

Dean's Roundup (Friday, 6 February 2015)

Roundup: *Ceiling function*, the mathematical operation of rounding a number up to the next higher integer.

Roundup: a term in American English referring to the process of gathering animals into an area, known as a "Muster" in Australia.

Rounding up: when a helmsman cannot control a boat and it heads into the wind

Roundup: the plan for an invasion of northern France by Allied forces during World War II (Wikipedia)

Dean's Roundup: part blog, part bulletin; part honour roll, part curatorial [cu'ra-to'ri-al (kyŏ̞r̥ə-tŏ̞r̥ə-əl, -tŏ̞r̥-)] *n.* nounised by the Dean from curator + editorial]

Dear all,

Earlier in January I was invited to give the 'wrapping-up' summary at an international symposium on heritage policy organized by RICS (our own Daniel Ho from REC was chair of the organising committee). Since Daniel had instructed me not to (re-) open the floor for questions, I found myself, instead, pushing the debate a little further. In so doing I suspect I may have caused offense. If you are reading this and were there and offended, I apologize. Professors are meant to profess, so nothing personal. The gist of what I said, as far as I recall, was as follows. There were two main points. They both exemplify the tight linkage between architectural conservation, property management and economics and this posting therefore nicely follows the decision at today's Faculty Board to innovatively merge our conservation programme with our property programmes.

The first of my points at the symposium related to the valuation of heritage assets. We may be surprised just how much the social value of any single heritage building in HK is, notwithstanding the relatively low historical or artistic value of most of our city's old building stock compared to older cities. Even low intrinsically valued community assets may have a high collective value if they are located in a dense population. The market value of a collectively consumed good is theoretically calculated by summing over individual willingness to pay. So if 1000 people in a village would pay 10\$ towards a fund to keep their local temple, the collective value of the temple, measured in this way, is 10,000 \$. If the land around the temple were redeveloped into high density apartments, housing 100,000, and each new house-holder expressed the same 10\$ willingness to pay to preserve the temple, then the market value of the temple's retention becomes 1M\$. So when the argument was raised at the symposium that HK land prices are too high to make a National Heritage Trust, or a Heritage Bond, workable, my comment was that while high population density leads to high land prices, it also leads to high aggregate heritage valuation. In my wrapping up, I noted that there are always two sides to an externality valuation problem (thus proving the usefulness of Coasian economics in generating off-the-cuff remarks about resource allocation problems). In fact, high land price can be taken as an objective indicator of high heritage bond fund potentiality and high demand for heritage trust subscriptions. The one can almost be taken as a surrogate of the other (assuming the heritage asset in question is of real social value and not only in the imaginations of heritage specialists or lobbyists).

The real problem in securing private funds for heritage buildings is not so much willingness to pay, but finding a suitable mechanism for allowing people to express that willingness to pay as actual payment. Here again, high density may be a help rather than a hindrance. Theoretically and empirically, willingness to pay to conserve something is a function of several kinds of value: use value, reservation value and existence value being the most important. You may be willing to offer a contribution towards a building's conservation either because you visit and admire the building ('use' it as a heritage asset); or because you might use it one day; or because you value its mere existence regardless of whether you ever visit it yourself. You might also value it as something that other people enjoy – altruistic use value, or altruistic reservation value. One could extend this further. Use value, in turn, has empirically been shown to be a function of frequency of use and distance to the heritage site. For a given individual with a certain set of preferences and a given heritage asset, the individual's use value expressed as willingness to pay to use (measured by actual or proposed fee or by travel and time expenditure) will fall with distance. Space matters. So in a high-density city, market (aggregated) use value will theoretically be higher than for a low-density city, even with the same set of people and the same assets. There might also be an argument to say that existence value *increases* with population density, *ceteris paribus*, because for a fixed set of heritage buildings, higher housing and population density means, by definition, greater scarcity.

So my first challenge was not to dismiss collective financing for heritage buildings in HK and other such cities (a private Heritage Trust Fund had been dismissed during the symposium discussion).

