

Towards demystifying the “black box”: body as site

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The architectural critic Reyner Banham (1922-1988) famously equated architectural education to a mysterious ‘black box’, a notion compounded by most beginner students being novices to the architectural disciplines and the studio. Initiating meaningful design processes in the studio is therefore one of the challenges facing staff. This article reflects on one approach where the student’s own body is appropriated as ‘site’. Students are invited to challenge a textual brief by designing and making an item of temporary adornment for themselves using recycled materials. They are encouraged to generate conceptual scenarios, to clarify intent and to investigate materials, production and presentation. Upon completion the maker parades the product and presents a verbal statement. Students eagerly engage with the project, despite the apparent frivolity that belies a pedagogic agenda: while facilitating the emergence of creative intentions, the project introduces the notions of concepts and generative processes, making as activated thinking, references to materiality and tentative normative positions. Before the curriculum escalates to unfamiliar and complex environments, the designer’s inner and outer self is explored and expressed in terms of the familiar context of the designer’s own body. As such it serves as a calculated primer from which to demystify Banham’s ‘black box’.

Key words: architectural education, ‘black box’, design, first year studio, human body

’n Poging tot blootlegging van die ‘swart kas’: liggaam as terrein

Die argitektuurkritikus, Reyner Banham (1922-1988), het argitektuuropleiding kennelik met ’n geheimsinnige ‘swart kas’ vergelyk. Sy siening word verreikend as mens in gedagte hou dat die meeste eerstejaarstudente groentjies in die argitektuurdissiplines en die ateljee is en dit dus ’n uitdaging vir dosente is om hulle sinryk by ontwerpprosesse in te wy. Hierdie artikel besin oor een benadering waar die ‘terrein’ tot die studente se eie liggame beperk is. Hulle word met ’n leitmotiv uitgedaag om ’n tydelike sieraad vir hulself te ontwerp en dan van herwonne materiale te maak. Die voortbrenging van konseptuele moontlikhede, ter uitklaring van ontwerpbedoelings, word aangemoedig en die ondersoek na materiale, produksie en voorlegging word aangepor. By voltooiing paradeer die maker sy of haar produk en lê ook ’n mondelinge verklaring voor. Ondanks die ooglopende ligsinnigheid, wat ’n pedagogiese agenda verskuil, pak studente die skema geesdriftig aan: saam met die ontluiking van kreatiewe intensie word die denkebeeld van generatiewe prosesse, konsepte, die maak van dinge as aktiveerde denke asook materialiteit en voorlopige normatiewe standpunte deur die projek voorgestel. Die ontwerpers se innerlike en uiterlike word gevolglik ondersoek en verbeeld in die bekende konteks van hulle fisiese wese, alvorens die kurrikulum na meer komplekse en onbekende omgewings uitgebrei word. In hierdie opsig dien dit as ’n berekende wegspringplek waarvandaan die geheimenisse van Banham se ‘swart kas’ verder blootgelê kan word.

Sleutelwoorde: argitektuuropleiding, ‘swart kas’, ontwerp, eerstejaarateljee, menslike liggaam

To be able to criticise we must listen – especially to the first year student who may be able to help us to re-mythologise our thought processes to such an extent that we will be able to teach with conviction. (Le Roux 2006: 99)

The writer and architectural critic Reyner Banham (1922-1988) famously equated architectural education to a mysterious ‘black box’ in an essay subtitled *The secret profession of architecture* (Banham 1990: 22-25). In what is essentially a critique of attitude, his analogy hinges on the argument that what happens inside the black box is little understood. Porter (2006: 14-15) explains: “The function of the black box is to transform an input and to output the result. Its importance as a concept lies in our not needing to know how the transformation is made in order to use the box”, much like the workings of a camera’s black chamber from which the term is derived.

While school leavers may generally find the transition from secondary to tertiary education challenging, the beginner student in the architectural disciplines is also confronted by “a move to a system where the answers are uncertain, and the route to that endpoint ambiguous and not following any set methodology” (Roberts 2006: 169). This notion is compounded by most first year students being novices to the disciplines of spatial design and neophytes to the studio as a learning environment (Peterson 1971: 56; Ochsner 2000: 195; Kucker & Perkins 2005: 171; Tozan Kiessel & Abbasoglu 2008: 1), which certainly contributes to the perceptual mystery of the black box. Initiating meaningful design processes is therefore one of the challenges facing staff teaching in the first year studio. Brian Sandrock (1960: 8) described this task as follows: “We are faced with the truly formidable task of first teaching them the basic alphabet of architectural language – a task akin to that which would face the Department of Mathematics if its first year students had not yet learnt arithmetic.”

