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# Mongolia, Modernity, Systems + Solutions: Questing Holistic Design + Planning Strategies for a Brighter Tomorrow

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**Abstract:** Mongolia is a unique nation underpinned by rich history, spectacular landscapes, rich culture and deep spirituality. It is also a country grappling with change, modernization, growth and governance. The author has been extensively engaged, over many years, in research and consulting in this interesting milieu, including architectural design, city planning, informal settlements and poverty reduction. Building from an innovative integrative framework (Sinclair 2009) for design and planning, the present paper explores the challenges of realizing progress in Mongolia through the lens of systems thinking. In particular, the author critically examines parameters that inform and inspire the development of guidelines to aid in more effective reconsideration, reform and redesign of the urban fabric. A key dimension of the research centers on ethnographic methods, with sensitivities focused on the needs, desires and aspirations of the local community. Many efforts to modernize, advance and develop nations are hamstrung through fragmentation, specialization, narrow agendas and an inability to see the broader picture. The current speculative proposition aims to connect the dots—intentionally pursuing interdisciplinary and interconnected ways of seeing, thinking and acting. While not directly providing answers to questions about the next steps on Mongolia’s path, the author builds and delineates ways of knowing that can support such answers and inform such steps. The main goal of the paper is to consider the complicated ethos in more systemic, holistic, overarching and impactful ways.

**Keywords:** systems; holism; design; planning; architecture; Mongolia; culture; city

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GUIDELINE [1] (*dfn*): a line by which one is guided as, (a) a cord or rope to aid a passer over a difficult point or to permit retracing a course or (b) an indication or outline of policy or conduct.

## 1. Introduction and Context

“Not to consider ‘I am this’, that is freedom.”

(Buddha)

Design and planning in our modern world proves to be a most daunting and difficult challenge. The ever-increasing realities of environmental degradation, social injustice, and the burgeoning complexity of problems presents serious obstacles to architects and environmental designers who seek responsible interventions, appropriate solutions, and a more sustainable ethos writ large. There is an array of reasons as to why our many societies, and our civilization more broadly, are facing escalating and expanding threats, quandaries and crises. The implications of the industrial age and a carbon-based economy prove undeniably front and center. Rapid urbanization is also at play, as are aggressive consumption, consumerism, materialism and greed. While many aspects of our journey have been

positive and productive, such as the development of modern medicine, the advancement of science, and the fostering of greater tolerance, to name but a few, there have also been a plethora of less positive and arguably destructive steps. On the negative side of the equation are nuclear arms, the propagation of variations and deadly potency of viral infections, the degradation of the environment, and the continuing and pervasive assault on human rights.

It is within this remarkably entangled milieu that environmental designers, including architects and planners, attempt to seek order, develop solutions, and improve quality of life (not only for humans but for all living beings). A key aspect of this work is the securing of a solid understanding of culture, context and conditions within any given system—for example, an urban system, a social system, an ecosystem, etc. While it can readily and reasonably be argued that all such systems are highly interrelated and heavily intertwined, the architect or designer must develop sound understanding of the realms closest to intervention while concurrently being attentive to the fact that impacts and implications of said interventions transcend immediate project boundaries. It is such attention to the various layers at play that places design in a unique position within contemporary society. The balance that must be sought is profound—for example between art and science, the local and the global, the social and the physical, the intellectual and the emotional, etc. Striking such balance, harmony and equilibrium—finding the ‘sweet spot’ so to speak—demands that architects be well-informed, well-reasoned, and highly sensitive in their approaches. Central to finding the balance is to fully explore and understand the countless facets and factors involved in a given problem, especially as they inform, influence and even inspire subsequent solution(s).

The present paper considers, as its case, the country of Mongolia. This landlocked Central Asian nation has a long and rich history. It is fundamentally fueled by Buddhism. It is also a relatively new democracy that endeavors to find viable routes into a brighter tomorrow. Obstacles to achieving this goal are many and intense, including severe poverty, infrastructural deficiencies, governance hurdles and endemic social fragmentation. The author has researched extensively and published widely on a spectrum of issues concerning Mongolia, its circumstances, and its trajectory. The present paper looks critically at the environment for decision-making and guideline development, with a view to promoting more holistic and systems-oriented approaches.

## 2. Ethnography and the Search for Understanding

“When viewed from the perspective of what people are experiencing, the entire development process may be seen as a great learning enterprise. Every aspect of it facilitates human learning. Through intentionally structured experiences, and through guided reflection on the process of change as it is underway, people can come to learn a great deal about themselves, their environment, the community, or the wide world. They also need to develop skills and to acquire the use of technologies previously unknown to them. As well, they will need to learn more about their own potentialities and about how to be more effective people in relationship with others.”

