

# ***Architectural Regeneration*** (ISBN: 9781119340331)

## Chapter 14

### Teaching Architectural Regeneration

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#### **INTRODUCTION**

The absence of an adequate understanding of historic buildings and their conservation within the core curriculum of architectural or interiors education has long been noted internationally (Erder 1983; Orbaşlı and Whitbourn 2002; Santana and Settles 2014). For many years the typical design studio project took on the prospect of an empty plot and the construction of a new building. In the UK, the Royal Institute of Architects' *Plan of Work* (RIBA 2013) typically follows the process of a new build, and this focus is also reflected in the Part II and Part III professional practice components of teaching. Although a conservation guide to the Plan of Work now exists (Feilden 2018), the emphasis remains on the conservation of listed buildings and monuments.

There has, however, been a steady growth in Architecture Schools of students being set projects that consider existing buildings as a starting point.<sup>1</sup> Some of these are short design assignments, others are linked into longer masters level programmes that combine design studio skills with teaching in the subject area. There are likely to be a range of reasons for a growing interest in reusing and repurposing existing buildings. Amongst them is a growing breadth of what is now valued as 'heritage', an increasing awareness in sustainability, a proliferation of high profile and award-winning projects that involve existing buildings and a demand from students who recognise that they are more than likely to encounter work in existing buildings in their careers as practicing architects.

Oxford Brookes University's School of Architecture has been a pioneer in this respect, teaching re-use and adaptation of existing buildings to Part II architecture students as a specialisation since the 1980s under the title Built Resource Management and later Built

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<sup>1</sup> A 1999 survey for the RIBA identified that specialist masters level programmes in conservation were separate stand-alone courses that were not integrated with architectural training (Orbaşlı, 1999). At the time of writing there are a number of master programmes that incorporate regeneration and re-use that do have overlaps with architectural programmes.

Resource Studies. At the time, teaching the conservation of what was considered the 'ordinary end' of the built environment was something new. Many early student projects focused on the regeneration of former industrial buildings, at a time when authorities across Europe were beginning to recognise the value of their industrial legacy and seek solutions to afford them a viable future.

Built Resource Studies, in combination with a parallel programme in International Vernacular Architecture Studies, formed the foundations of the International Architectural Regeneration and Development programme (hereafter referred to as Architectural Regeneration). Established in 2006, the programme builds on an understanding in the fields of anthropology of architecture, area-based conservation, development studies and cultural sustainability. The masters programme has been attracting graduates with degrees in architecture, planning, interior design, law, arts, cultural heritage management as well as craftsmen. It also continues to be offered as a design specialism for Part II architecture students. As the programme has evolved to become more theoretically grounded and internationally expansive, the challenges of teaching design through the existing built environment remain as relevant as ever. Over time, the influence of the programme is evident in a growing focus on existing buildings as a subject matter in design studios across all levels of the school.

As already discussed in this volume, architectural regeneration is more than simply considering the mechanics of adaptive re-use. In Chapter 10, Bassindale emphasises the need not only to understand the building, but also the set of values that characterise it. This process has to incorporate an understanding of 'how the traditional buildings and morphology make up the character of the place, how they have come to be used, and how they relate to current economic, social, cultural and environmental needs' (Orbaşlı and Vellinga 2008: 162).

Whilst most programmes in the field of regeneration are focused on policy and planning issues, those centred around building conservation tend to be concerned with the preservation and restoration of monuments, historic buildings and places, with either a material conservation, or a heritage management focus. The revitalisation of historic quarters and traditional settlements with their vernacular traditions often requires an approach that simultaneously recognises conservation principles, but also delivers on the regeneration objectives of economic, social and cultural sustainability (Orbaşlı and Vellinga 2008).

The purpose of this chapter is to reflect on our combined experiences of teaching architectural regeneration over the past thirty years. In doing so, we will discuss how within a time-bound programme we strive to achieve a balance between the practical, theoretical and research-based aspects of architectural regeneration. We particularly consider how an appreciation of the existing built environment in all its forms can be actively integrated into the architecture curriculum; how design teaching (and learning) can incorporate an understanding and appreciation of the theories that underpin decisions and the broader and far reaching social, environmental and economic implications that design decisions can have. A number of student projects are presented as case studies throughout the chapter.

