayed till April 1968.

travel to Ahmedabad during May of 1967 till February of 1969. The Indian architect in Philadelphia returned in April 1968 due to a lack of funds. By 1969 the institute decided that given the conclusion of the project was scheduled for 1966 it was best to address the delay in progress and the project was handed over to B.V. Doshi on 1<sup>st</sup> June, 1969 and the new drawings were from thereon provided by his studio<sup>14</sup>

To enable control over the construction Kahn had requested the involvement of an architect from his studio in Philadelphia but it required expenses that were not within the reach of an Indian institute. To supervise the operations, he sent back the first Senior Architect who had been deployed in his studio for six months till mid-1964. This is an indication of the extent of control that Kahn had over the project as it was the usual custom in the country to hand over the architectural drawings and the construction to the engineering team with the architect having a negligible part to play at a construction site. When Kahn visited in December of 1964 he was dissatisfied with the construction till that stage<sup>15</sup>. The bricks for instance were unlike the machine cut and standardized ones used in the US. At the site of the project they were made in local kilns using manual labour and of local clay that had a lower density and were more porous and less resistant to compression. Since the bricks were inconstant and labour was unskilled Kahn worked with the local architects to construct a Sample Yard<sup>16</sup> so as to demonstrate the correct method of the execution of the construction which was to be the model to be followed for the project. Kahn appointed one of the Junior Architects<sup>17</sup> to oversee and monitor the construction of the Sample Yard and circumvented the engineers. Later he directed that the architect had to inspect and approve the foundations and the initial brick courses before construction could proceed.

Gujarat being a seismic zone, criteria for the design of buildings to withstand seismic shocks were made public in 1962. The main complex was required to comply with these criteria. The first buildings being dormitories by virtue of being of box shape were confirmed to have followed the seismic parameters somewhat. But by the time it came to the main complex there were large stretches of walls with nonsupported lengths and heights. To safeguard the building from the horizontal forces of an

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<sup>14</sup> Kahn insisted that the project be completed by Anant Raje who worked in Doshi's studio, Vastu Shilpa. Raje had met Kahn during a visit of his to Ahmedabad and had been invited by him to work in his studio in Philadelphia as an Industrial Trainee from 1964 to 1969.

<sup>15</sup> The dormitory buildings had till then been built to approximately a height of 7 feet.

<sup>16</sup> This structure is still at the original site on the institute campus.

<sup>17</sup> The Junior Architect was M.S. Satsangi.



earthquake it was decided to structurally reinforce the walls. The masonry was reinforced by inserting steel bars inside the brickwork. This method was conveyed to Kahn in a letter<sup>18</sup> who despite not being happy with this solution by this time would possibly have realized that the project was way behind schedule and he assented to this way of building reinforced masonry so as to keep the project on track. Given the porosity of the brick this solution had a decisive impact on the conservation of the building over time. A combination of rainfall, high temperature variations and high exposure to the sun resulted in corrosion of the steel reinforcement that pushed outwards in all directions and caused cracks in the brick walls and affected the subsequent conservation of the buildings. Kahn made just one trip per year to the institute since 1970 (with no trip in 1973) and his last trip was in March of 1974 when the construction was near completion.

It is pertinent to raise the question: Who is the author of the first buildings at the IIM Ahmedabad campus? Is it Kahn or is it the Indian architects who worked on the drawings after obtaining direction from Kahn and who oversaw the project on site? How much of the legacy of architecture of the building should be attributed to Kahn? We leave it to others who understand how architects function to attempt an answer.

We would expect a decision maker to be typically more risk averse especially when the impact of a decision is high in terms of its consequence being a loss of something valuable. When the object is a building whose life span is long the risk of failure of parts of the building is spread over the lifetime of the building. Hence the risk involved in the estimation of the failure of the building in terms of safety, much after its construction, is relevant to the decision about whether to construct the building in the first place and how much to invest in a safer design. How does the risk preference get affected when the person involved in the decision is close as opposed to when they are at a distance from the location of the building and its eco-system?

This is akin to the problem that is prevalent when people turn to advice to others in a multitude of situations ranging from the prosaic to the life changing. We do ask others for advice when we think the other person is better suited to make decisions and this is particularly so for important decisions where we often pay experts for advice and to make decisions for us as when we use financial advisors, lawyers,

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<sup>18</sup> The letter was written by Anant Raje who was the Site Office manager of the project in August of 1969.

doctors, or architects. In all of these situations there is a dependence on another person to make a decision that is intended to be in one's best interest.

