A Revised Climate for the Design of Cities
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The discipline of urban design represents a deep caring for the environment and quality of life of all people, enacted through design intervention. We are faced with both environmental and human crises[1], yet we hold great optimism regarding what humankind can achieve[2]. In the face of unprecedented changes and challenges, the design and development professions have done little to "step outside the box", to develop evidence- based design, nor to create meaningful places supported by a system of values. Schools of architecture seek the ground between an aesthetic magic and parametric modeling, while planning programs have a mantra of social equity and justice, yet rarely touching the needs and lives of real people. Landscape architecture struggles to get "out of the garden", mainly making it larger. Those preaching urban design often retreat to pastiche and historic misinterpretation of past urban form.

It is in the particular of cities, life, and complexity that urban design matters, offering greater choice and opportunity, and in particular hope and joy.

When those charged with responsibility to creatively intervene became detached from contact with city life, they lost their sense of value and relevance. Understanding the phenomenon of the rapidly evolving city, and how we have at times created unlivable and suboptimal places while damaging nature, and ultimately the planet, is where urban design should begin. A simplistic suggestion would be to reduce our carbon footprint, moving from "three planet living" to "one planet living" as a matter of edict.[3] Changing the nature of cities, however, has to emerge from a starting point of both understanding, and working with society. People are both conformists and explorers, relying on the familiar, but seeking adventure, even risk and uncertainty, a contradiction and balance city designers must both research and understand.

Daily activity patterns, decisions, movements, in fact a "choreography",[4] define the life of urban dwellers. They form a complex web of need and opportunity, - school, work, food, activities, family, and friends. This urban framework can be "read", and thus "navigated", or not.[5] The design of cities can offer choices, textures, and identity.[6] Alternatively, it can segregate, create barriers, establish preferred and less preferred districts, and allow danger, noise, and intrusion into a world of scale-less buildings, fast roads, privatization of space, air pollution, and all the many other decisions made that jeopardize and impact the human condition (except, often, for those deemed "privileged"). This approach does not imply everyone living in the same manner, but on the contrary welcomes difference, and a rich mix of economies, lifestyles, and opportunities[7]. It establishes a platform for sharing experiences that brings intelligence and judgement in fostering a different kind of society[8].

The most sensitive balance between conformity and change comes at the scale of the home. "Home" is not measured in number of units, density, poverty, or double loaded corridors,[9] or for that matter ostentatiousness. A "home" is adopted, personalized, private, filled with light, energy resilient, and with an "indoor/outdoor" opportunity.[10]

Figure 1: 2016 HUD Affordable Housing Competition (ref. endnote 10)

The central challenge is designing a new generation of compact homes, that capture the sun, support a wide range of lifestyles, provide private outdoor space, and are carbon- neutral. The starting point is a deeper understanding of urban living, - homework of teenager, mental health of lonely grandparent, homemade tacos for sale. Considering house as fiscal commodity has left people in less than satisfactory homes or driven them from the city altogether.

Figure 2: Section, Kleehauser, Vauban. South facing homes capture sun in a setting of communal spaces, gardens, and bike storage. (Ref. endnote 12)

A highly successful typology in urban homes has been the combination of the "passive house" groupings of homes aimed to bring about social engagement and a greening of the city.[11] An example of this is the *Baugruppen* design by Michael Gies, offering thirty-two affordable homes in Vauban, Germany, close to bike routes and transit, greening the city while keeping it compact.[12] Additionally, these homes are close to a variety of uses, - shops, offices, schools, cafes. These patterns of association and mix form "sandwich architecture"[13], potentially bringing substantial benefits in economy and lifestyle.