## **APPROACH AND FRAMEWORK**

The International Council on Monuments and Sites (ICOMOS) *Guidelines on Education and Training in the Conservation of Monuments, Ensembles and Sites* (1993) identifies the skills required of a competent conservation professional. These guidelines relate to the specific discipline of building conservation, but do not differentiate amongst professionals (e.g. architect, engineer). They remain specific to the conservation field with an emphasis on works to important monuments and sites. However, as discussed previously in this volume, the conservation field is evolving, and proposed changes to the *Guidelines* include considerations for a broadening field and growing concerns for sustainability (Orbaşlı 2013). Others have argued for conservation education to incorporate a more holistic approach to cultural heritage, including landscape and nature, and an awareness of its social and economic context (Russell and Leverton 2013). The recommendations of the *Guidelines* do overlap with architectural regeneration, but on their own do not cover its broader remit. However, it can also be argued that architectural regeneration may not require the depth of knowledge of a conservation professional, but that its practitioner should have the ability to 'recognise when advice must be sought' (ICOMOS 1993, clause 5j).

The objectives of the Architectural Regeneration programme at Oxford Brookes University are summarised as follows, with specific aims for students to:

- Develop a critical awareness of the cultural and social values associated with the built environment and how these inform building reuse, regeneration and development processes;
- Critically engage with various complex and dynamic forms of social, political, cultural and economic contexts that shape architectural regeneration processes globally;
- Develop design skills and tools that are necessary to propose and implement innovative yet culturally sensitive and environmentally sustainable strategies for interventions in the existing built environment.

The aims are supported by the transferable skills of:

1. Working independently and in multidisciplinary teams to research, design, implement and critically assess the specific contexts that inform and underpin architectural regeneration;
2. Selecting appropriate methodologies to analyse and synthesise information from a range of secondary and primary sources, including field work;
3. Communicating ideas to a wide range of audiences through written, visual and oral means.

In the first chapter of this volume on the theoretical context of architectural regeneration, we situated architectural regeneration within a continuum that connects conservation and design. Architectural regeneration shares many elements of design teaching and its methodological processes, while at the same time also having its own disciplinary domain of knowledge and theoretical underpinnings. In the specific context of architectural education this raises the question as to whether architectural regeneration is a field all architects should be familiar with, or a specialist area/branch where specific skills are obtained in greater depth. Wedel, in chapter 11 of this volume discusses some of the additional skills required of an architectural regeneration practitioner that often fall beyond the remit of standard architectural education. Architectural regeneration is not separated from design or conservation, but is a broadening of the field through the introduction of more variables, spatial as well as economic and social.

In the present day, teaching in the subject area is also moving away from the outcomes based approaches (listing achievements that are to be attained) popularised in the 1990s to more pedagogical techniques such as experiential learning that places greater emphasis on learning processes and experiences (Wells and Stiefel 2014). In pedagogic terms, the programme is based around the principles of problem-based learning (PBL), as it provides a framework to combine theory with practice. Originally pioneered in medical training, PBL is highly suited to architecture education as learning is achieved through a process of facilitated problem solving. Importantly, PBL supports group work, self-directed study and reflection on what has been learnt with the role of the tutor becoming facilitator rather than a provider of knowledge (Hmelo-Silver 2004). Students are not only expected to solve the problem, but also to formulate the methodologies that will enable this.

In order to develop transferable skills, the programme at Oxford Brookes maintains a particular focus on working in multi-disciplinary teams, working in different cultural contexts

and developing negotiation skills, including with various stakeholder groups. These are achieved through real-life situations and experiences the students are exposed to as well as simulated situations and classroom learning. Collectively they support collaborative learning practices and encourage students to take responsibility for their own learning (De Graaff and Cowdroy 1997).

The framework that guides the delivery of the Architectural Regeneration programme is based on a '3R' approach being:

- **Research-led;** in that all work is underpinned by research (spatial, social and technical);
- **Real-life:** engagement in live projects and situations; delivery of realistic proposals that engage with and respond to local community needs, and can be meaningfully shared with stakeholders on completion;
- **Resource sensitive:** to be aware and considerate of environmental, social and cultural resources.

The 3R approach is embedded into every aspect of the year-long programme, including practical and theoretical modules.

### **The value of research**

Patrick Blessinger, editor of the *Journal of Applied Research in Higher Education*, notes that research is an integral part of the learning experience that 'provides a natural vehicle for transforming learning' and that through critical and creative thinking 'students are better able to evaluate issues and problems from a more comprehensive set of perspectives' (Blessinger 2017). In the programme we achieve research literacy through:

- Teaching research skills, including fieldwork methodologies, with an emphasis on analysis and synthesis of findings;
- Ensuring research is embedded into each learning and assessment component, and students are made aware of this;
- By providing an active research environment and leading by example by integrating staff and ongoing doctoral research into the teaching programme;
- Exposing students to the work and experiences of research-led practices working in the UK and internationally, including by members of the programme team.