Most choices involve some element of risk and when faced with such situations external experts tend to choose a safe option rather than a riskier option that may be more attractive. It has been consistently found for instance that financial service professionals<sup>19</sup> make investment decisions that involve less risk taking on speculative scenarios for their clients than they would do with their own money because of the value placed on how society assesses risk. However, and interestingly, after a discussion with a group that had delegated the decision to an expert it is found that the expert is prone to more risk-taking responses than prior to the group interaction. This is possibly because the group discussion serves to inform that the initial response was not as risky as had been thought. This risk shifting is because the initial tendency of a group of people towards a given direction intensifies following a group interaction. If a group has a moderate proclivity in a given direction, then group interaction has the tendency to result in a greater proclivity in the same direction<sup>20</sup>.

An interpretation for this is that modest risk is a stronger societal value than caution. Individuals consider themselves to being at least as willing as their peers to take risks and so following a group interaction on a matter that involves a risky choice those whose initial positions were less risky than the group average recognize their relative cautiousness and subsequently endorse greater risk than before so as to restore their perception of themselves as relatively risky.

Group discussions additionally allow persons to become familiar with the situations being discussed and this increased familiarity with an issue accounts for the shift of persons towards adopting more risky stances. Other explanations for the phenomenon are that those inclined to take risks tend to be more dominant and influential in group discussions and the shift in risk is attributable to the influence of risky leaders. Finally, it could also be that discussion produces emotional bonds

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<sup>19</sup> One should emphasize that here we are making a statement with regard to a professional and it is part of a professional's training to avoid playing with the client's money. We are not considering fly by night operators.

<sup>20</sup> For example, a group of moderately pro feminist women will be more strongly pro feminist following group discussion. See Myers, D. G. (1975) – "Discussion-induced attitude polarization", *Human Relations*, 28, 699-714. For a review see Isenberg, D. J. (1986) – "Group polarization: A critical review and meta-analysis", *Journal of Personality and Social Psychology*, 50(6), 1141–1151.

between members and frees individuals from full responsibility for their later decision because of the perception that the decision has been partially shaped by the group – a diffusion of responsibility. Contrary to the assumption that group involvement in solving problems results in the dampening of individual tendencies towards boldness and innovation it could be the case, we conjecture, that when the circumstances involve a dimension of risk there is a group induced shift towards greater risk.

In 1987 the Institute's *Alumnus* magazine<sup>21</sup> interviewed Kulbhushan and Mina Jain, former students of Kahn at the University of Pennsylvania, practicing architects, teachers at the School of Architecture (later CEPT University), Ahmedabad.

In the course of the interview they stated: "The usage of this material (local bricks) is going to cause a lot of problems in future because the sand content in this brick is very high and it will start disintegrating within a few years. Louis Kahn took it for granted that the quality of the brick would be good. ... Besides, Kahn did not anticipate that the construction could be poor and there would be water penetration into the walls causing the steel to rust, as some of these walls are reinforced steel walls. In our climate these things do not work. Soon the concrete will start chipping and falling, and bricks disintegrating and things will become so difficult that you would not know how to repair the Institute building." Towards the end of the interview they state, "May be, Louis Kahn did not visualise all this and it could be said that, perhaps, he was not advised properly, as in the case of planning." The interview ended with the following statement:

"It is said that Kahn liked to look at ruins. So, may be, he will like the campus."

Hardly fifteen years since the completion of the project degradation of the complex had begun to noticeably appear from the consequences of reinforcing the masonry. As early as 1982 a Building Committee meeting<sup>22</sup> had discussed the problem of erosion of the exposed brick buildings. The Site Office Architect Anant Raje along with the engineer Shah made a report in 1996 that documented the deterioration of the main building due to corrosion of reinforcement in the brick walls, brick arches, concrete tie beams responsible for resisting the thrust of the arches, and in the

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<sup>21</sup> ALUMNUS, Vol. 19 No. 2, IIM Ahmedabad, May 1987, page 10.

