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Community Design Studio: a Collaboration of Architects and Psychologists

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Abstract

The 'Community Design Studio' was a programme of collaboration between two courses, one in architecture and the other in environmental psychology. It aimed to generate a creative dialogue identifying responsible and professionally informed plans for the renewal of an inner city area in Glasgow (Govanhill) in which community participation was an essential ingredient. The collaboration took the form of architecture students, as designers and environmental psychology students as consultants, communicating electronically between Guildford (University of Surrey) and Glasgow (University of Strathclyde) and then meeting for on-site project work in London and Glasgow. The local community in Glasgow was the client for the architecture students, as the commissioner of ideas for neighbourhood regeneration.

This interdisciplinary collaboration took place over nine months and generated educational, social and professional capital and challenges for both groups of young professionals. It involved long-distance collaboration through a virtual-studio with limited direct contacts; the responsibility of dealing with a 'real' client; and the cultural diversity of the two disciplines with different curricula, philosophy, teaching styles and learning outcomes. This experience also suggests potential ways to overcome the obstacles encountered in professional/community as well as inter-disciplinary collaboration and cooperation, and advocates the educational and social utility of such collaboration.

Keywords: Collaborative Design, Collaborative Learning, Community Architecture, Live Project, Urban Regeneration, Virtual Design Studio

Good Practice Points

- Brings disciplines together, sharing parts of curricula and approaching common goals using different theoretical issues and methodologies.

- Students are exposed to other professionals and clients, and learn to interact and discuss their work with a broader mind and vocabulary, taking into account broader issues than architecture and design.

- When collaboration is intra-departmental, staff and students must economise resources and identify alternative methods for information sharing and discussion. When well organised, this has positive implications on management, students' progress and independent learning. Web-sites are ideal instruments for use to keep updated of progress on the work; though they must be interactive and accessible.

- Collaboration and task sharing between students enhances the responsibility of individual members of the team; this programme is a joint effort; individual progress can never be disentangled from group progress.

- Language and interaction in general must be disentangled from jargon and professional/professional and professional/public barriers.

- Working with a real client adds realism to the learning environment, introducing pressures more common to professional practice. It is a good training field for the development of precious methodological and interpersonal skills, increasingly required for professionals of both disciplines.

- Working with a real client necessitates acknowledgement of ethical issues; working in an interdisciplinary framework exposes students to the ethics of other disciplinary practices demonstrating that one cannot just 'use' the methodology of another discipline without being aware of its assumptions and requirements.

- Participants share a sense of pride in having contributed to the design and development decision process.

- The design proposals elaborated by the end of the project, being based on considerations taking into account different stakeholders, have a good chance to hold a strong degree of sustainability.

- It is often a long term process that requires high levels of commitment from participants; every participant needs to feel motivated to remain involved throughout its phases, without loosing interest, without having hopes and aspirations frustrated by the normal ups and downs that are bound to happen.

- Risk to raise expectations in participants: goals and realistic scenarios of what can be achieved must be clearly stated immediately.

- By the end of the experience, students show increased confidence in developing their ideas and design proposals (feeling that these are backed up by a more complete and realistic understanding of conditions). They are also better equipped to be able to brief fellow professionals in their future working practices.

Background

Design education, practice and research address complex questions, systems and problems through a synthesis across disciplines. Even more so does education for the design of the built environment, in its aim to match human needs and aspirations to the scale and spatial quality of the built environment. The advantages and hurdles of interdisciplinary work have been debated and experienced at length (Philip, 1996; Proshansky, Ittelson, and Rivlin, 1970). Several disciplines can enhance good place making – not only design-based disciplines, such as architecture, planning, landscape and urban design, but also disciplines centred around social studies, such as sociology, psychology and geography. This paper focuses on the collaboration between architecture and environmental psychology.

Environmental psychology is a behavioural science; since the early years of its development, it has sought to provide integral support to architecture. However, even after 40 years on, the collaboration between the two is still very limited, the reciprocal strengths have not been exploited and there are still unarguable ideological and practical barriers. This paper argues that effective collaboration is possible; it can bring invaluable educational and practical outcomes, and can be achieved when the two disciplines are brought together at an early stage in their education process.

The case study shows how two academic disciplines, Architecture and Environmental Psychology, have collaborated for one year on a common project; it discusses educational and organisational issues, and comments on possible improvement to interdisciplinary work offering practical recommendations.