(Bopp and Bopp [2], 2006)

In our efforts to understand our world, to explain phenomena and to better prepare us to tackle the activities of daily living, the challenges of our work, and the improvement of our lot, we have developed various ways of researching. Research, broadly viewed, can be defined (Synder [3], 1984) as “. . . systematic inquiry directed toward the creation of knowledge.” The quest for knowledge, search for understanding, and pursuit of ‘truth’ are vital aspects of our contemporary civilization. They also prove highly germane to the endeavors of architects, planners and allied environmental designers who struggle to appreciate human behavior and strive to comprehend our cities, buildings, spaces and places in order to make them more attractive, more livable, more supportive, healthier, and more safe and secure. The challenges of creating better environments in modern circumstances prove irrefutably daunting. Complexity and contradiction are commonplace, as are bureaucratic entanglement, political

pressures, and social injustice. Into this messy milieu environmental designers struggle to bring, in a Vitruvian sense and harmoniously, firmness (structure), commodity (function) and delight (beauty).

In the realm of environmental design research, anthropological (and especially cultural anthropology) approaches are interesting, relevant and most promising. The ethos of ethnography aims, fundamentally, at gaining solid understanding of a given event, or setting, or group, or community. This type of qualitative frame is apropos to architects and designers who cannot create in a vacuum but, rather, who must operate with the fullest grasp achievable vis-à-vis users, their needs, wants, capabilities, limitations, aspirations and dreams. It is never sufficient to assume. It is always essential to know. In a review of intellectual goals of qualitative inquiry Maxwell [4] (2004) emphasized the importance of understanding the particular context within which people act, and the influence of said context on their actions and behavior. He wrote: “Qualitative researchers typically study a relatively small number of individuals or situations, and preserve the individuality of each in these analyses, rather than collecting data from large samples and aggregating the data across individuals or situations. Thus, they are able to understand how events, actions and meanings are shaped by the unique circumstances in which these occur.” It is this real thirst for an understanding of ‘people in place’, of grasping ‘meaning in context’, which provides justification for deep anthropological examination and particularly warrants such methodological deployment in support of environmental design.

Ethnography, as a special type of qualitative exploration, has a strong tradition of pursuing a consciousness of meaning, beliefs and behaviors for people within the peculiarities and particularities of a given time and place. While basic research, for example laboratory-based work on the strength of materials, has definite value in our efforts to satisfy curiosity, discover knowledge, and better understand issues, environmental designers tend to be especially concerned about applied research (i.e., located and exercised in the field) wherein culture is factored significantly into both analysis and synthesis. Observation, consideration and interpretation in situ (as opposed to in vitro) seems most pertinent to architects and designers who conceive, create and construct in the real world, for real people with real needs and real problems. This position is not to diminish the value of curiosity-based research, but merely to underscore the value of critical inquiry and applied research that is principally immersed in, and receptive and responsive to, the cultures/communities at hand.

The appeal of ethnography to environmental designers is significant. The word ‘ethnography’ is derived from the term ‘ethno’ referring to people and ‘graph’ referring to picture—in other words, the constructing or making of a picture of people. As noted previously, central to this charge are aspects of culture, context and conditions. It is helpful to quote from Wolcott [5] (2008) who more fully describes ethnography:

“The underlying purpose of ethnographic research is to describe what the people in some particular place or status ordinarily do, and the meanings they ascribe to the doing, under ordinary or particular circumstances, presenting that description in a manner that draws attention to regularities that implicate cultural process. One can do ethnography anywhere, anytime, and of virtually anyone or any process, as long as human social behavior is involved (or was involved, in the case of studies made by archeologists and ethnohistorians). The important question is not whether ethnography is feasible in a particular instance but whether and how cultural interpretation might enhance understanding of the topic or problem under investigation.”

Environment—behavior research stresses the strong interconnections between environment and behavior, including such aspects as environmental perception, environmental cognition, spatial mapping, environmental preference, place-attachment, place-identity, etc. Scholarship in such areas points undeniably to the need for more complete understanding of the bonds, influences and relationships between people and place. In the development of design and planning guidelines for ger (informal) settlements in the capital city of Ulaan Baatar Mongolia, it is essential to observe and describe culture, context and conditions in a thoughtful, thorough and full manner.

### 3. Thick Descriptions (as inspired by Geertz)

“Culture is located in the minds and hearts of men.”

(Goodenough [6], 1970)

Ethnography presents researchers with a potent vehicle with which to paint a detailed and wide-ranging picture of a given situation. Schwandt [7] (1998) notes that an interpretive view of a situation has a goal of understanding the complex world of lived experience from the point of view of those who live it. He explains that, true to principles of phenomenological inquiry, such research serves to “ . . . celebrate the permanence and priority of the real world of the first-person, subjective experience.” A central objective in such work is the development of comprehensive descriptions, a notion that Geertz [8] (1974) coined as ‘thick descriptions’. A cultural anthropologist, he posited that social facts are not an objective reality of a situation that a researcher merely records, but rather must be constructed through a reading of context and meaning. By ‘thick description’ (a term he borrowed from Gilbert Ryle [9]), Geertz implied a richness of accounting—he wrote that the researcher in pursuit of such accounting is faced with “ . . . a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which he must contrive somehow first to grasp and then to render.” In addressing the crucial matter of interpretation, which is inseparably intertwined with the exercise of ethnography, he noted: “If anthropological interpretation is constructing a reading of what happens, then to divorce it from what happens—from what, in this time or that place, specific people say, what they do, what is done to them, from the whole vast business of the world—is to divorce it from its applications and to render it vacant. A good interpretation of anything—a poem, a person, a history, a ritual, an institution, a society—takes us into the heart of that of which it is the interpretation.” Such interpretation, or ways of seeing and understanding, proves of significance to activities of architects and to the charge of design.