<sup>22</sup> Building Committee meetings of 10<sup>th</sup> and 15<sup>th</sup> July, 1982. Some of these details are now in the public domain thanks to a well researched book by Alessandra Rampazzo titled "Steel like Straw – Louis I. Kahn and the Indian Institute of Management in Ahmedabad", published in 2020 as a part of the SAGGI IUAV 01 book series edited by Università Iuav di Venezia. I have benefited immensely from the material in this book.

exposed concrete work that is exposed to rain. The institute followed it up with sealing of the joints of the masonry, replacement of bricks that had been dilapidated from the exposure to the elements and waterproofing on the roofs. In 2000 the Institute entrusted a report to CEPT University which was submitted towards the beginning of the fourth quarter of 2000<sup>23</sup>. This report mapped the areas impacted by the deterioration of the structure but did not provide a plan for restoration. The cause of the damage was identified as the intrusion of moisture in the bricks which degraded the masonry. The compressive strength for instance was found to be 5 N/mm<sup>2</sup> which was less than half of the minimum value of 10.5 N/mm<sup>2</sup> required by the Indian Standards Specification announced in 1964 and the average percentage of water absorption was 14.55 per cent compared to a maximum prescribed of 15 per cent that is considered to be high for exposed reinforced brick work. The report also pointed out that horizontal reinforcing bars placed very near to exposed brick surfaces resulting in spalling of brick work along with pointing. The institute experienced a strong earthquake in January of 2001 that on visual inspection did not appear to affect the stability of the building<sup>24</sup>. Major damages that were observed were that in the library building the East and West side 8 feet high parapet wall cracked and fell. In the dormitory buildings the staircase roof slab fell and walls, including the shaft walls cracked. The cracks in the walls, flat arches and semicircular arches widened. In the service tower the main arches at 90 feet height and in the faculty houses the extended parapet wall cracked/fell.

The fiftieth anniversary of the institute in 2011 resulted in an effort to improve the appearance of the buildings with a touch up job<sup>25</sup> and some repairs on the wall facings and flat arches. The year before in the main complex buildings the outer window flat arches (352 nos. nonstructural, of three feet span) were reconstructed and brick masonry piers repaired as their condition was precarious. In the classroom

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<sup>23</sup> This report was written by Prof R.J. Shah of the CEPT University (Centre for Environmental Planning & Technology) along with his students V. Kundra and V. Jain. It was titled “Final Report (Condition Survey of Main Building, overhead and underground water tank at Indian Institute of Management, Vastrapur, Ahmedabad)”.

<sup>24</sup> Damages were reported in the non-load bearing masonry and in the roof of the stairwells of the dormitories.

<sup>25</sup> Cement based mortar was used to improve the appearance but in effect it prevented transpiration of the masonry which caused increased dampness of the walls which when they dried in turn resulted in crystallization of the salt and flaking of the brick. The bricks were also made to appear red by using the pigment from grinding red bricks.

complex terrace arches, seminar room arches, and outer walls were also repaired due to their dilapidated conditions.

In 2013 the Institute decided to undertake the conservation and restoration of the main campus core buildings of the library, faculty block, classroom complex and dormitories. The conservation architects from the UK, Peter Inskip and Stephen Gee, were invited to advise the institute. They visited in January 2014 and submitted a report in March 2014. The salient points of their report pointed to the degradation and distress of the structure which to them appeared largely to be caused by corrosion of reinforcement within both the concrete and brick structures. They recommended that the flat, segmental, and circular brick arches that exhibit cracking and are failing need to be dismantled, the steel reinforcement replaced in stainless steel and the arches rebuilt. It was pointed out that it is important to determine if the mortar is too hard for the brick. In parallel, an analysis of the bricks' properties required to see mortar and bricks holistically and ascertain both are operating/functioning without detriment to each other. They recommended that standard concrete repair requires removing concrete around a reinforcing bar, treating the bar with corrosion resistant paint and replacing the concrete with specially designed concrete mortar to match with what is existing.

Following up on the recommendation of Inskip and Gee that the restoration be phased out so that there is learning from a sample of buildings that can then be used to better execute the remaining structure the institute appointed Somaya & Kalappa Consultants (SnK) as Conservation and Restoration Architect through in July 2014. They were to do a condition assessment of the Library, Faculty Block, Classroom Complex and 18 Dormitories and prepare a plan for undertaking restoration in a phased manner. After the condition assessment it was decided to take up the Library and Dorm 15 for restoration. The Library restoration which included major internal changes and interior work was completed in 2018. The restoration work received a UNESCO Asia-Pacific award for Cultural Heritage Conservation in 2019.