Context

In 2001, community groups from Govanhill, Glasgow, requested the Community Design Unit (University of Strathclyde, Department of Architecture) to carry out design work in their neighbourhood and devise ideas for its future development (ranging from economic regeneration, through environmental improvements to community identity and attachment) with the involvement of its population. A design team comprising trainee community architects, environmental psychologists and community members was established. Govanhill is a mainly residential area ¾ miles south of the River Clyde and Glasgow City Centre, with interesting variations in the urban pattern and in the population mix.

Over 9 months, architecture students carried out traditional site investigations and the analysis of their own and residents' environmental experience using techniques borrowed from the fields of environmental psychology and social sciences. They developed site strategies and detailed design working in collaboration with both environmental psychology students and residents, by long-distant collaboration.

Implementation

Initially the staff of the Community Design Unit engaged students in ascertaining the conditions of the neighbourhood, its strengths, weaknesses and opportunities, using traditional site-analysis techniques, such as physical, economic and social analysis.

Students were then introduced to a sequential combination of methods; mental maps, open-ended questions, sensory walks, multiple sorting techniques and semantic differential (Romice, 2000; Uzzell and Romice, 2003; Romice & Frey, 2003). Brief details of these techniques are given at the end of the case study. These methods were used to ascertain another level of knowledge of the area, its environmental experience as experienced by the students as designers and by the residents. These methodologies are borrowed from social sciences; environmental psychology makes great use of such techniques and is experienced in the analysis of their results and in the investigation of their potential application. At the same time, staff from architecture and psychology departments introduced students to relevant theoretical issues of each discipline, to explain the cognitive framework at the base of design decisions and of the investigative techniques adopted. The main issues to clarify were the usefulness that the techniques adopted could bring to design, and the benefits each discipline could gain from (an understanding of the principles of) the other. The design project was the common ground to bring all these factors together within a set scenario and with a set outcome.

Architecture students were involved hands-on in consultation with the client, site analysis and formulation of strategies and briefs. The psychology students were involved as consultants; they interpreted data gathered from the architecture students and assisted with its interpretation, providing a perspective derived from psychological theories. They offered insight on the effects of spaces on people to guide design decisions and helped assess the quality of design propositions.

As the students were located a considerable distance apart, and the nature of the project called for continuous information exchange and contact, the architecture students set up a website. This was used for three purposes: as a calendar of events informing all interested groups about forthcoming meetings; a public means of communicating progress, especially to keep the community groups (i.e., those with access to the Internet) and the psychology students informed of the progress of their investigation work; and as an online studio, to communicate directly with the psychology students in order to seek advice, acquire references, discuss methodologies, etc. This was realised though a 'chatroom' to which both groups of students could ask questions and engage in discussion about the project.

Contact between the architecture and psychology student groups was also achieved through 1) the exchange of two of the tutors and 2) a four day field trip in London. The field trip was used to visit inspirational case studies and examples, carry out joint tutorials between architects and psychologists and share different perspectives on architecture, the use of space and investigative approaches. A small group of psychology students subsequently visited the Govanhill site.

Aims

The interdisciplinary work used participatory design and neighbourhood regeneration as an arena for the collaboration of two groups of students. As such, the project was devised to fulfil two goals.

First, the engagement of students in live design projects with community groups can generate a number of important intellectual and critical spin-offs which can have long-term effects on the development of young professionals and of community capacity building. In particular, it can: expose students to a practical view of the profession that is not traditionally promoted in built environment schools (Gurel, Potthoff & Tse, 2000); have positive concrete impacts on the community groups in terms of services/activities provided; have positive effects on the perception and evaluation of academic institutions by society in general and communities who traditionally have little contact with institutions of higher education (Reardon & Shields, 1997). Examples of these benefits have now long been shown through the work of community design studios across the world. For example, the East St. Louis Action Research Project guided by Kenneth Reardon and focussing on community-based planning in severely distressed urban neighbourhoods, has devised alternative approaches to community development, urban social movements, and municipal government reform and has created a design course regularly acknowledged by design and planning institutions. The approach of Henry Sanoff and his students across the United States is a model of good practice in terms of the relationship it encourages between students and communities and the responsiveness of design to environmental problems. Although the US is a strong cradle of community work, much is being developed in Europe and the UK as well. It is noteworthy that community participation and practice are now becoming of interest not only for the design and planning disciplines, but are being studied for their pedagogic focus and importance (Sanoff, 2003). Bob Fowles (Cardiff), drawing on long experience in a community design studio (Fowles, 1997), emphasises the intellectual, critical and creative aspects of this type of work and its potential impacts on sustainable development as well as education. In doing so, it extends its boundaries to a number of other disciplines.

