Title

Temporary Flows & Ephemeral Cities

Journal

Room One Thousand, 3(3)

Authors

Vera, Felipe
Mehrotra, Rahul

Publication Date

2015

Peer reviewed

Felipe Vera and Rahul Mehrotra

Temporary Flows & Ephemeral Cities

In recent years, the physical structure of cities has evolved, morphing, mutating and becoming more malleable, fluid, and more open to change than the technology and social institutions that generate them. Today, urban settlements globally face increasing flows of human movement, acceleration in the amount and periodicity of natural disasters, and iterative economic crises that modify streams of capital and their allocation to physical components of cities. As a consequence, urban settings are required to be more flexible in order to better organize and resist outside and inside pressures. In this context, there is a lot we can learn from "ephemeral cities," the outcomes of massive contemporary pilgrimages, when rethinking the forms future cities should take and the strategies to intervene in them. With this idea in mind, three years ago, we began to gather evidence on cities that are, by nature, ephemeral. "The Research Project on The Ephemeral City" at the Harvard Graduate School of Design is an effort to systematically analyze cities and settlements built with an explicit expiry date.

Forms and Outcomes of Contemporary Pilgrimage

Flows of people are increasing tremendously, not only as an effect of optimization, in the capacity of mobilizing people, but also in more specific contexts. In recent years, for instance, there has been an extraordinary intensification of pilgrimage practices, which has translated into the need for larger and more frequently constructed structures for hosting massive gatherings.[1] Extreme examples of temporary religious cities are the ephemeral constructions created for the Hajj in Mecca, as well as a series of temporary cities constructed in India for hosting celebrations such as the Durga Puja, Ganesh Chaturthi, and Kumbh Mela—the last a religious pilgrimage that, according to official figures, supports the congregation of more than 100 million people. These events are an expression of a range of ephemeral configurations deployed to accommodate gatherings that celebrate religious beliefs.

Natural disasters and changes in climatic conditions are increasingly displacing people through involuntary journeys, making evident the importance of temporary shelters as holding strategies or short-term solutions. The temporary cities constructed in the Philippines, Haiti, Chile, and several other places, as a result of a natural disaster, are some recent examples. Additionally, in many locations, political tensions contribute to the displacement of people from their sites of origin, creating refugee camps around the globe. Extreme examples of humanitarian space for hosting the stateless and asylum seekers are the refugee camps located in the Cote d'Ivoire, which accommodates more than 900,000 refugees coming largely from Liberia but also from other adjacent locations. The most striking cases, however, are those of Dabaad, in northeastern Kenya, which has been in existence for two decades and presently accommodates 500,000 people. The Breidjing camps in Chad, home to 200,000 people, as well as several camps in Sri Lanka that house 300,000 people displaced

in the decade-long civil war, are additional examples of this response. Surprisingly, these camps hold only a small fraction of the 45 million people that, according to the United Nations High Commissioner for Refugees, are currently displaced around the world and living in temporary accommodations.

Other forms of pilgrimage, in the form of nonreligious cultural celebrations, are also on the rise. Increasing in scale as well as frequency, they too cause the erection of temporary structures within and outside of urban areas. Extensive music festivals like Exit in Serbia, Coachella in California, and Sziget in Budapest, also motivate the construction of extended ephemeral settlements that, for short periods of time, congregate large groups of people. They range from relatively small gatherings, like Burning Man in Nevada or Fuji Rock in Japan—for which around 40,000 people congregate to enjoy music and celebratory event—to 350,000 people who gather for musical events such as Glastonbury in England, Roskilde Festival in Denmark, and Werchter in Belgium.

These examples could be expanded to include a range of cases such as temporal cities around temporary geographies, for example, the configuration of settlements for the exploitation of natural resources in mining, oil extraction, and forestry. The scope of extractive activities, like the ones at play in the Yanacocha mine in Peru, where more than 10,000 temporal dwellers reside, the Maritsa Iztok Mines in Bulgaria, the Motru Coal Mine in Romania, and the Chuquicamata, Salvador, and Pelambres sites in the north of Chile, generate completely different types of temporary settlements, adding to the complexity of dealing with environmental consequences and incredibly large-scale operations that constantly modify the topography of a landscape at a territorial scale. In these cases, the life cycle of temporary cities aligns with the duration of the extractive activity and the presence of resources, so that most of these settlements have a known or predictable date of expiration.

