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Addressing the tradition of the live project, this article examines architectural educators breaking out of the introverted university environment to involve students in real world challenges.

Made in Architecture: Education as collaborative practice

Jan Kattein

Introduction

During the academic year 2014/15 unit UG3 at the Bartlett School of Architecture embarked on an innovative teaching programme. Fourteen undergraduate students responded to a real brief, worked with a real client, and designed and built a series of structures on a real site in central London. The project continues the emerging tradition of the live project where architectural educators seek to break out of the introvert nature of the university teaching environment to involve their students in real world challenges. Live projects make an interesting contribution to a very current debate about the future of architectural education. UG3's project also questions the role of the professional architect, critically contributing to the evolution of architectural practice into a discipline that fosters community cohesion.

Architectural education at university strives for individual excellence. In practice successful architects rely on collaboration and teamwork. The live project puts this apparent contradiction on the spot. Educating a future generation of architects calls on us to embrace collaborative working methods – and will require us to redetermine how we define excellence in architectural education. Will the architecture school of the future reward actions over drawings? Process over product? Implementation over speculation? Collaboration over individualism?

This article has two parts. The first part reports on UG3's life project, its successes and challenges. Part 2 reflects on the wider consequences that live projects have to define the role of the contemporary architect.

Working in partnership

During the summer of 2014, the author and Julia King established a partnership with educational charity Global Generation which would define the programme for the year. Global Generation's mission is to foster community cohesion through combined learning activities that bring together people from all walks of life. During Lunch and Learning and Twilight Gardening, school children, local residents, construction workers, office workers, young and old people, apprentices and managers join forces in the charity's Skip Garden in King's Cross, London. Jane Riddiford, co-founder of Global Generation – the charity which runs the garden – explains her mission: 'It's not about growing, it's not about food, it's not about community, it is about all these things together, the interdependencies; the dialogue; an ecology, in the middle of London.' The Skip Garden was established in King's Cross a decade ago and has occupied four different sites across the development area during this time, moving from vacant plot to vacant plot to make room for the advancing regeneration of the area. The garden's migratory existence is also its most important asset. Each move brings about new spatial opportunities, new ways of doing things, and the chance to engage new people *[1]*.

Great effort went into establishing a mutually beneficial working relationship. That way, risks and opportunities became a shared concern between the partners. The role of Global Generation was to act as an inquisitive client who would provide a site for the realisation of a series of full-scale built structures, but who would also help to shape the students' brief



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1 Lunch and Learning at the Skip Garden provides an opportunity for people from all walks of life to work on a common task and learn from each other.

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and provide access to a much wider stakeholder community to contribute to the project through their involvement in the design and construction process. The role of the Bartlett School of Architecture was to provide design, project management, and construction services.

The academic year at architecture school often starts with the design brief, a document written by design tutors which sets out their agenda for the year. Our design brief introduces two distinct projects across the two academic terms, a prototype fragment of a building to be completed at the Bartlett workshop during Term 1 and a full-scale built structure to be sited at Global Generation's Skip Garden in King's Cross during Term 2. Besides introducing the site, the client and the tasks, the brief asks the students to consider three fundamental questions: 'How can your working methods contribute towards a new understanding of architecture as an activity that can incrementally realise spatial opportunities? How might your project inform a new type of architecture that can change and adapt to respond to the changing needs of its occupants? Can your activities serve as a blueprint of how making can engage communities?' Further it sets the ground rules for a live project, stating: 'The only pre-condition for your involvement: You must work in dialogue, embrace people's concerns, share your vision. How can you contribute? What can you learn from the garden? What spatial assets can you realise?'.

In October 2014, we 14 enthusiastic second and third year architecture students were allocated to our unit who were ready to start work on the new Skip Garden. Whilst students were advancing their design proposals, the Bartlett School of Architecture was grappling over some quite fundamental questions concerning the academic agenda of the project and how it would respond to the RIBA (Royal Institute of British Architects) accredited curriculum. How can we ensure design excellence when real-world constraints start to affect the student projects? How can we deliver a design portfolio that's comparable to those prepared by other students at the school when we are building structures at 1:1 scale? How can we safeguard individual authorship when collaboration and teamwork are prerequisites for the success of the project?