Architectural regeneration is a broad field as this volume has demonstrated, with many avenues of research to pursue, and a strong element of interdisciplinarity. In order to encourage critical and creative engagement with the numerous issues, themes and

problems, a 'deep learning' approach encourages students to critically and actively engage with the information they are acquiring (Biggs 2003).

At each point within the programme, students encounter multiple strands of research that engage their analytical skills and inform the design process. This often begins with research into the building and place, including identifying values (economic, historic, functional and cultural), and most importantly developing an empathy with the place and its stakeholders. At this stage using drawing as an analytical tool to explore a building's functionality or mapping to identify social networks allows students to build empathy with the building (Van Clempoel 2018). Once a thorough understanding of local context is established, students are asked to apply theories that underpin regeneration with a view to justifying what the objectives of intervention are. A focus on creating impact across the social, physical, economic and cultural realms, rather than merely an architectural end product, supports the consideration of the economic values and viability of the new functions being proposed. Once a strategic approach has been formulated, technical research supports decision-making towards resolving the adaptability, functionality, architectural detailing (especially as standard details might not work), economic and social feasibility of the proposed intervention.

Throughout the different research stages, the aim is to make balanced judgements and arrive at an increasingly complex and detailed understanding of the context and possible approaches to intervention. The role of research is to support the capacity to make judgements at every stage and justify these. It is important to note that the same context will inevitably give rise to a myriad of equally feasible solutions, but approaching the project with a sensitivity to resources can generate a sense of focus. Situating educational projects in real life contexts exposes learners to the type of situations where such judgement is called for and hones their research-based decision-making skills.

As such, the research undertaken by students on various components of the programme, including international field studies, projects, case studies and dissertations, contributes to the knowledge base of architectural regeneration within the School. Each year these enable us to broaden our horizons, and as a longitudinal dataset provide valuable insight into emergent trends and shifting priorities within the discipline.

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**Case study: Design-led research in Agra, India**

The historic waterfront of the city of Agra in India, once the location of numerous historic gardens and garden tombs has since evolved into semi-industrial uses and urban slums. Features of the historic gardens continue to survive amongst unplanned urban growth. An Arts and Humanities Research Council (AHRC) and Indian Council for Historical Research (ICHR) grant enabled the integration of a student project into a research project that investigated options for community-centred heritage regeneration amongst Agra's historic Mughal gardens. The students became co-researchers through the processes of conducting fieldwork, analysing data and developing regeneration proposals. The project was undertaken collaboratively with the Delhi School of Planning and Architecture (SPA) and a local NGO, enforcing both collaborative working and active engagement with local players.

The regeneration options prepared by the students from the two schools became a research tool through which ideas and recommendations were used as tangible elements for discussion and for testing with local inhabitants, NGO partners and local decision makers. The focus on a specific case study with a cycle of feedback loops enabled ideas to be tested and developed through an iterative process and a level of experimentation. The student projects became means for analysis and for testing willingness, interest and viability of approaches amongst local stakeholders. A stronger understanding of local conditions and realities by the students also resulted in projects that were highly sensitive to community needs, focusing on issues of sanitation, rubbish collection and recycling, improved conditions on the waterfront and managed community-tourism interventions.

Through the project, the students worked alongside the tutor (also the principal researcher) and independently engaged in all phases of the field research from meeting local participants and stakeholders, to conducting rapid site appraisals. The project had some lasting impacts on the students who by participating in an international research project responding to an identified need, became part of the research team, gained both field research skills and negotiation skills working alongside colleagues from different cultural backgrounds. Furthermore, it provided the students with an early career opportunity to directly engage with the issues of rapid urbanisation and its implications for less fortunate and marginalised communities, and to build empathy through exposure to a very different living environment.

[INSERT Figure 14.1 Site picture and 14.2 Helena recycling centre HERE] -----  
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## **Being realistic**

Placing a focus on being realistic and exposing students to real life experiences, situations and at times scenarios, supports the development of social and economic awareness and tests the capacity of students to work in different cultural and social environments, and to appreciate the differing priorities of various stakeholder groups.

In the project studio component of the programme students are set a project around an underused or redundant building or cluster of buildings. Selected sites are often ones awaiting regeneration with an identifiable group of stakeholders and beneficiaries whom the students meet and can be briefed by. Project proposals need to be 'realistic' in that they could be delivered in a commercial context, and therefore proven to be feasible and sustainable. The focus of learning is through the process, rather than focusing on the output as a prized product in a way that architecture is often viewed. The project studio reflects any architectural design studio in that it is experimental; trial and error is part of the design process, and often a case of 'reducing or abstracting, of returning to the essence' (Van Doreen *et al.* 2018: 437), which is no different in architectural regeneration.