These varied places add to a long list that enriches the diversity of taxonomies for temporary cities. The list could again be further expanded to include, for instance, cities built for military or defense purposes in contested territories, pop-up cities developed for transactions within and outside of city boundaries, temporary structures that support massive influxes of people around sporting events, or even the recent disruptive constructions inside formal settlements, such as the camps of the Occupy movement.

At a time in which change and the unexpected are the new normal, urban attributes like reversibility and openness seem critical elements for thinking about the articulation of a more sustainable form of urban development. Looking at this whole ecology generated by human flows, there is one case that stands out as an extreme condition: the Kumbh Mela. Probably the biggest pilgrimage mobilized in contemporary times, for religious purposes in most cases, but also non-religious ones, the Kumbh Mela sets the standards for understanding alternative ways

of building transitory cities aligned with the nature of gigantic human flows. This massive gathering, resulting in the biggest ephemeral mega city in the world, generates an extreme case that forces us to reflect deeply about the way we think of cities more broadly and from which several lessons and ideas can be extracted. In what follows, this piece reflects on two key attributes of the Kumbh Mela and lessons we can extrapolate from them pertaining to architecture, urban design, and planning. When we look at the impressive images of the ephemeral city, we tend to fix our eyes on the incommensurable extension of the city in its operation. However, what is most remarkable about the Kumbh Mela is not just that it was constructed in such a short period of time, but that it can quickly disassemble.

The Kumbh Mela raises a nuanced set of questions about how "reversibility" could be better imagined in the production of future cities. In a matter of weeks, the biggest public gathering in the world develops its own roads, pontoon bridges, cotton tents serving as residences and venues for spiritual meetings, and a spectrum of social infrastructure—all replicating the functions of an actual city. This pop-up megacity serves 5 to 7 million people who gather for 55 days and an additional flux of 10 to 20 million people who come for 24-hour cycles on the five main bathing dates. Once the festival is over, the whole city is disassembled as quickly as it was created, reversing the constructive operation, disaggregating the settlement to its basic components and recycling the majority of material used for its construction.

Reversibility and Openness

The city of the Kumbh Mela is erected in four different places, depending on astrological calendars. It is built exactly at the conjunction of two of the most sacred rivers of India, the Ganges and the Yamuna. People believe that underneath this confluence, there is a third mythical

river, named Saraswati. The city is situated right on the floodplain and its development is coordinated with the shifting conditions of the ground. Without seeing images of the Kumbh Mela, one could hardly believe that a complex mega city of such extensive scale could even be deployed in such a short and compressed time, even using all the technological instruments and disciplinary knowledge that we currently possess. However, it is precisely in the lack of technological specificity, and reversibility as a priori constraint on development, where its robustness relies. Therefore, one of the most valuable lessons offered by the Kumbh Mela is in the implementation of tactics that allow for the deployment of a whole city as a holding strategy for temporary urban processes and which does not aspire to be permanent. It is the non-permanent solutions for a non-permanent problem that are the *raison de etre* of the city. The alignment of the temporary nature of the problem (in this case, the need to host millions of people for 55 days) to its solution is something we could—and should—incorporate as a basic protocol for the cities we reshape and create in the future.

Reversibility can be examined in two contrasting dimensions. On one hand, its material aspects translate into the physical reversibility of the constructed armature that supports the existence of the Kumbh Mela. On the other hand, the immaterial agreement that frames a reversible political and institutional framework also supports the construction and organization of the ephemeral city.

The Kumbh Mela plugs into pre-existing urban management systems at the state level and draws its expertise from existing institutions—often pulling together, for a short period of twelve months, the best administrators in the state. Institutionally, the area of the Kumbh Mela becomes an autonomous city managed by several temporary governmental agencies that have jurisdiction over the site during the festival. The institutional structures that manage the city

evolve, depending of the stage in which they operate. Basically, the deployment of the city is divided according to four main stages of implementation that affect the nature of its governance. The first of four phases is an initial phase of planning, which is held outside the physical space of the Kumbh, and involves government authorities ranging from the local to the national. This is followed by implementation, the second phase, both in peripheries of the site, while the river is still high, and on the site itself when the river Ganges and Yamuna recede. The third phase, the management of the festival, must handle not just the crowds of people but also a river that might fluctuate or shift in its trajectory by thirty feet per day. Finally the fourth phase, deconstruction, starts after the last bathing day and is the process that reprograms the space, converting it back into agricultural fields for a few weeks before the Ganges floods again in the monsoon.

