

Institution: London Metropolitan University
Unit of Assessment: UoA16
Title of case study: Architecture of Rapid Change and Scarce Resources (ARCSR)
<p>1. Summary of the impact</p> <p>The research has improved the living conditions of urban residents, adding value whilst 'doing no harm'. It has had a world leading impact on the understanding of the role of architecture and the design process in the context of the informal city. It theorises practice and development from a more worldly perspective to debate the meaning of professional practice and interpret urban change. Its unusual orientation as a long term project shows how practice in challenging circumstances can be strategic, combining ethical practice and research to generate tools and skills whilst training emerging researchers to co-produce outputs with outstanding reach and significance.</p>
<p>2. Underpinning research</p> <p>The quality of life for many poor and vulnerable urban residents has improved. The originality lies in developing for these sensitive contexts appropriate and effective methodologies whereby collaborative practice and reflection creates shared understandings, of which research outputs are a part. Investigations and live project interventions within informal settlements undergoing rapid physical and cultural change have been imagined, represented, advocated, operationalised, tested and sustained in practice in small live projects through collaborations between ARCSR, local NGOs and local inhabitants. Projects are appropriate not only because they change lives and add value, but also because they do so within an ethical framework extending beyond conventional research practice to include the associated environmental, social and cultural costs. They are made effective through a sustained programme of contextual negotiation, institution formation and the assembly of practical capabilities that are built into the research alongside the challenge of making any positive impact at all in such difficult environments. The propriety of the research practices that have grown with and been mobilised by this work are at the heart of the character of the research and add weight to its impact. The engagement of 20 students per year over 12 years with informal urban communities has generated from first principles a wide range of ideas, hypothetical schemes and proposals. This has provided a broad design discourse within which to initiate small live projects which when sustained over a number of years have had a snowballing impact on researchers, communities and NGOs. This promulgates a way of thinking and practising which by accommodating strife and minimising side effects and hidden costs can become strategic. Thus this 'bottom up' research has provided insights which can be effectively scaled up and are consequently having a significant and far reaching impact on city policy, the way that informal settlements are represented and upgraded; and the global debate on the informal city.</p> <p>Outline of Underpinning Research</p> <ol style="list-style-type: none"> 1. Rebuilding Community in Kosovo (2000 + 2001); For the internally displaced. 2. Kachhpura Settlement Upgrading Project, Agra (2006 to date): First installation of internal toilets in an urban village plus, street paving + a waste water reuse. 3. Savda Ghewra, Delhi (2008 to date): shared technologies for incrementally upgrading a resettlement colony. Live sanitation project on site (April 2013). 4. Navi Mumbai Project for Community Classrooms, (2008 to date): 2 bridge classrooms for stone quarry worker children constructed. Investigating the effect of amenity building construction in dense informal settlements on public and religious space (see REF 2 submission by Bo Tang). 5. Kaningo School Project, Freetown, Sierra Leone (2009 to date): Constructing a primary school in a peri-urban village integrated with historical research into 3 neighbourhoods led to an investigation into how architectural culture in Freetown can help give place-meaning and a sense of identity to the growing urban population.

Key Researchers

Mitchell (2000 to date); Tang (research assistant; 2008/09, 2009/10; PhD student, 2010 -13, research coordinator 2013 to date); Patwari (research assistant 2008-10+13); King (PhD student, 2010 to date); O'Grady (PhD student, 2012 to date).

3. References to the research

1. Mitchell M. (ed) (2013) *The Architecture of 3 Freetown Neighbourhoods*. 2008-2013. British Council. REF 2 output, linked to exhibitions in London+ Freetown.
2. Tang, Bo (2012). *Quarry Schools: Building Community Classrooms in Stone Quarry Worker Settlements in Navi Mumbai, India*. Children, Youth and Environments 22(1):280-293. REF 2 Output. <http://www.colorado.edu/journals/cye>
3. Pear, T. + Mitchell, M. (2011) *Live Projects and their Role In Studio Teaching*, in Intercultural Interaction in Architectural Education. Collected SCHOSA conf. papers 2009.
4. Mitchell M. (2010), *Learning from Delhi*. Ashgate. REF 2 Output, Urban Design Group prize (2012). Positive reviews in Architectural Review (September 2010); Urban Design (issue 120 Aug. 2011); Univ. of Oregon UGRG (urban-geography.org.uk, 19th Aug. 2011).
5. Mitchell M. (2008), *Dispersed Initiatives in Changing Urban Landscapes*. Editor and contributor to single issue of Open House International (Vol 33, no 2) on ARCSR.
6. Mitchell M. (2003), *Rebuilding Community in Kosovo*, CAT Press. Book detailing research methods and outcome of student work.

Plus 2 exhibition catalogues + 7 Field Trip + 9 Live Project reports between 2008 and 2013

4. Details of the impact

Since 2000, over 240 LMU architecture students have produced portfolio schemes from research carried out during 26 field trips to informal settlements in 6 cities leading to 4 live construction projects and 3 PhDs. Access and support for this unique research environment has been provided through collaboration with local NGOs. The research process is one of testing resistances and making accommodations to local cultural and physical variables. Insights and new knowledge emerge as the work progresses.