Given the challenge of developing design and planning guidelines for the informal districts (Figure 1) (commonly known as ‘slums’ in similar settings around the globe) wrapping the Mongolian capital of Ulaan Baatar, it seems worthwhile to more fully explore the character and potential of ‘guidelines’, especially in light of expressed complexity of culture and interpretations of same.



Figure 1. (a) Children in front of a Ger; (b) Ger area near the urban core.

### 4. Guidelines for Design + Planning: General Overview

“A *guideline* is any document that aims to streamline particular processes according to a set routine. By definition, following a guideline is never mandatory (protocol would be a better term for a mandatory procedure). Guidelines are an essential part of the larger process of governance. Guidelines may be issued by and used by any organization (governmental or private) to make the actions of its employees or divisions more predictable, and presumably of higher quality.”

(<http://en.wikipedia.org/wiki/Guidelines>)

The goal of developing design and planning guidelines for ger areas of Ulaan Baatar is not about imposition but rather is about facilitation. In the highly chaotic and contested spaces of the informal settlement, characterized in part by the absence of a sanctioned and effectual regulatory framework and the lack of an approved planning approach, guidelines represent a non-threatening set of ideas for positive change. While it is evident that such ideas are warranted, and should be helpful, it is also clear that said guidelines must be carefully and responsibly constructed with deep appreciation for audiences, stakeholders and implementers of same. To this end, further consideration of demographics, learning styles, power bases and empowerment opportunities prove beneficial.

Prior to exploring learning in more depth, it is instrumental to consider in greater substance the notion of *guidelines*. Guidelines can be cast into two distinct categories: prescriptive guidelines, in which substantive detail and sequential steps are methodically laid out and delineated, and performative guidelines, in which targets are set with limited commentary on means to the ends—that is, multiple paths could be followed and manifold processes deployed in the effort to reach the targets. Guidelines developed for a certain circumstance could be either prescriptive, performative or a hybrid version drawn and constructed from both. Directions in this regard depend on the context, culture and intended consumers (e.g., architects, civil servants, end-users, etc.) of given guidelines. Cooper Marcus and Francis [10] (1990) noted that design guidelines are “... a systematic attempt to compile what has emerged from the burgeoning field of environmental and behavioral research, and to present the research in a form that is understandable and usable by the clients, users, designers, and managers of designed space.” These environment–behavior scholars see such guidelines as “... informed suggestions, as reminders of what seems to have worked or not worked, what appears to be appreciated and not appreciated, by users of existing spaces.” In the case of ger settlements in Ulaan Baatar, as limited precedent has been established locally, influence and inspiration will need to be drawn from similar informal settlements in other developing nations. This process will need to carefully and skillfully draw distinctions in conditions and culture, for seldom are guidelines readily transferable from place to place in an un-adapted form. Likely the Mongolian guidelines will, in some manner, respond to and incorporate matters of land tenure, infrastructure and building (environmental, social, economic), as well as policy and governance.

While the guidelines fall at the core of the researcher’s larger and longer-term goal of improving the quality of the environment and of life in the ger districts, there are other aspects of process that should be considered—in essence placing the guidelines within a broader framework. Some contemplation about such matters as targets, measures, incentives and responsibilities could be expected to strengthen efforts to determine appropriate design and planning guidelines. In a business context, which holds some relevance in terms of the operationalizing of guidelines, Covey [11] (1991) noted that forms of contract benefit from understanding and commitment regarding expectations in five areas: “desired results, guidelines, resources, accountabilities, and, consequences.” With regard to design and planning guidelines for the ger settlements, pursuing better awareness of these five areas should help in the development and delineation of specific guidelines. In the spirit of a Mongolian-oriented project, guidelines in question would consider: improving ger settlement conditions; ensuring that residents tangibly benefit; building community capacity; fostering self-reliance; and sincerely pursuing affordability, livability and sustainability.

It is crucial to emphasize that guidelines, in addition to being part of a larger and inter-connected series of activities (for example, aimed at improving a community), can prove a potent stepping stone to many other very important actions and outcomes. On such a note, van der Voordt and van Wegen [12] (2005) observed that guidelines can “... turn out to be highly suitable for developing and checking building plans, avoiding disasters, guiding policy and developing legislation and regulations.” It is especially on the latter point, that is, realizing a sound and effective regulatory milieu, that the proposed design and planning guidelines may afford longer-term impact/enhancement and hopefully foster a more sustainable environment.