Our second ambition was that in order to guarantee a prepared ground for successful interventions, design professionals and experts from other fields must co-operate, encouraging other forms of knowledge to permeate and reinforce design solutions. In particular, it was felt that research experience in environmental psychology could be applied to teach students of architecture how to be considerate, responsible and innovative professionals, to extend their range of research methods in order to support evidence-based decisions and to engage community organisations in fruitful debate on the design of their own environment. Complex ambitions lead to complex problems, which spanned across several fields: collaboration with a client; collaboration between disciplines; practicalities and contingencies.

The project itself is a challenge

When students collaborate with a real client, they listen to and interpret their needs/aspirations, and develop design ideas for them: at the same time they must be careful

not to generate false hope and expectations. At the end of the day, this is an academic project, and students' benefits (tangible: design portfolio, skills) differ greatly from the clients' benefits (potential: education, awareness-raising).

Bringing together two groups of students with two very different educational background, portfolio and needs is also a challenge. When students of architecture and environmental psychology get together, they do not share a common background or theoretical knowledge. They have probably been 'raised' in different research traditions and the means of, and attitudes to, investigation will differ, as well as the assessment procedures, the delivery of students' services and the educational outcomes (Becher & Trowler, 2001). The distinction between 'intellectual' and 'cultural' capital in architectural education has, for example, perpetrated the disconnection between architecture and other disciplines. Traditionally, architectural education tends to encourage the latter, an attitude that becomes self evident when we consider the state and process of advancement of architectural knowledge and discourse. Architecture academic departments constitute only a small fraction of the total discourse on architecture; their academics exercise far less power in the field than those in other disciplines; architecture is little influenced by the academic world, the main journals of architecture being often disconnected from the academic production; intellectual influences rarely penetrate architecture (Stevens, 2001). The word research itself may have a different connotation for each group of students within those in architecture, taking it to mean the collection of any kind of data about a subject matter, but not necessarily systematically, or following any set of rules or guidelines, or validation procedure. Psychologists, trained in the scientific tradition, will aspire to collect data in a systematic fashion and ensure it is valid, reliable, theoretically explicable, etc. Along with different approaches to research come different ethical standards, which were apparent in our joint fieldwork experience. The students' approach to practical work may be different, revealed in their possession of very different skills and competencies. They may have very different objectives (i.e., what to get out of the experience to satisfy the Department's specific curriculum requirements). It was felt by the psychology students that the architecture students' sketches should be utilised more. The architecture students use their sketches as a tool and a way of communication, which can act as an aid to crystallising ideas during the design process. These were not taken sufficient advantage of on the London field trip, the first chance students had to meet in person, particularly as the psychology students did not know how to 'read' them. Finally, the language they speak may be very different; each discipline has its own jargon and this can be a barrier to communication. The preparation and groundwork to meet and address these challenges and build some common knowledge and understanding requires intense commitment and is time consuming.

The cultural differences between the two groups of students and in particular their attitudes to site-visits and interviews were initially a surprise for both tutors, but turned soon into interest and a motive for reciprocal learning and questioning. It was extremely useful to discover and acknowledge differences in approach which in turn raised issues concerning necessary advanced preparatory work, training for fieldwork and research ethics.

Practical issues for collaboration

Collaboration between disciplines is generally dictated by personal and research interest. Such links are often extra-departmental between members of staff belonging to different universities. When the collaboration involves students, the practicalities of day-to-day work make it more complicated and consuming in terms of time/resources.

The particular problems we encountered were: the variations between departments and the demands on the courses and students; the different administrative procedures of the participating organisations; the comparative weightings and relevance of the project in the courses; the staging of the project in the programmes (in this case, fourth year architecture undergraduates and first year postgraduate students); the comparative weightings and delivery times of the work needed to be similar, so both groups should work with similar timetables; the amount of time secured for direct collaboration.

Innovation

This project can be considered innovative for a number of reasons. It has brought new *topics* and *ways of working* to the curriculum of both courses. This is an example of action learning for both groups. Action learning involves real problems, focusing on learning and actually implementing solutions (Levy and Delahoussaye, 2000); it provides a well-tried method of accelerating learning, which enables people to handle difficult situations more effectively. Action learning is a process of inquiry, beginning with the experience of not knowing 'what to do next', and finding that answers are not available through current expertise. When expertise fails to provide an answer, collaborative inquiry with fellow learners who are undergoing the same questioning experience is always available. To be effective, this partnership in learning needs to be both supportive and at the same time challenging, caring yet questioning. Such partnerships actually create themselves when different people with different ideas and expertise (clients, architect, and environmental psychologists) engage whole-heartedly with each other to resolve each other's problems.