The concept of real-life or live projects in architectural teaching is now well established since early debates on the practice at the seminal Oxford Conference on architectural education in 1958, and real life projects feature in architecture teaching across European schools of architecture (Orbaşlı and Worthington 1995). The nature of a live project can vary from students physically building something (which may be more suitable for undergraduate and degree level training) through to producing designs for a client via a project office established within the University (Brown 2012). Live projects differ from a normative and managed (or staged) studio environment by enabling students to engage with real clients and a range of outside players beyond the confines of the University (Sara 2006 cited in Brown 2012).

Working on real outcomes exposes students to experience levels of unpredictability and limitations experienced in real life situations. The clients who are variably local councils, building owners, NGOs or developers stand to gain from the process through the ideas and proposals that the students develop. However, it should be noted that the process is not fully client-driven either (since they are not commissioning), but it does introduce another player to the binary student-tutor relationship (Brown 2014). Learning through practice can also play a role in enabling students to understand the needs of others, including marginalised groups, and moves students away from exclusively drawing on their own experiences



(Morrow 2005). Also emphasised is the holistic pedagogic aspect of live projects that enables students to consider, 'the broader social, cultural and historical situatedness of that encounter' (Brown 2012: 119). Through the programme we specifically nurture a project experience that exposes students to the importance of building networks, including with potential 'clients', and managing unexpected developments when engaging with these networks.

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### **Case study: Rural regeneration and vernacular architecture**

Rural areas around the world are exposed to similar processes of decline and renewal as urban areas. Depopulation, environmental change, substandard housing and poor infrastructure are just some of the problems confronted by many rural regions, both in the developed and developing world. In spite of popular conceptions to the contrary, rural areas often accommodate a diversity of architectural types, ranging from agricultural buildings to country houses and from shopping outlets to industrial complexes. Exposing students to those rural realities widens their architectural perspectives and requires them to engage with regeneration contexts that are often culturally unfamiliar to them and that have received little attention in comparison to urban areas.

A collaborative project with the Ion Mincu University of Architecture and Urban Planning in Bucharest, Romania, focused on the regeneration of housing in the village of Berzasca in Romania. Faced with a rapid decline in local population caused by economic difficulties that resulted from the end of the Cold War and the subsequent entrance of Romania into the European Union, many houses in the village (both vernacular single-storey houses and Communist-era high-rise apartment blocks) had been abandoned or were in a state of decay. Attempting to find new uses for the houses, the students had to engage with a complex historical, social and political context, as much as with the architectural complexities of regenerating the actual buildings. A lack of initiative and engagement on the part of the local community proved particularly challenging and raised questions about the nature and efficacy of community consultation and participation.

Similar projects have been carried out in rural villages in northern Cyprus, in collaboration with the Eastern Mediterranean University in Famagusta and in the small town of Ademuz in Spain, working with staff and students from the University of Valencia. In both cases, design proposals to reuse rural vernacular architecture made it necessary for students to engage

with local problems ranging from post-conflict rehabilitation to environmental degradation and pollution to seasonal depopulation due to shifting economic demands dictated by tourism.

[INSERT Figure 14.3 Romania 14.4 Aaron Birch, Spain HERE]

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### **Resource sensitivity**

As elaborated in the chapter on the theoretical context of architectural regeneration, architecture is not just about static material buildings, but a dynamic process that is intricately related to the social and environmental context in which it takes place. All architecture evolves over time, going through phases of design, use, decline and sometimes regeneration, and during this process it may be used or be meaningful to a range of stakeholders, including (but not limited to) designers, builders, owners, inhabitants and visitors (Maudlin and Vellinga 2014). Although some of those stakeholders may put forward a stronger claim to connectedness with a building than others (often owners or inhabitants, and commonly 'locals'), the needs, ideas, values, wishes, beliefs, expectations, experiences and practices of all should be considered if one is to get a comprehensive understanding of the use and meaning of the architecture concerned. Cultural sensitivity in relation to the communities concerned is key to the success of any architectural development, be they newly built or a regeneration project, as they constitute an important resource (Oliver 2003).

Students are encouraged to engage with the social and cultural context of architecture by means of readings, debates and critical discussion, and original research as part of the taught part of the course, as well as during the fieldwork stage of the design studio project, when they collect data with and about local communities by means of observation and interviews, among other methods. They learn that social and cultural contexts are as dynamic and processual as architecture, ascribed and performed rather than given, and commonly difficult to delineate or generalise about. This critical understanding is important to do justice to the entire range of stakeholders connected to or associated with places or buildings - especially at a time when, as discussed in the theoretical context chapter, change is accelerating around the world and social, economic and political relationships and identities are increasingly fluid and precarious, resulting in a process that recently has been referred to as 'overheating' (Eriksen 2016).