### 5. Integrated Framework for Design + Planning

As a part of a much larger and longer research and consulting agenda in Mongolia (see, for example, Sinclair 2008 [13], 2014 [14]; Turney and Sinclair 2015 [15]), and to an ongoing pursuit of better ways of operating for environmental design professions, the author developed a holistic conceptual framework for design and planning (see Sinclair 2009 [16], 2012a [17], 2012b [18], 2015a [19], 2015b [20]). This unique framework is fundamentally embracing and celebrating systems thinking and integrative ways of engaging in design and planning. While developed in the first instance for ‘slum reform’, the model has subsequently seen broad applications, including in new, retrofit and regenerative contexts. It has also found resonance across scales, from architecture + urban design to community + city planning. The following hand-drawn sketch (Figure 2), by the author, underscores the many forces at play in the ger districts, the critical consideration of which helped to shape the creation and construction of the integrated framework for design + planning (Figure 3).

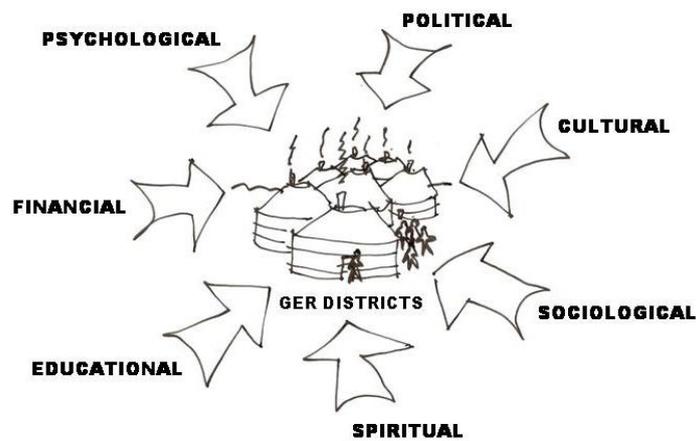


Figure 2. Sketch illustrating complex array of forces in Ger District.



Figure 3. Sinclair Holistic Framework for Design + Planning.

The framework incorporates four core aspects, namely agility, fitness, diversity and delight. Extending from these four essential aspects are a series of 16 more detailed dimensions of design and planning. The model assumes that all of these aspects and dimensions share equal and balanced weighting. From a systems perspective all of these items must be considered in concert when undertaking a design and planning project. It is inadequate and inappropriate to cull out and attend to only a few—although this is commonly and unfortunately the direction of many modern design and planning efforts. The framework was intentionally developed to remedy the very narrow and limited ways that much of modern design and planning transpires in both developed and developing worlds.

It is important to understand this framework for design + planning in the setting of the present paper. Although the paper moves beyond this holistic and systems-oriented framework (that is, in looking more critically at the development of subsequent guidelines) it nonetheless relies upon it to set the compass, inform thinking and generate inspiration.

## 6. Learning

“The comprehension of data, information, and knowledge is a rational process. When they have been around long enough, we may begin to treat them as truths. To reach beyond knowledge to achieve wisdom, particularly as an economy and society rather than just as individuals, will require us to embrace and develop perspectives that call on intuition and emotion, on the non-rational. Paradoxically, however, wisdom is not what lies on the other side of what is known, because once we get there it becomes mere knowledge. The laws of relativity, for example, reside in the world of knowledge, while Einstein’s shifts in perspective dwelt in the realm of wisdom.”

(Davis and Botkin [21], 1994)

In considering the content and character of design and planning guidelines it is instrumental to also consider the ways in which learning can happen. There are certainly a plethora of learning styles and array of capacities, reflecting the remarkable diversity in cultures, conventions and values. A spectrum of people and groups could potentially want to access and utilize said guidelines—while the development approach cannot reasonably aim at preparing content that would be accessible to all players, effort needs to be invested to identify the primary players and to cultivate the relevancy/resiliency of guidelines.

It is interesting to ponder the array of information that might be conveyed through design and planning guidelines. In a very general, and perhaps dualistic way, information can be coarsely divided into technical and non-technical, or expert and lay, categories. For example, information on lighting might be expressed to architects by way of quantitative measures (such as, minimum lumens) while the same point could be expressed to informal settlement dwellers in a more qualitative manner (such as, sufficient light to distinguish a black thread from a white thread). Two issues are important in this case: utilizing language that is appropriate for the intended user, and, ensuring that both technical and non-technical versions address the same subject and produce the same outcomes.

There are, of course, various types of learning aptitudes, or intelligences, used in processing and interpreting stimuli. Goleman (2005, 2007), in his seminal books on emotional [22] and social [23] intelligences, respectively, suggested that learning is much broader and more adaptive than is suggested by our contemporary obsession with IQ (Intelligence Quotient) measurements. In fact, he argues, human competencies like self-awareness, self-regulation, and empathy add significant value to cognitive abilities (as typically and narrowly assessed via IQ testing). With regard to the proposed research work on design and planning guidelines, certainly consideration should be given to a broader set of measures of learning other than, for example, success in mastering traditional subjects (e.g, math or languages). The role of emotional dimensions, and social systems, should be examined in addition to more commonly understood aspects of literacy and more accepted ways of ‘knowing’.