Students of architecture learn new methodologies for environmental analysis and develop a larger and more comprehensive repertoire of tools to support, justify and make their design more rigorous and responsive to users' experience and requirements. At the same time, they pair up and work with non-architects who like them, share strong views and interest in the built environment. Design is informed by a broader set of issues, students of architecture learn to be less defensive of their work and acquire confidence, a confidence which derives from broader knowledge gained from research, which is tested, credible and professional. Furthermore, their arguments as well as their designs are tested by a critical group of students who are trained to be critical, although they may not be particularly informed about what 'constitutes' good design from an architectural perspective. In this sense they act as intelligent members of the public, although their views are informed by social science knowledge. Equally, psychology students come to appreciate the complexity of the design process and the need to try and reconcile the conflicting demands made by clients, users and the wider public.

Students of psychology are confronted with live and realistic scenarios, and have the possibility to see their analysis and research applied in design terms. They study, in a real space and with real people, the effects of that space on their well-being and behaviour, and extrapolate from such understanding the qualities and properties that design should possess to enhance their quality of life. Their understanding guides design, reducing arbitrariness and enabling realistic, responsive schemes. The staff of both departments, while encouraging criticism, also try to ensure that such criticism is made in a safe, secure and supportive environment so that all students both know and feel that it is a positive educational experience that has the aim of developing, not undermining, their skills, knowledge and confidence.

Moreover, being confronted with a client brings to the educational setting realistic and necessary skills required in both professions. Collaboration between peers and clients has confronted students with non-traditional forms of communication, which teaches students efficiency, reliability and economy of resources. Relying on a virtual-design studio can be time-effective, and allows collaboration despite distance. Still, it is clear that this is not an ideal setting and should not be used as the sole vehicle of communication between the groups involved.

Student Induction; Resources

The collaboration started following research collaboration between one of the tutors from Architecture and the tutor from Environmental Psychology. The tutors presented both groups of students with insights in each other's discipline and an introduction to course programmes, meeting each other's students twice during the preparation (October-November). In parallel, the architecture students learned the principles and practices of participatory design and started devising consultation 'games' to interview residents and tease out their views, impressions and aspirations on the area. Meetings with stakeholders – housing organisations, community groups and NGOs brought economic, social and political dimension into the project.

After the initial phase of investigation and consultation, the architecture students devised group strategies for the development of the neighbourhood in connection to the surrounding areas and the city centre (December/January). Each student then selected an individual area to detail further and a specific theme to pursue, whether a housing scheme or a public complex. Each scheme was meant to include detail on architectural and urban design issues. In parallel, the psychology students were questioned by the architects on their insight on the use and effect of certain space typologies on people, i.e. neighbourhood squares, housing, greenery, public building, streets etc.

In February, the two groups met on a field trip to London; the architects brought along their individual area strategies and the days together were used to visit examples of residential and public spaces of interest for the project, and for informal tutorials. Face-to-face discussion between architects and psychologists was undoubtedly very effective and demonstrated how the chance to bring the two groups of students together on at least one

occasion at the start of the project, would have been extremely beneficial to the first months of research and consultancy. The 'virtual studio' cannot substitute initial human interaction.

Costs

The design project did not bear any extraordinary costs, although it is fairly well-known that architecture students spend a considerable amount of money to support their design expenses – printing, models etc.

The joint collaboration also did not incur any additional expenses aside from the field trip which, although not compulsory for the two student groups, was strongly recommended. Choosing London as a destination for the trip was useful, since the psychology students could travel there quite cheaply and easily. This was quite important as it was introduced as an additional element to the course and students had not budgeted for it. However the opportunity to work collaboratively with architecture students was seized upon by the psychologists and they were happy to incur this extra cost. Any shortfall was made up from the course budget. If the project were to be replicated though, it would be useful to travel to continental Europe to see more successful examples of neighbourhood regeneration, i.e. Germany, and the Netherlands. The fact that the field trip was self-financed limited the contacts between the two groups of students to just one encounter.

The website was built in-house but worked well; needless to say, face-to-face interaction at the outset of the course would enable students to use it more fully, not having to rely on the website to meet and share initial questions.

More resources would be useful to allow more frequent tutor exchanges (at least 3 times/semester, to review students' progress). Since the project is meant to involve a real client, it would be ideal to invite residents' representative to the field trip, which is meant to be a bonding experience, as well as a learning one.