The administration of the city is implemented by an organizational structure that is not only impermanent—something one would expect, given the temporal condition of the city—but also flexible. This malleability of structure and organization allows for the progressive appearance of transversal communication linkages across diverse hierarchies. This is clear when one examines the nature of the meetings and the authority afforded each member during different moments of the city's construction. Relations of power and connections vary depending of the stage of deployment. During the planning stage, interactions are framed in departmental meetings, which are small in scale, and where the authority mostly resides in representatives of the state. In this process, 28 departments from the state of Uttar Pradesh are engaged as well as seven different central departments from the national government. Over time, when the implementation stage arrives, the governance system becomes more dynamic, articulating constituencies at different levels to be represented on-site. During this

stage, diverse mechanism of feedback, among different levels within the hierarchies, are developed that respond to the need for quick decisions and adjustments for the materialization of the plan. The dynamism of the structure reaches its climax when the city is in operation. At this time, authority shifts from the high levels of the pyramid, that operate at the state and regional levels, to on the ground administration of the Kumbh Mela. Crucial is the fact that the Kumbh administration meets on the ground each evening during the festival bringing together representatives of the otherwise hierarchical administrative structure. This evening gathering gives the event administrators the capacity to react to any unpredicted incident or quickly and effectively, bypassing any inefficient clearance processes when necessary. Once the whole process is over, administrators are often promoted and are reappointed within pre-existing governmental structures. Like the traces of the city that are washed away by the flooding river during the monsoons, the institutional framework that supported the Kumbh Mela vanishes upon completion of the festival.

Reversibility is another main attribute that supports the physical deployment of the city. The implementation strategy is generic and employs low-tech construction techniques, which yields the most amazing buildings and morphologies and leaves open the possibility of reversing such operations once the festival is finished. The materials used for the festival are then reincorporated into regional economies and local industries.

The dismantling of the Kumbh *nagri* (town; city) begins after the last major bathing on the 17th of February. This past year, it rained heavily during three days and, therefore, some of the Akharas, Ashrams, and *kalpavasis* decided that it was better to leave earlier than in other years. The rain also caused flooding in sectors seven and eight, drenching many tents and participants. However, most of the people left the site

between the 20th and the 26th of February. By May 10th, only a few private groups of dwellers were still at the Kumbh for the last day of bathing. The emptiness of what was, before, a full functioning city was, by early March, only filled by the government structures that were still standing. However, several visitors came for the day and camped for the night. By the 16th of March, only half of the government structures were still standing and most of these were electricity board structures.

The disassembly of *akharas*'s camps and Ashrams began with devotees each removing their belongings through different means—cars, trucks or tractors—while chief organizers of each religious order and their *chelas* (juniors) stayed until the last day. When a religious order is ready to leave the Kumbh, they get in touch with the contractor that constructed their camp. They do this either directly, if they paid for the camp themselves, or through the sector magistrate, if the camp was constructed with funding from the Mela administrator. Days are arranged for trucks and workers to arrive in order to remove all the material—the tents, the plywood, and the steel sheets that formed fences, bamboos and every component of the camp. Once disassembled, the material is taken to compounds to be stored, counted, and sorted for damaged pieces. After that, different elements are sent by truck to tent suppliers all over India. Each truck only carries one specific type of material.

Great parts of the infrastructure are also disassembled once the Kumbh is over. For instance, by digging up wastewater and water supply pipes, Jal Nigam contractors removed all the tap connections. In the same way that tents are deconstructed and separated by materials before being returned to their original supplier, tap connections, motors and pipes, are returned to the Jal Nigam store from which they were ordered. Once there, the material is reused in different locations of Uttar Pradesh for other Jal Nigam projects.

Parts of the infrastructure remain on site. Sewage pits, for instance, get uncovered from the bamboo structures, treated with chemicals and covered with sand. Similar efforts are made for the reservoirs. Other kinds of infrastructure, like sandbags and toilets, are removed. The toilets built by the Mela administration, one of the most disperse infrastructural systems at the site, are disassembled first by the sweeper community who remove the ceramic seats from the toilets. The rest of the materials, such as brick and bamboo, are sold to different contractors to be reused in other locations. The same happens with electricity infrastructure. Wires are taken down and wound up, poles disassembled, and concrete and metal pieces taken back to storage. Special electricity boards keep a digital inventory of every item used in the construction of the temporary city.

