Learning in the 'Real' World

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**Learning in the 'Real' World:
Encounters with Radical Architectures (1960s-1970s)**

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Abstract

Throughout the 1960s and 1970s architectural education saw to the emergence of radical attempts to reconnect pedagogy with 'the real world' (the users of architecture and the city) and to forge greater social responsibility in architecture. From this epoch of important political, social, and environmental action, this article discusses three 'encounters' between architecture and (radical) pedagogy with the aim to study how architecture can contribute to learning innovation. While the first encounter, the International Design Conference held in Aspen in 1972, shows how architects and educators explored the potential of the city as a learning resource, the second one, offered by architect Cedric Price's radical proposals for mobile forms of learning, demonstrates the importance of visionary imaginations. Finally, revolutionary-anarchist architects and planners of the time, including Colin Ward and Brian Anson, experimented with the empowering and emancipatory potential of education. Via these three encounters, this article highlights the role of imagination and experimentation, typically associated with architecture, in triggering societal and pedagogical change.

Key words:

Architectural education; radical architecture; 1960s and 1970s; social outreach; School Without Walls; Cedric Price; Colin Ward; mobile learning.

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Recent architectural debates demonstrate a renewed interest in the social responsibility of architecture.¹ Confronted with a profession that, with its celebrity culture and involvement with global economic elites, (unwittingly) contributes to socio-spatial injustices and inequality; several architects, critics and educators have argued for greater ethical awareness regarding the impact of the built environment on social life. This awareness coincides with a renewed interest in the counter-initiatives

and radical pedagogies in architecture and planning of the 1960s and 1970s, a period that is becoming en vogue in the historiography of architecture and architectural education.² In this period, spurred by the civil rights movement, the 1960s counter-cultures, student revolts, and the housing crisis, architecture ambited to reinforce its social and political agency towards emancipatory ends. Such ambitions were reflected in efforts in architectural education, often under the banner of social outreach, 'live' projects, or community activism. I will mobilise such efforts with the aim to expand our understanding of the opportunities, potentials, and challenges of a socially responsible higher education more generally.

I have chosen to introduce to the reader three encounters between architecture and education that I deem instructive for studying how pedagogy has ambited to reach beyond the walls of education, and, more importantly, how architecture can possibly contribute to such endeavour, and learning innovation more generally. The first encounter is the International Design Conference in Aspen in 1972, where architects and educators explored the potential of the city as a learning resource. The second encounter is offered by Cedric Price's radical proposals for mobile forms of learning in architecture: the National School Plan and the Potteries Thinkbelt project, both dated 1966. The third encounter can be found in the work of revolutionary-anarchist architects and planners including Colin Ward, Walter Segal, and Brian Anson, who called for handing over control from the experts to the users of the built environment.³

But let me first briefly introduce architecture's multiple relationships with education and the changes that occurred in the architectural profession and education during the 1960s and 1970s.

The Challenges of Architectural Pedagogy

Curricula of schools of architecture are typically dominated by design studio teaching.⁴ In relatively small tutorial groups often-combined teams of academics and practitioners teach students. Through regular interactions with their tutors, with whom they may work for an entire academic year, sometimes even longer, students develop design projects that integrate different types of architectural knowledge: aesthetic, technological, imaginary, structural, social, cultural, political. The prioritising of one or some of these elements over others can differ greatly from unit to unit. Because

these differences tend to reflect fundamentally diverging ideas on what makes (good) architecture, rivalling units allow for fascinating, albeit sometimes heated debates on the responsibilities of architecture.⁵ Architectural pedagogy can thus be seen as a barometer of the wider debates and developments in architecture. As a result, regular debates occur around pedagogy's engagement with and contribution to architectural practice, which is often criticised for being limited and not (self-) critical enough (e.g. Nicol and Pilling 2000; Harriss and Widder 2014; Tzonis 2014). Also, education has often been a place where new solutions and ideas that emerge in response to societal changes, could be tested. One such period of change was the 1960s and 1970s, when architectural education '[tried] out revolutionary ideas and schemes that the profession did not dare yet touch.' (Tzonis 2014: 77). The late 1960s and early 1970s, saw to the production of various experimentations in architecture, many of which evincing an increased sense of social responsibility. During those years, the optimism induced by the student revolts of May 68, space travel, the Summer of Love, the Civil Rights Movement, and the Californian counter-cultures of the 1960s clashed with the sense of urgency called for by the economic recession, housing and environmental crises, and the unravelling of the Welfare State at the closing years of *Les Trente Glorieuses* (1945-1975) (Swenarton et al. 2015).⁶ Architecture's multiple responses to this complex set of conditions become evident when reading through the journal *Architectural Design* (AD) and in particular its 'Cosmorama' section, which reported on experimental architectures and events from around the world.⁷ Considered a key source of the period (Colomina and Buckley 2010; Hardingham 2005; Kallipoliti 2010), *AD* serves as a fruitful starting point for identifying key changes in architectural debates of the time. While these changes were manifold, I will here highlight only two, with particular relevance for this article.