An analysis of city housing indicates there is no such thing as "affordable housing", house price inflation being rampant. One view of city development is that it is exploitative, ruthless, and secretive. On the other hand, our work with the McCombs Real Estate Center has fostered alternative ways of understanding opportunity and change in a given part of the city and can bring about development that is complex in its multifaceted nature, and provides social and environmental benefit. A solid *pro forma*[14] can balance feasibility, process, profit and benefit. By benefit we mean ways to leverage gain, as in not-for-profit housing, public facilities, open spaces, or environmental resilience. This partnership has led to our students making major contributions towards improving the quality of American cities. Our national finalist team in the ULI Hines Urban Design Competition in Nashville designed a development that harvested water in a floodable river district and opened opportunity for affordable homes while preventing flooding.[15]

Figure 3: 2014 Nashville Hines Competition National Finalist (ref. endnote 15)

Our national finalist Cincinnati team created a democratic and diverse city meeting venue and a net zero carbon district.[16]

Figure 4: 2019 Cincinnati Hines Competition National Finalist (ref. endnote 16)

Our Chicago national first place winners turned a toxic and declining industrial area into subsidized inner-city housing and food production[17].

Figure 5: 2017 Chicago Hines Competition National Winner (ref. endnote 17)

Qualitative and resource benefit-driven inner-city development is one key to the future, and a vital change in bringing real estate and city design together.

Our attitude and values towards mobility and its technology must urgently transform. Quality of health is closely related to patterns of mobility, and hence the design of cities. Air pollution and lack of exercise, combined with inadequate diet, have brought about a health epidemic. Despite innovation in automobile technology,[18] the future city has to reverse opportunity for automobile access and movement. Universally accessible, non-carbon, safe, healthy design for mobility is a key link between innovations in engineering, medicine, and urban design. Walking is the number one objective, supported by the bike. Inclusiveness, safety, and comfort in the walking environment alter the basis upon which we live in and design cities.[19] By addressing walking and biking to school we integrate smaller and more

personable schools into neighborhoods, stimulate activity without the need for a sports field, and encourage local shops and services along the way. This slower, more integrated sense of city leads to a form of cognitive understanding where familiar routes and places act as a platform for place attachment, while also allowing the possibility of confronting the unfamiliar[20]. If we need and wish to come into contact with a wider range of ages, lifestyles, and ethnicities, and reengage with nature, then here is the onset of that opportunity. While the temptation has been to garage a car in the base of one's building, the future city must be framed as a "transit city" with remote storage of carbon-free vehicles[21]. New smaller- scale retail, with architecture that addresses the street, will locate around transit stops, which become key locations for compact homes with access to jobs and amenities, and less stress. The School of Architecture has an intermediate undergraduate environmental studio studying city futures. A team working in a deprived part of San Antonio, flanked by freeways and with two predominantly minority high schools, repurposed the highway network to become an inner-city rail network, combined with bike highways and electric-driven delivery, all powered from the highway infrastructure. This acted as a catalyst, opening opportunity for affordable housing, urban farming, a market, and a new inner-city neighborhood.[22]

Figure 6: Repurposing Interstate Highway, Environment Intermediate Studio (ref. endnote 22)

In the planning profession's view, transit has largely been seen as a mechanism for city growth and commuting, and some would argue that it favors the middle class. Evidence shows this to be untrue. Transit brings benefits in universal accessibility, centralized economies, and flexibility, in affect being the reenactment of the adapted streetcar.[23] The whole city is a source of energy.

Figure 7: Brixton, London, Eco-Corridor Proposal (ref. endnote 24)

