

**Dean's Roundup:
Special Roundup on Design-related Research**

23 January 2017

*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 (kyŏr'ə-tŏr'ē-əl, -tŏr'-) n. nounised by the Dean from curator + editorial]*

Dear All,

I would like to use this Dean's Roundup to circulate some interim ideas about design-related research. They are directed specifically at colleagues who are thinking of submitting design output in the forthcoming mock RAE, but they will also be useful to colleagues who are preparing for design-related tenure and promotion applications, and of more general interest to colleagues who are not designers. As you will read below, this is the first step in a more formal process of revising FoA's Design-Research position statement. They represent my personal viewpoint, which is only one input into the final position statement.

1. Background

The background is as follows.

- **Faculty Review:** Nasrine and I are working on a revised Design-Research FoA position paper as recommended by the FR panel. Nasrine is commissioning a set of papers from alternative perspectives within DoA. I am drafting a framework paper, from which the thoughts below are taken, aimed at setting the design-research relationship in an external context that (a) can be clearly understood by academics outside architecture and the built environment and (b) takes account of the considerable published debate on the issue in the design theory and related literature.
- **RAE:** FoA's mock RAE website is now open for you to submit your research outputs online <http://fac.arch.hku.hk/MocRAE2017/> There have been a number of organised discussions about design-research in FoA over the past three years, resulting among other things, in ad hoc advice to elaborate on FoA's existing design-research paper, offered to give those submitting tenure applications with a design portfolio better insight into the demands of PTP and USPC evaluation panels.

An expanded version of those guidelines is given in section 3 below. These guidelines are not final but they attempt to take into account the reality of views and perspectives of the faculty-level PTP and university-level USPC panels when evaluating design portfolios. They also take account of the framework paper I am drafting (which should be ready for consultation and feedback after Chinese New Year). I have no doubt that some of the guidelines are controversial. If they do not reflect your own view, please do not dismiss them out of hand. I present them as

an example of a set of guidelines that will help align FoA practices and individual research agenda with viewpoints that are external to FoA and external to the academic architectural community.

One of the key arguments in my forthcoming framework paper is as follows.

2. A conundrum in architectural research

The persistence of the research-design *problem* in architecture schools arises from a three-pronged conundrum:

- a) The process of design relies largely on the application of tacit knowledge and tacit methodologies. There are, of course, exceptions such as parametric design algorithms and formulaic processes. Design theorists are unanimous in their view, however, that it is the tacit nature of design knowledge that makes design such an effective and efficient mode of learning, thinking, problem solving, planning, designing and making. To simplify: designers start with holistic solutions and test fit by iteration. Scientist start with rules and test fit by systematic combination of solution elements.
- b) Students can therefore only be satisfactorily trained as designers through processes of tacit knowledge and tacit method learning (trial and error with one-to-one feedback and/or master-apprentice models). Effective and well-resourced architecture schools will therefore tend to want to recruit academic staff who have both the tacit knowledge and skills of an excellent designer and the ability and personality to inculcate these to students.
- c) This goes flatly against the mission of the world-class research-intensive university, which is to recruit academics who are known for the quality of *codified* (not tacit) knowledge arising from their published research and research-related teaching. The production of quality-controlled *codified* knowledge is the most important goal of systematic academic research across all disciplines. Academic research has emerged over the centuries as a distinct mode of knowledge production that is concerned with producing data, information, ideas, propositions, axioms, hypotheses and theories tested (in many different ways) for validity (accuracy) and reliability (robustness, reusability, etc). The traditions of academic research have also evolved to effectively pass this knowledge on to students and to subsequent generations of researchers and scholars. This description of academic research are as true for the humanities using literary data and methods as it is for the social scientist using ethnographic and other qualitative approaches, scientists using experiments and surveys and engineers using prototyping fabrication-testing methods.

Facing this difficulty, some architecture schools in the past have sought to plead a special case when it comes to research assessment and promotion and tenure. The special case is, arguably, not only logically ill-founded but practically counter-productive. It has only partially served the interests of FoA, inadequately guiding designer researchers in both RAE and tenure. How can we build a more robust argument for design research?

