Architectural schools should be at the forefront of Social Innovation.

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ABSTRACT Since the early 1990s, Social Innovation (SI) has developed as a field of research, with advancements being applied to management, entrepreneurship and policy-making. In exploring SI processes, we realize that aspects of them have much in common with the architectural design process, but there is little awareness of these processes in architectural practice or in architectural schools. One of the weaknesses of architects as a result of their training is a lack of skills and tools to manage effectively the social aspects of their projects. Architectural education typically focuses on the final product as a built form or a spatial design. This essay analyses the potential role of SI in user-centred architectural projects through a case study of the workshop "From Territory to Detail", which was realised in rural Colombia. The workshop was aligned with Live Project's educational model, which emphasises the importance of the social aspects of a project. The aim of the essay is to identify theories and models which will be of mutual benefit to architecture and SI, and to suggest a way forward for SI processes to be incorporated within architectural schools.

KEYWORDS Social Innovation, Live Projects, Community, Participatory Design, Workshop, Critical Pedagogy

Introduction

Over the last three decades, Social Innovation (SI) has spread rapidly to all sectors of society, associated with a diversity of activities in the non-profit, social entrepreneurship, social economy, services, and corporate social responsibility sectors.[1] Broadly; SI refers to new ideas that work in meeting social goals. The results of SI are all around us. They include fair trade and restorative justice, distance learning, traffic calming or much broader movements of change (such as feminism and environmentalism) or market dynamics and organisational incentives.[2] Practical examples could be Open University, Big Issue, Fairtrade, Crowdfunding, the High Line, etc. This essay will explore some of the theories associated with SI to find a conceptual definition that can be used to connect SI ideas and methodologies with architectural education and to explore how they can benefit each other. This is relevant in a time where we can observe preoccupation with the social aspects of the built environment in most academic studios and briefs but no actual tools, strategies and methodologies to deal with these aspects, which are always intertwined with user-focused architectural projects.

The text will unpack how SI was put into practice during an international workshop promoted both from practice and academia, with participants from different origins, skills, backgrounds and interests in a remote disadvantaged community in rural Colombia. It will use the theories and approaches by Edwards-Schachter and Wallace[3] with the theories of Cajaiba-Santana[4] and will use the approach and experience of organizations like the Young Foundation[5] to analyse this process and establish how SI could be incorporated in architectural processes.

There are few references to architecture in the existing literature on SI. However, most SI initiatives are somehow related to the built environment or influenced by contexts and spatial arrangements at different scales. It becomes apparent that these two disciplines could complement each other.

A common critique of contemporary architectural practice is that it is disconnected from the people and places that could really benefit from it; there is a gap that current architectural education seems unable to fill. In some cases, 'image making and aesthetic differentiation are keys to architectural production and architects are pressured to create outstanding forms and designs'.[6] Architectural practice will become more transformative and able to meet the growing needs of our society, when the architect's knowledge and skills are expanded beyond the limitations of current practice's programs, fee structure, and property lines of an individual client's project.[7]
Even more explicitly-social academic practices such as Service-learning – understood as an experiential component in students' education encouraging interaction with, and service to, underserved populations in the local community – have been widely criticised. Carroto's findings, when she investigated the impact of service-learning projects in the US, showed how students' work met course learning objectives and the relation with communities' unmet their needs. The distinctive 'civic' part of these projects (from a pure design & build) was typically underachieved.[8]
The education period is an opportunity to explore the societal and ethical dilemmas faced in practice and our responsibilities as designers to the built environment and the people who inhabit it. Typically, architectural education is structured through a series of projects whose briefs often involve the student facing social, environmental or political aspects of a particular context that go beyond spatial design. Teaching is normally based in the studio and following the command of the tutor. Students may visit the sites if these are local or just have one field trip if site is remote to their campus. Therefore, there is a lot of background research and theoretical hypothesis by which students create their own imagined scenarios to respond to. The value is in creativity defined as architectural spatial design, and the outputs are products, typically drawings and models. Professional bodies decide the content of the curriculum with values that lean towards professional efficacy.
Dean's ideas when reflecting about the work of Rural Studio implied that a fundamental change in architectural schools is needed; academics need to remind students of the profession's responsibilities if architecture is going to inspire a community or challenge the status quo into making responsible environmental and social structural changes.[9]

We are seeing the surge of SI as a theory and new field of knowledge put in practice from small scale initiatives to larger scale policy and government projects. However, there seems to be little cross-pollination between SI and architecture, even though their processes have much in common and most of the problems that current societies face have to do with the built environment. Key questions emerge: How can architectural pedagogies benefit from the SI approaches? Can architectural design contribute to SI processes?

Methodology

In order to get a better understanding of the issues outlined above, this essay will start with a literature overview to search for a conceptual framework of SI and to understand the different approaches and disciplines that most commonly use it.
Relevant theories have been identified due to their connection with learning processes and the socio-cultural aspects of contexts, first Edwards-Schachter and Wallace,[3] who emphasize the learning-based perspective of innovation, and then Cajaiba-Santana,[4] who understands SI as a driver for social change.
A key reference is the work carried out by the Young Foundation,[5] which comprises books and methodologies on SI that are a useful tool to establish how the SI processes could be structured and implemented in other areas and contexts.
This essay employs qualitative methods of analysis through the lens of SI using the aforementioned approaches and concepts to explore the case study of the workshop "From Territory to Detail", which was realised in Colombia in 2014. Participants provided feedback through a semi-structured questionnaire; these responses will be used through the essay to provide the reflexive views of participants on the process and the results of the workshop. The workshop is also

aligned with Live Project education and the conceptual framework developed by Anderson and Priest.[10] More recent inclusive studies by Anderson[11] will be used to map the different aspects of the approach and the focus of the workshop experience.
The study will explore the idea of 'infrastructuring'[12] as a critical approach to SI. As already identified by Mulgan[13], designers need to develop new approaches to be able to contribute in the field of SI. As a result of this critical dialogue with existing theories, the essay will propose ways to establish fruitful relationships between SI and architecture, adopting the model created by the SI Community (SIC) [14] on how to set up a process of SI. Finally, the study by Benneworth and Cunha[15] will look into SI from the university's perspective to understand their role in the process.
We understand the limitations of this study as it is based on one qualitative example and it is hard to extract generalizations when the sample size is small. Even though our findings are case-specific, we hope to open a space for future research into the theme. Architecture as a discipline has the potential to improve the built environment's social, environmental and economic conditions if education and practice work towards addressing social needs rather than individual interests. The processes and frameworks of architecture and SI are intertwined and can support each other to achieve greater outcomes.