Only to a limited extent has the close relationship between food production, health, and economic opportunity been realized. Soul Food Street Farms, Lufa Farms, Singapore Sky Greens each demonstrate a multi-benefit revolution in city design through adaptive reuse to bring healthy and affordable food production ever closer to the urban table.[24]
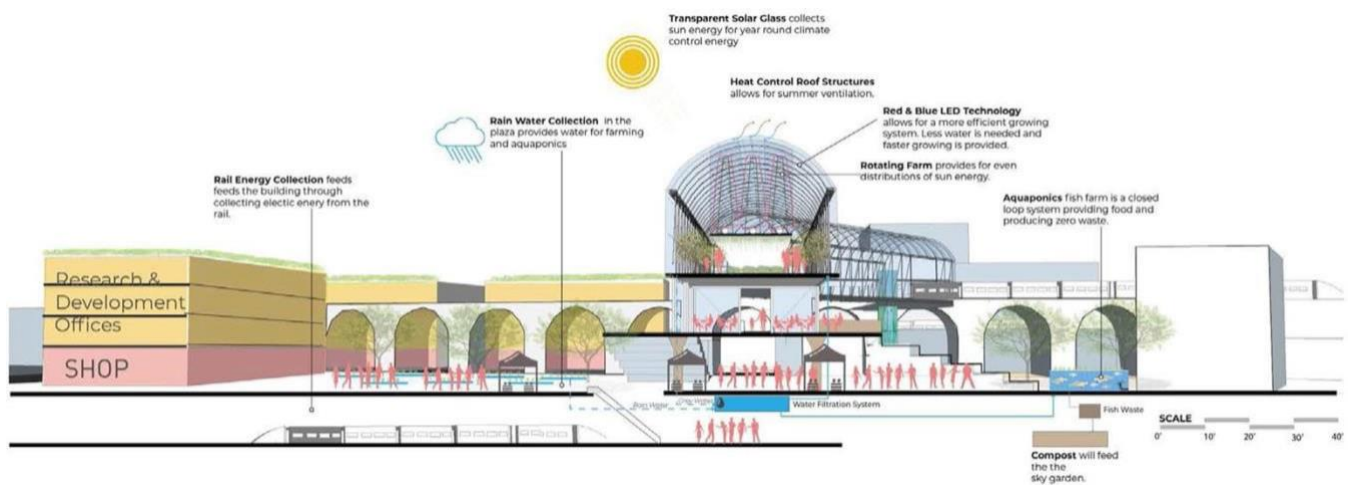

Figure 8: Brixton, London, Food Arcade (ref. endnote 25)

Of particular note are Soul Food Street Farms, in transforming contaminated and vacant land through food production, while simultaneously providing jobs and training to disadvantaged homeless persons. Vacant space, often in disadvantaged neighborhoods, can

bring a revolution in community gardening, in turn leading to a more engaged city.[25] Each surface of a building is a potential source of food or "greening" the city.[26] Green infrastructure cleans the air, counters the urban heat island effect,[27] reduces flooding,[28] and offers climatic comfort and a sense of wellbeing, as well as deepening our understanding of, and respect for nature.

Cities, in addition to nature, offer key resources for energy production. Rather than viewing cities as energy sinks with high carbon output, we can engage a net of geothermal, photo-voltaic skins, micro-turbines, rainwater harvesting, waste and energy capture from highways.[29] This is a key reversal of the design process in beginning with human benefit, in both access and affordability of energy, but also dramatically combining design intervention to combat the crisis faced by both nature and climate. In this sense, the most straightforward brings the greatest success, - solar technology, passive house design, water collection districts, and energy from urban waste.[30] Special reference can be made to Stockholm, where 70% of its energy comes from waste. This again emphasizes the need for the compact, integrated city, where pneumatic waste collection systems can be installed.[31]

This returns us to the more traditional ground of urban design -- grids, and composition of squares, style, and grandeur often leading to gentrification and exclusivity, - the curse of a sanitized, developer-driven world of security cameras and controlling notices. It also brings us to a question mark regarding the role of the academic in urban design.

We are in an urban crisis, ignoring future need and opportunity of almost all who live, or wish to live, and need to live in cities. Academics must move from largely unread, repetitive "research", supported by energy guzzling and expensive conferences, towards relevance. Universities must foster collaborative linkages to directly address key needs and opportunities in society. It is the ability to engage and invent solutions that safeguard and enhance the quality of life of all citizens, reverse climate change, and work in symbiotic relationships with nature that will define the university of tomorrow.