The design portfolio is a key component of any accredited architecture course in the UK. It is the vehicle for analysis and speculation, represented in drawings, diagrams, text, and photographs – and it is the document that is subject to academic assessments at the end of the year. We decided to replace the portfolio with a research log – a document, more formal than a sketchbook and less formal than the portfolio. Like a diary, the research log can explain the process rather than the product; advancing day by day as the project progresses towards completion. Elizabeth Diller and Ricardo Scofidio's book *Blur: The Making of Nothing* describes as 'part scrapbook, part anthology of short stories', which exposes the process of making a temporary pavillion 'as a complex orchestration of theorists,



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engineers, meteorologists, contractors, competing fog manufacturers, and government officials within the context of turbulent politics [...]'. [1] The publication, the authors explain, is not only the permanent manifestation of a temporary structure; it also documents schemes and ideas abandoned in the course of developing the pavillion. The students' research log is our permanent manifestation of the process that has led to the realisation of the students' structures on site. We are proposing a distinct departure from the polished appearance of university portfolios to reveal the contradictions, illogicalities, and unpredictabilities that shape the architectural design process in the real world. Students are encouraged to record mistakes as well as successes and reflect on endorsement as well as criticism. The research log treats failure as an integral part of the learning experience. The greatest problem of our contemporary risk-averse society is the disrepute associated with failure; whereas in reality the recognition, analysis, and dissemination of failure in an academic pursuit are essential constituents of the learning experience.

To safeguard students from external factors that could prevent them from delivering their project on site, the Bartlett decided that it would assess the design log, rather than any completed structures on site. This decision signified a commitment to process, rather than product, and an endorsement of dialogue and teamwork as a prerequisite for attaining design excellence *[2]*.

Designing through making

Although uncommon, the idea of a full-scale built project as part of the academic curriculum is not new. During November 2014, UG3 went on a road-trip across the United States for a fact-finding mission and visited Rural Studio, a long standing design studio associated with the University of Auburn. For two decades students there have been working amongst deprived communities, on real sites and to a real design brief, designing and building buildings at full scale *[3]*.

Under the leadership of its founder Samuel Mockbee, the focus of the studio during the 1990s was to provide housing for disadvantaged communities. Work with reclaimed materials, using the flotsam and jetsam of the American consumer society, brought about innovative design solutions,

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2 Undergraduate students learning about bamboo engineering in the Hero workshop in Greensboro, Alabama.

3 UG3 around campfire in Daniel Boone National Forest, Kentucky. UG3's annual road trip provides a forum for informal exchange and debate.

4 Rural Studio's playground in Lion's Park.

5 Rural Studio's soil regeneration project.



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but also broadcast an ethereal social commentary. The studio's headquarters in Newburn acted as a laboratory for spatial experimentation before prototypes were turned into full-scale constructions. New construction materials were first used to build student residences before they found their way into construction projects for housing clients. A tactile and visceral engagement exposes students to the flaws and opportunities of their own designs *[4]*.

The impact of the work was local initially, addressing distinct family needs. Over the years the brief shifted from the provision of housing to helping strengthen civic institutions. A fire station and a town hall were built. A new library is now on site, addressing educational need in a US state where one in four adults is functionally illiterate. [2]

After more than twenty years, during which over 150 buildings were completed, the more recent activities of this popular and internationally renowned architecture programme do not necessarily result in the design or construction of new buildings. Instead, the studio is pioneering research into regenerating soil to re-establish farming in an area of the US formerly blighted by intensive cotton farming. A newly established farmer's market is providing opportunities for local producers and promoting a healthier lifestyle. The studio's housing programme has evolved from the design of innovative one-off structures to a generic hurricane-proof prototype which can be mass-produced to provide permanent housing for a population still largely living in trailer homes. By tackling the cause of deprivation and improving the economic chances of communities, the studio simultaneously creates a market for its own housing prototype. Rural Studio today not only trains architects, but it also educates agents for social change with a remit that often expands beyond the disciplinary boundaries of the architectural profession. Building in their mind is hardly a means to an end, but a process that acts as a catalyst to bring forth community cohesion *[5]*.