Firstly, in reaction to the functionalist planning of the Welfare State and to what had become perceived as an elitist Modern Movement, the image of the architect as a hero and expert preoccupied with orchestrating the environment and controlling its users, was questioned. Voices mounted suggesting architects should become more receptive to the input of users in giving shape to the built environment. Italian architect and educator Giancarlo De Carlo famously called for the demystification of the expert by provocatively suggesting that architecture was 'too important to be left to architects' and that, therefore, 'all barriers between builders and users must be abolished' (De Carlo 2005 [1970]: 13). This credo was also part of architectural

education in the wake of May 68, whereby students called for a more democratic education and socially responsible profession. The longstanding sense of control (over users, the built environment) amongst experts was considered unattainable in a society of tremendous social, economic, political, and environmental complexity. For example, Archigram member Warren Chalk (1966: 478), a regular contributor to *AD*, had argued: '[the] first myth to be exploded is the universal man image that many architect/planners have of themselves, the heroic figure capable of masterminding the whole complex of urban forces into a coherent whole.' This questioning of the architect as hero and expert resonated in pedagogical discussions. In asking whether society actually needs 'form-givers' the employability of architectural graduates became at the heart of pedagogical discussions. This was articulated in many of the writings of Martin Pawley, who wrote regularly for *AD*. His calls for architects, and universities, to reach out to wider society was not just informed by the need for developing realistic answers for the 'urban collapse and ecological crisis' (Pawley 1972: 219), but also because he believed that architectural education was poorly preparing students for a career, thus creating a generation of disappointed graduates struggling to find jobs. He blamed education's emphasis on the '*prima donna* role of "form givers"' (Pawley 1972: 218), a role that Pawley argued was not in demand by society.⁸ And if form-givers were no longer in demand, neither was the obsession with 'form' i.e. the *products* of architecture. In this period, expanded definitions of architecture no longer centred on buildings and designed objects alone but also included processes, programming, events, squats, temporary structures and so on. Informed by such expanded definitions and by the new possibilities created by communication and computer technologies (see further), architects were no longer considered as mere designers but also programmers and analysts of space.

This brings us to a second, and related, change occurring in architecture in the late 1960s – early 1970s: the rediscovery of the city, which was, amongst others, to be seen as a reaction against the vast destruction of historic city centres through functionalist planning, which had triggered, from the late 1960s onwards, widespread urban revolts in European and American cities.⁹ Citizens organised in local action committees and, together with activist architects and planners, fought against the destruction of historic inner cities. This activism would, encouraged by the 1975 European Architectural Heritage Year, gradually inform a heritage-friendly take on the city and call for repairing the city by reconstructing its historical forms.¹⁰ That the

city was again at the centre of architectural debates was also reflected in education where students were exposed, through lectures and invited talks, to the wider societal, economic, urban, and political issues at stake in architecture.

Throughout the 1960s and 1970s one can thus observe calls for greater user-involvement in architecture and attempts to connect architectural schools with ‘the real world’ and the city. Architectural students addressed educational questions in several ways. In some instances students invested their design effort in the imagination of (often techno-optimistic) mobile learning facilities that could replace the permanent school or campus. In other instances, students were encouraged to work outside the boundaries of the design studio and instead seek collaborations with the communities for whom they were designing. Such combined architectural-pedagogical-urban reasoning was central to the three ‘encounters’ between architecture and pedagogy that I have chosen to discuss here.

Studying in Schools or Learning from Cities?

‘A walk through a city’s ground floor should be a continuous learning experience’.¹¹

One encounter between design and pedagogy occurred on the occasion of the International Design Conference in Aspen (IDCA) in 1972. Themed ‘The Invisible City’, the conference highlighted the city as an environment for learning. One project that figured in an exhibition organised as part of the conference was the Philadelphia Parkway Program, an educational experiment of a so-called School Without Walls.¹² Parkway was a publicly funded project whereby high school students had no school building but instead used places that were readily available across the city: such as zoos, art museums, and vacant buildings (R.L. 1971: 676). It was conceived by Cliff Brenner and implemented by John Bremer in 1969, based on ‘the idea that the city – any city – is a vast resource for learning and that education takes place in many places other than the classroom.’¹³ Students were actively encouraged to participate in their education: by choosing places for teaching or spotting ‘wasted space’ (R.L. 1971: 676) that could be turned into a teaching location; by contributing to curriculum design; or, simply, by being in the city, mingling with their communities (R.L. 1971:

675). The community, much more than the school building, was believed to offer ‘*the teaching resource*’ (Ward 1976c: xii; italics in original).¹⁴

The 1972 edition of the IDCA, an international platform for debate, was organised by Richard Saul Wurman. In addition to being director of the Philadelphia-based planning and architecture firm Murphy Levy Wurman, he was also vice president of the non-profit organisation *GEE!* (Group for Environmental Education). Through GEE, Wurman developed methods for learning in and through the environment. This was evidenced by the method-book called *Our man-made environment. Book 7* (published with Bill Chapman and Alan Levy in 1969), aiming at making children aware of their environment; and by the special issue Wurman edited, in 1971, for the journal *Design Quarterly* on the theme of ‘Making the City Observable’.¹⁵

The IDCA 1972 stood out in that, in addition to industrial and graphic designers and architects, also educational theoreticians and experts contributed to the event (Wurman 1972d: 4). For Wurman, the architecture of learning indeed ‘rarely is concerned with the building of schools.’ (Wurman 1972d: 4) Instead, it is concerned with the learning potential of the city. Because this potential was, according to Wurman, largely invisible and therefore unexplored, he believed it was paramount to make the city ‘observable and understandable [thus] creat[ing] classrooms with endless windows on the world.’ (Wurman 1972b: 66). Wurman dedicated part of his career to precisely this: mapping and information processing exercises aiming at making cities more legible to its users (Wurman 1996). Wurman also became the founder of TED Technology Entertainment Design Conference, equally part of his efforts to develop alternative and more productive and enjoyable formats for learning. As recent as in 2012, in an interview on the occasion of receiving the Smithsonian lifetime achievements award, he states that ‘I hate education. I love learning’.¹⁶

The importance of the 1972 IDCA for debates on architecture and the city is measured by *AD* dedicating a special issue to the British preparation for the event, titled ‘Invisible London’, and edited by Peter Murray (*AD* May 1972). Much in the spirit of the city as a learning resource, this *AD* issue aimed at ‘trac[ing] some of the networks that create life in London – to show how the city works, what people are doing and what people can do about using the city to increase their own potential’.¹⁷ *Design Quarterly* dedicated an entire issue to the event (*DQ* 1972 nr. 86-87), edited and curated by Wurman. Knowing that one of the ambitions of Aspen was ‘bridging

the gap between education and how designers might realistically function in an educational capacity' (Wurman 1972d: 4), one can ask: What role for architects towards innovative learning?

In answering this question, Aspen shows that there were several doubts and challenges to overcome. Could architects, with their 'occasional tendency to turn out a masterpiece when nobody's looking' (Nelson 1972: 31) make themselves useful for this purpose? Were architects willing to accept programs handed to them by teachers, pupils, and communities (Nelson 1972: 31)? And if so, there was still the challenge to find ways of communicating between educational and architectural jargons (Ruth Kohn quoted in Nelson 1972: 31). But at the same time, architects were believed to have specific skills that were particularly useful for developing new forms of learning in the city. Harry Parnass, founder of the Metro/Education project in Montreal, believed that designers are trained to be 'synthesizers' which places them 'in a fairly unique position when faced with the problems that occur in our cities.' (quoted in Wurman 1972c: 45). Architects were believed to be particularly useful in gathering, analysing, synthesising, and making available information regarding the resources of the city i.e. people, equipment, facilities (Ronald Barnes quoted in Wurman 1972c: 48).

If learning was to become mobile and the architect a synthesiser of complex sets of information, as was suggested in Aspen, then this required a better exploitation of newly available computer technologies and networks (Ronald Barnes quoted in Wurman 1972c: 48; Chalk 1966). Numerous technical advancements were made regarding camera, recording and broadcasting equipment, rendering communication technologies more affordable and opening up alternative forms of teaching.¹⁸ In addition to video and audio recording and broadcasting technologies, also the computer was considered a 'teaching machine' (Pike 1969) that deserved exploration.¹⁹ One example is Rice University Associate professor Paul Kennon's proposal for a 'mobile study carrel' for the year 2000, which would be fully equipped for individual learning and part of the transportation systems for new towns, facilitating study whilst commuting as well as a plug-in study space at home (Pike 1969: 516). Also Sim Van der Ryn, a well-known pioneer in ecological design, saw value in new technologies to allow for different ways of learning than the one offered in large lecture theatres on campuses. Through 'video instruction' - recorded lectures

made available in videotape libraries (Van der Ryn 1969: 618) - students would be able to 'attend' lectures whilst on campus as well as from home.