Howard Gardner's [24] (1983) classic work *Frames of Mind*, challenged the notion of intelligence as a unitary phenomenon, and in its place described a series of intelligences (i.e., multiple intelligences) that people can possess and exercise in negotiating their worlds. He cast intelligence as 'the capacity to solve problems or to fashion products that are valued in one or more cultural settings' (Gardner and Hatch [25], 1989). Undeniably the human mind is a rich 'machine' and powerful force, with each of us deploying our minds in different ways to perceive our world, consider our situations, analyze our problems and develop our solutions. While there are certainly threads in common with regard to perception and cognition, it is in the differences in approach and operations that we realize the outstanding complexities at play. In acknowledging that thinking does not follow a singular method or standard approach, Gardner underscored the inherent complexity of intelligence. Gardner postulated that there were indeed seven intelligences—the first two intelligences are those that have historically been employed in schools; the next three are connected with the arts; and the final two are akin to 'personal intelligences' (Gardner [26], 1999). His list encompasses:

1. Linguistic intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals.
2. Logical–mathematical intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically.
3. Musical intelligence involves skill in the performance, composition, and appreciation of musical patterns.
4. Bodily–kinesthetic intelligence entails the potential of using one's whole body or parts of the body to solve problems.
5. Spatial intelligence involves the potential to recognize and use the patterns of wide space and more confined areas.
6. Interpersonal intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others.
7. Intrapersonal intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations.

In conceiving and crafting design and planning guidelines, as suggested in the present researcher's work, it will be helpful to consider Gardner's range of intelligences. He underscored that people can have various combinations of intelligences—what is especially important is to be aware of and respect the diversity of approaches when considering how specific guidelines might be recognized, processed and applied (and even assessed for efficacy and possible revision after the fact).

In developing this list of multiple intelligences Gardner was interpreting from intense observation, over years of study, the ways in which people handled information. In his more recent book Gardner [27] (2007) considered the types of intelligences that will be required in the future to cope with an increasingly complex, challenging and globalizing world. His 'five minds for the future' are the:

1. Disciplinary Mind: mastery of major schools of thought (including science, mathematics and history) and of at least one professional craft.
2. Synthesizing Mind: ability to integrate ideas from different disciplines or spheres into a coherent whole and to communicate that integration to others.
3. Creating Mind: capacity to uncover and clarify new problems, questions and phenomena.
4. Respectful Mind: awareness of and appreciation for differences among human beings.
5. Ethical Mind: fulfillment of one's responsibilities as a worker and a citizen.

While this approach clearly gives preference to the Western and developed world, there are important cues to take when considering how design and planning guidelines might best be developed for use in Ulaan Baatar. It should be stressed that many of the high-ranking officials and accomplished professionals in developing nations, including Mongolia, have been educated in the West and are entirely comfortable with Western ideas and frameworks. The challenge, as pertains Gardner's five

minds approach, is most evident in the case of herdsmen who have migrated to the city. There is, on a daily basis, deep concern about meeting the most basic needs of living—such as provision of food and securement of clean water. While undoubtedly in such circumstances issues such as ethics, creativity and respect are commonplace, they are arguably in the background, being less explicit and more subconscious. Therefore, in evaluating the implications of the five minds approach within the context of the ger settlements, some of the language will undoubtedly need re-framing and some of the approaches will certainly deserve re-consideration.

Other key aspects to reflect on, as pertaining to design and planning guidelines, include the dynamic nature of learning and the value of a systems perspective. On the first point it is important to understand that people change, communities change, companies change and nations change. Change is a reality and today rates of change are commonly rapid and aggressive. Adaptability, flexibility, mutability and resiliency are all positive attributes in such an ethos of dramatic change. In this way, any guidelines should have enough tolerance built in to manage as conditions alter and needs shift. In addition to the guidelines having enough elasticity, so must the products/outcomes of the guidelines. Whether they are buildings, bridges, pipelines or plazas, there is the inherent capability for adjustment and adaptation. Chris Argyris [28] (1992), underscoring the need to confront and overcome contemporary quandaries suggested that organizations need the following: “1. Much more creative planning, 2. The development of valid and useful knowledge about new products and new processes, 3. Increased concerted and cooperative action with internalized long-range commitment by all involved, and, 4. Increased understanding of criteria for effectiveness that meet the challenges of complexity.” He noted that such qualities subsequently rely upon: “1. Continuous and open access between individuals and groups, 2. Free, reliable communication, where 3. Independence is the foundation for individual and departmental cohesiveness and 4. Trust, risk-taking and helping each other is prevalent, so that 5. Conflict is identified and managed in such as way that the destructive win-lose stances with their accompanying polarization of views are minimized and effective problem-solving is maximized.” While Argyris was referring to learning organizations more generally, without question many of the principles of learning, and its dynamic nature, can readily be applied to government agencies, professional organizations and community associations. The wisdom he delineates is also readily applicable to developing nations, although with moderation and nuance to account for differences in culture and conditions.

