

IMPROVISING, PERFORMING AND DRAWING CO-DESIGN

Rajapur Women's Literacy and Community Health Care Building, Bangladesh



TUMPA HUSNA YASMIN FELLOWS

UNIVERSITY OF
WESTMINSTER

DESIGN RESEARCH FOLIO 2021



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Rajapur Women's Literacy and Community Health Care Building, Bangladesh

TUMPA HUSNA YASMIN FELLOWS

Location: Rajapur village, Chandpur,
Bangladesh

Architect:
Our Building Design: Tumpa Husna Yasmin Fellows (Trustee of MFT)

Funder:
Mannan Foundation Trust (MFT)

Client: Mannan Foundation Trust
Engineer: *Our Building Design: David Fellows*

Health programme:
Dr Nilufar Fatema (Trustee of MFT) and Dr Tina Khanam (Trustee of MFT)

Education programme:
Mrs Razia Mannan (Head Trustee of MFT) and Ms Hawa Begum (community member)

Construction:
Tumpa Fellows, David Fellows and the Rajapur Village Community Builders

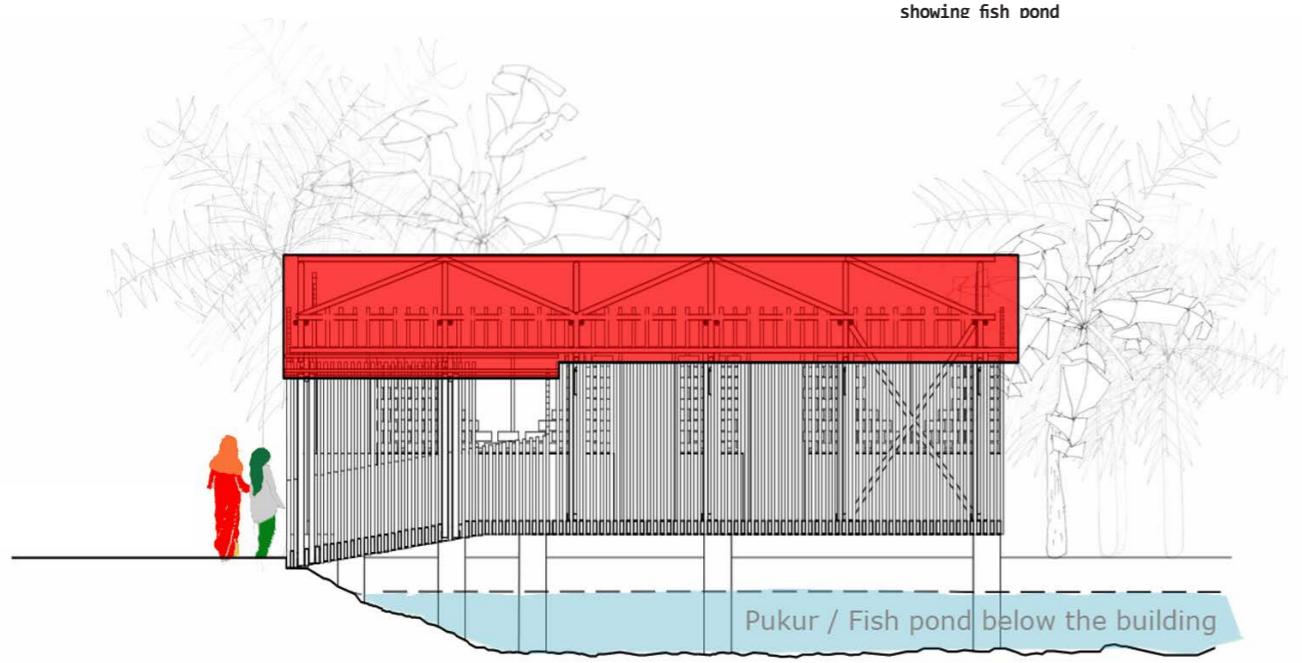
Dates: 2015-2017





Fig. 1
The Rajapur Women's Literacy and Community Healthcare Building in use

Fig. 2
The Rajapur Community Building, post-occupancy drawing: sectional elevation showing fish pond



ABSTRACT

This award-winning small building in Rajapur village, Bangladesh, was devised and built using participatory design methods as part of a social transformation project. It addresses the community's lack of access to healthcare and women's empowerment through literacy and income generation in a remote village with cultural restrictions and a high rate of maternal and infant mortality.

The research explores and tests iterative drawing, performance and face-to-face communication methods which emerged as key tools in the creation and dissemination of this project. These were used in the fundraising, design, development, construction, post-occupancy evaluations, and in the wider academic dissemination of findings of this project and as part of feedback and ongoing work with the villagers themselves.

The building was conceived and funded by Tumpa Fellows as architect of the Mannan Foundation Trust on a specific site prone to seasonal flooding – an environmental hazard affecting most of the country of Bangladesh. Fellows began her participation strategy by hosting children's English lessons and drawing workshops. The conventional Western-conceived design approach (used for successful fundraising in the UK) proved incomprehensible to the community on-site, leading Fellows to devise alternative participatory methods in further community workshops. These included setting-out and testing different versions of the building at 1:1 as a live design tool; local appraisals of construction types; simple treatments to reduce rot in bamboo construction; a home-based clay brick-making programme that generated income for skilled local women; and sharing local skills such as concrete-working.

The project was built between 2015-2017 and won Fellows an RIBA Rising Star Award 2017; Architecture Sans Frontières Award 2017 (Commendation); a SEED/Pacific Rim Community Network Design Award 2018; and an RIBA President's Award for Research 2019 (Commendation). Fellows' iterative development of workshops, including performances, drawings and videos of these, was used in written publications and presentations to analyse, test and disseminate her findings with international research communities, and also in ongoing face-to-face work with the building users, including drawing, design and design-based post-occupancy evaluation workshops in 2019.

RESEARCH QUESTIONS

- How may co-design strategies be used to respond to the changing climate in rural Bangladesh, and what social and cultural factors and expectations need to be considered?
- How may improvised drawing, making, and performance design methods be explored and used as effective elements of participatory design and as a key part of an ongoing appraisal and understanding of such projects?
- How may such iterative co-design methodologies themselves be tested, evaluated and shared with various specialised international research networks, and how does this contribute to development of participatory practices, design methodologies and environmental protection on the ground?