This article is a first attempt to reflect heuristically on some of the recent efforts to demystify the black box in the first year studio at the Department of Architecture, University of Pretoria, with specific reference to a first quarter studio project entitled Temporary Adornment.

Interdisciplinarity, the core curriculum and the generic studio

As architecture is historically a bimodal profession, it draws on and develops both the natural and human sciences. Students are therefore required to cultivate not only these spheres but also their collective application and synthesis. Regardless of significant differences that may exist in the approaches of various schools of architecture, most writers – including Banham (1990: 24) and others critics (see Till 2005) – agree that the design studio is the locus of this consolidation, “the main forum of creative exploration, interaction, and assimilation” (Salama 1995: 1). Fernando (2007: 143) adds:

In the stage of design education, the design studio exists in a range of contextual sets: it is an artist’s studio where aesthetic and creative ideas are materialized; it is a lab where experiments in building technology are conducted; it is a philosophical scene where theory of design is explored; and it is also a social workshop where the relevance of human and socio-cultural aspects of a design is addresses and applied. Although distinct from each other, these different sets must exist concurrently to achieve a comprehensive studio experience and to fulfil the need for a broader and all-inclusive design studio education.

With this broad model as reference, it is pertinent to state that the first year studio at the Department of Architecture, University of Pretoria, is a generic studio where spatial design is offered as a major module to beginner students in the architecture, interior architecture and landscape architecture programmes. Modules with programme-specific content are introduced from the second year of study as subject content becomes progressively more specialised in the framework of a core curriculum with a homologous structure across these three disciplines. Importantly, students share common studio space, not only during their first year, but in every year of study thereafter.

This equifinal framework resulted from a core curriculum introduced in 1999 under the curatorship of professors Schalk W. le Roux (Head of the Department, 1996-2004) and Roger C. Fisher (then Curriculum Coordinator) in response to managerial restructuring¹ and revised legislative frameworks.² Its resolution was probably as much due to their premise that design is the core task of the education of designers for the Built Environment (Lemmer 2004: 356) as it was a logistical retort to address concerns about limited resources to effectively accommodate

and teach more students. More than a decade later, one can hardly imagine functioning in singular professional silos. As Lemmer (2004: 360) explains:

The overall value of this innovation is embedded in its interdisciplinary and inclusive approach, which aspires to break down elitist attitudes that prevail amongst the disciplines and therefore, the professions. Students have the opportunity to discover that their professional activities are enhanced by working co-operatively and that their own production of knowledge is advanced by contact with other specialists working in adjacent fields.

Building on a pre-existing culture of studio work, this has contributed to and broadened the Department's approach to teaching, summarised in Department of Architecture (2012a: 4) as:

An encompassing study of the discipline, academic rigour, a non-flag following independence in formulating what architecture – and the role of architecture – could be, an attempt to achieve and maintain dynamic balance in the architectural dualisms of art and science, theory and praxis, past and future, and a striving towards an integrative, traditive, generative design approach that results in a facilitating, contextually relevant architecture that sustains culture and social evolution.³

Embracing interdisciplinarity, this approach is established in the joint first year studio⁴ that acts as a foundation year where the shared concerns of the spatial design disciplines are emphasised to equip students with a vocabulary, spatial frame of reference and the essential skills upon which subsequent courses in the various disciplines build. Creative work is fostered and developed through projects that stimulate intuition, imagination and conceptual thinking. Creative and appropriate processes and responses are encouraged and students develop their own design thinking and the ability to critically evaluate design within social, cultural and ecological frameworks. “Studio leaders facilitate rather than teach and students develop through their own initiative” (Reynders 1999: 4) and through continuous discussion on the relationship between design and its goal and context in order to facilitate an informed understanding of the relationship between man and the environment – both human and natural (Department of Architecture 2012b: 3).