My second point flowed from the idea that heritage values rise with population density. If the value of the Central Police Station to the entire HK population is, say 7 Billion HKD (each HK citizen is willing to pay 1000\$ to secure its future), then why on earth would the government insist that the program in the renovated building is run by an NGO? (That's where the 'sorry' was due). Why would the organizers of such a precious national asset not want it to be managed, run, maintained and developed by professionals who are experts in doing this effectively and efficiently?

Responses on a postcard (to Daniel or Hoyin).

Thanks to all those mentioned below for your contributions and achievements. Both multi-media clips are worth a look: David Lung as a very smooth presenter on his vernacular architecture Massive Online Open Course film: <http://youtu.be/hRelfmREuMM>; and Yan Gao's futuristic shape-optimising robotic space-frame: <http://youtu.be/mlQ6ltZROAc>

Chris

Architectural Conservation Programmes

1. Dr. Hoyin Lee

- Invited by Radio Television Hong Kong (RTHK) to write a series of short articles (in Chinese) for the website www.LiberalStudies.tv (香港電台「通識網」) as readings for students and teachers for the Liberal Studies curriculum in Hong Kong's Senior Secondary Education. Three articles published to date; the latest published on 2 February 2015. See: http://www.liberalstudies.tv/blog/ls_blog.php?mode=showThread&id=2478&mother_id=862.
- Invited by the Chartered Institute of Buildings (CIOB) to give a lecture entitled "Integration of Old and New: Innovative Design for Adaptive Reuse of Heritage Buildings"; held at the Federation of Youth Groups Buildings, 28 January 2015. See: <https://www.facebook.com/events/917946741550161/>. (Attended by about 80 CIOB members)

Department of Architecture

1. Mr. Yan Gao

- his research paper titled "Integrated Open Source Design for Architecture in High Density Housing Practice" (JCEA-E 20141106-1) has been accepted by Journal of Civil Engineering and Architecture, subject to minor revisions.

Abstract: *Housing is a collection of individual units based on negotiation between global standardization by the designers and local customization by the users after occupation. Due to the economic, industrial and time constraints, it is impossible to reflect users' different needs in the design stage for high density housing. In response to this challenge, this research paper argues that the high density housing design can adopt the individual customization by the users in the design stage without paying significantly extra cost, hence the design process could be an open-ended evolutionary and transparent process rather than deterministic execution. To overcome the deficiency in addressing the future uncertainty by different users and the one-off development without the interactive mechanism for users' feedback in the sub-sequential housing design and procurement, This essay proposes Integrated Open Source Design for Architecture (IOSDA) for housing design practice based on collective data and parametric connectivity between the end users and the designers, discussing how to integrate top-down mechanism with designer's empirical inputs and the bottom-up ecosystems with users' participation in high density housing design. IOSDA reflects a different attitude to design the future, which shifts from heroic prediction of the future to engaging the present grassroots, from board proactive reaction to the capacities for new possibilities.*

- his recent research project was exhibited in the Shanghai Minsheng Gallery recently. The title of the exhibition is Robotic Future.

The general introduction and the video link is available for viewing at <http://youtu.be/mlQ6ltZROAc>

Intelligent Wave:

The breakthrough of this research project is that, those Pyramid-like cells that are repeatedly connected under the triangulation structural principles and geometric constraints, are capable to generate infinite global reconfigurations of both the spatial structure and the unpredictable aesthetic pattern, that emerge depending on the force pattern during the time laps, meanwhile the whole assembly can maintain the characteristics of a stable structure every time when the external power stops, through the sophisticated component assembly under finite geometric rationale. There are no delicate high tech pistons, which are often the solution for a contractible structure. The local sliding triggers the global motion, leading to sub sequential complex combination of rotation.

The control system of the Intelligent Wave is the consequence of a variety of transformational process through Adurino via Firefly plug-in to Grasshopper. This control mode also offers more possibilities for different data input sources, such as environmental sensors, in order to trigger the self-organized structural transformation as potential response to changes of human needs and environment, etc..