Finally, the very nature of the project requires it to revolve around meetings with client groups: these meetings happen on site, as well as in the design ateliers; therefore a budget for transportation and for catering should always be anticipated. It is paramount to engage residents groups and show appreciation for the time they set aside to meet students. More importantly, social events are perhaps as important as the more formal ones: shmoozing and hanging around encourages informal discussion and allows both students and tutors to learn what really matters to community members (Forester, 1999).

Evaluation

A live project involving client groups is well suited to facilitate the development of collaboration between trainee architects and psychologists. Its main strengths are that it draws on relevant theories for the design of the city sensitive to a human response and the community, interests and attitudes that will develop from it. This is a major design and critical task, not to be disregarded if compared to the generally intended architectural design

of a building/complex of buildings. Students learn to question, augment information, draw conclusions from data and integrate them in design tasks (Romice, Uzzell, 2004).

Working for real clients and dedicating a considerable amount of time to research (other than the study of precedents) might suggest a corresponding diminution of precious time and creativity from the design process. Our experience shows that while this is true in part, it can with no doubt be reverted with more experience.

The tutors from architecture had – before this experience – been working with students with real clients for a long time, generally community groups and stakeholders in neighbourhood development. Participatory design can be daunting and inhibit designers if they are not fully aware of the principles at the base of collaboration with clients. When this happens, students tend to be less critical of clients' requirements, interpreting them as design guidelines rather than requirements, the former being close to directives, the latter being principles to respond to and interpret through personal and professional design ideas. The tutors were aware of this distinction and made it clear to students at the very start of the course. The presence of psychology students added a further layer of professionalism to the design work: they helped interpreting clients' ideas into spatial issues, preventing their direct translation into design solution. This step was fundamental because it forced spacial issues to be extensibely explored before resolution, adding awareness and knowledge to design creativity.

> *'I found that the collaborative project had a generally positive effect on the generation of architectural ideas. Our awareness and acceptance of the wider issues within the community - economical, social and political issues - became alternative starting points and parameters in generating design. I believe that in many ways this enabled us each to compose a brief that responded to these issues; a brief that we could not have created without our analysis and investigations. From the point of brief formation onwards each student was in a good position to develop specifically 'architectural' ideas within the larger condition they had drawn. One potential pitfall that as a unit we were wary of avoiding was the possibility of using our findings as a crutch to justify essentially willful design decisions. However, the conclusions that we arrived at based on our analysis were often dealing with programmatic or political issues and the spatial outcomes that we did maintain were essentially more abstract issues of principle and priority. This meant that we could be imaginative whilst remaining grounded and focused.'* (Architecture student)

Each individual design proposition had moreover to be integrated within the neighbourhood strategies; this adds a level of competitiveness and control upon students' quality of work; it had a positive affect in that it pushed students to demand effort and quality from the others whose design project had to fit the strategy.

> *'Part of the challenge involved making sure that what we designed related to the other buildings being designed in our group, but the process of ironing out issues with a co-designer usually strengthened the end product. As we were protective of our designs, situations were sought rather than compromises. This was also another valuable learning experience for the real world.'* (Architecture student)

There was an external acknowledgement of the students' work as well. Architecture students won the Glasgow Institute of Architect student awards for their design and the social relevance of their project. During design reviews, their work stood criticism from peers and staff and students demonstrated a good vocabulary of ideas to defend their proposal. The collaboration with students of psychology enriched both groups of critical and evaluative tools; the design outcomes were regarded as social and environmentally significant and relevant by the community and the architectural profession.

> *'Having the opportunity to discuss ideas and plans with architects gave us an insight into what drives their designs and thoughts. It allowed us to translate issues we have studied on the course into practical recommendations. I was also greatly encouraged by the enthusiasm of the architects to understand our suggestions and to incorporate them in their projects. The experience convinced me how productive an interdisciplinary design team can be, and I think encouraging this type of work at an early stage is both innovative and useful.'* (Environmental Psychology student)

Last but not least, the client, (members of the community) commented in favour of the experience. Upon invitation to the final design reviews, they commented that:

> *'I was struck by the wonderful diversity of approach and outcome by all of the group. Considering that their design were based on pooled data gathered in common, and although they were all trying to satisfy the requirements of the ordinary punter, they managed to go off in so many different directions, coming up with a wide range of design ideas, all of them equally valid and exciting.'* (tenant)

For the environmental psychology students, there was a consensus that the trip had indeed been educational and interesting and that the architecture and psychology students had learned a lot about each other and each other's disciplines. It gives food for thought and encourages independent thinking and innovative problem solutions; it provides an opportunity for two departments with long interdisciplinary histories to make the most of their credentials and support a joint project.