Equally important as cultural sensitivity is the awareness and consideration of environmental resources. The current environmental crisis calls for architectural approaches that make measured and efficient use of natural and built resources, including materials (timber, stone, earth, manufactured materials), technologies and existing buildings. It requires buildings to be used more effectively, consume less energy and have a smaller overall impact on their environmental surroundings. Architectural regeneration projects can help allow places and buildings to adapt to new environmental realities by reducing waste, pollution or energy use or increase thermal performance. However, it is also essential to recognise that these technical aspects of environmental sustainability can only be achieved within adequate social and cultural contexts that facilitate their implementation.

In teaching architectural regeneration, both social and environmental resources are thought of in the widest sense of their definition. Students are actively encouraged not only to consider the impact on communities and the natural environment, but in carrying out their assignments and projects are brought face to face with these limitations. For example, in the Regeneration Methods and Practices module, students practice the interaction with stakeholders in a live setting. Limitations to stakeholders availability, time, willingness to engage and the need to manage the expectations of those we engage with are all actively experienced in a local setting that allows students to explore these challenges in a familiar environment.

Similarly, in-depth research into environmental sustainability during the week-long data collection for the design studio project equips students with a solid understanding of the principles, regulations and cultural frameworks pertaining to environmental issues in the fieldwork location. The nuances of how these are applied, what priorities are perceived by stakeholders, and indeed how all aspects of environmental design manifest in real life are then confronted in the complex networks that reveal themselves when theory is tested in practice.

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### **Case study: Industrial heritage in Europe**

Since an emerging interest in the redundant architectural heritage of the industrial era in the 1970s in the UK, industrial heritage has become the focus of some highly innovative design interventions as well as a major challenge for authorities seeking new uses and architectural regeneration practitioners faced with the multiple challenges such buildings present. The

architectural regeneration of complexes of former industrial structures including mills, factories and warehouses has been a regular focus for the project studio since the 1980s. Such projects expose students to the multiple scales that need to be tackled in architectural regeneration (from building to large areas) alongside the challenges of re-working existing structures to provide sustainable environments for new users.

Most industrial heritage emerges in the form of a complex of buildings and structures regularly set apart from urban centres, posing a dual problem for architectural regeneration of finding appropriate and viable new uses for a significant number of buildings, and of linking the area back into the fabric of the city. On the positive side, the structural stability and robust nature of many industrial buildings contribute to their adaptive capacity. A clear structural grid evident especially in warehouses, and some factories provides much sought after flexibility, while tall chimneys or decorative facades can be incorporated into the brand identity of the regeneration, even if they remain functionally redundant.

A collaborative project with the Universities of Zagreb and Rijeka in Croatia focused on a redundant Hartera paper factory and associated buildings clustered around Rijeka's Rjecina river in response to the city authority and a local developer seeking ideas and options for the regeneration of the area. Architectural regeneration proposals prepared by the students included a combination of uses, from museums to education and high-end scientific research facilities that could link up with Rijeka's existing education and research infrastructure. The project enabled students to engage with late nineteenth century and early twentieth century structural systems (including reinforced concrete), consider internal lighting options for deep plan forms and identify appropriate methods for improving energy performance. Beyond the technical aspects, attention focused on design approaches that could maintain and capture the 'industrial' character of the buildings, and on how the area could be seamlessly linked to the city centre and waterfront while still maintaining a distinct identity.

[INSERT Figure 14.5: Jeremy Haest paper factory section HERE]

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## **PROGRAMME MANAGEMENT**

### **Fitting it all in**

As the various chapters in this book have demonstrated the subject matter of architectural regeneration is very broad and even similar building typologies can present different challenges in each social, political and economic situation. Identified issues of complexity, working at different scales, the breadth of the subject matter and the depth in which each needs to be covered in order to reach a level of specialisation all impact on how the programme is designed and delivered within a restricted time period (Van Clempoeel 2018). This is ever more pertinent, as educators come under pressure to shorten the length of architectural studies.