Besides the breakthrough of the relationship between the structural form and geometric constraints, Intelligent Wave demonstrates alternative approach in employing the 3D print technology from those who have been trying hard to pronounce the revolution of 3D printing methodology in the field of architecture nowadays. Under the obsession of 3D print, many have been scratching their heads for getting extreme complex forms, yet unfortunately often ends up with simple design ideas deviated from engagement of the more complex complexity in the real architectural practice, i.e. the inevitable assemblies of different materials and systems, which are connected together to perform functionally and aesthetically in the more sophisticated architectural context.

The goal of Intelligent Wave is to achieve an effective synthesis of the theory of complexity & emergence, architectural systematic design, digital fabrication, structural form, material & tectonic design and, automatic control system.



2. Ms. Tris Kee

- was interviewed by Ming Pao Daily on design sustainability issues in Hong Kong and Singapore



- was invited to the Legislative Council to receive the Lord Wilson Heritage Trust Fund on 3 Feb 2015.

3. Mr. Anderson Lee

- has been selected as the recipient for the Faculty of Architecture Outstanding Teaching Award. Anderson is a popular teacher well known for his challenging and engaging style in fostering students' independent thinking and developing their potential. His excellence in teaching is evident not only in his consistently high scores in Student Evaluation of Teaching and Learning, but also the international awards won by his students.

4. Professor David Lung

- Professor Lung has produced a trailer on his Massive Open Online Course (MOOC) titled "The Search for Vernacular Architecture of Asia Part I", it is available for viewing at <http://youtu.be/hRelfmREuMM>.

Please note that Part I of this MOOC will be officially launched in April and for Part II, it will be launched in September this year.

Division of Landscape Architecture

1. Scott Jennings Melbourne

- Had accepted for publication his paper "Resort Urbanism: The Role of Landscape in Hong Kong's Discovery Bay" in LA+ Interdisciplinary Journal of Landscape Architecture (University of Pennsylvania). Accepted December 2014.

Abstract: *Hong Kong's Discovery Bay presents an emergent typology for integrating urban growth at significant densities within a rich topographic condition. A mixed-use development primarily devoted to residences, Discovery Bay manifests commercial success even as the collective project highlights risks in combining urban convenience with landscapes of leisure before more comprehensively establishing the social structures of community. Within the context of an increasingly dynamic Southeast Asia, it is critical that successful, if imperfect, developments like Discovery Bay are investigated as living experiments that may inform future growth patterns throughout the region. As a built work with more than three decades of expansion and inhabitation, DB (as Discovery Bay is colloquially called) is also relevant to designers and planners beyond this territory who may recognize within the development, relationships and ideas worthy of adapting to different climatic and economic contexts.*

Department of Real Estate and Construction

1. Dr. Wilson Lu

- Conducted a DBA (Doctor of Business Administration) examination for Southern Cross University, NSW, Australia.
- Published a report "Flanagan, R., Jewell, C.A., **Lu, W.S.**, and Pekericli, K. (2015). Auto-ID - Bridging the physical and the digital on construction projects. Chartered Institute of Building. ISBN 1853800191. 38p".

Abstract: *Automatic-identification (auto-ID) technologies are part of everyday life, yet the construction industry has been slow to adopt them. Lots of reasons can be offered for the lack of take-up, ranging from too expensive, not enough time to learn the new technologies, to lack of opportunity. However, it is a robust technology that is transforming business processes, offering an opportunity to use data and information more efficiently, reliably, and effectively. The travel, retail, finance, and manufacturing sectors all use auto-ID technologies in their business. Car production lines could not function as efficiently as they do without auto-ID, similarly air travel would be more difficult without the luggage, freight, and boarding passes being automated. Construction needs to be at the forefront of the advances in auto-ID, demonstrating that it is an exciting and innovative industry.*

This report looks at how auto-ID has evolved and how it can be used in the construction industry and across projects from the perspective of all the stakeholders, from owners to design consultants, contractors and the supply chain. It could help to improve efficiency, reduce costs, ensure quality, protect the environment, and enhance safety.

Auto-ID is an enabling technology, where three categories of effects can be identified: automational, informational, and transformational. Data and information are at the core of every consultancy and construction business where it is necessary to use data and information more effectively.