With that said, the mind-set of the generic first year studio is best articulated by one of its instigators in Le Roux (2006: 98):

And how is learning to be achieved? By dialogue and confrontation, confrontation with as wide a variety of architectures, as wide a variety of texts, as wide a variety of contexts, as wide a variety of scales, as wide a variety of approaches as possible. Architecture is learned and taught through discourse. Teachers search for new confrontations, of which they do not know the answers through repetition – especially of earlier successful investigations.

Initiating the journey (with body in mind)

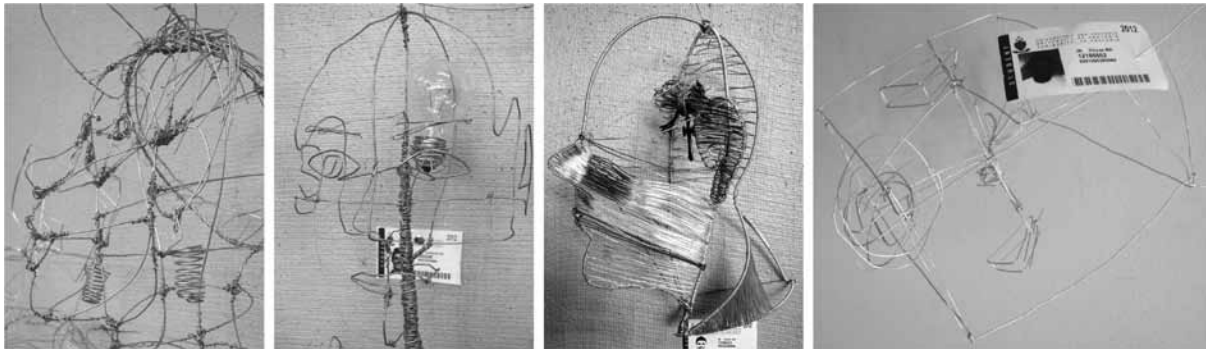
When students join the “secret society” (Banham 1990: 25) as first years, it is to be expected that they bring with them disparate skills, interests and personal histories. While this is actively encouraged in pursuit of individual vim and vigour, the gap between secondary school and architecture school is, for most, one that is not easily bridged. Finding commonality within the realm of the design disciplines is therefore vital to ensure inclusivity and participation. Loosely based on the human body, an approach was developed over the past five years to initiate the journey of design and to act as a platform from which to advance. Neither a panacea, nor an end in itself, it is purposefully directed at the universally familiar and recognisable, dealing directly with the physical beings of the aspiring designers who are finding their wings in the studio, but indirectly also projecting towards accommodating those who will inhabit and ultimately give meaning to their future creations.

In the first semester of the 2012 academic year, three projects formed part of this argument. Not presented sequentially, they were preceded, interrupted and followed by *charettes*, group work and individual schemes.

Project three: Self-portrait⁵

The first of these projects, a self-portrait, followed on a week of orientation sessions and two brief projects respectively aimed at design discovery through activated making (see Temple 2008: 3) and delving into cognitive memories (by sharing where they are from and their individual interpretations of ‘home’). The brief called for each student to make a life sized, three-dimensional self-portrait in wire capturing aspects of his or her outer self, but also prompting for representations of the inner being.

In its methodology the intentions are obvious: the outcome is spatial and the means to achieve that is limited to a medium that is not prescriptive, nor too dissimilar from a line drawn on paper. Unlike a pencil line, it does require physical shaping and thereby provides opportunity for tangible discovery and relative ease of editing. It also eliminates the perceived advantage that some students may have by being more experienced with conventional media and thus provides a platform where all are on a par. As a personal statement, it is a safe undertaking that prompts questions about relative size, scale, interpretation and representation, but does not dwell on any of these. Identified only by a facsimile of their student cards, the outcomes varied from attempts at realistic depictions and outlined contours to abstracted compositions loaded with intent (figures 1-4). This spectrum of possibilities is useful as the project assists in the process of getting to know (and hopefully better understand) the students as individuals.



Figures 1-4

Self-portraits by 1. Nombuso Mnguni, 2. Cobus Terblanche, 3. Reynders Venter and 4. Makolele Khoza (photographs: the author).