Designing Mobile Learning: Cedric Price's Potteries Thinkbelt and Think Grid

A second encounter between architecture and education can be found in Cedric Price's pedagogical innovations in architecture, such as the National School Plan and the Potteries Thinkbelt and Think Grid projects. Price's projects combined new communication technologies, mobile forms of learning, and the exploitation of available rail and road infrastructures.²⁰

Price, a visionary British architect whose ideas and projects, despite being largely unbuilt, had a great influence on contemporary architecture, believed that radically transforming education offered the only way to optimise the individual's capacity to learn. Learning, so Price believed, was so important to the individual that he likened it to the need for 'fresh air' (Price, 1968b: 242; Price, 1971b: 353). In an issue on 'Learning' which he guest-edited for *AD* in May 1968, Price expressed his concern that, whilst educators seem to agree that new forms of education are needed, 'they are in a difficult position to postulate new physical forms that will enable the extension of their activities.' (Price 1968b: 242).²¹ The formal, elitist, system of education, which Price also likened to a 'sausage machine' (Price 1971: 232), would require justification now that alternative forms of education through 'self-paced learning' would become possible thanks to communication media, and new technologies for storing and sharing information (Price 1968b: 242). With learning thus becoming possible not just in schools, but also at home, in the car, and so on, the 'design problem' for architects was, for Price, no longer one of improving and adjusting existing school buildings, but of 'providing individually operable space' facilitating learning to take place anywhere and anytime (Price 1968b: 242).

Price's ideas for a mobile education were translated into his National School Plan (NSP) (Price 1966).²² With the NSP Price proposed the radical transformation of architectural education in Britain through more flexible ways of learning. In the NSP students could study in different schools throughout their five years of study, and in doing so could fully benefit from the individual qualities of the schools (Price 1966: 1282). Infrastructures would be mobile and/or temporary and each school would have a 'information cell' clustering information, libraries, whilst the system as a whole

would be computer programmed (Price 1966: 1284). In addition to new technologies, mobile learning was also informed by the innovative use of rail, road and air transportation infrastructure and by a *social* justification of architectural education, and universities in general.

This emancipatory potential of new forms of education, was at the heart of the Potteries Thinkbelt proposal for North Staffordshire.²³ The Potteries Thinkbelt (Price 1966b) was a proposal for the rapidly de-industrialising landscape surrounding Stoke-on-Trent once prosperous for its manufacturing of pottery. Price suggested tapping into that history by proposing a network of technical education that worked in tandem with local industries, thus strengthening the connection between manufacturing and learning. By organising mobile learning in ‘teaching factories’ and ‘rail-buses’, students would, rather than live in a student dorm and study at a university campus, live and study across the region. While centred on education, the project also dedicated detailed attention to the creation of housing (for students and the local communities alike): it would ‘unite, rather than separate, student and community’ (Price and Barker 1966c: 20).

Price’s ambitious proposals required a design task that was no less than revolutionary: ‘no longer a question of improvement but of re-think.’ (Price 1968b: 242). Price believed that the only way to effectively change society and education was through a radical and systematic makeover. However, to achieve such change, Price suggested careful and hands-on preparations. He thus seemed to suggest that radical change and empowerment could only be effectuated through carefully preparing the ground, detailed planning and programming, and efficient strategies for reaching out to the community. The choice for the term ‘Thinkbelt’ is to be considered as part of such strategy. Martin Pawley, writing under the pseudonym Rupert Spade, argued that Price played with words for creating something genuinely new. Instead of ‘clear and simple languages [one needs] daft words ... Thinkbelt Fun Palace ... stupid words that embarrass people. Then you have a clean slate upon which you can place any meaning you want’ (Spade, 1969: 124).

In the wake of the Potteries Thinkbelt, Price was asked to develop similar ideas for the Oakland County Community College in Michigan USA,²⁴ in an area with high poverty and unemployment rates (Price 1971b: 359), which resulted in a proposal for a Think Grid (Price 1971b). Similar to the Potteries Thinkbelt it proposed mobile and flexible forms of learning and forged interactions between industry and

education: this time through so-called 'brain fairs' and industrial/commercial 'showcases' intended to connect available labour, employment, and education. Compared to the Potteries Thinkbelt, it seems that the Think Grid exploits the infrastructural potential of the area even more fully by using drive-in cinemas, recreational sites, deprived areas, railroads, and radio stations as sites for learning - even lakes were to provide 'floating classrooms' (Price 1971b).