Exploded Axonometric View:

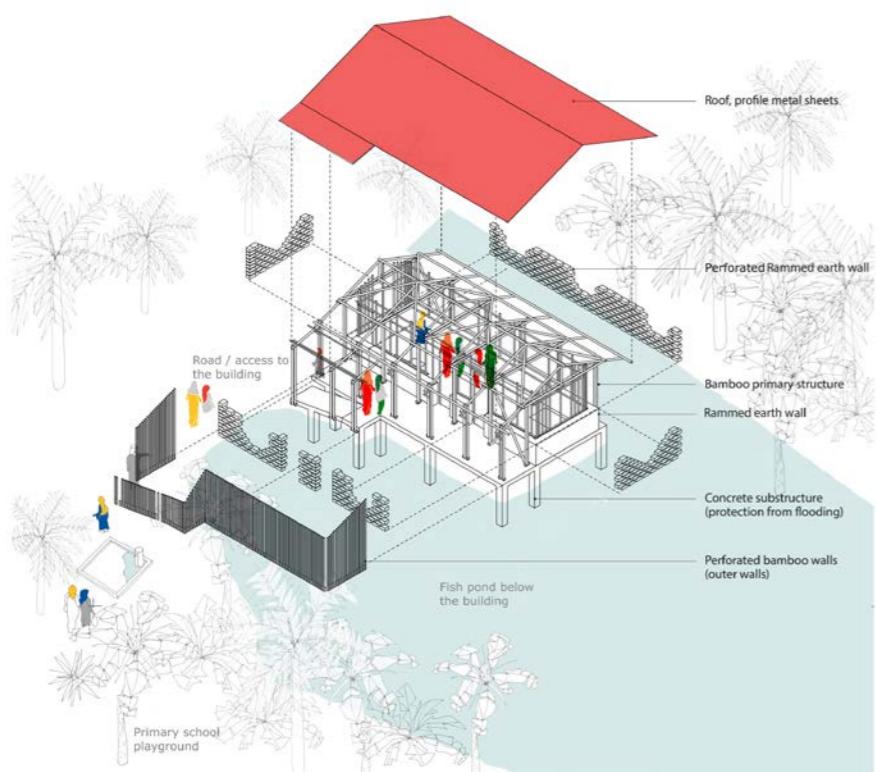


Fig. 3
Exploded axonometric view of the Rajapur
Centre built above a pond



Fig. 4
Side elevation of building, showing
handmade bricks and bamboo construction

GENERAL DESCRIPTION

The Rajapur Centre, or Women's Literacy and Community Health Care building (2015-2017), is a small facility devised, fundraised, designed and run by the Mannan Foundation Trust for a small village located in the Chandpur district, near the confluence of the Padma and Meghna rivers within flood-prone Bangladesh. The building and its related programme were devised to enable the regular provision of healthcare for the community, and education for women. Significantly, the Mannan Foundation Trust is led by professional Western-based women with local connections, including Fellows as its architect.¹

After a year of fundraising in the UK, using conventional architectural drawings for publicity purposes, construction began in 2015. Fellows immediately recognised that conventional architectural drawings proved incomprehensible to the local community and were unsuited to the realities of hands-on and participatory co-design. An alternative, iterative approach was immediately improvised addressing problems of visualising and discussing the form of the building on the site.

Key to this was performance-based setting-out discussions which were used to agree best design solutions, allowing all participants to work with design at 1:1 through acting out, discussing and agreeing uses of the building on site and in relation to different climatic and social conditions. Other methods included research and development of locally available treatments against rot in bamboo; and devising social working practices that facilitated the women to be able to make bricks from home. This was developed through responsive participatory methods including drawing, testing, making, visiting, negotiating, skill-sharing and storytelling. Apart from the concrete plinth poured to mitigate flooding (implemented as part of local skill sharing), exclusively local materials were used for construction.

The building was completed in 2017 and has been in constant use since, including four graduated cohorts of free literacy classes and regular free health camps for the community. The post-occupancy workshops of 2019 included community members' 'design by making' in response to extreme climate factors, women's skill-sharing and, in particular, children's and women's drawn interpretations of the building process, using Fellows' video record of the design and construction process as catalyst.

The project has won awards (Architecture Sans Frontières, SEED, Pacific Rim Community Design, RIBA) and been disseminated widely, both for its efficacy in establishing a platform for empowering communities, and for its methodologies of drawing and communication.

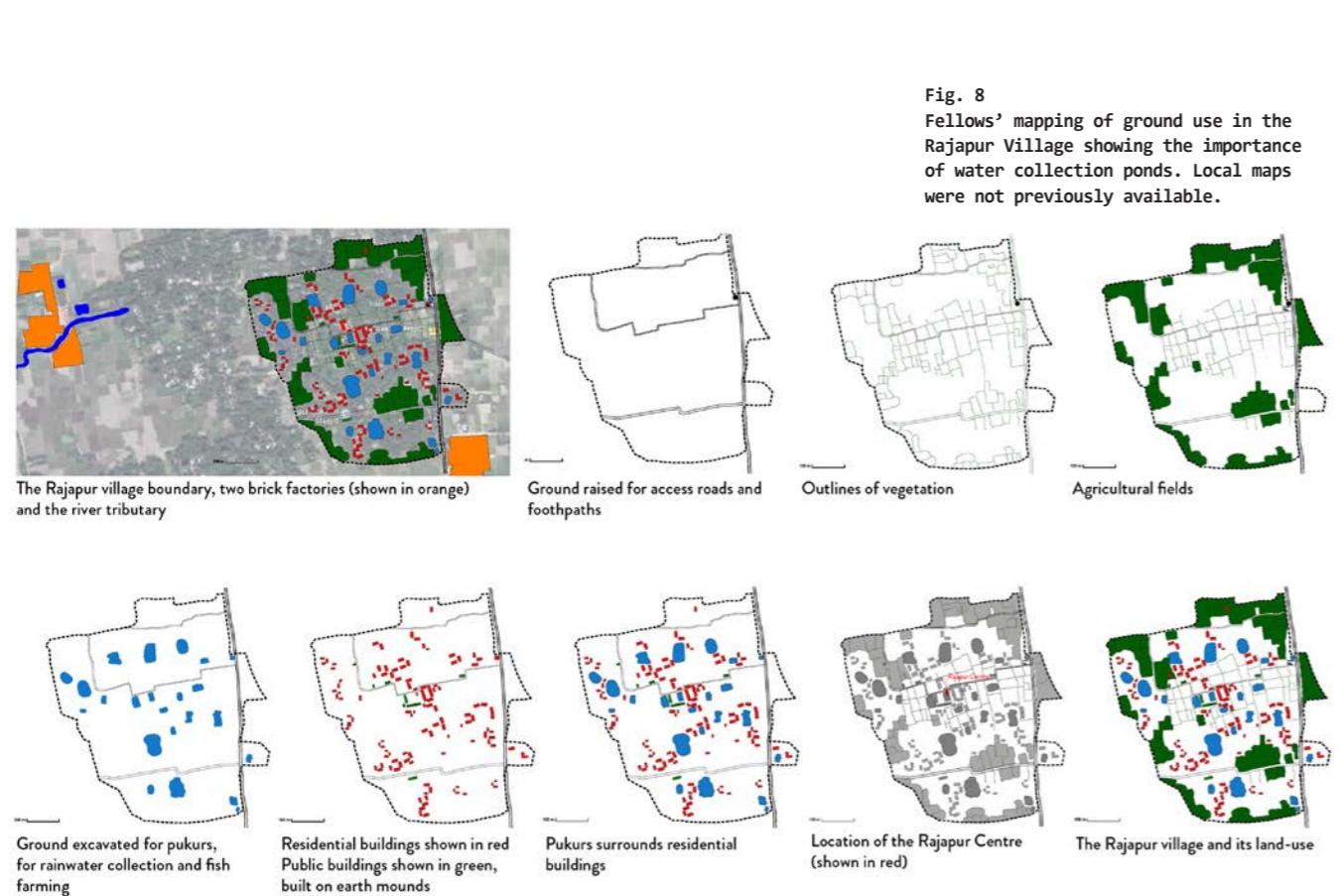


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Figs 5-7
Photos taken of the same field over a period of time documenting human practices adapting to the decline in rice farming and rise of fish cultivation in response to changing climate conditions in the Rajapur village



CONTEXT

Fellows' research addresses instances of climate change and human adaptations to it in the remote Rajapur village in Bangladesh, using collaborative architectural practices as a tool. The research sits in the context of local responses to the front line of the climate change emergency, specifically the ever-growing cohort of small one-off projects aiming to assist in and learn from this, generated typically in Western and developed nations, but done on site, often on a partly or fully voluntary basis, and typically through various forms of more-or-less participatory design practice.