SnK then prepared a restoration plan with the help of structural consultants for the Faculty Blocks. Though the restoration contract was awarded in April 2020 work could not begin till late October, 2020, due to the pandemic. SnK had meanwhile changed the structural consultant<sup>26</sup> for the project and the new consultant asked for

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<sup>26</sup> Ghadiyali & Raval, a Mumbai based structural consultant closed down and Construction Diagnostic Centre (CDC), Pune, was onboarded.

several tests (NDTs). These tests revealed that the condition of the building was worse than anticipated. Some major changes that were not a part of the scope of the original tender for the restoration contract that had been awarded<sup>27</sup> included portland slag cement in place of OPC, reinforcement steel SS 410L in place of SS304, brick with higher compressive strength (10 N/sq.mm v/s 5.), carbon fiber mesh for RCC members repair, cementitious grout for all structural brick walls, and insertion of 64 RCC columns (16 in each wing), tie beams and replacement of all partition walls.

Meanwhile, towards the end of 2020, cracks were observed on the library piers facing the Louis Kahn Plaza. SnK's structural consultant advised chemical grouting to arrest corrosion of reinforcement and arrest further crack development. The consultant also advised that this method be adopted as and when such cracks are noticed in Library building. While attempting to grout these piers the institute engineers observed it is taking-in a much higher quantity of material than the estimated quantity, which indicated evidence of large voids and mortar deterioration. This phenomenon had also been noticed in the Faculty Block during testing. The CEPT report of 2000 had also indicated this.

During the initial stages of the restoration the decision makers at the institute had been optimistic that the project would be successful. They would have reason to believe that the chance of restoring the building would be high. But over time that belief would be put to the test and optimism would slowly be replaced by anxiety. The apparent success in restoring the library building was an assurance that the restoration was going in the right direction and that there was merit in following through on the plan as laid out by Inskip and Gee. However, not much later the appearance of new cracks in the building and the reappearance on part of the walls of the dampness that had been responsible for the deterioration of the structures led to a dampening of the optimism. As fragments of the Louis Kahn buildings began to detach and fall at various locations on the campus the possible disastrous consequences for the lives of people began to become salient and those living on the campus began to be less optimistic. The buildings are places of work and in which students live and they serve two main functions – human comfort and safety as well as structural stability – apart from providing support for the activities of those who use the spaces, shelter from the elements, security, privacy, and importantly having an experiential and symbolic significance for its users. When a building begins to

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<sup>27</sup> The restoration contract was awarded to Ushta Infinity Construction.

manifestly not be safe, and prone to lead to situations that can lead to dramatic impingements on life, optimism fades as the severity of the potential outcomes becomes visible. For someone experiencing a risky event the perception grows that the risk is real and that is factored in when considering alternatives in a way that someone who does not live through such an event may. The future seems to provide the hint of a promise of a devastating event that threatens safety and the life of residents and the fear of that possibility results in an anxiety that is dreaded even more so because the coming damage is unpredictable. Anxiety of this sort is an asset as it serves to warn of potential danger and highlights the importance of a threatened loss and serves to make us pay attention to threat relevant information that would otherwise be ignored. It serves to heighten the evaluation of the probability of harm in a way that someone who is not a regular user of the buildings would not be able to discern.

Critics of the institute emphasized that IIMA is a steward of the unique buildings and called on the institute to place the identification, preservation, and conservations of these as being the *fundamental objective* whilst managing these assets on the campus. They do recognize that there is a requirement for providing reasonable student comfort in the dormitories and of making appropriate changes within the design context for meeting institutional objectives. They also have appreciated the pressures associated with the long term maintenance of the Kahn buildings but point out that such unusual pressures are part of the conservation of many historically significant properties. They have called on the institute to effectuate the highest degree of cultural and architectural significance to the old campus and to treat its original features as per the procedures of heritage conservation. They have categorized as misplaced the reasoning that the buildings are structurally inadequate and seismically vulnerable by asserting that there was minimal damage to them during the earthquake of 2001 and that the architectural configuration of the buildings showed a good density of structural walls. The earthquake took place twenty years ago. Since then, the quality of the construction material and the poor workmanship have done additional damage to the buildings with the cracks in the walls widening. The extent of the damage is reported later in this tract. At this point it is sufficient to state that the critics should state their views about how an accomplished architect could use brick and steel in the way it was used in the building as it would not work for a climate and environment in which the building is located. Add to it the poor



quality of construction and you have a perfect storm in the making<sup>28</sup>. Armed with a knowledge of these issues the critics could well have discussed whether given the quality and choice of construction materials the safety of those who use the building should be given priority over a conservation plan that prioritizes the original features of the buildings.