The need to combine breadth and depth within a curriculum and the value of the time to reflect have been identified as key components of a rounded architecture education (Orbaşlı and Worthington 1995). This necessitates developing a strong theoretical foundation around the subject area to enable students to develop skills through which they can adapt their learning experience to a range of regeneration situations they will encounter in their professional lives. The linking of theoretical taught knowledge and its practical application in the design studio in architectural education is much discussed (Gelernter 1988). The Architectural Regeneration programme is designed to be more theoretical knowledge intensive in the first and applied knowledge intensive in the second semester, with a further application through research and reflection being a dissertation with which the year-long programme culminates. However, classroom exercises, debates and independent case study analyses integrated into the taught programme engage students in applying the knowledge as it is being acquired. One of the theoretical modules explicitly leads into the fieldwork that is undertaken at the start of the project component of the programme. The project is set in an international location and is undertaken in two stages: in the first students work in small groups developing an area-based regeneration strategy where functionality and feasibility are also considered; in the second stage they focus individually on adaptive re-use and design proposals, or a thematic research-based study for the site. A number of skills required for the second semester project are gained in a first semester Regeneration Methods and Practices module which adapts Gelernter's (1988) model for integrating theory and application in design teaching. The organisation of this module is explained in more detail in the case study on temporary regeneration.

A shared virtual learning platform for the programme hosts a wealth of information that students can access at any time, including core reading, case studies and student work from previous years. Information is signposted on the platform, and supported by multiple opportunities that direct students to research on various aspects of architectural regeneration. The online platform is supported by dedicated social media accounts such as

Pinterest for a collection of architectural regeneration precedents and a Twitter handle for posting current news, blogs and projects. The availability of annotated lecture and seminar slides enables students to return to material and supports their learning at their own pace. The programme is specifically designed around formative and assessed assignments that engage students in different ways of gathering and analysing information, support their individual learning styles and encourage peer to peer learning and reflection (Schön, 1987).

Banfill *et al.* (2012) emphasise how reflection is central to professional activities in building conservation, since situations are often unique, contain elements of uncertainty or expose conflicts of values. Reflection deepens learning and allows a connection between specific areas of learning to the wider perspective (Race 2006). Whilst the programme timeframe restricts designated cycles of reflection, it is nevertheless built into assessment processes. In the project studio for example students are asked to reflect on the feedback they have received and also to use this feedback and reflection to develop the project to the next stage. At the same time, active engagement with practice and regeneration practitioners within the study also supports reflective practices in education (Bertolini *et al.* 2010).

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### **Case study: Practicing temporary regeneration**

A stand-alone module, Regeneration Methods and Practices epitomises a problem-based learning approach to learning about architectural regeneration in a condensed module intended to facilitate the application of regeneration theory to a practical problem set. The module tutor acts as a facilitator for a clearly identified architectural regeneration problem/project and students work in groups to propose temporary regeneration approaches to a bounded regeneration setting. The learning process is staged as whole-day teaching blocks, each dedicated to a key topic within regeneration practice (e.g. stakeholder consultation, feasibility, place making). Intense teaching days facilitate the delivery of expert lectures to present theory and case studies, introduce students to a set of practical tools, and allow these to be practiced on-site, with the day culminating in studio tutorials to discuss new dimensions and complexities to the process and help shape the groups' thinking.

The emphasis lies on stimulating the student's learning process (De Graaff and Cowdroy 1997) and conveying processes and tools, in traceable small steps, to develop a regeneration strategy and design by drawing on theoretical knowledge at each point of decision making (Gelernter 1988). These critically include engagement with the client, gathering data in the field, economics and financing of architectural regeneration, and

designing in a historic context. All stages of a problem-based learning approach are practiced, the final output being a regeneration strategy that identifies and addresses key features, and a reflective essay where each student evaluates their learning process and evolving understanding of the role of a regeneration practitioner.

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### **Practices of engagement**

Architectural regeneration is a multi-disciplinary and multi-stakeholder collaborative process and it is important that the various and complex levels of dialogue and collaboration that are present in practice, including team working, are reflected in education too. In architecture, participation is the engagement with a wider group than just the client, such as end users and the wider public who will be exposed to the building or place (Jenkins 2010). Whilst the traditional design studio places the dialogue between tutor and student at its centre (Ferreira, 2013), architectural regeneration teaching demands a model that draws on the wider contextual information of the site and a deeper understanding of it that can generate empathy for a wider base of stakeholders.

Engagement with one another (peer group learning) is facilitated through a range of group work activities. Working in groups to solve problems is the premise of problem-based learning, where the capacity of each individual to perform in the team is an essential component of the learning experience (Hmelo-Silver 2004). An interactive seminar on group working skills early on in the programme equips students with skills to actively participate in group work, identify individual strengths and weaknesses, and negotiate differences, and by drawing on these as opportunities enables them to overcome typical challenges.