One of the more compelling arguments is found in Nigel Cross's *Design Studies* paper (1982), where he brilliantly notes that the designed object is itself a piece of embodied knowledge. This allows us to admit that making a building is not research (RIBA's position – see the report cited at the end of this document). Although academic research findings might contribute to designing, the process of designing is not academic research. It cannot be, as the intrinsic strengths of designing, require it to stand apart from systematic knowledge production. Instead of making an indefensible argument that design *is* research, we can instead make the argument

that tacit knowledge and methods are legitimate and necessary for the designer and should be championed and honoured as much as research. One objection to the *design is research* position is that it demeans design. Claiming design as research in a tenure or RAE submission can obscure the issues and result in excellent design being graded as poor research. We have to go further than this, however, since a distinction must be made between the role of the designer inside the university and that of the designer in the city. One way to make this distinction is to insist that academic research should focus on either the designer's method or the designer's products. Either way, the purpose of academic research aligned to design can be said to be: unpack and codify, critique and test, describe and classify, deconstruct and reconstruct the *designerly* thoughts and activities at the heart of architecture. This seems to me to avoid all three of the 'myths about architectural research' identified in the RIBA position paper: (i) *Architecture is just architecture* (we are a special case so leave us alone); (ii) *Architecture is not architecture* (architectural research is essentially a collection of scientific, cultural studies, computational, historical and other modes of research); and (iii) building a building *is* research (RIBA).

The practical outworking of this idea means that if you wish to submit a building or an unbuilt design in your research portfolio, it needs to be accompanied by academic interpretation. This may be your own commentary or another author's commentary on your work. That commentary must abide by the widely accepted rules of academic scholarship and research: it must reflect in a scholarly way on either your processes of planning, designing and making or on the knowledge embodied in the designed or made object. You will need to demonstrate that your research is rigorous, original and significant (academically and socially). This means being intellectually rigorous when commenting on your own works and design methods, such as citing ideas that you use in the same way as expected of an academic paper; being self-critical; showing how your contribution adds to the existing body of published knowledge; adopting appropriate analytical approaches and methodology; relating your work to big themes; using it to test hypotheses; using it to build theory; using it to explore research questions and issues; and so on. If your design is significant, it is reasonable for RAE/PTP/USPC evaluators to expect that other authors will also have publicly commented on it – via articles that review your work in a scholarly way. Evaluators from other fields will see this as analogous to citations of an academic research paper.

More of all this in the coming weeks when Nasrine and I bring together our various contributions as a basis for wider consultation within and outside FoA. In the end, I shall leave it to DoA to attempt to synthesise a workable, helpful and rigorous position. I will support DoA's collective position so long as it is defensible to outside critics and efficacious in guiding individuals toward successful tenure applications and in guiding DoA towards successful external research evaluation.

For now, here are some tentative guidelines for design-related research submissions. If you have any questions about them, please let Nasrine and I have them. In that way, the guidelines below can be part of a consultation exercise in putting together FoA's new design-research position paper.

3. Guidelines for design related researchers

A well-founded architectural school in a research-intensive university will have a mix of those who can teach design and those who can teach the analytics needed to test, critique and improve design knowledge and methods. These are not necessarily the same people. Academic architectural research may focus on: **research for design** (materials, architectural history, building science, spatial analysis, environmental analysis, cultural studies and so on); **research**

about design (forensic and critical studies of design through analysis of buildings, experimental studies of design methods, philosophical studies of designs, designers and designing, and so on); **design as research (design as a systematic research methodology)** (systematically investigating the results of alternative design approaches in answering research questions and solving problems). Design as a research methodology is distinct from research about design, since a researcher may use design as a research method without researching about design.

3.1 Submitting designs as part of a research portfolio: General guidelines

The practice of architectural design is not, in itself, research. As an academic, a designing architecture teacher might be expected to:

- Design significant buildings or urban designs
- Train students to become designers
- Research, through intellectual analysis structured by rigorous method and a concern for data and knowledge quality, questions about designs and designers; and by these methods, thereby produce and disseminate tested, codified knowledge of significance to academics, students, practitioners and a wider audience
- Undertake research into other architectural, scientific, socio-cultural and urban questions not directly related to design.

What this means is that an academic research portfolio containing designs has to be accompanied by outputs from one of the three categories above: research *for* design, research *about* design, design as a *research method*.

Bearing all this in mind, if you are thinking of submitting design-related research outputs for an annual PRD or the quinquennial RAE, you might want to consider the following:

- Your design is unlikely in itself to be considered a product of academic research.
- The research undertaken in preparing for the design is unlikely to be, of itself, considered to be academic research.
- If it is, i.e. if you have conducted original and rigorous research using formal methods in order to establish the veracity of some aspect of your design, then this should be published in an academic journal.
- Although the design itself, is not a research output, it *is* an embodiment of knowledge. If it is a significant design, (embodying significant knowledge) it is worthy of research (research that asks the question ‘why is it significant’ in various ways).
- As an academic designer, it would be reasonable to expect you to systematically reflect upon and research your own designs and design processes and attempt to explain them in ways that produce testable knowledge or at least knowledge that can be built upon by others.
- This will probably also lead you to do the same for other designs and designers.
- Researching your own designs in order to produce lasting knowledge is quite different from self-commentaries by architects who seek to build their own mystique by (sometimes obtuse) prose or poetry. Poetic commentary may be a legitimate part of the artistic production but this should not be confused with intellectual commentary designed to clarify the questions that people will ask of the design in order to learn how to make better designs.
- Your design, as a piece of knowledge, will be read by many types of people. As a practicing architect, you may intentionally and legitimately refrain from guiding their interpretation. But as an academic researcher, you will want your design to contribute

to the extension of the general caucus of architectural knowledge and so you will want to explain, not obscure.