Roads and pontoons are taken apart sector by sector and taken to three main storage locations in the area. The first is the parade ground, the second is near the railway yard, and the third and largest is in Jhusi, next to the bus stand. Bridges are broken up in parts. First the railing is dismantled, then the plates are removed, and finally the joist and pontoons. Once all the material is disassembled and disposed of, the state government decides where to allocate the bridges and roads depending on the different needs of the districts.

Construction material is not all that is reused after the Mela ends; even waste becomes a resource to be taken off site. A large number of scavengers, from areas in and around Allahabad, arrive at the site. They dig up waste coal dumped by restaurants to use as fuel. They empty the sand bags used to construct temporary *ghats* to make ropes. They take any discarded wood or bamboo to burn on their fires.

After all the material has been removed, the flood plain of the river is still a landscape full of patterns, dots and traces of the city. It is possible to see a big range of elements, from unusable bricks and toilets to altars,

like deconstructed traces in the landscape. Pipes and rows lay on the ground, sewage pits are geometrically covered, and the marks of tent enclosures are left in the sand. The big statues are taken away, but their brick plinths are left behind along with some small *shiva lingams* and minor statues. Organic materials that are left behind, such as sandbags and bamboo poles, gradually disintegrate over time. As strong winds arrive, they sweep away the final patterns traced in the sand.

Once the deconstruction activity is over, the site begins to reestablish its yearly patterns. People from villages around the site start preparing beds for planting seasonal vegetables like cucumber and seasonal gourds. Thick grass left by holy men is burned to make the soil more fertile and small wells are built near what becomes an agricultural site. The cremation ground in sector five is reestablished, and with it the everyday use of the river border recolonizes the space.

Looking at the process just described, one is reminded that perhaps the most revolutionary opportunities for redefining the ways in which we produce the built environment lie in much simpler low-tech tactics. What is most remarkable about the Kumbh Mela is not that it is constructed in such a short period of time, but that it has the ability to be disassembled just as quickly. Multiple highly heterogeneous structures are organized around a combinatory system that relies on minimal building strategies. Construction techniques used also allow greater degrees of flexibility. The generic condition of basic elements, such as sticks connected by rope or simple nails at orthogonal and diagonal angles, offers infinite possibilities for recombination. The strength of the system is its capacity for achieving specific and determinate forms with a couple of indeterminate solutions, which are applicable in different contexts and re-adjustable at any moment. On account of this "kit of parts" approach, the material used for erecting tents, gathering spaces and even monuments several meters high, can easily be reused in other construction projects.

This reversible condition is counterpoint to our contemporary building culture, to the one aspect that has been notoriously absent from current debates: the afterlife of things built once they are not useful anymore. Today, buildings are constructed to last as long as possible and the need for transformation—the smart incorporation of weathering and the provisions to reconfigure—is not appropriately factored into the designs. We have developed a highly articulated technique for constructing and assembling all sorts of structures, which allow us to handle more complex and efficient construction processes. However, very little has been imagined in relation to advancing the development of more efficient ways to disassemble and deconstruct the things we build. Paradoxically, what we can learn from the Kumbh Mela is that sustainable practices are not defined by the construction of the built environment, but in how efficient we are in reconfiguring the spaces we have already built. Unfortunately, in more permanent settings, demolishing has been the generalized answer for creating the space a city requires for growing and changing according to new needs. In short, the lack of strategies for disassembly as an inherent part of design imagination and construction protocol obstructs the fluid and sustainable metabolism of contemporary urban spaces.

As digital tools are increasingly incorporated into the production of the built environment, perhaps the most revolutionary opportunities for redefining the ways in which we produce constructed spaces is just as fruitfully generated from simple and low-tech tactics. Downscaling to consider the specific technical elements that allow for the deployment of the ephemeral city, we can see how looking closely into the technology of implementation at the Kumbh Mela offers some key lessons in how to plan and design for temporary urbanism.