Rajapur Context

Rajapur village lies in the deltaic flood plains of south-east Bangladesh that suffer from periodic floods and cyclones which change the state, shape, location and condition of the ground. Environmental stresses include drought, floods, cyclones and arsenic poisoning, which radically reshape livelihoods of this rural community. Rice farming has become impossible due to increased levels of soil salination and soil exhaustion from continuous crop cultivation. The local economy has shifted into fish farming, using rainwater collecting ponds and the fish eggs which are redistributed by flooding, and this forms the main local income for the village, but it is affected by arsenic poisoning. Villagers negotiate a collaborative ownership of the fish and water. The Rajapur Centre is built above a rainwater collecting pool, where fish and kingfishers now migrate to in the rainy season. The design of the building enables the continuation of the natural habitat of these seasonal migrated species in the pond below the building.

While the majority of the Bangladeshi population live in rural areas, the recent and growing pattern is for men to work away from home, either in fast-growing cities or abroad on construction sites, causing unequal distribution of responsibilities. The women left behind carry much of the burden, with little access to education or healthcare, and with restrictive social attitudes to working. For example, girls in Rajapur were not supported in education beyond primary school. The project aims to actively improve these conditions through locally engaged provision of healthcare, education and through devising new employment opportunities.

Participatory Projects

Architectural participative projects of this type, by foreign nationals working on site overseas, has been well-documented since the 1960s.² This project aims to contribute its own findings and approaches to the field of architecture through participation, still a relatively marginal though fast-growing branch of practice.

This project does not form part of the work funded by major agencies, NGOs and charities such as the UN Habitat programme, Article 25, SEED, and Specific Rim Community Design. It is part of a growing body of well-published architectural projects, for example: Meti school, in Bangladesh (Anna Heringer); the Floating Arcadia Education Project in Bangladesh (Saif-ul-Haque); and Gando Primary School in Burkina Faso (Francis Kere). Though a small project, Fellows' effective dissemination positions her building among this body, principally through the extent of peer review, dissemination and the awards it has received (see dissemination) and through its ongoing reflective development and discussions of its methodologies.

Other Knowledge Contexts

Fellows' active professional and academic dissemination has shaped development of the later reflective and ongoing stages of the work. Her findings have been presented to and tested against a wide range of research and professional communities, including social, economic, environmental, design research, especially: The SEED Pacific Rim community that promotes sustainable projects which provide positive change in communities; Professor Lindsay Bremner's ERC-funded Monsoon Assemblages research project (MONASS) which has a particular interest in both uses of drawings and the 'entanglement' of climate, human and non-human agencies; professional design bodies including the RIBA; and the By Practice research community, led by the Royal Melbourne Institute of Technology, which explicate and study the complex and tacit forms of knowledge used in design itself.

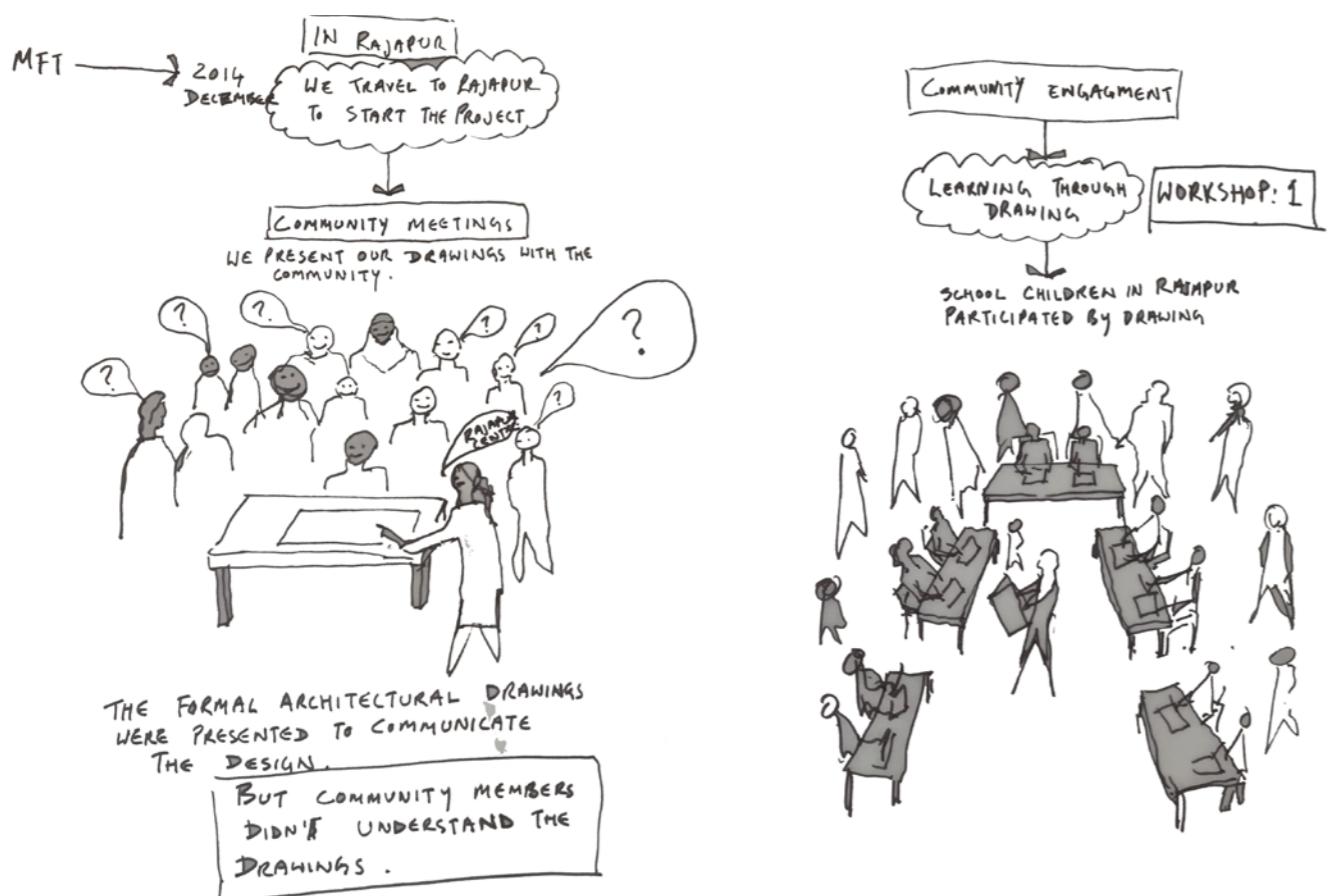


Fig. 9
Sketches describing the process of finding shared comprehension of the design process