The Library and Dormitory-15 buildings were restored in 2017 –18. The Conservation and Maintenance Manual recommended periodic structural audit. IIMA appointed IIT Roorkee<sup>29</sup> for this assignment in May 2021 and their Final report was submitted on September 21, 2021. The report pointed out that the reason for reoccurrence of distresses after restoration is attributed to inability in properly addressing corrosion of reinforcing bars in reinforced brick elements (walls, arches and piers in Library Building; arches and oculus openings in Dorm 15 building). Further they indicated that the corrosion repair of reinforced concrete is possible and methods are well established. The corrosion repair of reinforced masonry is difficult and there is no clear effective methodology. The deterioration of exposed masonry and RCC members is significant in absence of a protective layer of plaster as the buildings were planned and designed that way. The bars in the external and exposed reinforced brick masonry, especially towards the outer wythe were completely corroded, providing a negligible structural contribution. The structural analysis showed that even after considering full contribution of reinforcement provided in the ties and mullions, not all walls of library are safe under MCE (Maximum Considered Earthquake). One wall is unsafe even under DBE (Design Basis Earthquake).

The report went on to state that the current condition of reinforcement is suspect in the external walls in view of corrosion indicating full contribution of reinforcing bars cannot be considered in analysis. No information is available about the mechanical properties of the masonry, which has undergone significant aging and deterioration. In-situ material characterization the report proposed is crucial to estimate masonry property for estimating the structural capacity of the building. The replacement/addition of reinforcement embedded in masonry walls it stated is very

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<sup>28</sup> The failures in design and construction raises questions about the architects, construction company, and engineers who came together to bring the project to fruition.

<sup>29</sup> Prof. Umesh Kumar Sharma (Dean infrastructure) and Prof. Yogendra Singh (Earthquake Engineering department) undertook the study.



difficult and cumbersome. It recommended to undertake a fresh detailed structural analysis for all applicable load cases by considering reinforcement to be completely corroded, especially in the outer layers of the external exposed masonry. The buildings the report stated shall require repair and retrofitting interventions to make them safe against various relevant load cases. Such an intervention, without altering the architecture of the building, would be a difficult and challenging proposition<sup>30</sup>.

The experience of restoration was subdued. Structural problems did not appear to have been addressed fully and there was a marginal change in the living experience in Dormitory 15. Since only a conditional structural stability certificate was given the life expectancy of the restored dorms was under question. Safety of the occupants was in doubt given the institute is located in a seismic zone and certain problems like dampness, efflorescence, roof spalling, wall cracks etc. started appearing within two years of the restoration.

The institute finally decided to appoint a team of international restoration architects and structural engineers to conduct a peer review of the investigations, analysis, restoration designs, and recent repair treatments. The team was requested to suggest how go about the conservation process and to design modifications so as to preserve the historic buildings as well as to adapt them so that they provide a safe environment and meet the current living and learning standards of students and faculty. At the same time the institute appointed IIT Roorkee to do a structural conditional assessment of the dormitories and to recommend a way forward.

The international team reported the following familiar litany of problems. — Given the combination of rainfall, high temperature variations, and high exposure to the sun the steel reinforcement has corroded and pushed outwards in all directions, resulting in cracks in the brick walls. – The brick walls were built on concrete plinths that are flush with the external ground level. During rain the pooling water outside is absorbed directly into the brick which is not advisable in the climatic conditions of the city. – The quality of construction is poor. There are significant areas with almost no concrete cover over steel reinforcement which has inevitably led to rusting,

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<sup>30</sup> Till these investigations and analysis is undertaken the report stated that all serious structural distresses noted should be addressed immediately according to the standard procedures, i.e., the building should be repaired using fine grained cementitious grouts, cracks shall be then stitched using technique employed earlier during restoration (using Helifix bars), and other distresses namely spalling of bricks, disintegration of mortar joints, efflorescence, seepage, algae growth etc. on the façade elements shall be repaired and restored using the procedures used earlier.

displacement of the cover, and exposure of steel to the elements. – Most maintenance has been focused on fixing issues as they appear by which time the internal problems are too severe to be easily fixed. – The team concluded that there is significant complexity in dealing with buildings that have such fundamental flaws and issues and that there are no immediate or easy answers, or quick fixes. They proposed that a systematic approach with a methodical and detailed plan is required to address the issues. The level of damage in parts of the buildings is extreme, requiring complex technical solutions and likely partial reconstruction. After restoration they stated that maintenance work will be necessary on a continuous basis and zero risk for the users (e.g. from falling debris) is not possible.

The IIT Roorkee report on the structural condition assessment of the dormitories found that in most of the dormitories at least 70 per cent of the tested slab members have doubtful integrity raising serious questions about their structural health. An overwhelming number of locations where corrosion was in a very advance stage were marked by severe cracking, delamination, and spalling. The overall summary of corrosion tests on RCC indicates that the durability of concrete was severely compromised.