Key benefits

Working with a real client group provides students with a realistic experience and emphasises the need to be efficient, reliable, communicative and organized. The structured establishment of collaboration between the university and communities in the city can, with time, substitute the negative view that sees university scholars using the serious problems facing communities for purely didactic purposes, or to secure research funding that generate few, if any, community benefits. The view that universities are ivory towers can be replaced with an understanding that they can provide innovative, thoughtful and place-sensitive solutions to serious environmental and community issues.

Working on a strict structured sequence of stages from investigation through to design, gives each student a firm basis upon which to build; students build an evidence-based strategic, design and action brief themselves.

The collaboration between students from two disciplines presents both groups with the problems of communication and collaboration that have in the past been highlighted as one of the main sources of the failure of the early promise of a psychology/architecture dialogue and a creative relationship (Proshansky, Ittelson and Rivlin, 1970; Uzzell, 2000; Brown and Gifford, 2001). They learn to work in scenarios where they do not depend exclusively on themselves, but have to rely on others and where other trainee professionals are dependent on them. They learn to be rigorous, manage time, be honest and reliable (towards the client, and themselves).

It became apparent to the architecture students that a design project is more than just about planning and design; it was experiential learning on two fronts, working with a community on the one side and collaborating with another discipline has forced them to reconsider preconceptions about their role and skills, the effectiveness as well as the fragility of design in general, and to open up their design proposals to more grounded and evidence-based justifications. The psychology students realised that design is difficult if you are to reconcile professional expectations and philosophies, participating and 'invisible' client needs and preferences, past environment-behaviour research, as well as the constraints of the physical environment itself.

Conclusions and Considerations

The adoption of a very clear and organised programme of events and work over the year; the creative academic relationship between the tutors; the field trip and the on-line communication which fostered personal links and interests between students were all beneficial to students and their work procedure, and instilled in them an interest for collaboration with other disciplines.

It is our intention to continue this collaboration. Given sufficient support from both our respective universities and outside bodies, we hope to produce a handbook that would provide other architecture, design and social science departments with guidelines for undertaking similar programmes, including teaching objectives and learning outcomes, methodologies, practical exercises etc.

Since the early '60s attempts have been made to link the two fields of environmental psychology and architecture; however both fields are still severely disconnected (Gurel, Potthoff & Tse, 2000). In Europe and the United States, the original hope for architects and psychologists to work together has not materialised, at least to the degree anticipated. The growing concern for sustainability increases the scope for, and interest in, further developments and continuation of work to facilitate their connection. Perhaps, the objectives of environmental psychology and architecture should be joined to address what Forester calls *the organisation of hope*: planning.

> *'The objectives are not only to develop a set of programs and initiatives that address basic (practical, immediate, physical) concerns, but to do it in a participatory fashion so that folks can continue doing that kind of creative problem solving on their own. The outcomes we are looking for are not only improved physical conditions, but also*

an increased ability on the part of the local community-based organisation to do planning and programming and an increase in the number and quality of community leaders in a position to facilitate this process.' (Forester, 1999: 121).

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Appendix

Brief details of methodologies referred to under 'Implementation'

Mental maps is a technique frequently used when studying users' perception and imageability of places; by avoiding direct questioning, it reduces the number of preconceived ideas whilst studying the genuine experiences, habits and aspirations of users*. Open-ended questions* is a method used in this case to capture additional perceptions and evaluation of places; questions are hinged to the outcomes of the mental-maps, adding detail to their features. *Sensory walks* are exercises that record the effects that a place – through its colours, forms, smells, and atmosphere – exercises upon people. They are useful in that, by breaking down the experience of being in a place in its components, they allow an in-depth analysis of perceptual effects. *Multiple sorting procedures* identify the design criteria that users unconsciously attribute to places; being non-verbal techniques, the results they achieve are free from misunderstanding, independent from bias and can bridge cultural gaps. *Semantic differential* is an assessment technique based on the ranking of polar adjectives describing objects, spaces or else. Very common for its simplicity of use, it has long been questioned for the bias that can affect the choice of adjectives, normally depending upon professionals' values. In our case, the list of adjectives is built upon respondents' values, not solely upon researchers' values. For more information on each technique, with a description on how to use them in practice, see Romice & Frey (2003).