Abram (2007) emphasises the importance of exposing students of planning to communities experiencing regeneration as a counter-balance to the more scientific and positivistic aspects of planning education that are often supported by quantitative datasets. This can also become the case in architecture where the design project is undertaken within a bubble of assumptions. Places and buildings may in many (but by no means all) cases be designed and built by professionals, but they are commonly inhabited or used by other people. An awareness of the customs, habits, needs, expectations and aspirations of those users is crucial before a regeneration project is proposed. Students need to learn how to meaningfully engage with local communities, and how to take into account their wishes and needs. Often using the term 'community architecture', community engagement is motivated

by improving the quality of life of individuals and their communities, but also critically strives for a better use of local resources as a social investment (Jenkins 2010: 29).

As architectural regeneration is increasingly becoming an important component of architectural practice, it has also been important to actively engage with professional practices as the programme has developed. This is partly achieved through establishing practice partners where research generated through collaboration with the students can also benefit practice. Working with partners from both the private and public sector exposes students to up-to-date thinking, and can be of use to practices in that they obtain ideas from the latter. Students are also introduced to the work of the programme's extensive international alumni network, through invited lectures, workshops, social media and other shared platforms. There are numerous instances of recent graduates going to work with past graduates of the programme, including a community-based project in Nepal.

Creative and effective communication skills is also an important skill set, especially as the remit for communication in architectural regeneration can often exceed those of a traditional architectural practice with the need to communicate to wider and varied audiences.

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**Case study: Community engagement in Ras Al Khaimah, UAE**

The Emirate of Ras-Al-Khaimah in the United Arab Emirates, has not experienced the same oil wealth and attendant rapid urbanisation as its more well-known neighbours Dubai and Abu Dhabi, and has often struggled to define its image. The surviving old town of Ras-Al-Khaimah consists of courtyard style vernacular buildings constructed of coral stone, but has been abandoned in the wake of new housing construction following the distribution of oil wealth across the Emirates. By the early 2000s, the old town's buildings had become home to communities of illegal construction workers, many of them trapped and unable to pay off their debts to people traffickers who had brought them into the country promising wealth from work on building sites.

The student project developed a strategy to empower those workers through highly specialised skills training in conservation and repair techniques, which would then give them the opportunity to find employment under better conditions. Repairing the rapidly deteriorating buildings in the process would benefit the landowners by making the buildings habitable and generating income. The process would also strengthen the Emirate's image



by restoring this unique vernacular heritage and bringing the old neighbourhoods back to life (Figure 14.7, top).

As such, the project aimed to identify incentives for all key stakeholders including powerful ruling families, landowners and the discriminated-against immigrant worker population (Figure 14.7, bottom). It aimed to use the manifold constraints as opportunities to develop a strategy that would not only have social impact, but would save the historic building stock and return it to life, helping to build the Emirate's image in the process. The solutions generated in this project demonstrate the need for broad stakeholder engagement and the creation of incentives if a context of multiple complex constraints is to be transformed into opportunities that yield not only architectural heritage benefits, but root these in socio-economic systems that persist beyond the project timeline itself.

[INSERT Figure 14.6 and 14.7 HERE]

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### **Achieving impact through education**

A regularly voiced criticism of student projects is that they use a local situation and a vulnerable community for their own end, with cases of marginalised communities being tired of being 'studied'. While very aware of such criticism we also argue that there is value to student projects and that they do have a capacity to make a difference. Although it is important to be realistic about how much difference a student project can make, its impact should not be underestimated either. The research-led approach with an environment of creative thinking and the generation of ideas become useful tools that provide ideas for NGOs and government departments tasked with regeneration. For communities, the verbal engagement with local issues can help to crystallise ways forward in long-standing challenges, and can provide outside perspectives to inform local stand points, as Woodbridge, cited chapter 12, illustrates.

Visualisation is a powerful tool for communicating ideas to a wider audience, avoiding lengthy reports or the need for fully worked up final proposals. In an interview on reaching out to grassroots initiatives in improving urban slum conditions, Seema Redkar from the Municipal Corporation of Greater Mumbai, specifically identifies the role for universities and schools of architecture in the process of intermediation, helping to integrate bottom-up practices through larger networks and access to expertise (Shankar 2013: 49).

Student projects can also unlock funding by demonstrating opportunities and this has been the experience of Mitchell *et al.* (2010) and our own experience too. For example the students' projects for a historic neighbourhood in Jaipur in India were initially used by an NGO to demonstrate the potential for urban realm improvements and were subsequently implemented once the concept attracted backing. More mundanely, student projects can generate datasets, maps and drawings of buildings that may not otherwise be recorded.