The interpretation of the results from the Double Flatjack tests was that masonry strength was severely compromised, and the load bearing capacity of the walls has deteriorated.

The carbonation test indicated that the total acid soluble chloride value was higher than the code specified value and a combination of carbonation and chloride created a very aggressive exposure condition for reinforcement corrosion. This is the reason for the severe corrosion of the reinforced brick elements such as flat arches and openings which caused significant damages.

In the service life prediction modelling at almost all the tested locations in RCC, the degree of corrosion was found to be more than 10 per cent. This means for this limit case, cover cracking has reached at most locations in RC members. The cover cracking stage of corroded RCC is generally taken as the end of useful service life. The estimated service life varies from 16 to 30 years for this case. At more than 90% of the tested RCC locations in various dormitories, a degree of corrosion of more than 20% was measured. The estimated service life for 20% degree of corrosion ranges from 31 to 54 years. Thus, even with respect to this limit state, the service life of most RCC members of Dormitory buildings is over.

As evident from the stress contours, the compressive stress values for a majority portion of the walls are found to be more than the permissible value of 0.37 MPa. Similarly, in a majority portion of the walls, the tensile stress values are found to be more than the permissible value of 0.07 MPa. The shear stress values are also found to be more than the permissible value of 0.147 MPa in majority portion of the wall.

The Report pronounced that the buildings have undergone significant deterioration and they are highly vulnerable for earthquake expected in this seismic zone.

Since the results of the study also indicated an insignificant residual life of most structural elements, under such a scenario, the buildings will not be able to furnish the desired functional and structural performance.

The report concluded that theoretically, it is possible to restore and/or even strengthen the buildings. However, considering the ground realities, such an exercise will be technically inadvisable, impractical and prohibitively expensive.

## Part 3: Arjuna's Dilemma

In the Book VI of the *Mahabharata*, Arjuna is confronted with a dilemma. He has to wage a war against his own teachers, cousins and extended family members. He tells Krishna, his charioteer, who is really a god disguised as a human, that he is in doubt about his duty as a warrior, and he is not prepared to fight. Instead, he wants to seek complete renunciation from the world.

Arjuna was the legitimate heir of the kingdom and he is under an obligation to recover the kingdom from the *Kauravas*, to fight the deadly battle, and recapture the realm forcibly.

Should he fight in a battle that will lead to the destruction of his friends and family, or should he drop his bow and withdraw from the battle? What is Arjuna's *dharma*? What is the "right" thing for him to do? Arjuna already knows that he has done all it takes to avoid the battle and the battle must go on. What stops him is his feeling of grief that clouds his vision and makes his mind waver<sup>31</sup>.

Krishna tells Arjuna to fight the war to fulfill his *dharma*, that is, his moral duty as a warrior. Krishna engages with Arjuna in a discourse on how he can seek a compromise between the moral ideals of *dharma* (fulfilling his duty as a warrior) and *moksha* (releasing himself from the world of *karma*). The *Mahabharata* is an attempt to provide a solution reconciling the two conflicting worldviews: the 'world-supporting' principles of morality (*dharma*) and 'world-denying' realms of morality (*moksha*)<sup>32</sup>.

Krishna agrees that emotions of pity and grief cloud Arjuna's reason as he stands on the battlefield about to slaughter his uncles and cousins. But he goes on to advocate that matter is temporary and therefore emotional assessments based on transitory conditions must be forsaken<sup>33</sup>. Passion, desire, anger, according to Krishna are dark

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<sup>31</sup> Bhagavad Gita Chapter 2, Verse 7.

<sup>32</sup> Kinsley, D.R. (1993) - "*Hinduism: A cultural perspective*" Englewood Cliffs, NJ: Prentice Hall, page 34.

<sup>33</sup> Bhagavad Gita Chapter 2, Verse 14 & 15.

emotions that are forceful and create a cloud of confusion and obscure knowledge. It is beneficial if the senses are restrained so that right judgment and knowledge may be revealed<sup>34</sup>.

If the demands of the community and worldly order are at odds with the uncontrolled emotional state of the individual only confusion and disorder would result. The ideal warrior must master his emotions and free himself from anger and passion by cultivating the emotion of detachment and acting without regard for the fruit of action<sup>35</sup>.