Lastly, on the learning front is the need to employ systems thinking in the development of design and planning guidelines. Cities and communities, as well as buildings and spaces, are intensely, and at times incomprehensibly, complex. Creating them is complicated, managing them is challenging, and using them is often difficult. Aspects of the environment are heavily inter-dependent, including natural realms and human-made ethos—issues become especially uncertain and unpredictable in those instances where the natural and the human-made overlap, interplay, collide and/or co-exist. In crafting design and planning guidelines it is prudent and responsible to explore, describe, envision and explain as many of the parameters at play, and their relationships, as much as possible. This need to investigate, to understand, and to act on such knowledge, while vital, is not the sole jurisdiction of the professional planner or architect. In fact, the opportunities for success and sustainability are significantly enhanced if the array of stakeholders are together working to understand the systems at play. Senge [29] (2000) noted that those organizations that “... will truly excel in the future will be the organizations that discover how to tap into people’s commitment and capacity to learn at all levels in an organization.” Such an argument holds true, in many ways, not only for corporations and governments but also for cities and communities.

## 7. Critical Components of Design + Planning Guidelines

“The issue of slums is very complex. It cuts across numerous disciplines. It concerns hundreds of millions of slum dwellers directly—and it indirectly concerns all local and national economies and societies in which slums exist. It is one of the fundamental global

challenges of our times. The physical, legal, social, political and economic characteristics of slums are richly varied. Besides, the multiplicity of urban and national contexts within which slums exist adds a further layer of complexity to the issue. So if interventions are going to be meaningful—there needs to be a genuine effort to appreciate the complexities and subtleties of slums, their communities, and how they interact within and with the broader context in which they exist.”

(Mehta and Dastur [30], 2008)

In considering the components of design and planning guidelines for ger settlements in Ulaan Baatar, it is useful to address sustainability and culture as imperative dimensions within the environment. While the most common framework for addressing sustainability in corporations and government is the so called ‘Triple Bottom Line’ (Firey [31], 1960; Elkington [32], 1999) of environment (physical), economic (financial) and equity (social), for the Mongolian case this approach is likely too narrow. A more appropriate sustainability framework, and design and planning guidelines, can be built upon the model developed by the Canadian International Development Association (CIDA [33], 1991)—especially considering the essential inclusion of both cultural and political aspects. CIDA’s Framework for Sustainable Development outlined five key areas, or pillars, that together sought to address the complexity at hand: (1) environmental sustainability, (2) economic sustainability, (3) political sustainability, (4) social sustainability, and, (5) cultural sustainability. It is worth, in the context of the present paper and in light of the proposed guideline development in Mongolia’s urban center, further detailing the CIDA frame:

- ENVIRONMENTAL
  - Ecosystem integrity
  - Biological diversity
  - Population
- ECONOMIC
  - Appropriate economic policies
  - Efficient resource use
  - More equitable access to resources
  - Increasing productive capacity of the poor
- POLITICAL
  - Human rights
  - Democratic development
  - Good governance
- SOCIAL
  - Improved income distribution
  - Gender equity
  - Investing in basic health and education
  - Emphasizing participation of the beneficiaries
- CULTURAL
  - Sensitivity to cultural factors
  - Recognition of the values that are conducive to development

What is significant about the CIDA conceptual framework is its careful and comprehensive attention to the many complications and nuances involved in pursuing community development and greater sustainability in the under-developed hemispheric east and south.

While the proposed design and planning guidelines would not necessarily follow the above structure in terms of actual guideline items, these five areas (i.e., environmental, economic, political, social, and cultural) could be considered within a matrix structure. Actual guidelines would more likely include quite explicit, tangible and manageable points: for example, geometry of street layouts, materials for fencing, open area requirements, housing standards, infrastructure, waste management, communal areas, zoning, etc. For any one of these aspects the cross-referencing to the five points of the CIDA frame would prove illustrative and worthwhile. Clearly, at this speculative point in the research it is somewhat premature to generate a complete list of guideline components (i.e., that exercise arguably resides at the core of a larger multi-national interdisciplinary undertaking)—that said, the principle of pursuing cultural sensitivity, attending to political realities, responding to social need, encouraging economic activity, and improving the environment seems paramount.

### 8. Strategies for Guidelines: Nested Recommendations

“Poor design is making something worthless.  
 Good design is making something intelligible and memorable.  
 Great design is making something memorable and meaningful.  
 Exceptional design is making something meaningful and worthwhile.”