Orkidstudio – a UK-based architecture practice working predominantly in the Third World – aims to use its projects not only to provide much-needed resources for communities, but it also develops local skills and technological capabilities. James Mitchell explains: 'Our projects focus on the process of design

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and construction rather than just the final product. We believe this process can be a powerful tool for affecting social change and empowering people through the sharing of skills and knowledge on site.'[3] To ensure engagement occurs through all project stages a recent project in Kenya saw the architect involving a team of up to seventy local volunteers. On leaving the site they left behind a home for abandoned children and the legacy of its construction.

Apparently, Rural Studio's founder Samuel Mockbee knowingly established the programme in a location remote from the academic campus.[4] After all he was engaging his students in activities which had for the better part of two hundred years been abolished from educational curricula. Even today hearsay and repute rather than regulation addresses the conundrum of grading individual academic performance in an environment where teamwork is a prerequisite for success. The studio is proud to confirm that 'Everybody knows that you are likely to get an A anyway if you complete our programme.'[5] At Rural Studio, participation and full-hearted engagement are more important than individual academic performance *[6]*.

A range of live project programmes around the world have been inspired by Rural Studio's work. The University of Auburn now also runs the Urban Studio, an outreach programme immersing architecture students in the urban context of Birmingham, Alabama. In the UK, Sheffield University runs a very successful live projects programme with the aim to 'learn how to act as critical thinkers, understanding wider contexts, questioning the role of the architect and speculating on future models for practice and education'. London Metropolitan University and the University of East London have integrated architect's offices within the faculty, giving students the opportunity to participate in the delivery of real projects. The *Live Projects Network* run by Oxford Brookes University is a platform to share intelligence about live projects with other educators, students, and professionals. UG3's programme is unique in a number of ways.[6] From start to finish the programme is integrated with the Bartlett's degree course and unit system. Although students work collaboratively with other design professionals, the client and external stakeholders, authorship of the design for each of the structures remains exclusively with each individual student. The project is sited amidst one of the most complex and ambitious regeneration sites in central London and contributes to a well-established community cohesion programme.

To add to the challenges of integrating a live project into an academic context, building full-scale inhabitable structures on a central London site brought its own challenges. Funding for materials and transport logistics needed to be secured and



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design liability ascribed. Planning permission had to be sought, site safety and supervision assured, volunteer construction help organised, insurance put in place and a contract drawn up between the university and Global Generation.

Funding was confirmed in November. Structural engineers were appointed in early December. The students received planning permission for their projects in January. First Aid training and site safety training was completed in February. Foundations were laid and a site manager appointed in March. Working weekends for volunteers took place in March and April. A legal agreement was drawn up during May and the students' term finished later during the same month *[7]*.

The skip garden will continue its migratory journey across the King's Cross development site in three years' time when Global Generation will move on to occupy a permanent site. Until then, UG3's buildings will be open to the public and serve the charity's programmes. The students' projects are in tune with the cycles of the garden and respond to the unique urban context of King's Cross. Innovative design solutions are the result of satisfying a present need and responding to an actual set of parameters. Teamwork and collaboration – essential skills of the professional architect – were of utmost importance for the success of the project. For the first time in living memory, Bartlett students designed and built a real project on a real site for a real client. The engagement with Global Generation has moved centre stage in the students' design process. Engaging in detail with the charity's educational remit has brought about designs that are unique, specific, and responsive. The project sets a precedent for how architecture can be taught, but it also sets a precedent for the role of architectural practice to engage and empower communities. Almost all materials are reclaimed, many of them from the King's Cross development sites surrounding the garden. Earth, dug out adjacent to the site was used to construct a rammed earth wall. Reclaimed scaffolding boards form the filtration beds for the greywater recycling scape, a reclaimed shipping container serves as foundation and base for the twilight gardening space which in turn is clad with reclaimed sash windows sourced locally, and a produce cool store and poetry writing space is built from earth-bag walls made from coffee sacks donated by a local roaster *[8]*.

The project seeks to engage the students in a design process that advances in dialogue with stakeholders, clients, other design team members, public authorities, and industry partners. With our unit brief we wanted to communicate an understanding of architecture which goes beyond the production of drawings and models and which values the architectural process just as much as the final product.

6 Students working in UG3's studio at the Bartlett School of Architecture. The studio is a cross-disciplinary laboratory.