Social Innovation: Searching for a Conceptual Framework

In the UK, the Young Foundation (YF) leads the field of SI. The foundation came out of the merge in 2005 of The Institute for Community Studies –an urban studies think tank which combined academic research and practical SI- set up by social researcher and innovator Michael Young in 1954 and the Mutual Aid Centre. The YF has proposed key ideas that changed the social sphere in the period after WWII, such as the Open University, School for Social Entrepreneurs, Which? etc. The Open Book of Social Innovation, published by the YF, defines SI as 'new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations. In other words, they are innovations that are both good for society and enhance society's capacity to act'[16].

SI is a relatively recent field of study and there are various definitions of what SI may be. Efforts to formally review the concept have primarily arisen since the year 2000, usually in form of reports and working papers[17]. The knowledge fields that have commonly taken the lead in adopting SI are sociology, management, social entrepreneurship, territorial and urban development, political science etc[18]. Drucker defines SI as 'a tool used by entrepreneurs to exploit a change as an opportunity for a different business or a different service.'[19] Phills from the Stanford SI Review, describes SI as 'a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions, and for which the value created accrues primarily to society as a whole rather than private individuals.'[20] From a social perspective, Mulgan affirms that SI 'refers to innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social.'[21] From a more institutional perspective, Andrew and Klein affirm that 'social innovation involves the wish to do things differently, to think in terms of transformations to institutions and to social practices'.[22]

The question is how might architectural practice mobilise SI? This study will focus on the concepts that could bring SI ideas and strategies to the learning process of architectural design and hence introduce a change by nurturing professionals that look at the built environment from a different perspective. The study formulated by Edwards-Schachter and Wallace,[23] who studied 252 definitions of the concept between 1955 and 2014, is relevant to this essay as their own conceptual framework for SI assumes 'innovation to be a learning-based process involving actors' interactions and social practices'. Their inclusive analytical approach highlights the following aspects and brings together various existing theories summarized as follows:

- The importance of social interactions relating to various actors and social practices. Innovation process comes with purposeful and social action which involves interactive learning and capacity improvement.
- Cultural (and institutional) factors need to be articulated into local and institutional

dynamics. Innovation processes involve formalizing social practices, allowing actors to modify the rules, relationships or resource distribution towards change.
- Social practices are central to all stages of innovation, from early ideas to dissemination.

This analytical approach summarizes the learning-based process perspective of social innovation and will be used as a lens to apply to the case study (fig. 1).

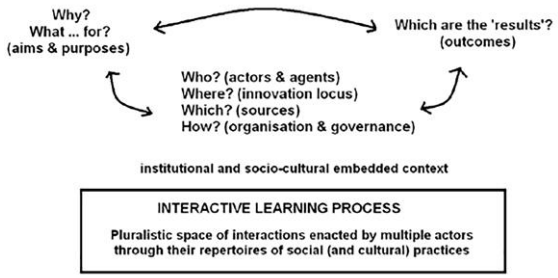

Figure 1: Elements to guide the analysis of SI as innovation process by Edwards-Schachter and Wallace, p.66 (2017).

Edwards-Schachter and Wallace identified a set of common core elements underpinning three different and interrelated discursive areas: processes of social change, sustainable development and the services sector (serving people's needs)' [24]. They found an overlap of terms, such as 'community', 'process', 'change', 'idea', 'society', 'development' and 'practice' that are common to all three areas above. These terms are frequent in the architectural discourse too, but they may have a slightly different meaning; we see them used to illustrate situations, sometimes as token words used superficially without real engagement or exploration by the students. Typically an architectural student project develops a design solution to a brief covering the questions in fig.1. Most academic briefs ask students to respond to those issues but sometimes the socio-cultural aspects are not considered in sufficient depth and the outcomes not always demonstrate how the user's needs are covered. These issues are difficult to approach from the design studio; architectural processes need to be engaged with users and their issues throughout the process and for this to be successful new methods of teaching need to be implemented. One of the key aspects of this SI approach is 'process' understood as a dynamic structure involving social practices and social interactions at different scales and levels of society.[25] This acknowledges the multiple dimensions of SI as all parts should be considered and integrated in the process to make it work. Both architecture and SI are creative processes which involve new ideas and relationships between the agents and actors involved; the weakness seen in architectural proposals is the lack of real engagement with social and cultural practices which could be further explored introducing SI approaches as part of the architectural process. The Young Foundation's approach and principles are valuable as a structure for SI processes; they are pioneers in the field, engaging stakeholders and citizens to develop solutions to societal challenges. The foundation has a long track record of researching the processes of innovation and working to ensure that anyone in a position to affect social change can harness appropriate and effective methods to create or sustain innovative solutions. Fig. 2 shows the Spiral of SI, a simple diagram that can be used to describe and evaluate SI processes. It identifies six basic stages of the process; 1) Prompts, inspirations and diagnoses; 2) Proposals and ideas; 3) Prototyping and pilots; 4) Sustaining; 5) Scaling and diffusion; 6) Systemic change.