Project eight: Temporary adornment⁶

Most of the studio activities between the self-portrait and project eight focussed on skills development and building a (spatial) frame of reference.⁷ Early in March students were confronted with the following leitmotiv:

Designers design beautiful things. This is a most generalised and even precarious statement. What is beauty? Is it precious and permanent, or can it be temporary? Natural or make-believe natural, even manipulated? Should it be functional? Frivolous? Joyous and fun? Dramatic? Can it be seen as cultural, traditional or related to heritage – or all of these at once? Provocative, stimulating, even controversial or simply idiosyncratic? Is it gender specific? Does it call for a personal approach or should it be universal? Accidental or planned? What is design then? Could it be a bright idea or does it depend on context and content? Can it be superficial? And intuitive? Can we argue about it or is it too subjective? (Department of Architecture 2012c: 1)

Accompanied by a visual presentation, the brief required students to investigate and challenge this statement by designing and making an item of temporary adornment for themselves. While formally introducing the idea of concept to the studio vocabulary, it prompted them to take a stand and make decisions, but also limited the outcome to recycled materials and found objects. It was also expected that at least five conceptual scenarios be initially investigated in journal⁸ format and with maquettes for informal discussion so as to allow ideas to migrate and influence each other.

Upon completion a week later, the designer paraded the product to a jury and their peers while presenting a brief verbal statement. It was immediately photographically documented and evaluated.⁹ In stark contrast to the informality of the studio environment, the formal staging forced students to formulate and edit their thoughts while setting the scene for future critiques and presentations. Although the photographs successfully captured aspects of the design product, there was a danger that the design rationale and intent may in time be forgotten, relegating the project to later be judged purely for its visual qualities. Hence the project was later revisited to allow for reflection and to entrench the necessity of conceptual clarity. Despite the risk of post-rationalisation, this reversal of procedure was helpful to engender the notion of abstraction, to confirm the core argument and distil the design intent to diagrams (figure 5) and transcribing (and editing) their verbal arguments (figure 6).

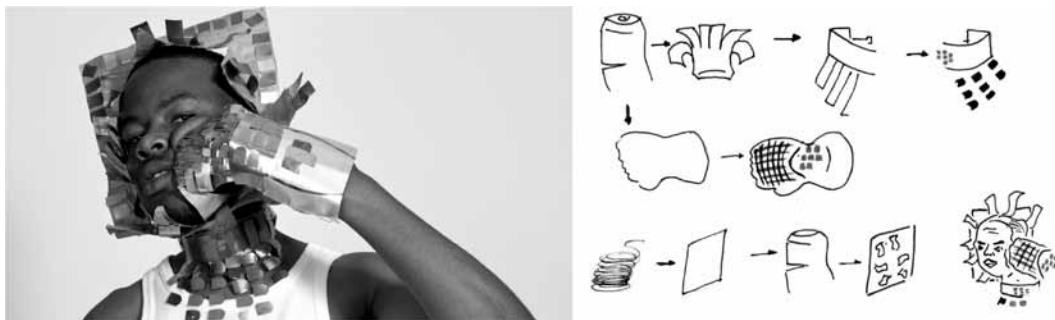


Figure 5
David Waleng, *No one knows what it means*, with rationale diagrams
(photograph: Melita Moloney).



Figure 6
Megan Cochrane, *Ontogenesis*, with project rationale
(photograph: Melita Moloney).



Figures 7, 8 & 9

7. YJ Chang, *Beauty is dangerous*; 8. Shane Alborough, *Clawbeats*; 9. Jamie Gilleran, *Pulchritude* (photographs: Melita Moloney).



Figures 10, 11, 12 & 13

10. Eloïse Thompson, *Xplicatio Forma*; 11. Bernadine Clark, *Stepping Beauty*; 12. Megan Mathey, *The beauty paradox*; 13. Kate Krone, *Put a spring in your step* (photographs: Melita Moloney).



Figures 14, 15, 16 & 17

14. Eduard Schoeman, *The beauty paradox, a duplicity*; 15. Michael Watson, *The observer*; 16. Jani Schreuder, *Visual concenter*; 17. Makolele Khoza, *Beauty* (photographs: Melita Moloney).