7 Axonometric drawing of consented scheme for Global Generation's Skip Garden by Bartlett UG3 students.

8 Client presentation for the UG3 skip garden project.

9 Crit inside inflatable prototype by UG3 student Max Worrell.

From practice to university

In his book *Words and Buildings* Adrian Forty explains the emergence of the architectural profession as we know it. Until the fourteenth century, architects worked as makers amongst other craftsmen. The



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ability to draw acquired during the Italian Renaissance allowed architects to take on a supervising role, remote from the site of construction.[7] Historically, architectural education relied on an informal skills transfer from master to student. In a professional environment the trainee architect would acquire skills whilst working on real projects for real clients on real sites – under the supervision of an experienced professional. As skills were acquired, responsibility grew and business contacts were established which ultimately allowed the young professional to take on a senior position in their master's business or establish their own firm.

University-based architectural education emerged in France during the early nineteenth century when the *Ecole des Beaux Arts* in Paris established a studio-based training programme. In 1890, the Architectural Association was formally established following increasing pressure from professionals in the UK to formalise architectural education. A process had started where architectural education gradually migrated from site and practice, to theory and institution. During the nineteenth century, polytechnics offered an alternative to university education on the one side, and industry-based apprenticeships on the other. Their educational offer was a response to the skills needed to satisfy growing industrialisation. Neither entirely manual, nor entirely scientific, the polytechnic was an institution that taught multiple (poly = many [Greek]) technologies under one roof. Its educational remit had established itself in a grey area between science and art, making and research, technology and craft, and in recognition that innovation often occurs at the intersection between disciplines. Many polytechnics offered courses in architecture and design. The origins of architectural education at UK polytechnics date back to the 1880s. Here, architecture students were taught in a hothouse of invention amidst scientific discoveries, artistic endeavours, and social innovation. Architecture continued to defy classification, sitting comfortably on the fence between artistic, manual, intellectual, and technological endeavours. In 1992, the Further and Higher Education Act[8] granted polytechnics university status. Many courses leading to qualifications in manual trades were relocated to institutions offering B.Tech. qualifications. Sandwich courses in architecture – offering a combination of training at an institution with training in practice – were abolished. The Bartlett School of Architecture was established in 1841 and university-based architecture courses have always also played a role in educating architects, but when polytechnics acquired university status, architectural education was for the first time firmly and uniformly aligned with academia rather than practice.

In the course of around 120 years, architectural education had undergone fundamental changes which impacted on the profession as a whole. Where in the pre-nineteenth-century apprentice system, a design team meeting served as a forum to scrutinise and evaluate design proposals, the university system introduced 'crit' sessions and tutorials. As well as being a means of communication with client and contractor, the drawing has also become a vehicle of academic speculation and research. The audience of the students' designs changed from a (lay-) client to (professional-) academic. The site of construction shifted from a place within a distinct environmental and physical context to a *genius loci* which no longer needed to have physical qualities *[9]*. But the most distinctive change that occurred when architectural education migrated to a formal institution was the introduction of universal marking and grading procedures. At university, individual excellence is rewarded, whereas success in architectural practice is the result of cohesive teamwork. Intellectual monologue has replaced polyphone dialogue.

By the 1960s, universities had taken on a new role in shaping the profession. In their recent article 'Experiments in Architectural Education', Beatriz Colomina, Esther Choi, Ignacio Gonzales Galan, and Anna-Maria Meister credit universities for overthrowing – until then undisputed – modernist principles. At the time a catalyst for innovation and revolutionary thinking universities were a form of 'radical practice in their own right', 'probing architecture's disciplinary assumptions and [...] architecture's relation to social, political and economic processes'. Where the pre-nineteenth-century apprentice system embedded students in practice the university-based system suddenly saw students and staff take on the architectural establishment during the 1960s, shaking the foundations of the very profession they were training to service. In recent years the introduction of tuition fees in England and Wales has had a profound impact on architectural education. Kevin Rhowbotham defines an education sector operating in accordance with the principles of the market economy as an 'instrument of capital'.[9] Students become customers, and staff become service providers. The contemporary university graduate commonly has profound intellectual capabilities and excels in advanced digital and analogue representation but lacks critical insight into architectural processes that could help to advance the profession and has yet to acquire the skills required to manage the relationships that are essential for the successful delivery of a building on site. 'As schools [...] increasingly favour professionalism, they seem to drown in self-imposed bureaucratic oversight, suffocating any possibility for the emergence of experimental practices and failures.'[10] Crucially, the failure to critically engage with practice is much more detrimental to the profession than the radical inquisition into practice put forward by universities during the 1960s. Rhowbotham writes:

> *An isolating agenda which regards architecture as an autopoetical play of self-referential concerns, risks leaving life well out of the picture; and if there is no social product to teaching, there is little social benefit. To wish for an isolated art, without social determination, is to wish for solipsism and ultimately for extinction.*

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Three architect characters

My book, *The Architecture Chronicle – Diary of an Architectural Practice* defines the architect as three distinct characters. The architect-inventor challenges conventions and questions the social *status quo*. The architect-activist transgresses the boundary of the profession and enters the construction process. The architect-arbitrator engages the audience to realise the ambitious project. In concert the three architect-characters can excel and inspire. For this concert of architecture to be harmonious, the architect needs to be a balance of inventor, activist, and arbitrator and to adapt *ad hoc* as demanded by the site and the project at hand. A project run as a solo or duet will most probably either remain uninventive, unbuilt or unsuitable.

Marking criteria at a UK university (although similar definitions are applicable at universities throughout the UK) evaluates students' observant analysis, intellectual ambition, design synthesis, and communication skills. Observant analysis, intellectual ambition, and design synthesis are associated with the realm of the architect –inventor – to again use the analogy from *The Architecture Chronicle*. Observant analysis and intellectual ambition seek to evaluate the intellectual component of the students' project. Design synthesis seeks to evaluate the application of that thinking process to the students' speculative project, whilst communication skills seek to evaluate the degree to which the project and its intellectual context have been explained in the portfolio.

Although communication skills are a formal requirement to becoming an architect in the UK and the US,[11] teamwork is not. In the UK, the students' portfolio forms the basis of the university assessment process. Surprisingly, students are generally excluded from portfolio review sessions and the engagement with examiners is only a peripheral event, designed to verify a decision that has already been made. The term 'Communication Skills' in the context of architectural education



10 Valerie Vyvial's diary of her pet hens' behaviour are informing the design process for her chicken coop.



11 Bartlett students on site. Large-scale making relies on collaboration and teamwork.

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refers to the student's skills of graphic expression in the portfolio. Architectural education emphasises the ability to present at the expense of the ability to listen and negotiate. Leadership is the result of countenance rather than empathy and engagement. The absence of dialogue during the examination process marginalises the architect-arbitrator. Collaboration and teamwork are extra-curricular activities.