With projects such as the Potteries Thinkbelt and Think Grid, Price suggested important adjustments to the role and responsibility of (future) architects. For Price, the role of architects was not celebratory or mystical but instead architects were believed to carry a responsibility that was revolutionary as much as it was hands-on. Price was convinced that 'society does not owe architects a living and not necessarily attention either' (Price 1966: 1282). And yet, for Price, when students operated at the service of society, such as in the Potteries Thinkbelt, they should be remunerated accordingly. Price therefore argued that student grants should not be loans but salaries: 'If people are doing a job society wants them to do, they must be paid for it.' (Price and Barker 1966c: 20).

Architecture (Students) as a Revolutionary Force

Is a certain kind of person attracted to that profession or do the schools of architecture produce a particular kind of character? (Ward 1996: 7)

Cedric Price was not alone in suggesting a revolutionary role for (future) architects. Colin Ward and Brian Anson, for example, saw great value in the School Without Walls as a means to build stronger connections with the community, and in alternative forms of architecture. In his 1976 lecture addressed at an architectural audience at the University of Sheffield, Ward suggests that, in order to nurture such alternatives, a more open-minded pedagogy is necessary.²⁵ Ward calls for a changing ethos in both the profession and pedagogy regarding the role that is allocated to architects: instead of 'independent professionals' (Ward 1976: 16), architects could be considered radicals, even anarchists. But herein, so Ward suggests, resides also an undeniable paradox (Ward 1996: 9):

One of the paradoxes of the radical end of their profession is its insistence that, given just half a chance, people could build for themselves.

This paradox also informed Brian Anson's call for a shift away from the radical towards the 'revolutionary architect' (Anson 1975). For Anson, who had been involved in the community activism around Covent Garden in London, this shift was needed because the radical planner or architect, when working alongside communities and supporting their fight against destructive plans and projects, may, in fact, affirm the system they aimed to challenge (Anson, 1975: 36).²⁶ The revolutionary architect, rather than working on behalf of those in power, is better placed to shake the foundations of unjust systems and imagine alternatives outside the logic of that system.²⁷

The paradoxes Ward and Anson refer to are particularly difficult to overcome in an education aimed at convincing future architects, usually in an optimistic fashion, about their importance in the creation of the built environment. The tempering of that importance risks, but needn't, being misunderstood as a dismissal of expertise altogether. Ward indeed shows that a more humble role for architects can go hand in hand with the recognition of their skills, and that, what is really at stake is the architect's willingness to hand over control to the users of architecture i.e. the dwellers (Ward 1976; 1996).²⁸ Even so, those 'willing' architects often meet resistance when attempting to hand over control to the user. This is clearly demonstrated in the efforts by Walter Segal, a German-born British architect who revolutionised affordable housing through self-build solutions facilitated by the Segal Frame and Infill system. Despite the Segal method was in demand amongst council housing residents, and had proven very successful in the pilot realisations by the London council of Lewisham, other public councils were reluctant to implement his projects. Some claimed that this had not as much to do with the shortage of available land (as was often argued) but with a sense of discomfort with people being capable of doing their own things: 'ordinary people doing their own things'²⁹ was seen as disruptive.

And yet, despite the profession's deeply rooted reluctance to let go of control, thinkers like De Carlo, Segal, Anson, and Ward saw great potential in architectural education in the creation of the revolutionary or anarchist architect. Brian Anson, as a tutor at the Architectural Association (AA) in the 1970s and co-founder of the Covent

Garden Action Committee recognised in schools of architecture ‘major resource centres for the local communities in which they are situated’ (Anson, 1975: 36). Anson believed that were local communities to become part of, and even teach, at schools of architecture then ‘the entire architectural training system could become the major link between society and the profession’ (Anson, 1975: 36). He had tested this model in his Covent Garden activism, where students would work on location in the communities, for example during an AA Summer Session, and community members taught students at the AA (Doucet 2016; Anson 1981).³⁰ Also for Ward education could play an empowering role. His proposal for an ‘Exploding School’ (Ward and Fyson 1973) was a ‘free school or college, which might be totally de-institutionalised, using the whole environment as an educational resource’ (Ward 1976: 14). Thus, similar to the Parkway project in Philadelphia, Ward saw in the city an empowering tool: a place for learning not just about urban structures but also political situations (Parkinson 1974). For Ward (1962), however, rendering architects more useful to society did not just require a revolutionary proposition, but also a realistic one. Drawing from the results of a survey published by the Royal Institute of British Architects in April 1962 called ‘The Architect and his Office’, Ward argued that a major challenge would be to promote user-driven architecture in ways that allowed also for financially and creatively healthy offices (i.e. profitable, non-autocratic) (Ward 1962). Ward thus asked: How to make user-driven architectures that are based on intense, long, negotiations and ‘continual re-adjustment’ processes, in such a way that these are also productive and profitable (Ward 1962:109)?

Imagination as a Transformative Force?