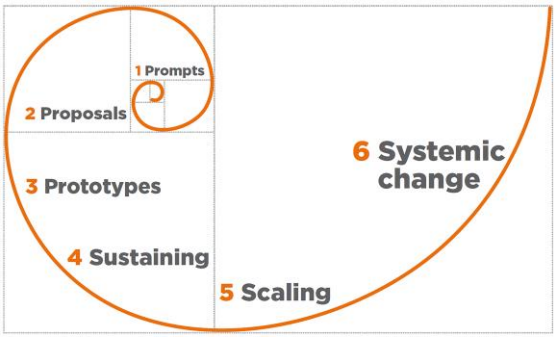

Figure 2: The Spiral of Social Innovation, by the Young Foundation in 'The Open Book of Social Innovation', p. 11, 2010.

This essay uses the theoretical framework proposed by Edwards-Schachter and Wallace (fig. 1) to analyse the workshop undertaken in 2014 with architectural students working with the local community in Caimalito. It will also refer to the definition by Cajaiba-Santana and the approach by the Young Foundation as lenses to reflect, analyse and critique the process and results. A critical reflection by the authors will expose the strengths and weaknesses of this initiative. The aspiration is

to determine the relationship and potential benefits of the intersection between architectural education and SI to identify what benefits it can bring and to open a new strand of research to facilitate the use of SI approaches and methodologies in architecture. The process structure created by the SI Community[26] will be used to establish a process and potential methodology that could be used as a base to link these two fields, and the study by Benneworth and Cunha[27] will help analyse SI from the University's perspective.

Case Study: Workshop – From Territory to Detail

The idea of this workshop originated with a research project where Estudio SPN[28] was awarded 1st prize in an international competition in 2012 ('Emergency Interventions: how to manage the integral development of habitability in a territory affected by floods linked to climate change in San Cristóbal, Colombia' promoted by OPPTA[29] organization). Estudio SPN was founded by the authors as a research-led design studio. The founders, based in Spain and the UK, work between practice and academia and between North and South. The focus is on the fields of architecture and urban design, development and participatory design, with a special interest in projects of community support through the design of socio-productive cycles and strategies (fig 3). Estudio SPN has been researching bamboo-guadua ('guadua angustifolia' is the Colombian variety of bamboo) as an engine for human development, studying solutions of habitability and urban regeneration in disadvantaged areas through the design of socio-productive cycles. These cycles work holistically incorporating the social, cultural, economic and environmental aspects of the context of each project, operating from the territorial scale to the domestic scale. In this case, the key tools for the cycle were bamboo as a material and the participation of the community throughout the process. Leff argued that the environmental potential of a region is determined not only by its ecosystem structure, but also by the productive processes that different socio-economic formations developed in the region. The use of resources depends on the value system of communities, on the cultural significance of their resources, on the social and ecological logic of their productive practices; also, on their capacity to assimilate modern scientific and technical knowledge to their values. [30] This approach supports our idea of the socio-productive cycles putting an emphasis on the social and cultural processes in a region. These cycles incorporate bamboo at all stages from planting, harvesting and treatment, designing of crafts and furniture and, finally, housing construction. One of the biggest challenges these ideas face is the perception of bamboo by locals as 'the material of the poor' which is embedded in their cultural values.

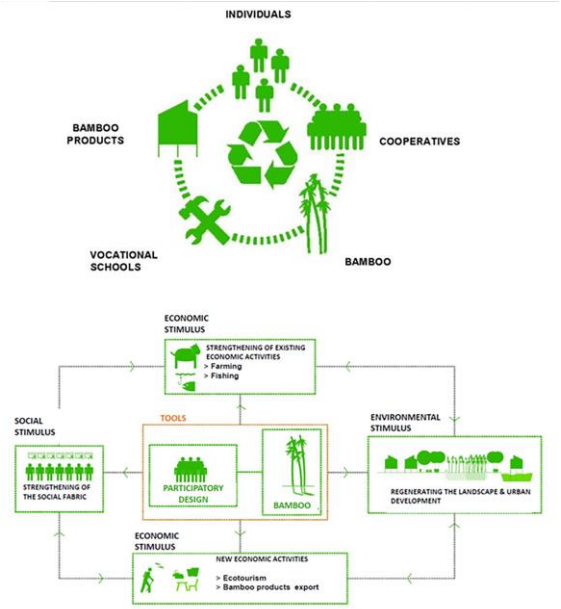

Figure 3: Diagram of the Sustainable Productive Cycle of Bamboo and Project Strategy, Tools and Goals, by Estudio SPN.

The initial research ideas underpinning the workshop could be seen as a possible prompt or inspiration in the spiral of SI (Fig. 2); the workshop would be stage 2 and 3 of the model (2-concrete proposals and ideas generated by the communities and 3-prototype and pilot). The future steps and ambition would be for these ideas and prototypes to be 4-sustained in time and 5-scaled up by subsequent experiences aiming for a 6-systemic change which was the ultimate aim of the sustainable productive cycle idea.

Even though the competition included partners such as UN-Habitat and government departments, there were no funds to progress. However, the trip to Colombia to present the proposal allowed us to connect with Carlos Hernández, director of the PEI[31] programme (International Studies Programme) of the

School of Architecture and Design of the Pontificia Universidad Javeriana of Bogotá, and begin an international collaboration between a Europe-based research-led practice and a Colombian University.
Estudio SPN and PEI collaborated on a few projects prior to co-founding Bamboo Think Tank (BTT); an international knowledge platform formed by practitioners, academics and members of the bamboo industry from Spain and Colombia to research and promote the use of bamboo in the social, economic and environmental development of vulnerable communities.

Within this background and following the conceptual model shown in fig. 1 through the lens of SI as a learning-based process, the workshop will be critically analysed.

