New SDG refined human habitat reduces impacts, mitigates risk and inspires hope in a compact permanent infrastructure and farm system.

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Abstract. Introduction: One best HOPE for humanity meeting SDG targets is to give building site owners MORE OPTIONS. Today’s cities typically TRAP URBAN DWELLERS in the local housing type with NO ENTREPRENEURIAL OPPORTUNITY! This paper proposes a NEW CITY INFRASTRUCTURE with neighborhood modules of completely flexible, large two-story totally private development sites suitable for any typical urban business or 1 to 4 homes. Entrepreneurial urban dwellers may pursue any enterprise; an amazing new economic resource for individuals and cities. These vacant building sites will be built in a permanent (1000+year) multi-story infrastructure. Flexibility of space and utility raceways allow continual updating for continually changing objectives and new technology to meet SDG’s. Locals complete their city and transit link. It will function as a permanent, autonomous, self-sustaining, compact, efficient, adaptable dwelling and farming system. Methods: Designing, building, market testing and worldwide research over 40 years proved the need for this proposal. Inspiration: Ancient stone structures occupied for hundreds of years. Flexibility and privacy make a permanent infrastructure practical. "Continual-use" reduces future housing costs 70%. This infrastructure stimulates remarkable new ownership and financial arrangements for all income levels. Results: Long term success of SDG targets ultimately depends on individuals. Options give hope and more control over their property and future. Flexibility encourages incentives to improve and increase ownership equity. This design’s hillside village qualities of dwellings overlooking daily life on their neighborhood plaza will generate common bonds overlapping many generations. Total privacy, flexibility, backyard gardens and incentives encourage entrepreneurs, combining talents, sweat equity, self-employment, pride and hope! Conclusion: In some locations the need is already desperate. The only logical conclusion: Immediately build, test and refine this proposal. Many modules together become a city, living areas above floods, capable of reducing CO2 and totally eliminating fire or climate risk. Implementing this new urban flexibility will revolutionize future human habitats and the life of every person. Test it, discover new SDG guidelines.

1. Bold summary statement
This city infrastructure with its surrounding land satisfies related SDG’s with physical certainty. In ways not physically satisfied, flexibility and privacy allow occupants to meet other goals. As wisdom and technology improve, physical conditions allow people to meet future changing challenges. It’s difficult to visualize and imagine living in it, possible only after it’s built. Over centuries it offers a secure village quality of life near nature for all ages, overcomes failings of cities summarized by Joel Kotkin in The Human City and fulfills more SDG Beyond2020 proposals than other city concept.

2. Eliminates 70% of future building cost and environmental impacts
The ancient stone buildings still occupied after hundreds of years inspired this permanent infrastructure. Continual use is the most efficient recycling. We have the historic understanding of cities and technology to build an infrastructure to last 1000+years. It replaces 70% of what all buildings and cities need. Instead of building those basics (like streets, sidewalks, utilities, foundations, driveways, separate floors, sidewalls and roofs, etc.) spread out across the land, equivalent dollars will pay for this complete multilevel infrastructure. It contains large totally private building sites. To provide enclosed the livable space, only the front and back walls are needed. Inside,
beyond basics, build only what you can afford. Sites are stair-stepped; a roof of one site is the
d backyard for the site above. As a permanent infrastructure, it’s financed like a typical real estate
improvement bond at lower interest rates. Once it is paid off, those 70% construction costs and
environmental impacts, effectively, never occur again. Adequate privacy and flexibility make a
permanent structure practical.

Within building sites, flexibility and privacy allow near total development freedom. The parameters
for building site requirements are based on decades of research by professional teams designing,
building and market-testing typical urban uses. It was discovered that larger than normal building sites
with appropriate dimensions could provide the necessary flexibility to accommodate any urban use
expected in a typical city. Adjacent sites can be combined for larger uses like hotels or schools. The
neighborhood street plazas can be encroached upon with combined sites for additional commercial
development freedom. Residences are the highest percentage of use in a city. Arrangements for
individual and residential needs are given highest priority. Growing a sense of community starts with
clusters of 16 residential building sites, the maximum front porches within voice distance of the play
area. Building sites are off-set along one side creating a visual focus on cluster’s central play area.
Three clusters are stacked to form one side of the neighborhood. Facing another three-cluster stack
creates a large partially enclosed space. This is for plaza activities and its continuous pedestrian main
shopping street connecting to adjacent neighborhood modules. Space is available for all commercial
uses. Live-above shops can be up to 4 stories. Neighborhood modules contain 96 building sites, with
cars on lower level. The front of every site overlooks its cluster’s front porches and the neighborhood
Main Street Plaza. Recognizing friends on the plaza is still possible at 12 stories. Vertical and
horizontal raceways to every building site allow for easy updating, eventually achieving ultimate
solutions to meet continually changing future challenges.

Figure 1. (above left) In moderate climates every backyard will have
trees. This compact city will look like a tree-covered hillside. In many
practical respects it will function with the natural environment almost as
if it were an integrated life form. The intense human activities are
contained inside so they do not have negative effects on nature.

Figure 2. (above right) This shows the infrastructure of a neighbourhood
module. Inside is the Main Street Plaza which is the connecting link to
all other neighbourhoods. Many linked together become the city. Central
darker rectangular areas on three levels are play areas for each cluster.