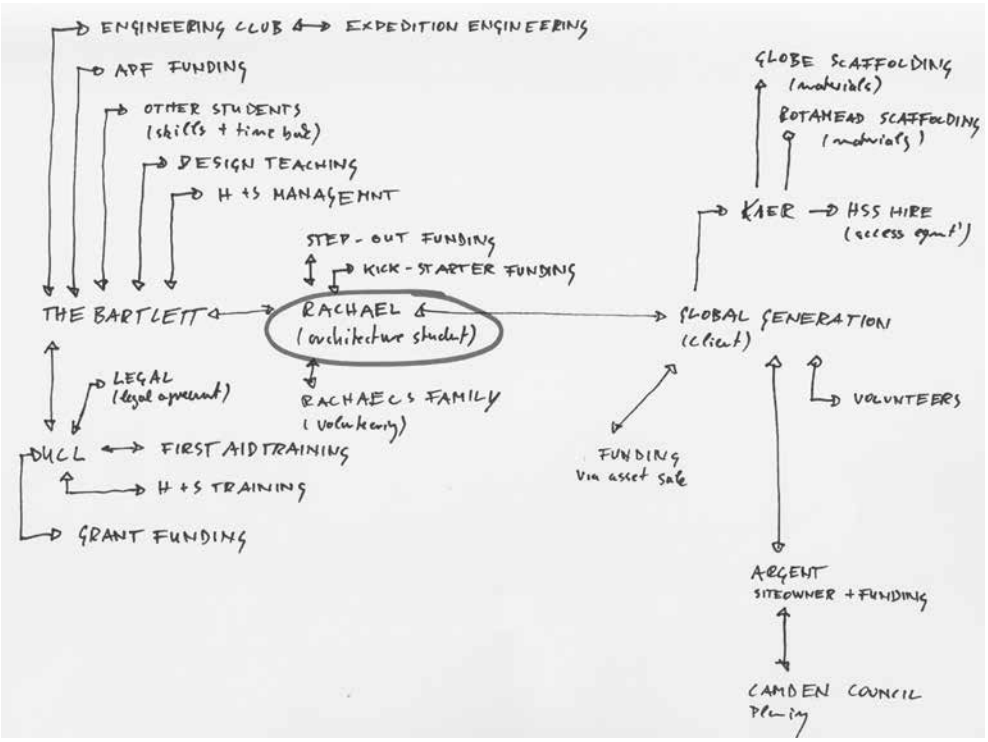
UG3's design brief seeks to bring the architect-arbitrator into the team, by recognising that a real client, stakeholders, and the local authority would have input into our project, that limited funding would require inventive engagement strategies to obtain material donations, and that students would have to work in collaboration to realise their ambitions. As opposed to Rural Studio's remote setting, UG3's project is firmly under the public gaze. The site is located immediately north of London's most strategic transport hub, King's Cross Station, one of the most complex and diverse social, political, and physical environments in the world and only a short walk from UCL's main university campus in central London. Where Rural Studio for many years flourished in its remote location, UG3's project in King's Cross is reliant on partnerships, networks, and social relationships at university and beyond *[10]*.

Relying on others brings risk. Risk to budget, risk to programme, planning risk. In practice risks are assigned monetary values and are managed through contingencies or insurance. Sometimes risks can be assigned to consultants or contractors who are compensated for taking on a risk on behalf of their client. Budgetary and programming risks at Rural Studio are transferred to the students who are responsible for securing material donations and are obliged to enter into an agreement with the university confirming that they will stay in Hale County and finish their project even if completion is delayed beyond their graduation from Auburn University. Planning risk at Rural Studio is managed through engagement with the authorities.

Architecture is commonly taught as a series of distinct modules including design, history, technology, IT, and professional practice. The modules dissect the architectural process into bite-sized chunks, each with easily definable learning outcomes and an associated grading structure. To manage students' workload many universities are trying to integrate modules. In reality a rigid academic calendar and accreditation criteria makes integration a challenging task. In UG3 we are realising that the design project is by default becoming a means to synthesise individual modules into a greater whole. The IT module is becoming a useful tool for students to digitally manufacture components of their designs. The professional practice module becomes a means for students to understand the planning implications that the construction of large structures has. The technology module provides answers about the structural design and construction sequence of a real structure. The history module has the potential to provide a critical and academic background to the students' design proposals. Outside the faculty the project is galvanising multiple resources across the university into a project team. UCLs safety team is helping to manage construction risk. The public engagement unit is providing funding and are assisting in recruiting volunteers. The legal department is helping to draft contract documents *[11]*.

Beyond university

Beyond the university the project is helping to establish relationships that have the potential to support students long beyond their graduation and



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12 The students are the node point of a network of relationships that are inherent to the architectural process.

13 Carrie Connigsby's rainwater loo. Good architecture does not simply satisfy the client brief, it provides a platform for us to change our relationship with our environment.

14 Rachael Taylor's twilight gardening space. A brief of radical sustainability and near zero budget, brings about spatial innovation.

15 Charlie Redman's kinetic dining shelter can adapt to host a range of spatial experiences.

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into their professional careers. Engineering firms with an international reputation are giving their time to help with designs and calculations. Large construction companies and the City of London are donating materials. Developers and local businesses are providing funding. The local authority is advising on planning restrictions. The urge to be part of a larger whole is galvanising a community of supporters and contributors who are keen to advance their profession and question the *status quo*.

The role of the architect has once again changed fundamentally during the last decade. Technological progress, and economic and environmental changes have introduced a whole new set of parameters into architectural practice. And there is a definite sense of accountability. Resources are scarce, climate change is a reality. Our work must consider today as well as tomorrow. Design has evolved from the endeavour of the lone genius into a tool for engagement and dialogue, empowering communities all over to contribute towards the shaping of their city.