Why? Estudio SPN wanted to put into practice some of the theoretical ideas and test them in a real-life scenario, where bamboo is a local material for a community that could benefit from these strategies. The approach was to use participatory design methods to agree what the focus of the workshop should be rather than imposing pre-existing ideas on the community.

What …for? BTT organized **t**he international workshop open to architecture students and graduates with an interest in bamboo and in working with communities as a pilot experience. SI was part of the agenda of the workshop as we understood that there was a further challenge in this scenario which was the acceptance of bamboo as a 'noble' material by the community and the design toolkit will not be sufficient to resolve this issue. We believed that SI processes would contribute to enable social change through sustainable development and to meet local needs.[32]
Students reported that their motivation to participate was: "understand the needs from the perspective of the habitat and provide solutions using local resources like guadua"; "to apply learning from the vision of the community; working with them, their needs turn real"; "it's a workshop for cultural interaction, learning from other realities"; "immersive aspect of the workshop"; "different from what we normally get taught that architecture must generate big impacts with complex and costly buildings"; "the social component, innovation and the qualities of the material."

Who? BTT organized the workshop alongside Estudio SPN, who were in charge of the international students and international aspects using their links to academia in Europe and their experience in practice; PEI programme, who were the key academic partner in Colombia and had connections with the organizations and locations where the workshop took place; Fundación Escuela Taller de Bogotá[33] (FETB) and the community of Caimalito. The participants were:

- International students from Spain, Italy, Macao and Venezuela, typically young graduates. They were self-driven and highly motivated which empowered the rest of participants.
- Colombian carpentry students from FETB, coming from disadvantaged backgrounds. They had excellent skills in understanding materials and working with tools and shared these with others.
- Colombian students from the PEI programme; typically coming from urban middle class or privileged families and for whom this workshop was the first project of their term.
- Caimalito community; a group of young children, a group of teenagers, a group of mothers from the local school, a group of unemployed men and some senior citizens. There was a mix of skills and levels of involvement between these groups.

In the context of this essay, we understand 'community' in the wider sense as 'sharing or having certain attitudes and interests in common'; we can also consider each of the groups as a small community. There were significant differences between participants in terms of personal background, knowledge and resources which was a challenge as well as an opportunity; the premise was that all communities were equal working together. The questionnaire reported that everyone considered that the mix of participants was a very positive aspect and students considered that they learnt the most from the community.

Figure 4: Students visiting a bamboo plantation (top); participatory design workshop with the group of children (middle); local kids helping to build a bamboo playful surface for their playground (bottom), by Estudio SPN.

Where? The workshop started at FETB in Bogotá for the first week. This is a Vocational Training School providing skills in traditional trades such as carpentry through methodologies of learning by doing. Students come from disadvantaged backgrounds in areas of Colombia affected by the armed conflict. The following week, students moved to Caimalito, an informal rural settlement originated in the 1970s along the disused rail tracks near Pereira. Caimalito is located in the coffee region by the Cauca River, more than 300km away from Bogotá. The region suffered a big economic downturn in the 1990s with the coffee crisis. Nowadays it has high levels of poverty and unemployment, bad transport links and limited access to essential services.

Which (sources)? The resources employed in this workshop came mainly from the organizers, their networks and connections. Members of BTT had approached the Caimalito community in preparation for the workshop. Clemencia Sanint was an influential community leader who hosted the students in her bamboo plantation and farm adjacent to Caimalito. Other members donated their time for lectures and others donated bamboo for the prototyping phase. International students paid a small tuition fee to cover some of the aspects that required funding.

How? The organization of the workshop established a series of activities to make the best use of the limited time in each location. From technical learning about the material to participatory design workshops involving different community groups up to the practice and implementation phase where students and local community worked together to test the proposed designs. This was an interactive learning process enabled through social interactions considering cultural factors through all stages of the process. [34]
The workshop used a combination of theoretical and practical activities. Students started by exploring the potential of the material and making prototypes in the FETB's carpentry workshop (learning by doing) and exchanging knowledge between the FETB students who were more skilled with the tools and the rest of the students who were stronger conceptually (peer-to-peer knowledge transfer). Bamboo masters like German Rubio and Simon Velez lectured and took students to visit bamboo projects. Students also visited bamboo plantations, treatment plants and other bamboo constructions to understand the full cycle and potential of this material. Visiting-students provided feedback that the activities they found more interesting were working with the community through practical activities.

On arrival to Caimalito, visiting-students explored and analysed the area and engaged with the local people. They organised participatory design workshops with the local community groups. Through these workshops, participants collectively-decided to focus the

works on the recovery of the disused train station building and surrounding area for cultural activities as this would benefit the entire community; the goal of the workshop was decided collectively as highlighted by Cajaiba-Santana's[35] definition. There was a longer-term ambition which was to turn this disused building into a Vocational School similar to FETB which will benefit the local youth; however, this goal encountered political problems with the local government (budget). This is a complex aspect that needs further exploration of local institutional dynamics to understand how this could be implemented, linking back to the theories of SI where institutional[36] involvement is required.

Students were organized in groups and distributed tasks on a daily basis. The members of the local community joined the works when they had available time. A group worked with the local children regenerating the garden adjacent to the old station; others designed and made furniture with bamboo collaborating with the local teenagers; and others designed a small artefact to be used as a play area or a stand to watch films projected on the station walls as an improvised cinema. The use of bamboo in this case supported the collectively-decided main goal of the workshop.