Abraham Maslow has been a hidden mentor since beginning to understand and work with *A Theory of Human Motivation*.[32] Here is an entry point, putting an understanding of city

design into a revised framework. His thesis defines a hierarchical pyramid from physiological need at the bottom to self-actualization at the top. Historically, the top of the pyramid with a focus on religion, laws, and the arts, would be a means to define city. Today, cities are struggling with famine, drought, poverty, and pandemic, - issues at the bottom of the pyramid. It becomes critical to realize the urgent need to reconnect at the level of neighborhood and district, to achieve Maslow's mid-pyramid definition of "senses of connection, love, and belonging" as a means of defining urban needs in terms of daily safety, community, and action at an engaged, inclusive, and grassroots level, - city design with the ability to define meaningful goals for effective change.

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[1] Gore, Al and Guggenheim, Davis. 2006, *An Inconvenient Truth* (documentary), Lawrence Bender Productions. Florida, Richard, 2018, *The Urban Crisis*, London: Oneworld Publications. Mallach, Allan, 2018, *The Divided City: Poverty and Prosperity in Urban America*, Wash. DC: Island Press.

[2] Sennett, Richard, 2015, Ch. 28 "The Public Realm", in *The City Reader,* NYC: Routledge. Hall, Peter, 2014, *Good Cities, Better Lives.* NYC: Routledge.

[3] Bioregional have developed a framework for One Planet Living, also ref. BedZED Ecovillage.

[4] Chapin, F. Stuart, 1974, *Human Activity Patterns in the City: Things People Do in Time and Space*, Hoboken: Wiley. Halprin, Lawrence, 1982, *RSVP Cycles: Creative Processes in the Human Environment,* NYC: Brazilier. Alexander, Christopher, Ishikawa, Sara, Silverstein, Murray, 1976, *A Pattern Language*, Oxford: Oxford University Press.

[5] Hillier, Bill and Hanson, Julienne, 1984, *The Social Logic of Space*, Cambridge, UK: Cambridge University Press. Jacobs, Jane, 1993, *The Death and Life of Great American Cities,* NYC: Random House. Cullen, Gordon, 1968, *Notation,* D. Hartford Press. Cullen, Gordon, 1968, *The Scanner,* Leicester: DeMontfort Press.

[6] Gosling, David, 1996*, Visions of Urban Design: Gordon Cullen,* Academy Press. Cullen, Gordon, 1971, *Concise Landscape*, London: Architectural Press. Lynch, Kevin, 1960, *Image of the City*, Boston: MIT Press.

[7] Sennett, Richard, 1992, *The Uses of Disorder: Personal Identity and City Life*, NYC: Norton Press. Ellin, Nan, 2006, *Integral Urbanism*, NYC: Routledge. Crawford, Margaret, Kaliski, John, and Chase, John, 2008, *Everyday Urbanism*, NYC: Monacelli Press.

[8] Sennett, Richard, 2012, *Together: The Rituals, Pleasure, and Politics of Cooperation*, New Haven: Yale University Press. Gehl, Jan, 2011, *Life Between Buildings*, Wash. DC: Island Press.

[9] A "double loaded corridor" arranges house units either side of a central passageway, rather like a hotel. This short term economy forces anonymous access, and single aspect apartment orientation in a number of cases with unacceptable living conditions. Sennett, Richard, 2019, *Building and Dwelling: Ethics for the City*, London: Penguin Press.

[10] 2016 HUD Innovation Affordable Housing Competition Winners Bret Clark, Brianna Garner-

Frey, Tatum Lau, Meagan Recher, Sarah Simpson.

[11] Voss, Karsten, and Musall, Eike, 2013, *Net Zero Energy Buildings*, Berlin: DeGrayter Press.

[12] *Baugruppe* is a form of cooperative group housing with diversified membership. *Kleehauser* is a passive house grouping of affordable houses consuming 500 watts of energy per person per week and designed by Michael Gies. *Via Verde*, New York, Dattner Architects and Grimshaw Architects, 2012, has 222 affordable apartments, roof gardens, retail, health center, live/work, common areas, Bronx, New York.

[13] Palsson, Karsten, 2018, *How to Design Humane Cities,* Berlin: Don Publishers.

[14] *ULI Ten Principles for Building Resilient Communities, 2018,* Wash DC: ULI. Webber, Steven, *Pro Forma Analysis and Resilience,* Canadian Institute of Planners Conference 2017.