(Rams [34], 2007)

In contemplating the challenge of structure of the guidelines (i.e., how the guidelines are best communicated to a range of stakeholders), and in light of the review of learning approaches and styles as outlined previously, it seems evident that a single solution will not be tenable. One size will not fit all. Rather, guidelines must be conveyed in ways that can most readily and successfully be understood and acted upon. It would seem that a ‘nested’ approach might hold the most promise in consideration of multiple ‘consumers’. A nested approach would have various layers of a given guideline shifting based upon definitive user needs, appropriate language and expressed expectations. For example, at the professional level a given guideline might be particularly technical and exacting—it might include dimensions, performance targets, specifications, etc. The same guideline, for consumption by bureaucrats and authorities with jurisdiction may include language that is more akin to a draft policy statement—it might make reference to means of evaluation, monitoring and enforcement. The same guideline, considered once again but this time for herdsman residing in the ger settlements, might be cast in a manner that best connects to cultural, social and spiritual dimensions—it might refer to orientation of housing in respect of the age-old focus on cardinal points and sun movement.

Another key consideration, in terms of the most appropriate means to convey a given guideline to a given stakeholder group, is the nature of communication itself. In some instances, hand drawings or photographs of conditions or actual examples might be the best route to explain a recommendation. In other instances, tables and charts might be desirable. The assessment of learning styles of users and of the content and character of information in the guidelines is, of course, imperative. Latitude, sensitivity and knowledge should help shape conception and construction. One mode of communication cannot trump others. Given the known diversity of the audiences and the anticipated diversity of guidelines, the presentation methods and communicative value therein will need to be critically explored and thoughtfully considered.

### 9. Example and Delineation of A ‘Typical’ Guideline | Ub Ger Settlement

“Vast numbers of people in Ulaan Baatar, with scant government expenditures on facilities, have translated into high levels of air pollution. Stoves burning coal and wood in the ger districts generate levels of carbon dioxide that can reach seven times higher than in the city center and can occasionally create sufficient smog to impede operations at the airport.”

(Rossabi [35], 2005)

In considering an example of how guidelines could be best structured and crafted to prove most effective and appropriate, it is important to underscore several points. Firstly, the test case noted below, namely heating of communities and residences, is intentionally idealized. The clear delineation of levels and content therein, in this case, fails to account for the volatile political realities (including massive bureaucracy and widespread corruption) that plague the nation. As actual guidelines are considered and crafted they will need to more fully respond to such matters. Secondly, the example noted is presented in relative isolation (i.e., intentionally bounded for illustration purposes), while in reality even minor issues see intense inter-connection within the complexities of an informal settlement. That said, the exercise of exploring an example guideline within the present paper is intended to draw out several promising qualities of the proposed approach, such as nesting and attention to language, rather than to prove definitive. Better a diamond that is flawed than a pebble that is perfect.

- Heating: At present, ger settlement residents purchase and burn wood slats in the summer months and coal in the winter months. Both of these heating solutions are expensive, arguably inefficient, and heavily polluting. It is stressed that in the countryside, in nomadic lifestyles, dung from herds is used as the primary fuel. Dung is clean burning, relatively efficient, obviously affordable, and very sustainable. The dramatic shift from country to city is problematic on many counts. A guideline is anticipated to deal with this very difficult aspect of ger district living. Below is a hypothetical example dealing with this critical issue, albeit with some liberties exercised and taken to an extreme for illustration purposes:
  1. Guideline—General Principle (overarching idea): In heating homes within the ger settlements residents (as well as other engaged stakeholders) will seek solutions that are affordable, healthy, safe, limited or non-polluting, and wherever possible renewable.
  2. Contextualized Version (community): Burning of coal and wood results in serious pollution in the neighborhood and many health problems for families. It is important to respect neighbors and ensure the health, safety and happiness of family members. Heating should be done using one or a combination of solutions that are now available to families in the ger district, including solar panels, wind turbines, and purchase of district heating delivered by the government. Heating from renewable sources should be sufficient to cover the summer period, while purchase of some government-supplied heating over winter months will be necessary.
  3. Performative Version (professional): Heating of ger settlement housing units must ensure net-zero energy realization at the unit level where possible and collectively at the district level. Coal and wood burning is strictly prohibited. Solar panels must be positioned in the yard or on the top of the housing unit and must be placed in a manner to achieve maximum solar access. Microwind turbines are encouraged and should be located either within a private yard or, in respect of government regulations, on publicly-held lands (such as right-of-ways or streets). Housing units should in all instances be constructed in a manner to accept inputs from district heating that is provided by the government. While some residents may be able to establish self-sufficiency, especially in the summer months, all units must be capable of plugging into the grid. It is desirable for all residents to be able to sell power back to the grid in instances where excess is realized. It is necessary to incorporate extraordinary levels of insulation to ensure maximum heat retention, especially over the harsh winter period. To promote clean indoor air, and sufficient air circulation, the stack effect should be designed into dwellings, including provision for straightforward operations of openings in the building envelope.
  4. Regulatory Version (political): Heating within the ger settlements will be a combination of government supplied district heating (for purchase) as well as a series of resident-owned