Calls for alternative pedagogies as they emerged in the 1960s and 1970s were part of the wider questioning of the role of the architect in society. From the point of view of pedagogy, learning was no longer believed to have necessarily to take place on one single site (campus or school building) but could potentially take place anywhere at any time, and in closer connection to communities. Education’s call for more mobile, flexible, and community-engaged learning found resonance with an architectural discipline that questioned the dominance of the expert (in favour of the user), called for social responsibility, rediscovered the city, and expanded the definitions of architecture beyond the creation of buildings and artefacts by including also

processes, programs, and systems. In this article I have discussed three encounters between architecture and pedagogy: the IDCA conference in Aspen in 1972; Cedric Price's visionary proposals for alternative forms of learning; and revolutionary-anarchist calls to hand over control to the users of the built environment. What can be learned from these encounters about how architects, today, can contribute to pedagogical innovation?

Nicol and Pilling (2000: 13) summarised the challenges for architectural education as follows: communication skills to relate better to clients, teamwork and collaborative skills, an openness towards continued learning in order to be able to adjust to a continuously changing profession, and develop a sense of community as opposed to advanced individualism. These challenges resonate with Alexander Tzonis's (2014) identification of problems in education: to convince students to design for users rather than for the media (with the hope that they can be propelled into stardom) and to prepare students for collaborative work and for the technical challenges of the profession. Seen the multiplicity of demands, Tzonis suggests a 'radical institutional rethinking' (2014: 77). Such radical rethinking is precisely what connects those efforts of the 1960-1970s as discussed in this article. The revolutionary, anarchist and self-build proposals of this period aimed at political and democratic change through challenging the *entire* system (planning, education, politics) and handing over control from the expert to the user. These efforts show us that architects can contribute by being 'synthesisers' of knowledge but also, and perhaps more importantly, by having strong imaginative power. Trained to reflect creatively about future spatial scenarios, architects can offer visionary proposals that allow to radically rethinking existing models and orders; that allow to imagine possible (other) futures.

Such visionary force does, however, not necessarily inform a distant utopia. The total rethinking of the system was, in the examples studied, ambitious but also practical and hands-on. That visionary proposals were also to be realistic was demonstrated perhaps most explicitly in Cedric Price's proposals for the Potteries Thinkbelt and Think Grid. While rethinking the system in a more or less utopian fashion, Price also suggested hands-on, realistic, and situated solutions i.e. embedded in a thorough understanding of local circumstances. In the Potteries Thinkbelt and the Think Grid, for example, we saw how Price includes concrete on-the-ground solutions and taps into the readily available (e.g. the abandoned railway infrastructures).

The capacity to imagine innovations that are equally revolutionary and hands-on, that 'not just dream but [also] deliver' (Harriss 2015: xii), is important and timely, but also full of hurdles that, in education, tend to get magnified. From Ward, we had learned that architecture students should be offered realistic perspectives that allow them to produce 'alternative' architectures whilst making a professional living. Also, even in open-minded educational settings, architectural students, when enrolled in revolutionary and activist efforts, often still rely on the design of buildings in order to secure a degree (see also Doucet 2016). Deeply rooted expectations of individual authorship moreover prevent students to operate as collectives, rather than individual designers, even if such was justified and encouraged by the brief.³¹ Also, the skills and practical requirements for acting as a good partner for social outreach project, does not always match with the profile of the architectural student. Their lack of skill and experience (they are, after all, still learning) and discrepancies between timing, curriculum requirements, and intensities hamper students to become fully at the service of community activism. Community planner Chester Hartman argued that the success of community efforts in education need to be measured both in terms of 'the assistance provided to the community and the education of students' (Hartman, 1971, p. 13). Students were therefore not always believed to be the most reliable partners for community groups, and in addition, Hartman argued that it was somewhat counter-productive that precisely those groups that attract support from students were often the more vulnerable ones in need of solid support (Hartman 1971, p. 14).

What Hartman shows is that it is not enough to preach for more mundane, community-based architectures (with small 'a') as opposed to Architecture with capital 'A' (star-architecture, global icons) nor is it enough to preach for architects to let go of control and hand over to the users. Even when resistance to dominant curricula is 'organised', such as in the case of 'live' projects, whereby tutors organise learning outside the studio-based design exercises and instead working directly with communities, it is often underestimated that such works should also be evaluated different from design studio projects. As indeed Harriss and Widder (2014: xxi) argue, different from studio projects 'they [live projects] exist in complex, unpredictable spaces where skills of negotiation, fleetness of foot, resourcefulness, time management, and ability to deliver within (changing) constraints to a range of audiences are at stake and of value.'