In the UK the title Architect is protected by law and its use reserved to those individuals who have successfully completed a teaching programme accredited by the Architect's Registration Board (ARB). In the autumn of 2013 the RIBA has launched the first fundamental review into architectural education in the UK since the 1950s. Interim conclusions in 2014 suggest a much closer alignment between education and practice. Whilst this is a welcome development, the interim conclusion of the report falls short of addressing the issues that really are at stake. Architectural practice in the UK is just as much in the doldrums as architectural education.

The Guardian newspaper's architecture critic, Oliver Wainwright observes that, 'the architect's role has [...] increasingly diminished since the [...] 50s [...]. The Architects' position at the top of the pyramid has been eroded by the proliferation of sub-consultants for every stage of the process, as well as the rise of contractor-led forms of procurement, in which the architect is often sidelined altogether. Faced with all



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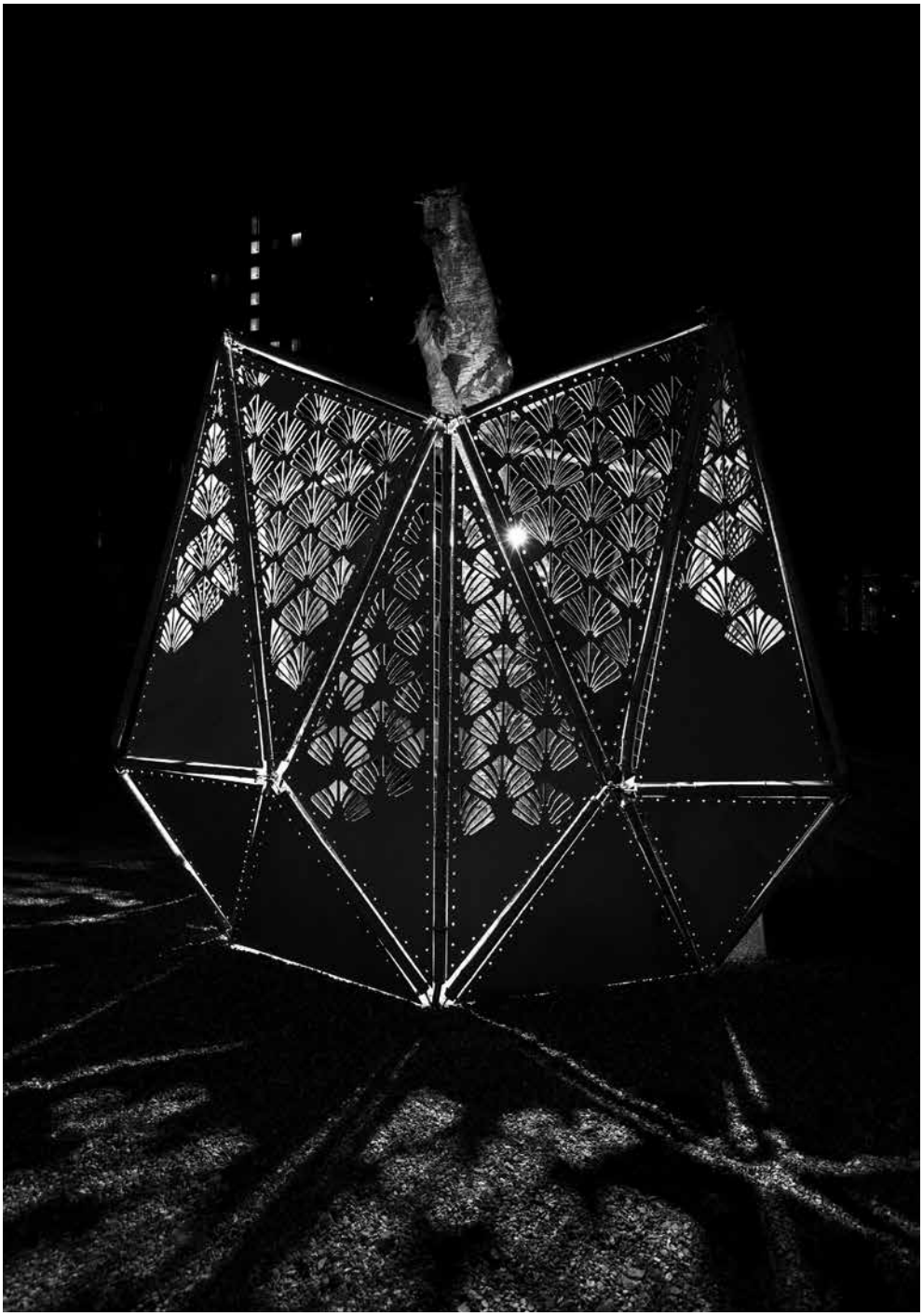