- renewable ‘micro-generation’ technologies. It is expected that ger district residents will be energy self-sufficient over the summer period. Provision of district heating by government over the winter months will be necessary, although supplementing by aforesaid on-site renewal sources will assist in reducing costs to residents. All new housing will be equipped to handle government-supplied district heating. Coal and wood burning will be prohibited, with reasonable penalties to be set for violations. Incentives should be provided to ger district residents, including price reductions on government-supplied heating for units equipped with on-site and operational renewables. In some instances, and especially over summer months, provisions should be made for government purchase of excess residential energy. Energy storage and load balancing should be explored in order to manage in peak periods. While guidelines and performance specifications are focused first and foremost on new construction, consideration should be given to retrofitting and upgrading of any existing structure to accommodate new technologies, to improve energy efficiencies, and to reduce energy loss through the building envelope.
5. Specifications (technical): This section would have very detailed information on recommended technologies, targets for on-site energy production, insulation types and R-values, and constructional systems including structure, materials, assembly, moisture control, ventilation, fireproofing, etc. Wiring, thermal and energy storage, monitoring, individual unit and system-wide specifications and relationships would also be addressed under this section.

While this multi-level system should prove sensitive, strategic and beneficial in the longer-term, the proposed guideline development aims to focus more on the upper levels—that is, having most concern with general, community and professional guidelines. The development of the regulatory and policy milieu, as well as delineation of the precise technical specification can be expected to follow adoption of the guidelines at the broader level. While the need to improve the living conditions of ger settlements (Figure 4) is urgent, the process invoked to realize same must be sound, broadly supported and advanced, developed and implemented in due course. To date, the informal areas have rapidly appeared in, and are aggressively expanding within, the peri-urban areas encircling Ulaan Baatar. Any steps to bring order, reason, planning and design into the equation will no doubt be welcomed and surely worthwhile. That said, the process of getting to such ends must be fair, inclusive, evidence-based, culturally-sensitive and, in the end, sustainable.



**Figure 4.** Aerial view of Peri-Urban Ger District + Public Space in Inner City Ger District.

As is evident through this research, the systems at play operate across multiple disciplinary lines, departmental boundaries, bureaucratic domains and spheres of influence (social, economic,

environmental, cultural, legal, political, etc.). This complexity, while daunting, must be approached using models that embrace holism and consider a network of inter-relationships, manifold agendas, opportunities for leveraging and obligations for learning. In underscoring the pressing needs of the ger areas, it is important to delineate several particularly urgent areas for action. As guidelines are being considered for both established and emerging ger districts, particular emphasis should be placed on the development of clear policies tackling organizational systems (e.g., spatial dimensions of neighborhoods), governance systems (e.g., community voice, leadership, participation), environmental systems (e.g., infrastructure) and cultural/spiritual systems (e.g., role of Buddhism and its tenets in city making). As the author has stressed in this paper, fragmentation, separation and narrow agendas confound efforts by architects, planners, politicians and citizens alike to realize positive and demonstrable progress. While starting with the above-noted priority areas introduces levels of manageability, it remains a reality that the quest for more integrated and effective models of design and planning demands an open-mind, vigilance and an unswerving commitment to connect the dots in an often overwhelming, unclear, complex and convoluted ethos.

## 10. Summary and Conclusions

“Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius—and a lot of courage—to move in the opposite direction.”

(Schumacher [36], 1973)

While it is premature in the research process, at this time, to be able to commit to specific guidelines, the present paper has endeavored to outline and explore a number of dimensions to the work that proves fundamental. Ethnography, as a methodological approach, is well-suited for the author’s proposed and ongoing work in Mongolia. In particular, the pursuit of ‘thick descriptions’ should provide strong cultural understanding and awareness of meanings that will inform and inspire the crafting of design and planning guidelines. Learning styles, nuances in communication, a diversity of stakeholders (e.g., designers, planners, funders, builders, regulators, and, of course most importantly, users), the importance of balancing individual and collective needs, as well as attention to local and systemwide facets, all loom large. The present paper included the proposition of a possible strategy (nested guidelines) for most effectively reaching the main stakeholder groups, as well as a hypothetically delineated example of a typical guideline (namely, heating provisions to communities and residences therein). At this juncture it seems as though the development of high level (versus very technical) design and planning guidelines for the ger settlements of Ulaan Baatar is an important, timely and manageable next step. Explorations within this paper suggest that using a matrix type approach, whereby the aforesaid design and planning guidelines would be overlaid with primary sustainability concerns (i.e., environmental, economic, political, social, cultural), could prove productive and worthwhile. Without doubt, given the dire situation in these informal settlements, where infrastructure is lacking, pollution is intense, safety is threatened and health is jeopardized, the need for thoughtful, empathetic, informed and appropriate planning and design seems most welcomed, is undeniably required and remains unquestionably urgent. The author argues, based on logic and experience, that we must move beyond fragmented approaches in order to realize demonstrable improvements. To this end, systems thinking and systemic strategies hold tremendous potential and real promise.

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