Hamdi (2004) differentiates between the theorist academics and the pragmatic practitioners who all too often operate in different spheres to one another: academics increasingly fulfilling the agendas of funding bodies (and by extension governments) in order to remain ahead of the competition whilst practitioners seek short-term solutions that they can deliver, or for which their clients can see evidential benefits. Defining the role of the regeneration practitioner as responsible to both realms helps students' decision-making to bridge this divide, delivering added value to practice through research and simultaneously improving the quality and depth of research with up-to-date local information gained from engaging with practice.

## **CONCLUSION**

Bringing together this book has enabled us to articulate the theoretical underpinning of architectural regeneration and the principles that govern it (Orbaşlı and Vellinga in the first chapter of this volume). These principles have been explored in more detail in each of the chapters that make up this volume. Collectively they reflect on the subject of architectural regeneration and the notions that inform our teaching of it.

One of the biggest challenges facing the teaching of architectural regeneration is the relative scope and reach of the field compared to the restricted time there is to effectively educate future practitioners. Architectural regeneration is complex and to transfer knowledge and understanding of this complexity, but also equip students with the tools to break down the complexity into manageable and focused components without losing sight of the end-goals, takes time and effort. We try to achieve this by seeking compact solutions that maximise the potential for learning and provide opportunities for 'scaling up', with regular reflection and feedback loops to enhance the learning that is built around the principles of problem-based learning. This approach is underpinned by the emphasis we place on learning processes and experiences, rather than on specific, finished design outcomes. We see architectural regeneration as a multi-disciplinary pursuit that has to encompass all aspects – architectural, environmental, social and economic – throughout the curriculum and learning experience.

We also place our values of global citizenship, social and cultural sensitivity, and environmental sustainability at the centre of the programme and actively try to widen our outreach by networking with communities of interest, local and global, academic, professional and citizen.

Looking forward, it is clear that in the immediate future architectural regeneration will remain a growth area globally as the existing building stock and settlements around the world are adapted and revitalised. At the same time there are aspects of architectural regeneration that are going to become technically more challenging such as adaptation for climate change and carbon reduction. This will require research, innovation and possibly some radical approaches. In various chapters of this book we have discussed emergent issues of uncertainty and the need to adapt to increasingly rapid and unpredictable change, fluidity in planning and flexibility in design and functionality. The same forces will also impact on higher education and architectural education. The knowledge base and skill sets associated with architectural regeneration are well placed to deal with conditions of rapid change and adaptation. Architectural regeneration must therefore evolve from being a specialist area to one that is embedded in every architect's training as the disciplinary boundaries of architecture, planning and environmental studies continue to merge.

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## Captions

Figure 14.1 Various monuments of the seventeenth century Mughal era gardens on Agra's riverfront are today embedded into a dense informal settlement. The heritage is recognised and respected by the local community, and could potentially act as a catalyst to support community-focused regeneration (Photograph by Aylin Orbaşlı, 2016)

Figure 14.2 A proposal for a recycling centre in the neighbourhood occupying the former Zahara Bagh in Agra, India. The structures are constructed of reclaimed and readily available materials and form a prototype for similar shelters that can be erected and taken down according to need. The recycling centre addresses the prevalent waste problem in the area with generating employment opportunities (Project by Helena Tunbridge, 2016)

Figure 14.3 Single-storey vernacular houses in the village of Berzasca, Romania. Declining population numbers, caused by economic difficulties that resulted from the end of the Cold War and the subsequent entrance of Romania into the European Union, had left many vernacular houses in the region abandoned or in disrepair (Photograph by Marcel Vellinga, 2012)

Figure 14.4 A proposal for new housing carefully inserted amongst the older vernacular buildings in the village of Torrebaja in Spain's Valencia region. Visualisations that capture the character of the existing context and the contrast of the new building is an important tool to communicate interventions to a broad audience (Project by Aaron Birch, 2011)

Figure 14.5 A proposal for a museum in the former Hartera paper factory in Rijeka, Croatia captures the industrial character of the building and its internal spaces, while accommodating a series of adaptations to accommodate the needs of a functioning museum (Project by Jeremy Haest, 2014)

Figure 14.6 Many of the older coral buildings making up the historic neighbourhoods of Ras Al-Khaimah have been rudimentarily patched up for informal use by immigrant communities (Photograph by Aylin Orbaşlı, 2009)

Figure 14.7 A strategy based on skills training provides economic opportunities for trapped construction workers, repairs the rapidly deteriorating buildings in the process and ultimately

benefits the landowners and the Emirate's image (top). The strategy relies on the involvement of multiple stakeholders and outlines their respective responsibilities, gains and overall outcomes for the project (bottom).(Project by Julia Wedel, 2009)