Preliminary Engagement, Rajapur

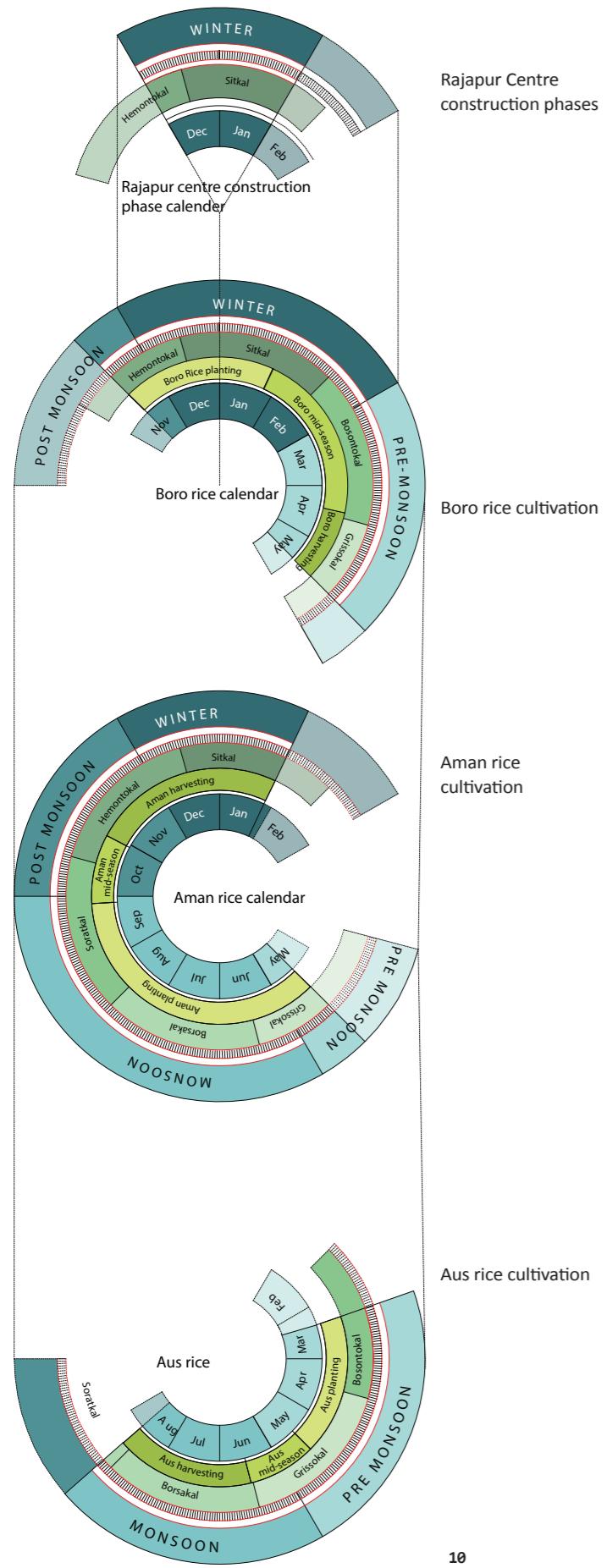
Fellows began community engagement at Rajapur in 2011 as an observer, studying how the community adapts to the changing climate and the complex social issues it faces. Her participation began by volunteering to teach English classes in the village primary school, helping build her relationship with the community and starting to develop the brief. Ethnographic storytelling in formal community engagement workshops and informal conversations with the community revealed relationships between the site and its seasonally shifting landscape, waters and wildlife, and evolved into a working study of the entanglement³ of climate, landscape, community and individuals.

AIMS AND OBJECTIVES

- To establish a facility for healthcare and literacy in Rajapur village using participatory co-design methods, local materials and skills; using its design and construction as an educational and skill-sharing device in itself.
- To study and enable local design responses to environmental challenges at the forefront of the unpredictable fast-changing climate, and to share and discuss its findings with both local and international communities.
- To teach, learn and skill share design, drawing and construction methods in such circumstances, expanding on traditional architectural design practices; and in the contexts of the changing state of the environment, enable emerging understanding of participatory architectural practices.

METHODOLOGY

This project was developed by design work with fundraising continuing in parallel. It spanned working in London for fundraising, Rajapur for participation, construction and post-occupancy evaluation, and internationally for dissemination and reflective work. As iterative, participatory and reflective work, many instances of innovation were developed through trial and error, and later refined through testing and wider comparisons and contextualisation in reflective research.



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Understanding seasonal patterns of flooding, economy, social practice and climate were key. This included: the seasonal rain patterns and the value this afforded to the local flood-pond on the site; understanding the ownership of the fish and water; and the seasonal weather patterns that determined when co-building would be possible.

Collective consciousness and local understanding of the context were thus built into the co-designing processes, with story-telling (conversations), drawing, making and performance-based activities continuing through design development and construction stages.

The first of Fellows' 'Drawing, Making and Co-designing' workshops, open to both the adults and the children, were held in 2014. Sharing and developing material knowledge between all participants continued throughout the design and construction process to post-occupancy evaluation.

Social Factors

An early recognition that women had little access to education or healthcare, and were subject to restrictive social attitudes to working in or outside of the village, shaped the Rajapur Centre's aim to address this social imbalance through its function, construction and programme.

It also shaped the development of the workshops. The social structure in the village did not allow women to voice their opinions in a public meeting scenario; these were instead managed by the male Village Elders. By participating in the making workshops the women could have a voice and become part of both making design decisions and shaping the appropriate construction materials and methods used. The involvement of the community meant they felt ownership of the building and its future use and management.

Fundraising Design and Participation, London

Working in London from 2013-14, Fellows devised an architectural proposal for an initial fundraising event held for the Bangladeshi community in London. Images of the initial design were used on social media and other platforms for fundraising by the Trustees. Fundraising and outreach was then extended to the architectural community, with social lunchtime fundraising workshops at the offices of architectural practices Allies & Morrison and Proctor & Matthews Architects, where volunteers contributed home cooked dishes from their country of origin. Fellows continued these events, presenting the Rajapur Centre at various construction phases, both for fundraising purposes and to share knowledge and experience with the profession.

In December 2014, Fellows devised and ran improvised workshops with the village children and their parents, called 'Learning Through Drawing' in the village primary school.