Figures 18, 19, 20 & 21

18. Marni van der Hoven, *Muzzle*; 19. Juliet Bolton, *Through the anonymous eyes of the beholder*; 20. Andrew Freer, *Sensory deprivation*; 21. Christiane Gerber, *Kaleidoscope* (photographs: Melita Moloney).

Beyond the brief

Students eagerly engaged with the project, its making and the presentation. Despite the purposeful gullibility of the guiding questions that accompanied the brief, or perhaps because of it, a serious attempt was made to contest it, or at least find a personal reading. Some were daring and evocative, most were argumentative and only one or two managed to bypass critical conceptual development. Among the assorted outcomes, some themes can be identified. A handful or so were drawn to portrayals of creatures and claws, albeit for different reasons (figures 7-9). Nature was emulated, celebrated and exploited (figures 10, 11), embraced and gently reconfigured (figure 12), or confronted and juxtaposed with the manmade (figure 13).

Filters, masks and perceptual manipulators featured prominently and addressed the duplicity between absolute and benign constructs (figure 14), forceful attempts to attract the unseen (figure 15), to expand attention and focus concentration (figure 16) and to rediscover the confusingly familiar from different angles (figure 17). Similarly notions of editing, selective exclusion and concealment ranged from emotional and perceptual censoring (figures 18, 19) to sensory deprivation (figure 20) or found expression in a bodily kaleidoscope that invites the viewer beyond the obvious (figure 21).

Experimentation with materials and expression of materiality found articulation across a broad spectrum of possibilities: unsurprisingly, wire was explored, as was paper in various guises, unfolding cans (figures 7-9), composing and recomposing leaves, twigs and flowers (figures 10-13). We saw textiles, teabags, sand, shredded synthetics (figure 22) and skin beading with circuitry components (figure 23), gelatine as glue (figure 24), charcoal and leather (figure 25), bark superimposed on slithers of inner tube (figure 26), the plasticity of wax and plaster embraced, masking tape corsets and vertebra cast in tin (figure 27).

As the brief lent itself to theatrical costume, it could be expected that some would exploit this opportunity. Jana van Dalen contrasted the human form with asymmetrical geometry (figure 28) by wrapping herself, head-to-toe, in an attempt to question what lies beneath the surface. A dramatic moment was captured in Marcus van der Hoven's *Burn* (figure 29) where salvaged floorboards were transformed into the stereotomic platform of a waistcoat before it became a temporary adornment covered in flames. Some endearing personal approaches developed (figure 30), often leading to finely crafted products that transcended the metaphor of the initial concept (figure 31) or simply translated and engendered the cognitive. Helga Fernandes used dance as a means of storytelling (figure 32) and concluded that beauty is created and understood by our experiences.

Project eleven: how tall is a policeman?¹⁰

Temporary adornment was followed by exercises that introduced drawing board skills. With the individual student in mind, this ranged from constructing their names in Roman block letters to designing monograms for their portfolios. Especially the latter project reiterated generative processes while again allowing for personal expression. Returning to the human form, project eleven introduced empirical investigations into anthropometrics and ergonomics. Allowing students to first survey their familiar surroundings, it was escalated from the micro to the macro scale so as to gradually increase the scope of thinking. Concurrently students started to explore the inner city in preparation for an upcoming project where they will design a mobile service unit for entrepreneurs in the Tshwane metro. The link with the human body is obvious.



Figures 22, 23, 24, 25, 26 & 27

22. Dipuo Matena, *Lucid trigger*; 23. Taryn King, *Skin beads*; 24. Leoné Pieters, *Infinite fractal beauty*; 25. Walter Coetzee, *Cycle*; 26. Pierre Hugo, *Human enlightenment*; 27. Jaco Kritzinger, *Human* (photographs: Melita Moloney).



Figure 28

Jana van Dalen, *Enervate abstraction* (photographs: Melita Moloney).



Figure 29

Marcus van der Hoven, *Burn* (photograph left: Melita Moloney; other photographs: Marcus van der Hoven).



Figures 30, 31 & 32

30. Henri Pienaar, *Ubuntu*; 31. Yvonne Bruinette, *A secret lingo*; 32. Helga Fernandes, *Transparency through her dancing soul* (photographs: Melita Moloney).