Figure 3. (on the left) Upper half of diagram is the plan of a
neighbourhood module. Lower half shows a section through the midpoint
of a neighbourhood module. (Basic schematic arrangement.)
Compared to USA suburban 100% land coverage, with the same total density, this proposal covers only 20% of the land. In some climates, with landscaped backyards, as little as 10% is removed out of the biosphere. It is compact, making short distances for everything, shorter walks and lower cost utility distribution systems. Arrangements are based on what individuals at all ages do and how they actually live. It offers opportunities for energy-recycle-farm systems that waste nothing, creates energy, sustains surrounding farming plus integrates water reuse and lakes for natural purification. Collections of waste products from every building site and deliveries of purchases to hot or cold storage cabinets are done with pneumatic systems. Items purchased in neighborhood single-sample shops or online are delivered directly from warehouse to each home site. Tall towers for future generations will rise out of this low-rise city and still maintain traditional neighborhood qualities. These are a few basics of this schematic concept. Flexibility allows for different countries to meet different objectives and requirements.

3. Prevents climate, flood and wildfire disasters
This compact, carefully arranged, infrastructure makes enclosing the entire city practical. It provides edges for connections. Openings are of sizes easily enclosed with retractable fabrics, when necessary. For local conditions, fabrics are selected to resist maximum wind speeds, hot or cold climate extremes or wild fires. Various fabrics can be reflective, transparent or convert sun’s rays to energy. The interior public spaces of the city’s neighbourhoods are further insulated by the buildings on each side of the main street plaza. This street connects all the city’s neighbourhoods. As climate extremes, hot or cold, rage outside, inside normal daily neighbourhood life continues without distraction. Building sites can open up and borrow moderated conditions from the neighbourhood interior spaces. Private backyards and main street plazas are enclosed by the push of a button. If desired, comfortable plant growing conditions can be maintained in any climate, year-round. Depending on the culture, enclosed or not, backyards are suitable for sustainable survival gardens, chickens or even a goat. Over 1000 years, conditions will change: this infrastructure’s flexibility to incorporate new thinking will allow the city and individuals in it to adapt. Everything about this concept conserves energy and reduces CO2 omissions. This city will improve life and be a good neighbor anywhere.

Extreme conditions already exist, in some places the need is already urgent. It would almost seem negligent not to take advantage of building this concept and the new sustainable opportunities it offers. It allows occupants to directly solve many sustainable development goals (SDG).

4. Gives city dwellers new social & economic opportunities
Introducing this new concept of flexibility and privacy will enhance individual lives of every age and status. Incentives, including direct and rewarding ways to enhance personal skills, ownership and life style plus generate individual hope and enthusiasm. Every improvement individual’s make enhances their equity, and their life. The new secret ingredients: Privacy and Flexibility. Privacy avoids negative impacts on neighbours. It is surprising that simply larger private building sites in this structural framework allows more freedom and rewards than a rural building site on a hillside in the country. Think of it as raw land on a reasonable sized parcel. People can build with local materials, anything from mud bricks to sophisticated wall/floor systems. It’s logical to expect eventually standardized wall and floor systems will become as easy to install as moving furniture. Over a few days building site owners can rearrange the housing accommodations on their property. They could provide space to start a family restaurant or business. Space could be arranged for a nephew’s family or a caregiver. This compact city and technology will make at home healthcare practical. But this is about more than providing space. It’s an opportunity for everyone young and old to learn new skills, develop a sense of accomplishment and perhaps earn a greater amount of ownership in the property.

The city’s comfortable compact physical arrangement enhances multiple overlapping inherently interactive activities. The street plaza is the neighborhood stage, with continuous activity, the path to
everywhere. Many cities today have miles of boring streets (or hallways) where no one would ever have any reason to sit on a porch. Here a sense of community will happen naturally. Porch watching will be fun while enhancing security. Education starts early. From porch watching, children will learn about people and how a community works. Only a five-minute walk from every home to the transit stop. Transit connects small cities, separated by 1 to 4 miles of farmland. Many small cities connected will form a new kind of rural mega city, with everything accessible to everyone. It is psychologically, physically and environmentally connected to and in total cooperation with nature. It opens up new ways for this city to directly benefit occupants. Traditionally, financing is favourable for up to four housing units. Once the permanent infrastructure bond is fully paid off, that part of monthly housing expense goes away, effectively forever! That also opens up fascinating new financing and low income assistance options. Neighbourhoods will develop local standards. If appropriate for local conditions, owners are free to further divide their building site into miniature housing for low or no income dwellers. It allows occupants to directly solve many sustainable development goals (SDG).

5. Provide conditions that release the human imagination
The objective over time, by providing flexibility and privacy, is to develop finely tuned self-contained human habitats that address every aspect of a city and life in it. Release everyone’s imaginations. Build prototypes in 3 to 5 locations in different parts of the world. Start with a single neighborhood module or more. We already have all of the construction technology necessary. We can build it today, on new land or deteriorated urban areas. If restoring urban areas, existing owners are entitled to space in new infrastructure. Favorite sections of their old home can be inserted into the new infrastructure. Container units are lifted from below the street plaza and placed in the backyards of building sites. They may contain construction materials or complete kitchen or bath modules, even a modular home. An orchard of full-size fruit trees could be lifted into well oriented backyards, lifted to roof for harvesting once a year.

High density high-rise cities can benefit from two of the important features proposed here, the permanent framework and larger private flexible building sites. Village qualities maybe harder to achieve in a high-rise, but that’s also another avenue for discovery. This proposal allows for refining the highest and best solutions for every challenge facing cities. That includes establishing an inherently interactive village quality of life in neighbourhoods. That may eventually extend to a higher quality of life for the entire city and rural mega city. There are too many possibilities to mention here. Public access is by elevator and sloping pathways to every building site. These pedestrian pathways accommodate small access vehicles. This city will remain liveable during good and bad times, with or without power or even during total economic or political collapse. Flexibility and privacy allow opportunity for people to meet continually changing objectives and introduce technical refinements that will eventually meet all SDG targets. It’s like a new urban frontier.

References
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