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this, a retreat into the world of arcane academia must be enticing'.'[12] Will Hunters' article, 'Alternative Routes for Architecture',[13] sets out his vision for the London School of Architecture, a new architecture school entirely embedded in practice, or 'a 21st century form of apprenticeship, which redefines the relationship between master and apprentice … [which] could provide a vital reciprocal relationship that benefits both the teacher and the taught, and ultimately [this] would strengthen the profession as a whole.' The London School of Architecture has recently gained accreditation from the ARB for a graduate course in architecture, which will see architect's practices employ student apprentices and host research clusters at their premises. At the heart of Hunter's proposal is the intention to relocate architectural education from university to practice. The conundrum is that innovation does not often occur from within, and that staff at junior level will rarely be in a position to question professional processes and procedures. Their allegiance will first and foremost be to their employer's business rather than a critical agenda of change and innovation.

Rural Studio would not have grown out of architectural practice. The RIBA Part 3 course and exam (the post-university route to registration as a professional architect in the UK since the 1950s) is already embedded in practice. The course's remit is to affirm age-old processes and procedures from practice, rather than question or evolve the profession. The first cohort of students from the



16 Valerie Vyvial's chicken coop lantern combines digital with analogue fabrication methods.

17 Ali Conning-Rowland's earth bag cool store uses evaporation cooling to keep the produce from the garden fresh. The use of 95% reclaimed materials, age-old techniques and natural cycles set a powerful precedent for a more sustainable future.

18 Chris Dembinski's 100 hands dining hall uses rammed-earth construction to maximise time and labour on site, engaging volunteers from all across the country.

19 Iman Mohd Hadzhalie's inhabitable hydroponic hedge maximises growing space in a restricted urban context. It also embraces a new type of urban life, creating ad hoc workspace with fast internet access amidst scented herbs.

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London School of Architecture will be graduating in 2017. Whether they emerge as critical innovators or as proclaimers of a practice that is drifting towards marginalisation remains to be seen. What architecture needs is for the coalition between education and practice to entice both partners to transform. The main shortcoming of architectural education is not its failure to align with practice, it is its failure to facilitate and reward teamwork, dialogue, and engagement. Simply aligning education with a form of practice with a 'diminishing role' would accelerate the demise of the profession and ignore the opportunity at hand to redefine architectural practice as a collaborative process *[12]*.

Architecture as collaborative practice

The RIBA review may well fall short of addressing the most pressing need of the profession: comprehension of architecture as a collaborative process that can empower communities and instil a sense of civic pride. Using the character analogy from *The Architecture Chronicle*, it becomes clear that universities excel in educating the architect-inventor but poorly communicate the skills of the architect-activist or the architect-arbitrator. In a context where accountability, engagement, and teamwork are increasingly moving centre-stage, an architectural education which rewards individual excellence at the expense of communal accomplishments is contributing to the marginalisation of the profession. If we are serious about advancing architectural practice, university education must endorse the significance of the architect-activist and the architect-arbitrator. Our Skip Garden project has brought about a group of graduates who will move into practice as excellent designers, confident makers and pioneering entrepreneurs who can inspire and engage others. A range of skills that are prerequisites for innovation in architectural practice.

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Author's biography

Jan Kattein is a lecturer, researcher, and designer who lives and works in London. He is founder of award-winning practice Jan Kattein Architects. Jan understands architecture as an interdependent process that emerges from the collaborative exchange between designers, makers, and his book, *The Architecture Chronicle – Diary of an Architectural Practice* was recently published by Ashgate in 2014.

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