- A significant piece of design, submitted as a contribution to knowledge, will be accompanied by your own research-based commentary (citing precedents, theory and other forms of existing knowledge and showing how your work takes the field forward).
- It will also be accompanied by commentaries by other academics, published in journals, professional magazines and book chapters, in an analogous way to significant peer-endorsed knowledge produced by scientists being cited in other scientists' research works.

3.2 Research *for* design: Specific guidelines

Research *for* design spans all fields of knowledge. Academic architectural researchers will need to choose appropriate research methods: humanities or scientific; qualitative or quantitative; inductive or descriptive statistical; cross-sectional or longitudinal; case study or survey; prototyping or analytical; deductive or inductive; empirical or theoretical; exploratory or confirmatory; textual or numeric; and so on. It is reasonable to expect that a significant amount of research undertaken in a school of architecture will be 'research *for* design'. For this reason alone, if not for the sake of general educational goals, architecture students and researchers will need to be familiar (not necessarily expert in) the whole spectrum of research methods. It is unhelpful to construct an architectural research curriculum that does not map onto the research curricula used by the rest of academia.

3.3 Research *about* design: Specific guidelines

Cross (1982) suggest three foci for research about design: people, processes and products

- design epistemology – the study of designerly ways of knowing
- design praxeology – the study of practices and processes of design
- design phenomenology – the study of form and configuration of artefacts

There are many variants of this scheme, some focusing more on the designer; others on the designed object; others on the design method; and others on the design context.

3.4 Peer review of design-related research: Specific guidelines

Here are some thoughts to help construct peer-review evidence in design-based research portfolios, with suggested equivalences between design-based research and scientific research. These are only suggestions, not prescriptions.

- References by other authors to your own published commentary on your own design work should be counted as citations using the standard academic convention practiced in all fields of research. You should report the number of citations to a paper you have written about your own work(s) as a measure of academic impact of that paper (and by deduction, of the impact of that design or body of design work)
- Having your design reviewed by someone else in a journal paper, book chapter or professional magazine is equivalent to a science researcher having a paper cited: someone is using the knowledge embedded in your design to generate new knowledge by critiquing your design.
- A 'citation' of (reference to) your design may be a full article of several pages or a more passing reference. Both are valuable measures of the quality/usefulness of your work.
- The number of reviews of, or mentions of, your design is therefore equivalent to the number of citations to a scientific paper

- Your review of someone else's design may be counted as a *research about design* research output if it is sufficiently substantive and disseminated in an appropriate publishing outlet. It becomes a 'citation' of someone else's work.
- An exhibition of your design is equivalent to publishing a scientific paper, in the sense that you are disseminating the work for critical appraisal.
- The textual and other explanation accompanying the exhibition is your own contribution to *research about (your) design*. Without this, an exhibited work is unlikely to be considered academic research.
- Other author's reviews of your work (academic, professional, journalistic) are equivalent to citations to a scientific paper.
- A local exhibition is equivalent to publishing a paper in a local journal or an international journal with no or low impact factor and low reputation and is unlikely to be rated more than 2* research. Exhibiting in a national exhibition of international reputation or an international exhibition with good but not the highest reputation may be equivalent to publishing in a high impact international journal and is likely to be regarded as 3* research. Exhibiting on the main stage of the world's top venues is equivalent to a 4* publication on the assumption that the exhibited work will have passed through multiple layers of scrutiny by the world's leading experts.
- Curating an exhibition can be thought of in the same way: the academic contribution needs to be rigorously stated and peer reviewed and 1* to 4* rating follows the degree and quality of peer review using the fame and standing of venue and reviewers as an indicator.
- Receiving an award, commendation or nomination for your design (built or otherwise) in a local competition is equivalent to having a scientific paper cited by another author: your work has been singled out by someone else and recorded as having merit for specified reasons. The merit is recorded publicly for others to learn from.
- Receiving an award in a more prestigious competition with national, regional or international reach is equivalent to receiving a prize-paper award for a scientific paper in an international journal. It may help establish the design as 3* or 4* depending on the degree of rigour and reputation of the award.
- Academic impact and social impact of a design should be assessed as two different phenomena. Academic impact is measured in the ways suggested above. Social impact may be measured, for example, by exhibition attendance numbers, journalistic citations and coverage and so on.
- Measuring academic impact of built works follows the same rules as above – citations by other authors, awards etc.
- Measuring social impact of a built design should acknowledge the scale, importance, location and other features of the design. The dollar value of the scheme would seem in most cases to be a crucial indicator; as is impact-related information about the client. A built work in a more prominent location means more quantitative social impact in terms of people affected by your design. There may be ways of evidencing qualitative social impact too, such as popular awards and prizes (as opposed to academic awards or awards from the architectural profession), journalistic coverage and so on. The economic success of an urban design scheme as measured in property values, reduced property voids and increased footfall and turnover would be an appropriate measure of social impact; as would the scheme's citation by a national policy document or set of guidelines; or the scheme's innovative solution for redressing housing poverty, for example.