The technology is equally applicable to small, medium and large enterprises. It can be affordable, available, reliable, robust and user-friendly. It does not require a large IT department to implement it; it requires motivation, an open mind and a desire to improve the business. With a little effort, the first steps can be taken. Progress in mobile technologies has opened up greater possibilities for on-site use.

Construction projects have always been a challenge to deliver safely, on time, on budget and to the right quality. However, there are new pressures to ensure sustainability, safety, and ethical responsibility. There is more legislation imposed by government on issues such as planning gain, disposal of waste, and landfill tax. The office and the job site have to handle more data and information, so there is the need for real-time information, visibility and traceability. Accurate information is needed to track materials, workers, machinery and site progress. Auto-ID is a technology which will transform the way that projects can be delivered.

The report will be sent to all the CIOB's members. Online publication at <http://www.ciob.org/sites/default/files/Auto-ID%20Book.pdf>

Department of Urban Planning and Design

1. Dr. Mandy Lau

- Published a paper with following details:

Lau, M.H.M. (2015) "Tackling uncertainties in plan implementation: lessons from a growth area in England", *Town Planning Review*, 86(1), pp. 7-28.

Abstract: *This paper investigates the challenges of tackling multiple uncertainties in strategic plan implementation. Through a case study of a planned urban extension in the east of England, the paper examines the approaches that were adopted to tackle different types of uncertainties, including value uncertainties, organisational uncertainties and external uncertainties. The findings suggest that strategic, sub-regional plans are particularly vulnerable to external uncertainties, and that it is difficult to address external uncertainties through contingency plans, given the impact of political changes on the legitimacy of value assumptions underpinning each plan period. Nevertheless, the findings indicate the importance of mature, multi-actor partnership arrangements for development plan-making and implementation, which can facilitate the mitigation of organisational uncertainties following implementation failure. This implies that effective plan implementation is less about the circumvention of undesirable uncertainties, and more about the capacity to deal with the ongoing, recurring emergence of multiple uncertainties.*

2. Mr. Zhong Teng (PhD student)

- The New Urban Researchers' Seminar Series (NURSS) held its third public seminar on January 29th, 2015. Prof. Tang Guoan, Dean of School of Geography in Nanjing Normal University, was invited to give a seminar titled "The Beauty of GIS". Faculty members, research students and master students from DUPAD, Department of Geography, and Department of Civil Engineering attended this seminar.



3. Dr. Jianxiang Huang (PI), Visiting Architectural Science Professor Phil Jones and Dean Webster have been awarded a Post Doctoral Fellowship post for two years under the 33rd Round PDF/RAP Scheme to undertake cross-disciplinary research into Built Environment, Health and Healing. Honorary Professor Stephen Lau will also be involved in this project.
4. Dean Webster, and the newly constituted Greenery and Health research cluster based in the Division of Landscape Architecture has had a paper accepted by Landscape Architecture Frontiers:

Chris Webster¹ Chinmoy Sarkar¹ Scott Melbourne¹ Matthew Pryor¹ Dorothy Tang¹ Nezar Kafafy² (2015) Green equals healthy? Towards an Evidence Base for High Density Healthy City Research. **Landscape Architecture Frontiers (forthcoming).**

¹ HKUrban Lab, The University of Hong Kong, Knowles Building, Pokfulam Road, Hong Kong.

² Faculty of Urban and Regional Planning, Cairo University, Giza City 12613, Egypt

Abstract: *In this paper we set out a systematic and authoritative review of the underlying logic for the widespread and historic claim that green=healthy. First we review fourteen possible causal pathways from green to healthy, drawing on published empirical studies. Evidencing such pathways is necessary for interpreting more direct links measured between greenery and health outcomes. Second, we examine the mounting published evidence, much of it in the medical literature, for those greenery-health links. We review studies that attempt to show objective changes in health outcomes (for example obesity) that are statistically associated with variations in, or changes in, green space. To add insight to these two reviews and to help the shaping of future research in this area, we also offer a critique of methodologies used in such studies. We conclude that the time has never been better to link landscape-health research to well-funded, large scale public health research and that to build a reliable and convincing evidence base, landscape architects need to work in multi-disciplinary teams with public health scientists.*