Results? The legacy of the workshop and what happens when students leave the site was a priority. This workshop started as the first of many, creating a connection with this community that would be sustained in time. It worked as a catalyst for various actions: a) The disused station building was turned into a community cultural space, achieving the main goal decided collectively; b) The workshop empowered the local dance group to manage the recovered station open to all. Dance is embedded in local culture and a few dance groups practice there regularly and organize cultural activities for children and teenagers. This shows the impact that design can have in a community strengthening local social practices for the general benefit; c) Caimalito was the site for the Colombian students during that semester returning in various occasions. The Colombian students had the opportunity to return with new ideas and actions, this shows that engaging in projects located closer to campus can generate greater impact for all parties involved, have good continuity and scale up ideas; d) The workshop triggered talks with local government which facilitated that the students of the FETB converted the fire station building (adjacent to the train station) into a cultural centre the following summer. Involvement with local institutions was ultimately fruitful although the timescale of the workshop was too short to see these results the community benefits from them; e) The workshop initiated the students from the local school of architecture at the Catholic University of Pereira to begin working with the community of Caimalito; they have been developing proposals with the community since then obtaining mutual benefits.

Institutional and socio-cultural embedded context

Institutionally, the organizers were fully aware that in order to make this experience successful there had to be an engagement with local authorities.[37] This happened through various meetings with the council resulting in the concession of the old train station shed as a place for the workshop; however, the Council did not grant support for the implementation of a future vocational school in the old train shed to continue with the ideas and the process started by the workshop.
One key aspect of this workshop was the socio-cultural aspects of SI processes. According to Cajaiba-Santana,[38] 'SIs are new social practices created from collective, intentional, and goal-oriented actions aimed at prompting social change through the reconfiguration of how social goals are accomplished'. A fundamental aspect is that the aim of these actions needs to be created collectively; ideas cannot be imposed on people.
Culturally, a key part of the original ideas of working with bamboo aimed at removing the stigma of bamboo being the "material of the poor" which stops some people from using it even if they have the knowledge and skills to use it. Every SI represents a story, a rich account of the actions, events, and circumstances in which social context and actions are interwoven.[39]
Students appreciated that "the community provided a vision of the dynamics of Caimalito including their lifestyle and traditions"; "We saw a new aspect of life and a reality of the country"; "We worked directly with the community, understanding their living conditions and culture and most importantly getting involved with the people to whom the project is aimed which makes it real".

The fact that students from all over the world came to Caimalito to learn about bamboo made an impact on its perception by the locals achieving positive impact at small scale with the local people engaged in the workshop. However, not everyone in the community was involved in the workshop and to shift the cultural perception of bamboo would require these new ideas to change deeply rooted cultural factors. We were not naïve about this target as we knew the power of a group of enthusiastic students coming from far was limited but it was a good way to test potential and learn for future activities.

Interactive Learning Process

The learning aspect was a clear achievement of the workshop and demonstrates that learning is central to SI. All actors involved in the workshop shared a pluralistic space of interactions enacted by their repertoires of social (and cultural) practices[40]. Student feedback proves this interactive learning process, highlighting what they thought they learnt from it (learning outcomes): "Participatory design shows the will to create active local initiatives strengthening community"; "The practical experience; participatory, cultural and human which contributed to my learning as an architect"; "A new way of approaching the profession 'horizontally' including everyone's knowledge to contribute to the general progress"; "To take advantage of local resources; how small actions can generate a big change for the community"; "Different points of view, an open learning initiative accessible to students of all types and all community members".

For each project, qualitative methods are required to understand and measure the value system and the local narratives which are relevant to any potential SI. Ethnographic and sociological research on these values and narratives can help SI innovation proposals. These aspects are considered the 'software' of the SI process by the YF: to make this work, teams need to be multidisciplinary to complement the skills of the architects who are not trained in these disciplines.

Architectural Pedagogy Connection

The architectural education model is typically project-based with outcomes as design proposals. Emerging models for architectural education such as Live Projects aim to situate the students in a real setting, so they engage and respond to real users and issues; these aspects are also present in all SI processes. Anderson and Priest developed a flexible framework and definition of Live Projects in 2014[41]. Central to this conceptual framework is the engagement of learners with communities' culture and practice. The inclusive aspects that make a project "live"; brief, timescale, budget, product (built or not) and educational organization engaged with external organization for their mutual benefit are important to reflect on the pedagogical experiences that focus on the critical thinking of those involved.

From this perspective, the workshop can be framed as a Live Project; it was located outside the university and situated[42] in particular places where the learning occurred, the participants were coming voluntarily from different origins, backgrounds, skills, abilities and interests (only for a few of them it was part of their architectural course).Time was spread over two weeks and budget was limited, which meant that creativity had a big role to make the most of the resources. The external collaborator was the community of Caimalito. There was an overarching brief that participants needed to make specific; proposals aiming to improve the living conditions of Caimalito using participatory design and bamboo as tools. Through participatory activities the brief was narrowed down to the regeneration of the old train station for a community cultural space.

Figure 5: PEI and international students working with adult members of the community making furniture and artefacts with bamboo in the old station building, by Estudio SPN.

More recent work by Anderson has devised an inclusive and flexible taxonomy of these projects internationally to develop an objective method capable of analysing live projects promoting diversity and evolution[43]. Through a quantitative and qualitative analysis, Anderson created a series of categories to frame live project initiatives. If we map this workshop as a live project through those categories, it will be: self-funded, propositional, collaboration, semi-permanent, by a mixed group of 11-50 people. From the data gathered, the trend for this type of learning activities in the global South is for self-initiated or collaborative projects, self-funded and with mixed level of student group. This suggests that these projects are complex, require unconventional arrangements in relation to the curriculum and require concerted external resources and collaborations in order to operate[44]. This coincides with our experience in Caimalito.
In terms of qualitative analysis, Anderson's findings show that contextual resources shape the nature of live projects, and there is a strong connection between live projects and contexts with significant levels of need (economic, social justice, wellbeing…). Context was re-conceptualised as a multi-dimensional resource connected to need or opportunity. Human resources are an important qualitative factor revealing the significance of the expertise and aspirations brought to each project by project participants[45]. In our case, Caimalito was an informal settlement in a rural area with scarce resources where local people were a central part of the participatory-design process and implementation of proposals. The project aimed to have continuity with the community and to be able to scale up the impact to progressively achieve change in the social dynamics.
For live projects, engagement with communities is critically important but there is no method or model about how to create this engagement or how to measure impact or success. SI practices could have a key role in the social aspects of live projects; for this more research is needed to develop suitable methodologies and frameworks that will benefit both.