3.5 What *not* to do in compiling your design-research portfolio:

- Don't use superlatives or hyperbole to claim significance, rigour, originality or impact: let the evidence speak for itself. Evaluators will be put off by self-claims.
- Don't make it too long. Evaluators will assume you are disguising a weak submission.
- Don't give too much information. Your claim to originality, rigour and significance (academic and social) can probably be conveyed in a concise abstract, with a reference to the published work(s) where you have elaborated the academic/intellectual case.
- Don't make it complicated. Ideally, focus on one claim to academic contribution per design (or two or three at the most if you must).
- Don't make your claims in *jargoness*. If you can't convey its significance in lay terms, it probably isn't significant. Use technical terms if that makes your explanation more efficient, but not jargon. Technical terms simplify clear narrative; jargon complicates and obscures and will alienate most evaluators.
- Don't use your own bibliographic referencing style: use a standard style (Harvard is best).
- Don't fill a portfolio with images. You are not trying to convince the evaluator of the beauty and other merits of your design; you are recording evidence of how the design has been received by peers and public. From this point of view, arguably your submission should only contain one image of each work being submitted, presented for the purpose of visually communicating to the evaluator which building/scheme you are referring to.
- Don't list other people's articles that cite or discuss your designs under your own list of publications (a surprising number of PTP submissions in FoA have done this). These are citations to your work, not your own work. You count them and record them as a number along with other descriptions of your design's impact. In your CV, you may want to keep a bibliographic record of these as some people do for their scientific papers, but since these citations will grow to the tens or hopefully hundreds as you progress in your career, this becomes unwieldy and certainly not appropriate to include in a PTP or RAE research portfolio
- Don't claim monographic authorship of an edited book. This is another common mistake or confusion in PTP submissions. Architectural books often contain essays and self-commentaries on design works by multiple authors, with section commentaries and other chapters penned by the organiser. These are sometimes presented as authored books by multiple authors (confusing to evaluators), or worse, the names of the authors are not mentioned, giving the impression that this is a sole-authored monograph when it is not (alienating evaluators). Such works should always be presented as edited books. The organiser is the editor. The book appears as a research output using the standard bibliographic format for an edited book. If you have written a chapter in such a book organised by someone else, your essay should be listed as a chapter in an edited book. If you are the organiser and you have also contributed an introduction, one chapter covering your own design project, three section introductions and a concluding essay, then you record seven separate research outputs in your CV, PTP and PRD submission (edited book, and six separate chapters). You pick one of these for your RAE submission (the edited book would be the most impressive). If one of your chapters is of very high quality in terms of originality, rigour and significance, then you could risk submitting it as a second PTP or RAE output, but it must be easily understood to be a distinct intellectual contribution to the edited book as a whole.
- Don't claim as your own, work that has been co-authored by someone else including your professional partners, students and employees, without duly acknowledging them as co-authors. Again, this is a common mistake/confusion in FoA PTP portfolios.

Jointly authored work (design or otherwise) is perfectly acceptable so long as it accurately attributes contributions and effort. Because of the large size of teams in STEM research, particularly bio-medical, and the long lists of authors (running into the hundreds in the extreme), it is now required practice in most scientific publishing to state your contribution alongside a bibliographic entry in your CV/PTP/PRD record. In science, other conventions help this, such as the lead researcher being listed first in the author list, corresponding author listed second if different, and lab leader or PI listed last. Others may be listed in some rough order of contribution in between or listed alphabetically. Adding an approximate % contribution is also good practice in many fields. Design outputs in a research portfolio should find an appropriate way of following these good practices and ethical principles.

References

Cross, Nigel (1982). "Designerly ways of knowing". *Design Studies*. **3** (4): 221–7. doi:[10.1016/0142-694X\(82\)90040-0](https://doi.org/10.1016/0142-694X(82)90040-0).

RIBA What is architectural research? Architectural Research: Three Myths And One Model

<https://www.architecture.com/files/ribaprofessionalservices/researchanddevelopment/whatisarchitecturalresearch.pdf> (accessed January 23rd 2017)

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