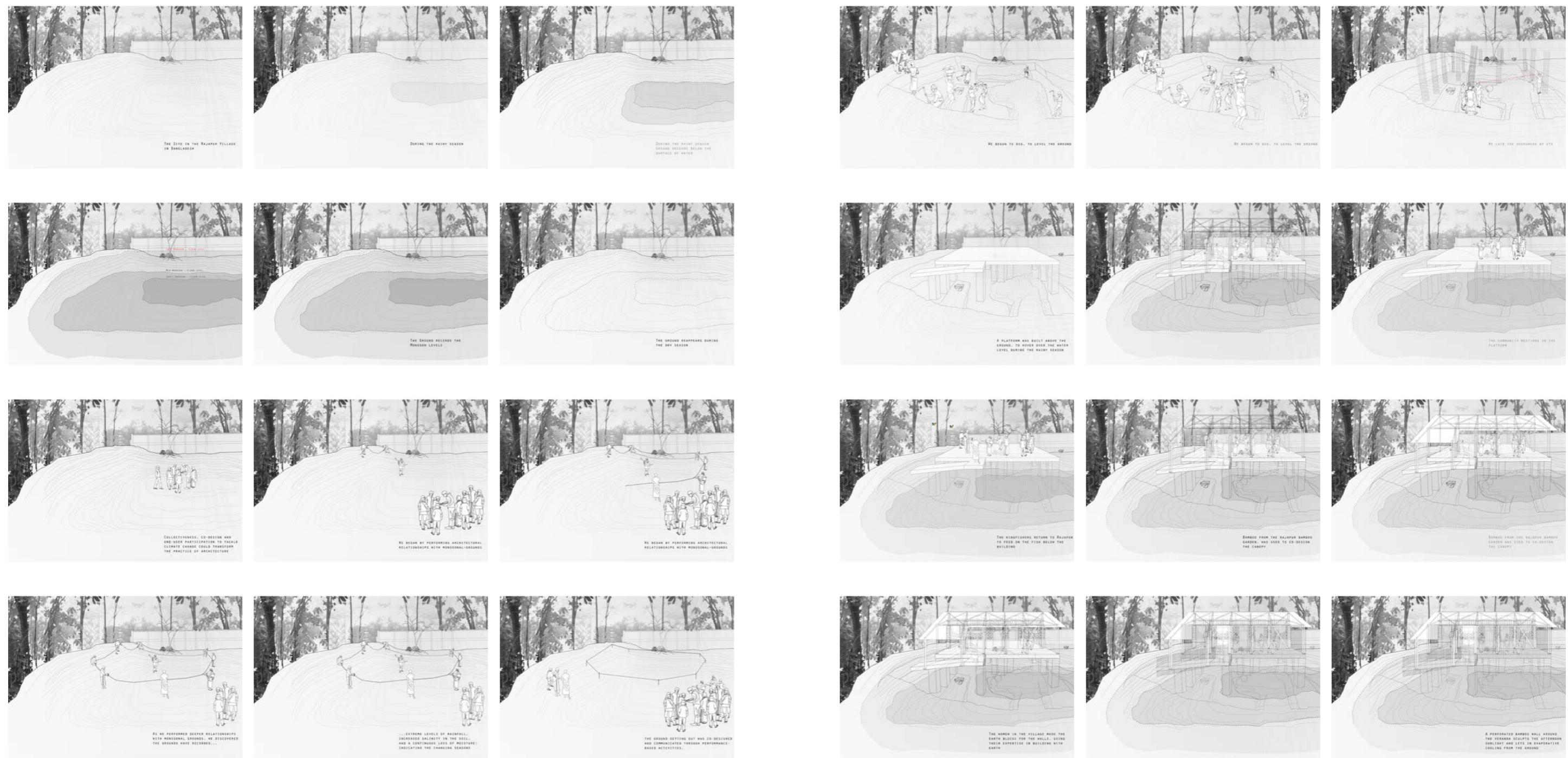
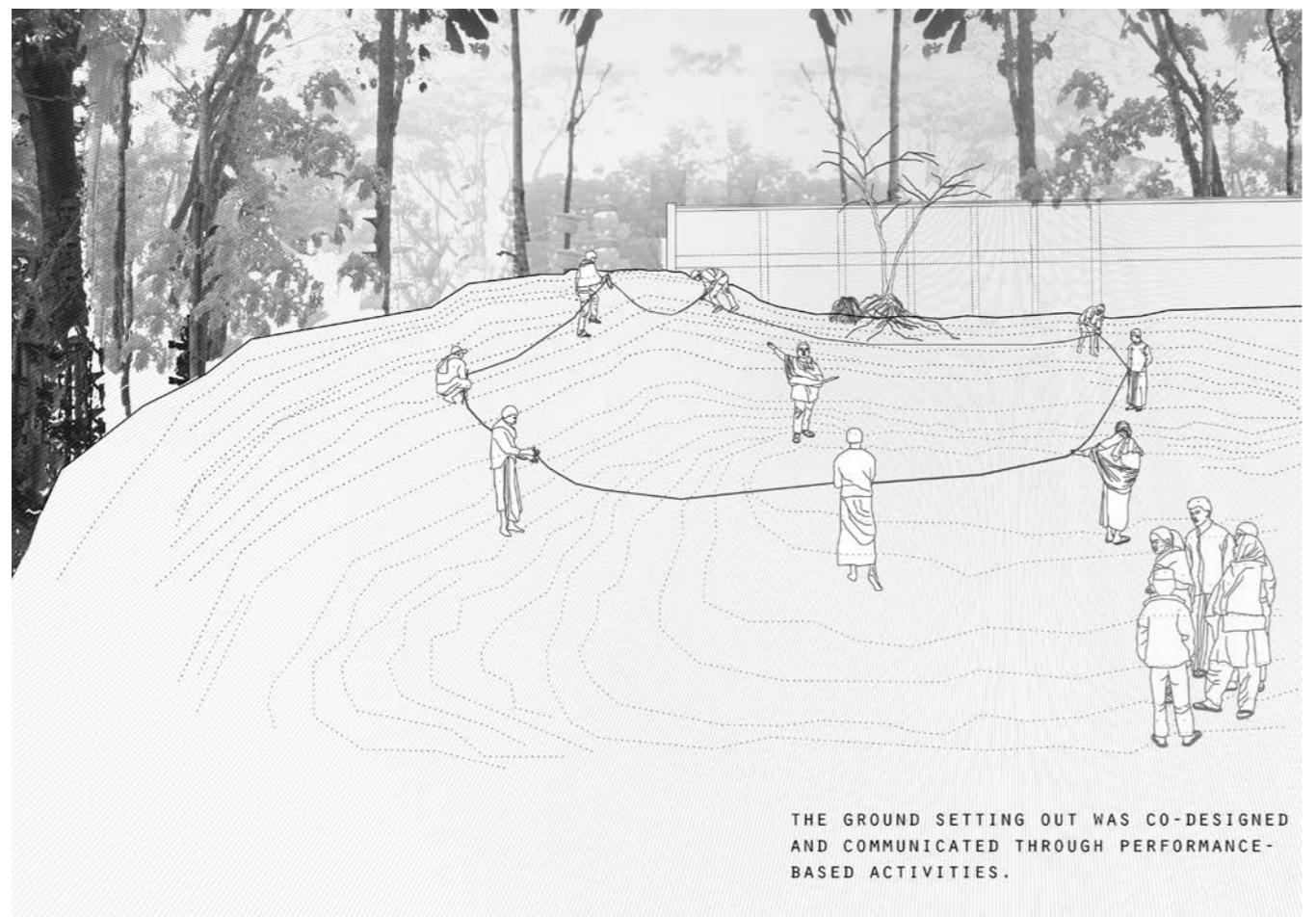


Fig. 12
Frames from Fellows' animation which describes the improvised performance-based participatory activities to communicate, test and discuss design on site in response to seasonal variations and climatic changes



Participatory Design Development, Rajapur

The ‘Learning Through Drawing’ workshops started with individual conversations, which developed into parents narrating ideas for the design and their children drawing their interpretation of those designs. While these workshops were progressing, a new set of ‘Learning Through Making’ workshops were improvised, enabling the parents to engage by making and sharing their skills of embroidery, basket weaving, clay pottery and making with various local materials found in their homes. The children joined in making with their parents, hence learning new skills using these materials. This began the processes of skill-sharing and design development and testing between all participants in the projects. These workshops not only assisted in the extraction of local knowledge and skills, but also helped Fellows recognise the limited resources and skills available in the village.