This workshop had some unique factors. The fact that SI was a key part of it from inception made participation and empowerment of the local community central to the process, trying to avoid paternalistic approaches. The implemented design was not pre-conceived remotely and imposed on the place; the role of design was a vehicle for communication and empowerment (participatory design) through designing with a material that is familiar to the local communities but not to the visiting-students, which empowered locals. Rather than bringing studio-formulated proposals to be implanted in the area, the workshop brought students to the site to learn, understand, interact and co-create together with the local community, enabling new social interactions that facilitated SI. This way, students learnt about the socio-political conditions that affected the area and questioned the role of design in those scenarios and their position as practitioners.

On reflection, we observed high levels of engagement, empathy and motivation which were due to the immersive learning experience in a new environment and the collaboration between the different communities involved. This could be understood as an immersive and socially-innovative live project experience which provided transformative learning to all participants.

Figure 6: Bamboo structure for seating and playing- under construction and used by local kids. (by Estudio SPN).

Critical Review

While different initiatives have demonstrated how design can be a powerful approach in SI, especially when it comes to systemic thinking, prototyping and visualising, some concerns have been raised regarding the limitations of applying design in this field[46]. Some actors working with SI have pointed out the weaknesses of designers and the limits of design methods. These reflections made it clear that design must be adapted to this new landscape in order to avoid naïve and superficial approaches. The weaknesses of designers include: lack of economic and organisational skills, inabilities in driving the implementation process, the high cost of design consultants who often do not have a long-term commitment to the projects, and the superficiality of some proposals due to the fact that by ignoring the evidence and field experiences designers tend to 'reinvent the wheel'[47]. This criticism also applies to academic architectural projects which may suffer of similar weaknesses. To respond to these challenges, design needs to collaborate more closely with other disciplines involved in SI as well as importing tools and methods that could support the development of robust proposals and their implementation in real contexts.

These processes involving different actors need to balance the expectations of each group. For this workshop, some students were critical about the brief, as they felt that the outcome (built product) was not impressive enough; a more prescriptive brief would have created a better 'product'. Students typically focus on final product and forget the importance of learning through the process. We didn't want to dictate the outcome as it should be defined by all participants as the result of the participatory design process (SI approach). The collectively-agreed goal of the workshop, which was to recover the old station building for community cultural activities, was achieved.

We were aware of the challenging issue of time and took this opportunity as a prototype for future workshops. Processes need time, especially when dealing with a varied group of participants, a local-community and different locations. The workshop was ambitious, complex and involved risks. It was the beginning of a longer-term engagement. The first step aimed to change the way people think about their built environment and resources, in this case bamboo. Hamdi[48] is one of the advocates of small-scale, incremental change involving community dynamics. Some students identified this potential: "I understood how a small action can generate a big change for a community, specially taking advantage of the local resources" and others saw the limitation of time: "a single action brings limited benefit to the community; continuity of the process is required to increase impact". The issue of time also relates to the concept of "infrastructuring" (as opposed to a project-based approach to SI), where the activities involved are aimed at building long-term relationships with stakeholders in order to create networks from which design opportunities can emerge[49]. This approach could facilitate better long-term results for these initiatives and strengthen links between universities and external organizations.

Changing cultural issues related to bamboo among the wider community remained a challenge. Innovation must consider the pre-existing cultural and socio-economic dimensions. The idea behind working with the community was the transfer of knowledge whereby the students bring fresh ideas about how to use bamboo and its potential to improve the area, and the locals bring the knowledge about the place and local culture. The professional designer should transfer skills among the actors to enable their capacity to 'continually respond, adapt and innovate.'[50] Students thought they "dignified bamboo by exchanging designs ideas"; "provided a new perspective of their own environment and how to take advantage of local resources"; "the self-sufficiency and independency that can be achieved when they know how to use this material to progressively improve their dwellings."

Socially, the aspiration was that local participant-actors would be the agents of change in the community which remained an aspiration. In order to achieve this goal, we needed stronger links with a more organized local-community and longer engagement. Using the Spiral of SI by the YF (fig. 2), the first three stages were successfully achieved. The process and participants' reflections showed promising signs of continuing the spiral process into the next steps. These were the aspects we were aiming to implement in the following workshops which unfortunately did not happen due to various factors such as lack of funding and coordination of different term times between Colombia and Europe.

All the learning from this experience is transferable to similar experiences closer to campus. SI initiatives can be found anywhere in the UK and Europe and it will benefit universities to establish long lasting links with nearby organizations and stakeholders that will allow for long term projects. However different conflicts arise with educational projects as these would normally be limited to academic schedules and this has an impact on the length of projects that can be undertaken.

Was SI innovation achieved? How can this be measured? According to the framework by Edwards-Schachter and Wallace the workshop followed all aspects of SI (fig.1). From our own observations the workshop enabled empathy, a deep understanding of the local context and the collaboration of various groups which wouldn't have worked together otherwise and benefited from this collaboration. In conversation with members of the community, they highlighted the integration, commitment and immersion of the students in the community which improved the community's motivation.

Reflecting upon the experience and the format being a workshop, we see different impacts in the communities involved. A short-term immersive-workshop can generate great impact in the community of students participating. However, the impact generated in the local community was much smaller, as improving the socio-cultural issues that affect a disadvantage community is not an issue that a single workshop could transform. Nonetheless, a local community leader provided feedback, saying that "a great achievement for Caimalito was to obtain a much needed space for young people for cultural and leisure activities and keep them out of trouble".