Kachhpura Settlement Upgrading Project (KSUP), Agra (2006 to date)

Collaborating with the Centre for Urban Regional Excellence (CURE) within the Indian Government (GOI) funded Cross Cutting Agra (CAP) project, students responded to the overwhelming need of the female inhabitants of an urban village for sanitation. In 2007, 4 students installed the first internal household toilet and washing space. They established the quality and method of construction, carried out hygiene awareness workshops in the schools and established a sustainable maintenance programme. Subsequently by revolving the funds a further 200 internal toilets have been produced.

In addition, a DEWATS system to clean waste water was installed. Cleaned water is used for irrigation, building work and toilet flushing. Cooperation with Indian professionals, the Municipal Authority and the Archaeological Survey of India followed. DEWATS was recognised as best practice by the GOI (2013) and the Delhi Centre for Science and Environment (CSE). The India Urban Challenge Fund is providing funds for replication in other cities. In Agra, the Municipal Authority is replicating DEWATS on a much bigger scale and is using it as a training case study. The KSUP experience has contributed to the Citywide Slum Upgrading Plan and Strategy aligned to the GOI's Housing for the Urban Poor Programme. The project is featured in the Global Monitoring Report 2013 produced by The World Bank (Box 2.6, page 112, Catalysing Citywide Slum Development in Agra), thus, in turn, the research is having an outstanding impact in terms of reach and significance on the urban development policy of India and at the world scale. This project has also had a considerable impact on the analysis of buildings and settlements in informal settlements by Space Syntax Ltd., who have collaborated to test, on the ground, their mapping of

Agra to develop and sensitise their software programme to cultural as well as physical variables.

Savda Ghewra, Delhi: shared technologies for resettlement upgrading (2008 to date)

In collaboration with CURE, ARCSR contributed to the process of house design for a group of poor resettled families. Julia King's live sanitation project proposal in Savda Ghewra won a Holcim Award (2012) starting on site in April 2013. The Delhi Government is considering replication of the model in peri-urban communities. Julia King was nominated by ICON magazine as one of 50 young people, shaping the future (August 2013), thus having an outstanding impact in terms of reach and significance on the urban development policy of Delhi and on the debate on the role of the architect.

Navi Mumbai Project for Community Classrooms (2008 to date)

Collaborating with Indian NGO ARPHEN, students and local quarry workers constructed 2 classrooms providing primary education. As a result of the classroom construction ARPHEN secured funding for teachers' salaries from Hindustan Cola, children have a route into state education, adult literacy and women's sewing classes have begun and the Municipal Corporation have provided water taps, electricity and street lighting, new pathways and formalised drainage. Project shortlisted for the Architect's Journal Small Projects Award (February 2010).

Kaningo School Project, Freetown, Sierra Leone (2008 to date)

Collaborating with local NGO CESO students, researchers and an emergent, post civil war community designed and constructed a primary school. This process revealed the deep social and physical problems encountered by poor Freetown residents. To address a sense of isolation from the city as a whole, investigations into the architecture of 3 different but spatially adjacent city neighbourhoods, followed by exhibitions at the British Council in Freetown (July 2013) and London (part of the London Festival of Architecture and International Architecture and Design Showcase 2012) have laid down the basis for a sense of shared spatial identity. Mitchell presented his paper 'The Architect as Detective, Narrator and Craftsperson' at an international symposium on 'Design Tactics and the Informalized City' at Cornell University in April 2012 indicating outstanding impact in terms of the reach and significance on the debate on the role of the architect working in informal cities.

5. Sources to corroborate the impact

- (1) Former **Director of Studies at the TVB School of Habitat Studies**, Delhi, for impact on architectural education in India.
- (2) **Director, Centre for Urban and Regional Excellence (CURE)** for Delhi and Agra
- (3) **Director, British Council, Freetown**, Sierra Leone for impact of Freetown projects.
- (4) **Research Leader**, History & Theory of Architecture, **London South Bank University**, for the debate on the role of the architect in development practice.
- (5) Khosla, R. (2011) **Making Slum Renewal Work**. In Johnson, C. (ed.) *Managing Urban Growth*. A Metropolis Research Publication, India.
- (6) Administrative Staff College of India, Hyderabad. **Reimagining Sanitation in Agra - Agra Municipal Corporation**. Case study paper used in training Municipal Staff.
- (7) Parham E, (2012) **The Segregated Classes: spatial and social relationships in slums**. Paper no 8150 in Eighth Int. Space Syntax Symposium, Santiago, Chile.
- (8) The World Bank (2013) **Global Monitoring Report** (Box 2.6, page 112, *Catalysing Citywide Slum Development in Agra*),
- (9) Hindustan Times, Agra (03.09.2009), **Meet City's 'Toilet Missionary'**.
- (10) Kpange, I (22.07.13) **Freedom Homes of Sierra Leone**. Tweet-pitch.