The warrior must master emotions by nurturing an inner poise or *samatvam* – balanced equanimity, inner poise, and indifference. The self is the controller of the chariot and the senses are the horses. As the charioteer controls the horses of the chariot, so the self should control the senses by keeping them restrained. A person who cultivates *samatvam* also masters other virtues, such as endurance, courage, and wisdom. Embodied existence involves contact with sensory objects that results in pleasure or pain, experiences which are transient. These should be endured patiently, a person of wisdom views pleasures and pain alike.

One's duty or *dharma* must then be performed without attachment to the world or regard for the fruit of action. No negative action or *karma* accrues for action without desire. Krishna further expounds that the real self (*purusha*) neither dies nor acts, for *purusha* is not exterminable. Moreover, killing does not eradicate what is the real self (*purusha*), and merely changes the form (of *prakriti*) and is not wrong<sup>36</sup>.

Krishna teaches Arjuna how to see, not from his own particular point of view, but from the point of view of "Time," in which everyone is born and lives and finally passes away. Krishna's point about the destructive and creative cycle of the cosmos is conveyed in the revelation of Krishna's divine form<sup>37</sup>:

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<sup>34</sup> Bhagavad Gita Chapter 3, Verse 37 to 43.

<sup>35</sup> Bhagavad Gita Chapter 3, Verse 35. The alternative emotion of detachment is referred to as *asakti*.

<sup>36</sup> Bhagavad Gita Chapter 2, Verses 16 to 30.

<sup>37</sup> This is theophany or the temporal and spatial manifestation of God in some tangible form. For example, God revealed his divine presence and protection to the Israelites by leading them out of Egypt and straight through the Sinai desert by appearing as a pillar of cloud by day and a pillar of fire by night.

*Time ripens the creatures. Time rots them. .... Time unfolds all beings in the world, .... Time shrinks them and expands them again. .... Whatever beings there are .... they are all the creatures of Time—know it and do not lose your sense*<sup>38</sup>.

"Architecture has to have the element of time."<sup>39</sup> – Architect I.M. Pei

For a building to attain a level of timelessness it must be historic and though opinions differ we may consider that to be that the building is at least fifty years old. Moreover, it must have some significance for the history of the nation and be a remarkable example of an architectural style or the work of a celebrity architect. By these criteria the IIMA buildings are historic. However, as documented above, the buildings deteriorated quicker than a historic building. The buildings were executed from 1964 to 1975 and less than ten years later a Building Committee of the institute was discussing the problem of erosion of the exposed brick walls. The techniques that were used in construction and limited repair were responsible for the deterioration. Cover blocks used during the reinforced cement concrete construction were insufficiently sized leading to carbonation of the slab or were absent. The embedded reinforcement bars in the brickwork were not encased with concrete to prevent them from rusting and that led to the cracking of the brickwork. The bricks were second class bricks<sup>40</sup> with inbuilt efflorescence. As the brick edges were blunt, face filled pointing was used to hide the blunt edges. As such pointing got damaged it allowed the collection and ingress of water into the masonry<sup>41</sup>.

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<sup>38</sup> Van Buitenen J A B (ed.) – “The Mahabharata, Volume 1 Book 1: The Book of the Beginning”, The University of Chicago Press, 1980, pages 188-190. This is spoken by the sage Ugraśravas.

<sup>39</sup> Architect I.M. Pei on the works of Louis Kahn, from “My Architect, A Son’s Journey”, directed by Nathaniel Kahn, 2003, New Yorker video, United States. Pei goes on to ask how one can judge a work today by a well-known architect. And what will happen to it 20, 50 years later is the measure he suggests where the spirituality of the project will remain. Then a building is said to have withstood the test of time.

<sup>40</sup> As per IS 3102-1971 they are classified as second-class with average compressive strength of 4.89 N/sqmm.

<sup>41</sup> Other factors that contributed to the damage were the use of cement mortar repairs on the exposed brick façade which blocked the breathability of the brick surface and new layers of terrace waterproofing being added without removing the damaged waterproofing which damaged the terrace slab.

The current condition has a significance for the way to go about dealing with the deterioration of the buildings. Restoration, understood as the treatment that restores the building to reflect the time period it was built is an option but is it feasible given that the quality of materials are inferior and the porosity of the brick is a cause of the ingress of water that has corroded the structure. Reconstruction that recreates the structure that has not survived intact over the years is an alternative. Refurbishment or rehabilitation of the building to meet continuing or changing uses of the building in line with modern requirements could accompany the reconstruction.