Conclusions

SI processes have an immense potential to create new resources and infrastructures that contribute to the delivery of teaching and research activities for architectural students. These processes can be located anywhere but ideally in the vicinity of each architectural school, generating and maximizing the benefits for students, users and the social groups and organizations involved.

SI opens a more collaborative and inclusive way to find solutions that meet people's real needs, a creative process with the aim to deliver new solutions to a challenge. There is increasing literature around SI and some useful theoretical and conceptual models for the process. However, so far there is no clear methodology for its implementation as a useful tool for tutors and academics wishing to engage with it.

The Social Innovation Community (SIC) model could help architectural schools set up briefs with a SI approach. The aim will be to achieve a better solution to the design challenge and create some real impact through the process with outcomes such as design proposals, strategies, models or built projects for a proposed place and its community. SIC[51] created a handbook that explains the stages and actors involved in the process. The principles behind this process have similarities with the architectural design process: collaborative and open, iterative, divergent-convergent thinking,

coaching approach, peer-to-peer learning. The diagram in fig. 7 could be tailored to incorporate key elements and stages of an architectural project. It reflects the engaged nature of these processes where activities are designed to make actors, users and stakeholders interact; these activities can be repeated in time and have impact on each other; the process is live and the outcomes are open ended. Preparation work is needed to establish connections, sometimes prior to the students' engagement in the projects. Time scales need to be sufficiently long to allow appropriate time for students to engage with each stage and actor involved and also to reflect on the process and their practice. Resources will be needed which can help student understand how to obtain them and the value of proposed ideas and strategies. The pilot project will be a key stage to evaluate proposals and potential impact.

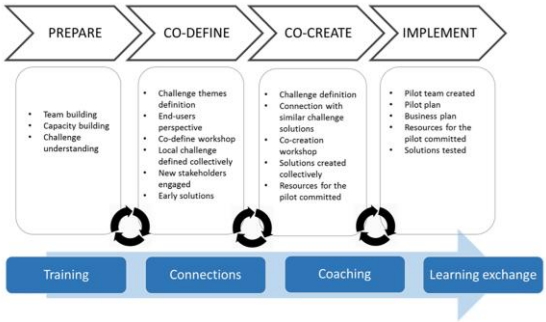

Fig 7. "How to set up a process of SI" by the Social Innovation Community, 2018. Available online at https://youngfoundation.org/social-innovation-investment/how-to-set-up-a-process-of-social-innovation/

Each stage of this process requires specific methodologies to set up these steps successfully; further research and testing on these methodologies will strengthen these processes. The diagram could be continued with further steps for "evaluation" and "adjustments", aiming to improve a process which doesn't have a specific end. There is little published about ways to measure SI and its success which will be a key area for further research.

From the case study, we found that the immersive nature of the workshop facilitated the horizontal participation of the different communities involved, enabling SI, which empowered the community of visiting students as much as the local community. However, the long-term ambitions of the workshop were underachieved due to different factors (i.e.: time, resources, early engagement with community and authorities). It is apparent that architects have the skills to produce positive change in the built environment; however, they are underequipped to deal with the social aspects and socio-cultural factors of projects. To achieve longer term results, there needs to be an agreed target and a strong relationship between a well-organised community and the educational organisation requiring a lot of planning and commitment from the parts, following similar steps as described in the model above. It is also necessary to establish institutional connections that will facilitate change which is something that is not normally part of architectural curriculums.

Academics have useful knowledge for SI resulting from their past teaching and research activities, and likewise SI can create benefits for their future teaching and research activities, providing placements for teaching courses, inspiration and material for new research, as well as evidence of user engagement and impact. At its most radical, SI can change the nature of teaching in particular disciplinary areas[52]. However, tensions also arise from increasing pressures on universities to prioritise individual institutional success (private benefits) over wider public benefits[53].

A key question is whether architectural education is ready to respond to the complexity of the issues affecting the world beyond the campus. Architecture can be considered as a social practice but the way in which it is typically taught seems somehow disconnected with key aspects of the contexts within which architects work. SI can bridge this gap in architectural education but for this to be part of the education of the architects of the future, architectural schools need to strengthen the multidisciplinary aspect of the teaching teams and these teams need to be involved in real experiences outside the comfort of the campus. Socially-innovative live projects should be included as an essential part of the curriculum as immersive experiences of a sufficient length that allow for a real impact on the students and the communities that they connect with. The focus should be shifting towards introducing the innovative (social) aspects of each project as part of the creative process to get valuable learning through these stages that is relevant to architectural education and will make architects real innovators and agents of change reflecting on their position as spatial practitioners.

REFERENCES

[1] Monica Edwards-Schachter, Cristian Matti and Enrique Alcántara, 'Fostering Quality of Life through Social Innovation: A Living Lab Methodology Study Case', Review Of Policy Research, 29, pp. 672-692, (2012). [Accessed 5 July 2018], p. 672.

[2] Geoff Mulgan, Simon Tucker, Rushanara Ali and Ben Sanders, 'Social Innovation: what it is, why it matters and how it can be accelerated', The Young Foundation, (2007), p. 4. https://youngfoundation.org/publications/social-innovation-what-it-is-why-it-matters-how-it-can-be-accelerated/ [accessed 25 Jan. 2018].

[3] Monica Edwards-Schachter and Matthew L. Wallace, '"Shaken, but not stirred": Sixty years of defining social innovation', Technological Forecasting & Social Change, vol. 119, (2017), pp.64–79.

[4] Giovany Cajaiba-Santana, 'Social innovation: Moving the field forward. A conceptual framework', Technological Forecasting & Social Change, vol.82, (2014), pp.42-51.