Openness

The temporary urbanism of the Kumbh Mela challenges the idea of a linear, top down, over-determinate, equilibrated, integrated and contextual design effort in planning cities. As Charles Waldheim thoughtfully describes in "On Landscape, Ecology and other Modifiers to Urbanism," under current conditions, incompletion and spatial-temporal openness is central to addressing urban questions in contemporary cities. It is in the context of urban intensity—vis-à-vis permanent and accomplished density—that plans for temporary interventions into the city has the greatest capacity to successfully shape and add to urban experiences. Unlike landscape practices, the focus in urbanism is mostly placed on the achievement of discreet closed solutions, rather than on generating open-ended systems. However, current extreme conditions are forcing us to rethink what we consider to be desirable outcomes for urban design. In parallel trend, over the past decades, technology has empowered designers with the ability to control form and matter in a way that we never before imagined. Within the capacity to anticipate forthcoming events by modeling natural and artificial processes, implementing mapping techniques and representing complex dynamics informing design operations, emerges a completely new world of possibilities. Fueled by the ambition of being able to "make almost everything," new techniques offer the opportunity for restructuring design and planning processes around immaterial or "paperless" fictions, rendering the project of design a more specific and complete process of construction.

Challenging this tendency are several aspects of the Kumbh Mela, which reminds us of how important and powerful it is to understand design as an incomplete, circular and intentionally unbalanced operation. The process by which the city of the Kumbh Mela is assembled, managed and deconstructed, presents an opportunity for learning about

scenarios in which cities, as unfinished open systems, accommodate diverse temporalities as part of their own material discourses. Time is at the heart—indeed, perhaps the heart itself—of the city's construction, form, and technique.

For Richard Sennett, an open city means that it is incomplete, errant, conflictual and non-linear. Along the same lines, a pop-up settlement presents us with a project that is not just made for people, but one in which the guidelines of the city are given to people as an open template to be developed, transformed, and materialized. In this regard, it is interesting to see how the city of the Kumbh Mela is not defined by a fixed plan. It is neither a closed definition of buildings nor a set of plots, but something in between an idea and a map. It is conceptualized more as a set of relationships between components that get organized and progressively specified after the city forms in the shifting geography of the floodplains. The stage of physical materialization is also informed by several negotiations, happening on the ground, between *Akharas*,

dwellers and other visitors, which last until a spatial agreement is reached. Both the adaptation to dynamic geographical processes and the dialogue between diverse agents progressively complete the form of the city.

Once the project of the city is grounded and completed, several limits start to appear within the designated spaces of the *nagri*. They are all diverse in nature and function, generating all sorts of forms and morphological expressions. The almost complete absence of massive walls, replaced by thin sheets of different kinds, nuances the divide between the open and closed space of the festival. Every limit is almost completely permeable and at the same time functional as a separation.

The porous borders of the Kumbh Mela manifest not only in the physical and planning structures of the city, but also in the interesting patterns of space occupation and internal organization that inform a sense of communality. In the ephemeral city, public, private, and sacred spaces are blended and yet distinguishable. The spatial patterns generated for how food is arranged at the Kumbh is quite telling as an example. Very few shops, stalls, and street vendors are seen along the temporal roads of the Kumbh. While there was some interesting commerce on the streets, comprised of a few small cafes and stalls selling shampoo, religious items and trinkets were clustered at major intersections; big stores for food trading where completely absent. Unexpectedly, the Kumbh Mela does not have an established formal trading system inside its boundaries. Food is brought by religious orders' pilgrims and visitors and a great part of it is distributed for free in large tents that cover large, open spaces for people to sit in rows and eat together. Outside the limits of the settlement, in the border with the permanent city, markets are set up for trading things such as food and clothes. Talking with vendors, we realized that, sometimes, stalls are rented for several years and the same people run small businesses in different *melas*. Most of the vendors come from nearby cities in the state of Uttar Pradesh. Most of

the goods are brought from Jhusi market. The vegetables provided in these stalls help to bridge the gap between what is needed and what religious orders bring with them for their people. Interestingly this form of market is not as omnipresent as one might expect and occurs only on a few streets, which house the large *Akharas* or major thoroughfares through the temporary city. Perhaps the frugal nature of most people at the Kumbh Mela, who are on religious pilgrimage, diminishes the compulsion to consume while at the festival.