During this period of community engagement, Fellows recognised that the London design and construction methods proposed, were not appropriate for such participative processes, as participants were unable to ‘read’ the design images, and hence comment on or engage with the design. In response, Fellows developed a series of improvised activities to enable discussions about architecture as the villagers understood it and assisted in finding a common language for design.

Paradoxically, though unable to ‘read’ the design, the Village Elders (who usually make decisions on community matters), were prejudiced in favour of western-style design intervention and against local materials (such as mud and bamboo) because they were seen as ‘poor’ and ‘low materials’ and because of local knowledge that bamboo rots. Fellows’ organised a series of visits to houses made of different local construction materials and together she and the villagers stayed to drink tea at each one and arrived at agreement on the superior comfort of indigenous building types.

Fig. 13
Improvising performance-based participatory activities to communicate, test and discuss design on site in response to seasonal variations and climatic changes

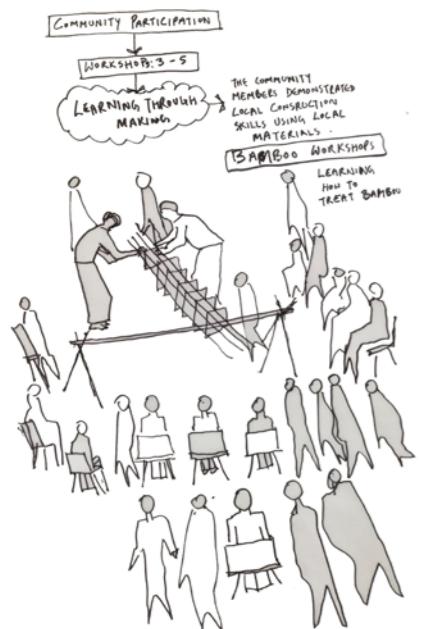
‘Performing’ Architectural Design

The key design method was a series of community-wide, negotiated performances used to generate collective design proposal and discussion. Various options for the buildings were discussed on-site, with Fellows and the community members moving around the site and acting out how the building could be laid out using ropes to establish positions and orientations at 1:1 scale. The participants discussed and performed the consequences of each option, in terms of immediate uses, effects of sun and wind, the location and effect of the seasonal fish-pond and its impact on the building, and the community’s etiquette of using public buildings in terms of gender segregation etc. Once the layout was decided, with the building placed over the pond to benefit from its evaporative cooling effect, the rope drawing of the building was finalised and agreed and carefully recorded.



Skill-sharing

The drawing and making workshops first encouraged community participation and engagement between the children and mainly the women, and then provided an opportunity to explicate skills in the community through the process of making, using local building materials such as mud and bamboo. As workshops moved outside, more men joined these practices with the addition of larger construction techniques. Designs thus progressed through making physical prototypes, drawing sketches, and testing between inside (women), and outside (men) with children.



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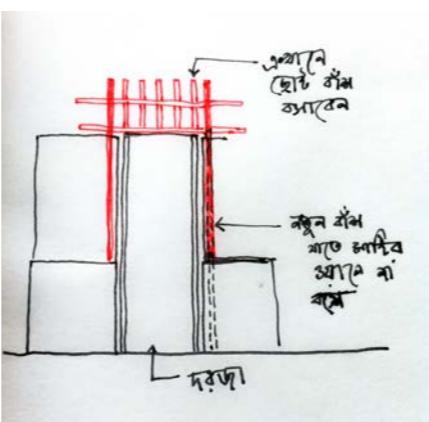
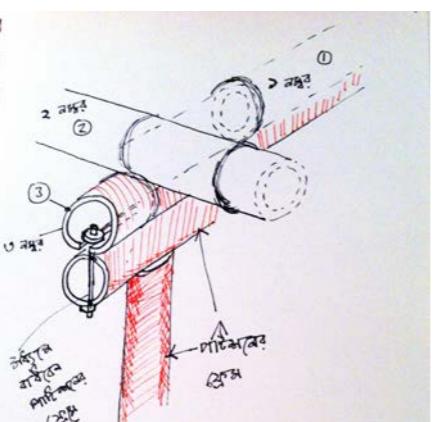
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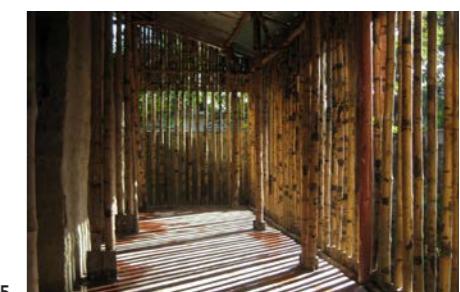
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Fig. 24
Constructing the Centre's structure

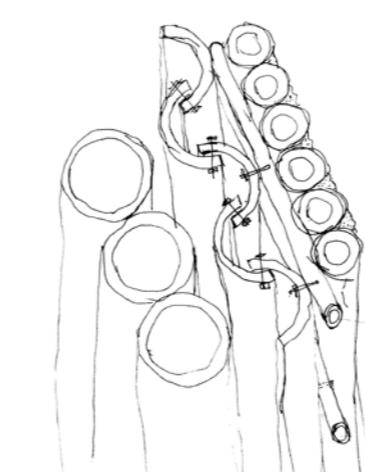
Fig. 25
Finished bamboo veranda

Fig. 26
Bamboo connection detail

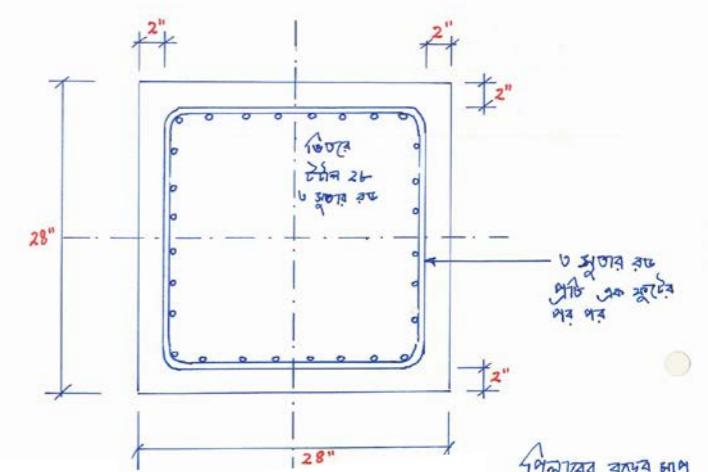
Fig. 27
Concrete reinforcement detailing sketch



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Figs 28, 29
Earth bricks making skills being shared and demonstrated at the 'Learning Through Making' workshops hosted by the women