Pedagogic agenda

In designing the first quarter of the first year design studio in 2012, the human body was appropriated as theme and escalated through a sequence of projects. In the broadest sense this pedagogic agenda aimed to facilitate the emergence of creative intentions while specifically introducing students to design concepts and generative processes. The scope and diversity of outcomes indicate that neither the body as site, nor its true scale, proved too daunting to confront. This perceived accessibility clearly encouraged participation and advanced the pedagogic objective.

The more persuasive temporary adornment schemes suggest that many students challenged not only the brief, but also themselves in the process. For its timing, the project was intended to link opportunities for personal reflection with extra-personal spatial enquiries in an effort to mediate between the subjective and objective. It also encouraged normative positions, however tentative, and allowed students to ‘think, feel and do’¹¹ early in the year. Similarly, it served as an induction to formal presentation, prompted investigations into materiality and hinted towards the notion of ecotropic thinking that will intensify throughout their studies.

However compelling or naïve the outcomes may seem, ultimately the value of this approach is that it initiated processes of translating ideas to products. Before the curriculum escalates to unfamiliar and complex environments, long before it deals with conventions and professional expectations, the young designer’s inner and outer self could be explored and expressed in terms of the familiar context of his or her own body. In this respect the project served as a calculated primer from which to further demystify Banham’s ‘black box’.

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Notes

- 1 Managerial restructuring refers firstly to the re-amalgamation of the Departments of Architecture and Landscape Architecture in 1997. A curriculum review followed for which prof. Roger Fisher undertook a study tour to the United Kingdom and the Netherlands to investigate interdisciplinary teaching at various institutions (Fisher 1997). As no local precedent existed, the aim was to resolve the restructuring of the programmes in architecture and landscape architecture. This led to the introduction of a core curriculum in 1999. The programme in interior design was integrated in the (then) Department of Architecture and Landscape Architecture in 1999 after major restructuring of all faculties at the University of Pretoria (University of Pretoria 2002: 192-194), leading to the core curriculum being expanded to accommodate a third discipline.
- 2 Legislative frameworks refer to the implementation of the National Qualifications Framework (see Council on Higher Education 2001) and the (then) anticipated new tiered categories of professional registration that was to be legislated in 2000, respectively by the Architectural Profession Act 2000 (Act 44 of 2000) and the Landscape Architectural Professions Act (Act 45 of 2000). See Lemmer (2004).

- 3 The term ‘architecture’ should not be read too narrowly. Albeit that the report from which this quotation was borrowed was specifically written for validation by the South African Council for the Architectural Profession, ‘architecture’ is ubiquitously and collectively used by staff and students alike to refer to all three disciplines of spatial design, as is evident from the name of the Department (of Architecture).
- 4 Preceding the first year studio, prospective students are already confronted with this approach during selection, when every effort is made to identify all-rounders with a broad, enquiring intellectual capacity and curiosity that could nurture, and sustain, aptitude. Adhering to the values of multiple possibilities (instead of a formulaic, predeterminate profile), applicants are engaged and challenged with various means and in different formats.
- 5 A similar project was done with the first year studio of 2009.
- 6 The project was conceived and first executed in 2008, revived in 2011 and adapted for the class of 2012. The tedium of repetition (among students and lecturers) now consigns it to the archives, at least for the foreseeable future.
- 7 The intent is clear from the keywords for these projects. For project five: analyse, appreciate, capture, contemporary, evaluate, plagiarism, precedent, Zeitgeist. For project six: contrast, depth, evaluation, Gestalt, grading, intensity, light, maquette, outline, pattern, perception, representation, shade, shadow, silhouette, spatial composition, unfold.
- 8 Students are expected to keep a design journal or visual diary and to always have it with them, also out of the studio.
- 9 Although verbal feedback is always given, quantitative evaluation of student work during the first quarter of the first year of study is a treacherous subject. Students just out of school often have high expectations, especially if they were used to high marks. In an effort to mediate their expectations with the realities of an introductory syllabus, a mark out of three is usually awarded, while percentage marks are limited to full portfolio reviews.
- 10 Studies in anthropometrics and ergonomics are considered vital for designers in the built environment. Projects to initiate students to these aspects are undertaken annually, but approached differently every year.
- 11 Fisher & Clarke (2011: 19) use these terms to refer to the cognitive, emotive and psychomotorial domains.

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