The three million people who dwell at the Kumbh get their food in the Langam, massive communal meals hosted by each Akhara three times a day. According to some of our interviews, over 100,000 pilgrims eat a simple meal during the busiest days of the Mela. Each Akhara and Ashram has its own corps of volunteers, organizing, cooking, and taking care of supplies. They draw upon the regional resources of the Kumbh, sending representatives several times a week to wholesale markets in the outskirts of Allahabad, Jhunsi, and Naini in order to purchase fresh vegetables from local farms. They also aggregate the small amounts of fresh vegetables, rice and flour that many pilgrims bring as contributions. Finally, although the Mela administration organizes shops for grain, rice and oil, Akharas and Ashrams bring their own sticks of rice, flour and firewood from their Ashrams in Punjab, Kashmir, and every corner of India. Each Akhara is, in a sense, a self-contained managerial cell shelter and offers services for its members and guests.

The porous limits of the Kumbh are not only physical, they are also constructed by visual markers such as the flags placed in the center of the *Akharas*. These tall and vertical markers designate the area below them as a sacred space, defining a completely different set of rules structured by immaterial demarcations. In accordance with tradition, the area for each sect is organized around an identifying flag, which stands at the center of the space and is clearly visible from the street. The flag represents

the identity of the Akhara. The Juna Akhara, or older akhara, has a larger flag. So far, we have identified this as a highly particular kind of demarcation that is used for the Kumbh Mela as a strategy not only for demarcating space but also for constructing place. Areas for the tents of the gurus and their followers are distributed around each flag, with the most prominent gurus located along the path from the main entrance to the flag. The importance of each guru is connected with the number of devotees he attracts, which is manifested in the organization of space at the Kumbh Mela: locations with prime exposure are given to more prominent gurus, allowing them to gather more potential followers, and when one teacher's followers become too numerous for the allotted space, a new "suburban" akhara is created with its own space below its flag. The *akharas* themselves are also arranged within the sector according to their prominence, with Juna Akhara, the biggest and oldest of the sects, occupying a privileged spot while adjacent are the Mahanirvani and Niranjan. One of the most interesting and complex spatial textures of the Kumbh Mela we experienced was when walking through the various camps of these religious orders. Interestingly, while virtually everything changes from one version of the Kumbh to the next, the spatial configuration of the akhara remains the same, keeping the same structures and strictly preserving spatial relationships and internal configurations. Continuing to read the Kumbh according to Sennet work on creating the urban, the Kumbh could be a refined example of when "growth in an open city is a matter of evolution rather than erasure."

At the Kumbh Mela, openness manifests at different scales and stages, from the scale of the construction detail to the scale of the master plan, as well as from the scale of its marco planning to its later deconstruction. However, perhaps the most powerful aspect of the Kumbh Mela city is that its robustness and resilience is first conceived

of as an open work, as a text written in dialogue with its users. The pragmatism of the officials who plan the festival is complemented by the use and appropriation of the site and materials by devotees, *kalpavasis*, and saints. The fluid openness that defines the urban fabric of the Kumbh Mela is based on an implicit contract of confidence and a common religious purpose. Again, in Sennet's words, the ephemeral city of the Kumbh, unlike the closed city, is resilient exactly because it "is a bottom-up place; it belongs to the people." Challenging current trends, and as an extreme case of design and planning with uncertainty, the Kumbh Mela shows us how improvisation and incompleteness can become fundamental parts in the construction of strength and unity.

Scaling down, openness also manifests in how the city is materialized. For instance, the modularity of steel plates which can be carried by four men is what allows them to be deployed anywhere a road is required. The simplicity of hand-stitched cotton tents stretched over lightweight bamboo frames enables them to be concatenated into the skeleton of a megacity, whatever shape it may need to take, and in whatever colors and patterns may be desired. Heavy machinery and advanced technology are, for the most part, not required, nor are highly trained specialists. In fact, it is the large workforce of low paid labor, in combination with the piece meal construction, which makes the temporary urbanism of the Kumbh Mela possible.

Within the camp, highly heterogeneous structures are organized around combinatory systems that rely on very few building strategies. Each of the few building techniques implemented at the Kumbh are based on the repetition and recombination of a basic module with a simple connection. This is usually a stick that, by aggregation, allows for the generation of diverse enclosures in a wide range, from small tents to complex structures that give expression to diverse social institutions such as theaters, monuments, temples, hospitals, and more. All of them are

constructed out of the same elements, bamboo sticks used as framework connected to laminar materials such as corrugated metal and fabric.