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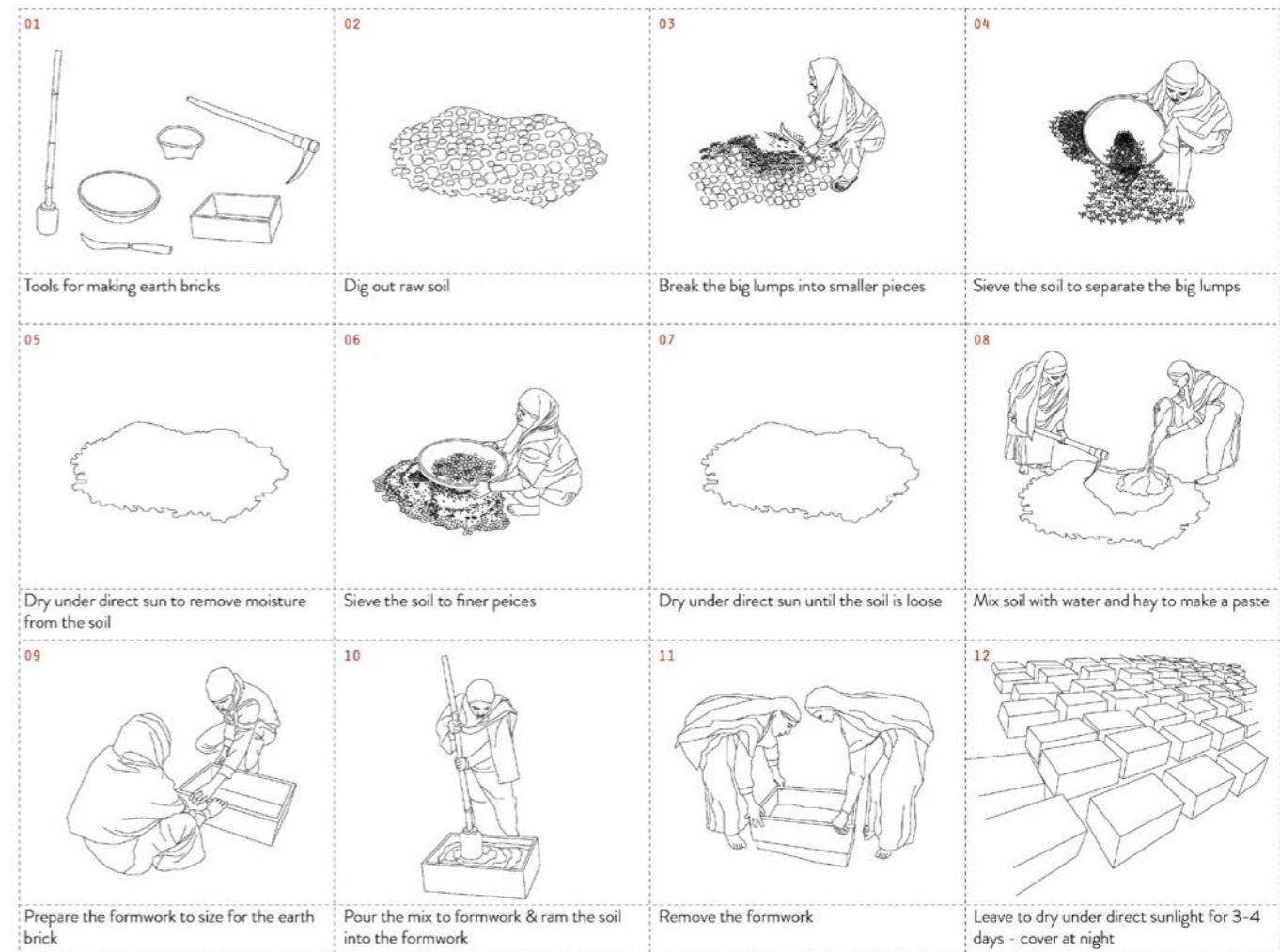
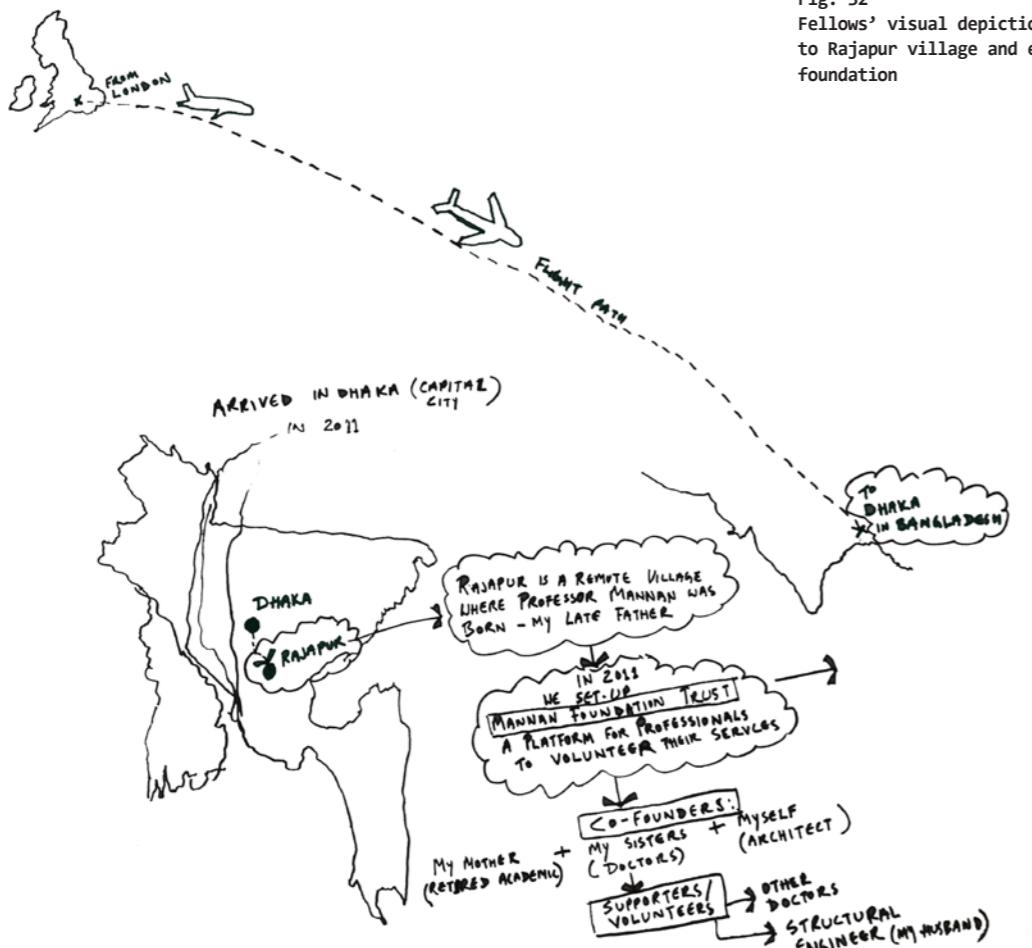


Fig. 30
Brick making worksheet - drawings developed by Fellows to aid in sharing the information and local knowledge generated



Fig. 31
The women in the village had the expertise to build with mud and demonstrated the method of brick making in the 'Learning Through Making' workshops, as the project developed a pattern of skill-sharing



Material Testing and Development

To combat the problems of rot in bamboo, knowledge of appropriate treatments available in the village and from other projects in rural Bangladesh were shared by Fellows through devised workshops. Villagers participated and were eager to learn how treating the bamboo organically by soaking it in water to eliminate sugars and deter pests, or chemically by using a boron fertiliser, can ensure the longevity of bamboo.

The only non-local building material was concrete, used as a plinth to raise the building above flood level (it allows the seasonal community fish pond to continue under the building). The project thus used the design team's engineering knowledge and the concrete experience of one local builder, to share a new construction skill with others – mainly the unskilled, unemployed youth – in order to increase their employability in local construction sites.