A decision maker confronted with the issues of the Louis Kahn complex at the IIM Ahmedabad campus has a similar dilemma to Arjuna: Should she privilege the connections that generations have had with the poetry of light and shade that is constituted by the architecture of the Kahn designed buildings and restore or should she be giving weight instead to the safety of the current and future users of the buildings given that the residual life of the buildings is over and reconstruct? What is the right thing to do? Is the reconstruction of the buildings in the spirit that Kahn intended better than restoration of the existing structure?<sup>42</sup>

Though architecture is an art form like sculpture and painting it must in addition serve a specific purpose. Unlike other forms of art, it has to meet the practical test of utility and reflect the needs of the users of that building. When a building no longer serves the purpose for which it was built as happens when the residual life of the building has been accomplished its restoration is no longer a practical necessity and becomes purely a task of the urgency of preserving a cultural asset. A building is a lived-in object and it is incorrect to reduce it to merely its aesthetic aspect and historical value to the community and to the detriment of the utility aspect. This is all the more so when the institute has a shortage of land for further expansion at a time when it is in a growth phase.

Unlike a painting where the artist both conceives and executes the work an architect relies on a construction team to express the inspiration that she provides the design

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<sup>42</sup> A line of reasoning that is often advanced is that the destruction of buildings often occurs in the name of progress due to short-sightedness emanating from economic and social factors. This does not have relevance in the current context as the institute has never made the case that a resource crunch is holding it back from a full-scale restoration project.

for. Many a slip occurs between what was intended by the architect and the outcome as we saw when reviewing the history of the project and subsequent restoration attempts. The integrity of the design was impacted with the type of restoration involving compensations made to the structure for the deterioration of time, enhancements to the materials, and changes to some of the functional elements of the building. In addition to the deterioration of the buildings due to age and weathering there has also been reactions to some of the materials used as when cement-based mortar was used on the bricks which prevented transpiration of the masonry and increased dampness. Over time it has become difficult to identify the structure with the original creativity that was manifested in the building associated with the architect and his associates.

Inferior quality of materials, inadequate structural stability, construction defects, and inadequate maintenance are sufficient reasons that cause anxiety and concern about the safety of those who live and work in the buildings. If architects shy away from providing a safety assurance, then it is a grievous imposition on the users of the building to give precedence to the historical and cultural value over the utilitarian and functional aspects of the architecture. A building must be safe and provide a healthy work and stay environment free from exposure to hazards and mishaps and injuries or death from fragments of the building detaching and falling.

“The Life you save may be your own” – Thomas Schelling<sup>43</sup>

As Schelling observed we respond quite differently to the possibility of saving the lives of identifiable individuals and of people in general. Visible, specified human beings – identifiable victims – are different from anonymous, faceless persons when it comes to decision making that has a lasting impact on lives. If we have information about and have had face to face interactions with those individuals who will be impacted by a decision it has a pronounced different consequence. The different treatment of identifiable victims and statistical lives is discussed in health care where it is pointed out that too few resources are allocated to preventive measures such as hygiene, nutrition, inoculations, mammographies, etc., because victims have not been identified yet<sup>44</sup>. It has been reported how in debates over the North American

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<sup>43</sup> Thomas C. Schelling (1984) – “Choice and Consequence”, Harvard University Press, Chapter 5.

<sup>44</sup> Weinstein, Milton C. and Quinn, Robert J. (1983) - “Psychological Considerations in Valuing Health Risk Reductions.” *Natural Resources Journal*, Summer 1983, 23(3), pp. 659 – 73.



Free Trade Agreement opponents could pick out and ascertain specific individuals who would lose their jobs if the agreement was approved, whereas proponents could cite only the additional statistical jobs that would probably result<sup>45</sup>.

When an identifiable person is at risk of injury or death it has a far greater influence on how we behave or decide than even more comprehensive but insipid statistical information. The familiarity with the person does not give us the comfort of emotional distance and it appears important to undertake extraordinary measures to mitigate any harm that may come to the person. There is a different level of responsibility when we address issues that affect persons close to us as we are then burdened by the feelings and connections we have with them and our attention to those intimate feelings makes us evaluate a situation differently as we feel responsible for the recognizable life we could safeguard from harm. When the same situation is presented as a statistical death such as when we consider the impact of safety regulations or preventive health care it is unlikely that we evoke such special feelings and sentiments in our evaluation of the impact on safety and lives. It is for those elsewhere to consider this difference when they examine the decision of those at the IIM Ahmedabad to reconstruct the buildings because they give primacy to safety over a historic heritage that they acknowledge with deep gratitude.

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<sup>45</sup> Goodman, Walter (1993). "TV, by its very nature, can stack the deck", The New York Times, September 13th, page C20