The simplicity of the building systems is consistently employed not just in their assembly, reconfiguration, and disassembly on site, but also in the deployment of the logistics and channels of distribution for each component and piece. The modulation of every material is provided in a way that it can be carried and handled by one person or groups of small people in absence of heavy machinery. Materials are small and light enough to be easily transported and distributed to every corner of the *nagri* in a rapid and efficient manner. Both construction and reconstruction, as well as formation and reabsorption into the various ecologies and geographies of the region, serves the Kumbh Mela and the entire regional economy. After the festival ends, the city is dismantled and its components are quickly and effectively recycled or repurposed, with metal and plastic items finding their ways either to storage or to other festivals and construction projects. Biodegradable materials such as thatch and bamboo are left to reintegrate into the site. The flood plains serve as valuable agricultural land for the eleven monsoon cycles between festivals. This open condition of planning, urban design, space occupation and constructability could also be applied to other non-permanent settlements such as refugee camps or disaster relief efforts, as well as to future urban design and redesign projects.

While, recently, there have been efforts to incorporate the unspecific into architectonic projects, a willingness to embrace randomness, incompletion, and incrementality in design, at the urban scale, could be quite beneficial. The aspiration of almost absolute control, brought on by the empowerment of new technologies, has recently been challenged by some practical and conceptual efforts to accept incompletion and incrementality as more effective strategies than the certainties and entropy of digital modeling. Therefore, in the same way that urban designers have

learned from the experiences of incremental social housing, from the city of the Kumbh Mela we can certainly also extract some applicable lessons with respect to how openness and adaptability could be introduced into the design of cities at the urban scale.

Claiming Temporality

It is time for urbanism, and for design more generally, to find new ways of effectively factoring change as a critical component of its institutional and technological repertoire. The future of cities depends less on the rearrangement of buildings and infrastructure, but more on the ability for us to imagine material, technological, social and economic landscapes in a more open and dynamic way. For engaging in this discussion, the exploration of temporal landscapes opens a potent avenue for future research.

The form of urbanism that emerges after the construction and occupancy of the Kumbh Mela, provides what Kaliski suggests is lacking in the temporal dimension of contemporary permanent cities: ephemerality, cacophony, multiplicity and simultaneity. The Kumbh Mela offers a flexible model for spatial construction that is temporal, cyclic, in constant advancement, and ready to spring into motion as the environment changes, making way for the needs of pilgrims seeking to connect with a dynamic geography. As we have seen, the Kumbh's design anticipates elasticity, building robustness through the capacity to articulate competing indices of population, velocity, and concentrations. It does so without even having to erase or restrict the spatial manifestations of the religious practice around which it is constructed. The city is designed to frame the human experience, thus, its religious component is always at the core of its form.

An inspiring thought that comes after having examined the construction and disassembly of the city is that, perhaps, design can anticipate diverse temporalities into images for the future. In single

buildings, as in master plans, the embracing of change, as an active dimension in spatial production, is something that architects and planners need to consider more fully. Change is everywhere. Whether perceptibly or imperceptibly, different materials fade at different paces and geographies change at different speeds. The modulation of change, through design processes, allows for the production of flexible, elastic, and weak structures at all scales. Something we can learn from the city of the Kumbh Mela, moving forward, is to better manage the ephemeral nature of the built environment; to develop a more intelligent management of change is an essential element.

Besides the technical refinement that has already been highlighted throughout this study, one should not ignore the personal experience of attending such a large pilgrimage festival. A short but powerful comment crystalized for me the spirit behind the spectacular deployment we witnessed while observing the temporary city from the rooftop of our camp on a hilltop above the Kumbh Mela. We were silently observing and thinking how best to map and understand this instantaneous city. We were completely focused on understanding tents, streets, and infrastructure, and were impressed by the fluidity that the most elementary components of the everyday city could acquire. Then someone put a question to the owner of our host camp, a woman that was very close to the *Akharas*: "So…the whole plain in which the city is constructed is actually flooded by the river? Are the banks inaccessible during the monsoon?" "No," the owner responded sharply, "once a year, the mother Ganga retreats and lets you sit on her lap."

[Endnotes]

1. Diana Eck, *India: A Sacred Geography* (New York: Harmony, 2013).