So, how relevant are pedagogical innovations invented more than four decades ago in fundamentally different political and economic circumstances? Can we, as Tim Iveson (2015: 35) seems to suggest, distil a 'toolkit of strategies' from counter-cultural experiments of the 1960s and 1970s and deem these relevant also in the current climate of a neoliberal academy?³² I do not think we can. And yet, I do believe that there is merit in recovering the visionary and revolutionary nature of these proposals. Not just because, arguably, for example in Britain, despite paradigm shifts and radical 'fashions', education has changed very little in its foundations (Crinson and Lubbock 1994; Powers 2015). The recovering of these visionary ideas is also timely because, in an era of neo-liberal education and spatial planning, there is a need to reconsider imagination as a *transformative* power. Architects have a choice to use their imaginative power not to feed the unbridled desires of economic elites and creative classes, but to imagine 'other worlds'. Architectural education serves as an important locus for nurturing this skill to imagine other worlds. Students are in that sense to be encouraged to develop design skills, but also solid historical and societal understandings of the world in which they operate and of their own discipline. Historical and societal contextualisation, all too often side-tracked by architectural education's emphasis on design, is crucial in that respect.³³ Through learning from historical successes and mistakes, education can help to prevent excellent imaginative 'out of the box' solutions from falling victim to recuperation and co-optation (as so often happened with radical architecture). Historical insights also offer a warning for students to not confuse promising radical micro-interventions with structural change. In other words, through deep understandings of, and through forging alliances between, social responsibility and imaginative design can students and architects become a powerful force again towards imagining and effectuating radical change.

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¹ E.g. Bell and Wakeford 2008; Boano et al. 2013; Lydon and Garcia 2015; Awan et al. 2011.

² See, amongst others, Kaminer 2011; Scott 2010; Maniaque-Benton 2011; Blauvelt 2015; Hayes 2007, and the research project Radical Pedagogies, directed by Beatriz Colomina, taking the shape of an online platform and travelling exhibition.

³ This article draws from cases taken from the UK/US, which is not to suggest that these were the sole or most important loci for innovation. For example, those learning-through-practice experiments of the time, whereby students realised small-scale interventions (e.g. inflatable and pneumatic structures, exhibition pavilions, DIY-kits, and alternative living experiments), whilst relevant, require a wider discussion around ephemeral and nomadic architecture, deemed beyond the scope of this article. For a historical contextualisation of architectural pedagogy in the UK, see for example Crinson and Lubbock 1994; Froud and Harriss, 2015: 3-58; Nicol and Pilling 2000; Worthington 2000.

⁴ In addition to the design studio, architectural education also contains, albeit to a much smaller extent, traditional lecture courses in theory and history, taught in lecture theatre formats or seminars.

⁵ Diverging ideologies in the educational unit-system were famously played out as a productive force by Alvin Boyarsky, chairman of the Architectural Association in London during the 1970s (Sunwoo 2012).

⁶ The 1970s arguable underwent a gradual de-politicisation of architectural thinking, away from the radical-progressive utopias and radical experiments towards a more reactive post-modern architecture. This shift is, in Europe, located usually around 1972-1975 (Kaminer 2011; Swenarton et al, 2015) and around 1969-1970 in the US (Maniaque-Benton 2011; Scott 2010).

⁷ Typically short reports (also reprints from other sources) of projects, conferences, exhibitions, and other events.

⁸ Pawley (1972: 218) compared state education with the army in creating a 'graduate reserve' without providing roles (careers) for them.

⁹ While late-modernist architects of the Team X group had already started to revalue the connective tissue provided by the urban fabric, the 1970s saw to a more articulate recovery of the historic city.

¹⁰ Part of the formation of a widespread mainstream European postmodernism (Barey 1980). For a detailed discussion of this movement, with roots in 1970s Brussels, see 'Counter-Projects' in Doucet 2015: 233-247.

¹¹ Taken from Wurman: quotes reprinted in 'The Invisible City' *AD* March 1972: 191. Allegedly Wurman's original idea for the conference theme had been 'The City as a Schoolhouse' ('Aspen 1972: Invisible City', *AD* August 1972: 526).

¹² Connected to the theories of Marshal McLuhan on the environment as a (programmed) teaching machine. It was believed that cities, and even buildings could become 'educational instruments' (Beinart 1967: 110) e.g. people learn from buildings when allowed to make them fail.

¹³ *Design Quarterly*, 1971, nr. 80: 66-67, 66.

¹⁴ Colin Ward (1976c: xii) discusses Parkway as a major inspiration for the wider movement of 'de-schoolers', who, inspired by American anarchist Paul Goodman, favoured schools becoming part of wider community services e.g. located in a community center and open to pupils and community members (p xiii).