[15] 2014 Hines Competition Finalist "Green Heart Village", Katie Summers, Yishwen Lo, Mark Nordby, Mitchell Peterson, Tarek Salloum. University of Texas at Austin.

[16] 2019 Hines Competition Finalist "The Landing", Trent Tunks, Hayley Brown, Victoria Freeman, Eric Joyce, Andres Manrique. University of Texas at Austin.

[17] 2017 Hines Competition Winner "Rooted", Christopher Perkes, Luke Kvasnicka, Miles Payton, Mason Rathe, Kirsten Stray-Gunderson. University of Texas at Austin.

[18] Ref. MIT City Car, MIT Media Lab 2013.

[19] Sim, David, 2019, *Soft City*, *Building Density for Everyday Life*, Wash. DC: Island Press. Speck, Jeff, 2019, *Walkable City Rules: Steps to Making Better Places*, Wash. DC: Island Press.

[20] Lewicka, Maria, "What Makes Neighborhood Different from Home and City? Effects of Place Scale on Place Attachment", *Journal of Environmental Psychology, Volume 30, Issue 1, March 2010, Pages 35-51.*

[21] Cerveo, Robert, Guerra, Erick, Al, Stephen, 2018, *Beyond Mobility, Planning Cities for People*, Wash. DC: Island Press. Gehl, Jan, 2010, *Cities for People*, Wash. DC: Island Press. Crawford, Joe, 2002, *Car-Free Cities,* Dublin: International Books.

[22] Hailey Algoe, Kaavya Chhatrapati, Cameron Young, "Metro City", Environmental Intermediate Studio, School of Architecture, University of Texas at Austin, 2020.

[23] Lucas, Karen, Martens, Karel, DiCionno, Floridea and Dupont-Kieffer, Arione, 2018, *Mealsuring Transport Equity,* Boston: Elsevier. Condon, Patrick, 2010, *The Seven Rules for Sustainable Cities,* Wash. DC: Island Press.

[24] Yuqing Yang, Ivan Xiang, Isabelle Donatelli, Erasmo Cantu, "Eco-Corridor, Re-Designing the Resilient Metropolis of the Future", Final Urban Design Studio, School of Architecture, University of Texas at Austin, 2019. A project for redesigning Brixton, Borough of Lambeth.

[25] Michelle Hipps-Cruz, "Brixton Food Arcade", with Jiaqian Yu, Andrew Curran and Andriy Grygorenka, Final Urban Design Studio, School of Architecture, University of Texas at Austin, 2019, a project for redesigning Brixton, London Borough of Lambeth. Waters, Alice and Duane,

Daniel, 2009, *Edible Schoolyard,* San Francisco: Chronicle Books. Whiston Spurn, Anne, 1984, *The Granite Garden: Urban Nature and Human Design*, NCY: Basic Books. Ref. Sole Food Street Farms, Vancouver.

26 Beatley, Timothy, 2010, *Biophilic Cities: Integrating Nature into Urban Design and Planning",* Wash. DC, Island Press. Kellert, Stephen, Haerwagen, Judith, Mador, Martin, 2008, *Biophilic Design*, Hoboken: Wiley Press.

27 Bulkeley, Harriet, 2012, *Cities and Climate Change*, NYC: Routledge.

28 Kelbaugh, Douglas, 2019, *The Urban Fix*, NYC: Routledge.

29 Farr, Douglas, 2018, *Sustainable Nation: Urban Design Patterns for the Future,* Hoboken: Wiley Press. Rudlin, David and Henani, Shruti, *Climax City: Master Planning and the Complexity of Urban Growth,* London: RIBA Press.

30 Dreiseitl, Herbert and Grau, Dieter, 2014, *Waterscapes Innovation*, London: Design Media Publ.

31 Ref. Envac, Stockholm, "Waste Management Reimagined". https://www.envacgroup.com/waste-collection- reimagined/

32 Maslow, Abraham, 2013, *A Theory of Human Motivation*, Eastford CT: Martino Fine Books.