[5] The Young Foundation, online resource, <https://youngfoundation.org/> [Accessed 25 Jan. 2018].

[6] Thomas A. Dutton and Lian Hurst Mann, *Reconstructing Architecture: Critical Discourses and Social Practices*. Minneapolis ; London : University of Minnesota Press, 1996.

[7] Roberta M. Feldman, Sergio Palleroni, David Perkes and Bryan Bell, 'Wisdom from the field: Public Interest Architecture in practice', (2013), p. 11. <https://designcorps.org/wp-content/uploads/2013/06/PUBLIC-INTEREST-PRACTICES-IN-ARCHITECTURE.pdf >[Accessed 17 July 2018].

[8] Carla Carroto, 'When you have a hammer in your hand, everything looks like a nail: The architecture of service learning'. Qualitative Research Journal, vol. 14 (2014), pp. 103-118, p. 105.

[9] Andrea O. Dean and Timothy Hursley, Rural Studio: Samuel Mockbee and an architecture of decency. (New York: Princeton Architectural Press, 2002), p. 15.

[10] Jane Anderson and Colin Priest, 'Developing an inclusive definition, typological analysis and online resource for Live Projects' in *Architecture Live Projects, Pedagogy into Practice* ed. by Harriet Harriss and Lynnette Widder, (Oxford: Routledge, 2014), p. 9-17.

[11] Jane Anderson, 'Devising an Inclusive and Flexible Taxonomy of International Live Projects'. ARENA Journal of Architectural Research, 2(1) (2017), p. 1-16. <http://doi.org/10.5334/ajar.5 [accessed 28 Feb. 2018]>

[12] Per-Anders Hillgren, Anna Seravalli and Anders Emilson, 'Prototyping and infrastructuring in design for social innovation', Codesign, 7 (2011), pp. 169-183. Online [accessed 6 July 2018].

[13] Mulgan et al., 2007.

[14] Social Innovation Community (SIC). Online resource <https://www.siceurope.eu/about-sic > [accessed 3 July 2018].

[15] Paul Benneworth and Jorge Cunha, 'Universities' Contributions to Social Innovation: Reflections in Theory & Practice.' European Journal of Innovation Management, vol. 18, no. 4, (2015), pp. 508–527. p. 519

[16] Robin Murray, Julie Caulier-Grice and Geoff Mulgan. The Open Book of Social Innovation, 2010. <https://youngfoundation.org/wp-content/uploads/2012/10/The-Open-Book-of-Social-Innovationg.pdf> [accessed 25 Jan. 2018].

[17] Edwards-Schacher and Wallace, 2017, p. 65.

[18] Edwards-Schachter et al., 2012, p.674.

[19] Peter Drucker, *Innovation and Entrepreneurship, Taylor & Francis Group*, (2012). <https://ebookcentral-proquest-com.oxfordbrookes.idm.oclc.org/lib/brookes/detail.action?docID=995740> [accessed 4 July 2018].

[20] James A. Phills Jr., Kriss Deiglmeier, and Dale T. Miller. 'Rediscovering SI.' Stanford Social Innovation Review, 6(4), 34–44, 2008. [accessed 8 February 2018].

[21] Mulgan et al., 2007, p. 8.

[22] Caroline Andrew and Juan Luis Klein, 'SI: What is it and why is it important to understand it better.' Cahiers du Centre de recherche sur les innovations sociales (CRISES). Collection Études théoriques, no ET1003, (2010).

[23] Edwards-Schacher and Wallace, 2017.

[24] Ibid, p. 67.

[25] Ibid, p. 64.

[26] Social Innovation Community (SIC).

[27] Benneworth and Cunha, 2015.

[28] EstudioSPN. (2012). [online] <https://estudiospn.wordpress.com/> [accessed 1 Aug. 2017].

[29] OPPTA International Competition (2012). [online] <http://concurso.oppta.org/en/winners/> (Entry: 506183CO), [accessed 1 Aug. 2017].

[30] Enrique Leff, 'Habitat/Habitar' in *Saber ambiental. Racionalidad, sustentabilidad, complejidad, poder*, (México: Siglo XXI Editores, 2002).

[31] Peilab. (2017). Peilab. <http://peilab.wixsite.com/peilab> [accessed 10 Jul. 2017].

[32] Murray et al., 2010, p. 3.

[33] Fundación Escuela Taller de Bogotá <http://www.escuelataller.org/> [accessed 11 Jul. 2017].

[34] Edwards-Schacher and Wallace, 2017, p. 66.

[35] Cajaiba-Santana, 2014, p. 46.

[36] Andrew and Klein, 2010.

[37] Cajaiba-Santana, 2014, p. 46.

[38] Ibid, p. 46.

[39] Ibid, p. 49.

[40] Edwards-Schacher and Wallace, p. 66.

[41] Anderson and Priest, 2014.

[42] Jean Lave and Etienne Wenger, *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press, 1991.

[43] Anderson, 2017, p. 1.

[44] Ibid, p.9.

[45] Ibid, p.11.

[46] Hillgren et al., p. 169.

[47] Ibid, p. 172.

[48] Nabeel Hamdi, *Small Change*. UK and USA: Earthscan, 2004.

[49] Hillgren et al., p. 169.

[50] Colin Burns et al. 'Transformation Design'. Design Council, 2006. p, 21. <https://www.designcouncil.org.uk/sites/default/files/asset/document/red-paper-transformation-design.pdf.> [accessed 10 July 2018].

[51] SIC, "How to set up a process of SI" <https://youngfoundation.org/social-innovation-investment/how-to-set-up-a-process-of-social-

innovation/ > March 2018, [accessed 5 July 2018].

[52] Benneworth and Cunha, 2015, p. 519.

[53] Ibid, p. 517.