¹⁵ *Design Quarterly* 1972 nr 86-87, themed 'The Invisible City', edited and curated by Paul Wurman; 'The Invisible City', *AD* March 1972: 191; and *DQ* 1971 nr. 80 themed 'Making the City Observable', a catalogue of projects, discussions, and bibliographies dedicated to 'environmental education' including a discussion of Parkway Philadelphia.

¹⁶ Youtube: Smithsonian.com.

¹⁷ *AD* May 1972: 282. *AD* evaluated the conference positively but regretted that the focus was too much on the US with limited third-world country representation and that there had been no further elaboration on the UK Open University ('Aspen 1972: Invisible City': *AD* August 1972: 526).

¹⁸ The 'Cosmorama' sections in *AD* and the 'Developments' sections edited by Alexander Pike evidence the fascination for new communication technologies.

¹⁹ Computers were argued to be widely used in offices, banking, trading and so on, but hardly in education (with the US as was an exception). Pike (1969: 515) asks whether this was because of the unclear cost-efficiency of computers in a sector (education) where the 'precise value of the end product cannot be measured'.

²⁰ Such efforts found resonance with other projects of the time such as 'Classroom LA'; 'Motor Lodge School' (by Alan Wexler, turning motor lodges by Howard Johnson Company into dormitories and classrooms – 'Cosmorama' *AD* November 1972: 667); 'Edu-Tran' (graduate course by Adelphi University in a rail car provided by The Long Island Railroad - 'Cosmorama' *AD* January 1972: 4); and

'Metro/Education' in Montreal (included in IDCA 1972 and special issue *DQ* 1972 nr. 86-87, and covered by *AD* May 1973; 313 Round-Up section, on 'education'; *AD* 8/1972).

²¹ Because they are too much embedded in the system, and also because they are no designers.

²² In the context of NSP Price founded Polyark, 'an organisation which increases communication between schools of architecture and other agencies and individuals not normally accessible.' ('round-up' section, *Architectural Design*, 12, 1972: 780). One implementation of NSP was the AD/AA/Polyark project: a converted bus that travelled architectural students of the Architectural Associations across the United Kingdom in the early 1970s with the aim to set up a dialogue amongst students (see also Doucet 2016).

²³ This articulation of the emancipatory power was evident also in the examples Price selected for the special issue on 'Learning' (*Architectural Design* May 1968).

²⁴ Commissioned by the Oakland Community College and Cranbrook Institute of Science. See announcement in 'Cosmorama' *AD* May 1968: 199.

²⁵ Ward refers to Bernard Rudofsky, author of the well-known exhibition and book *Architecture Without Architects*, which celebrated the vernacular in architecture, and who regretted that architectural education (in the US particularly) does not make room for the study of 'unpedigreed, undated buildings.' (Ward 1976: 12)

²⁶ Anson wrote these critiques when he started to doubt the impact of the community activism of Covent Garden, which, so he believed, had failed in shaking the foundations of system (more details see Anson 1981 and also Doucet 2016).

²⁷ The revolutionary architect contributes to a decentralised society where architecture is developed through collaborations with laypeople (Anson, 1975: 36). Price, too, defended 'participatory control' over participatory advocacy planning, which notwithstanding its good intentions was too often driven towards consensus and end products (Price 1971: 232).

²⁸ Ward saw evidence of such approach in the work of, amongst others, Walter Segal, an advocate of self-build; Giancarlo De Carlo, an advocate for participatory architecture; John Habraken, inventor of the structure-and-infill system; and John Turner, a planner working in informal settlements in the global south.

²⁹ Nicholas Taylor, a council member involved in the Lewisham project, cited from video footage by Jackie Spreckley c.1982, ITN, 5mins02, as shown at 'Walter's Way. The Self-Build Revolution' exhibition at the AA Gallery, 16 January – 24 March 2016.

³⁰ During the AA Summer Session of 1971 students took part in a Covent Garden workshop. AA Chairman Alvin Boyarski believed that the workshop had demonstrated that 'it was possible [even in a short 6 weeks workshop] to move in on a situation, amplify it, and merge with the local community, student body and sympathetic professionals' ('AA Summer Session 1971', *AD* April 1972: 220).

³¹ In Brussels, several design units at architectural school *La Cambre*, were involved in local activism. While these students, in the early 1970s, still acted as a collective, signing their published and exhibited work as a collective, they would gradually publish again under individual authorship (see Doucet 2013; 2015: 233-247). *La Cambre* moreover shows that schools were not necessarily comfortable with having militant students in their midst, which was also argued by Hartman (1971, p. 15).

³² Iveson includes in his discussion Price's NSP and Polyark, and Ward and Fyson's Exploding School proposal (1973).

³³ Also Powers (2015: 17) argued that the overwhelming weight of 'design' training in the education of architects deserves reconsideration