Women in the village had expertise of building with mud, but social convention prevented their working in public at the site with other men so Fellows negotiated a process where the women made the earth blocks at home and the men working on site installed them.

Because the initial post-construction drawings (made for award submissions) did not reflect these core design activities, all of these processes which had been filmed and photographed at the time, were drawn as part of a reflective analysis of the 'real' and iterative design processes through which the building was produced.

Construction Phasing

Construction was seasonal and conducted in three phases over two years, during set periods when both Fellows and the villagers were available due to shifting seasonal labour patterns and when the climate allowed building work to proceed. Each phase lasted approximately a month during December/January and the fundraising was carried out in between each construction phase.

Phase 1 of the construction work started in January 2015 and the concrete plinth above the pond was completed during this first phase. After Fellows left the village, community members used skills learnt in the workshops to treat and prepare the bamboo, while several women made earth blocks at home. Communication was then via phone calls with her in London (due to the lack of access to internet in the village) allowing collaboration to continue.

Phase 2 began in January 2016 when the building's bamboo structural frame was erected above the concrete plinth, using the prepared and treated bamboo. The roof was constructed from metal profile sheet and erected over the bamboo frame, acting as a canopy. The one non-traditional addition to the roof construction was a thin layer of foam insulation used under the metal roof to reduce the noise of heavy rain during the monsoon season.

Construction Phase 3 took place between December 2016-January 2017 when Fellows returned to the Rajapur village, to complete the construction. In the third Phase, the earth walls were built, and the external perforated bamboo walls were completed.



Fig. 33
In a series of ‘Learning Through Making’ workshops, participants collectively improvised designs of objects for their homes by sharing their skills of embroidery, basket weaving and making

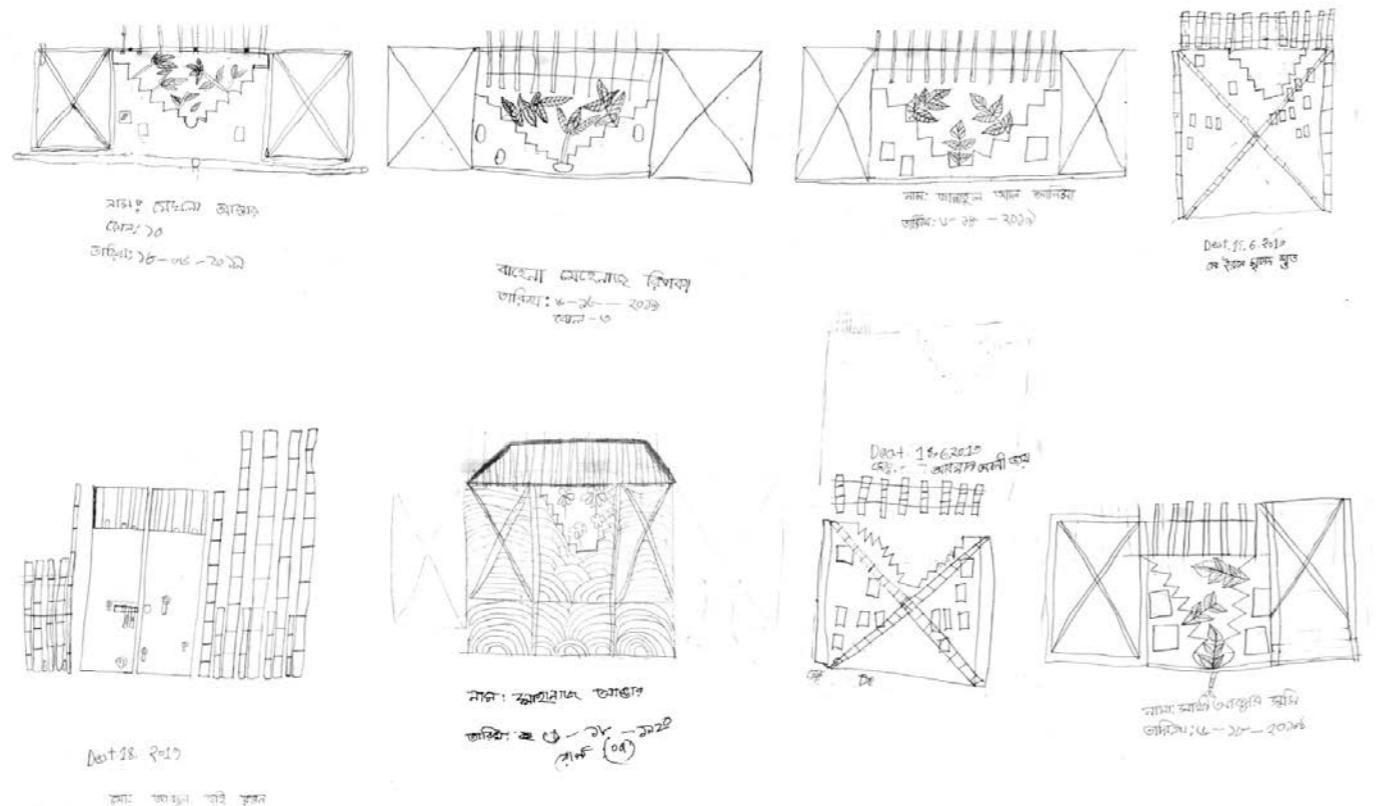


Fig. 34
Drawings by the children in the Rajapur village at the Post Occupancy Evaluation ‘Learning through drawing’ workshops

Dissemination and Reflective Analysis

The wide range of academic forums in which this work was presented opened a phase of reflective and analytical drawing work which developed out of the first set of post-construction drawings prepared for awards and presentations. These later drawing iterations became more analytical, with a speculative series of drawings and animations to communicate actual design and construction processes, foregrounding aspects that architectural drawings typically omit such as face-to-face communication, teaching, making and drawing design practices, and the improvised collective design ‘performances’. These drawings contribute to a growing critical knowledge of how such Western-funded participatory projects operate in the context of climate emergency, and to help challenge conventional, object-based representation of them.⁴ The video was itself successfully used in the 2019 post-occupancy workshops as a way of re-engaging the community with Fellows’ project analysis and ongoing work.

In June 2019, through University of Westminster Global Challenges Research Funds, Fellows extended these methods with further workshops for adults and children.

Post-occupancy Evaluation

These post-occupancy evaluation workshops built on Fellows findings to accommodate feedback from women and children, both typically excluded from community meetings, and all non-literate users of the building. At the children’s workshops, Fellows showed the animation that captures the participatory process. The children collectively developed their own account of how the Rajapur Centre was co-created by their community. They drew their chosen part of the building by developing beautiful architectural drawings and each child provided a feedback for the Rajapur Centre through story-telling.

Those who attended the women’s group workshops made collective drawings that represented a seasonal calendar which narrated the cultural practices associated with the changing climate and the impact of extreme climate events on the lives of the communities. Such workshop products proved valuable in drawing out local knowledge to capture the challenges faced. The participants of the workshops involved the wider community group, sharing skills of embroidery and basket weaving. Collectively, the group used these new and shared skills to improvise the design and making of objects which respond to the extreme changes the community experience to their climate. These architectural interventions, included a prototype humidity condenser which can trap water droplets from the air for use in irrigation of farmland, are illustrative of the iterative and shared learning experiences the community gained.

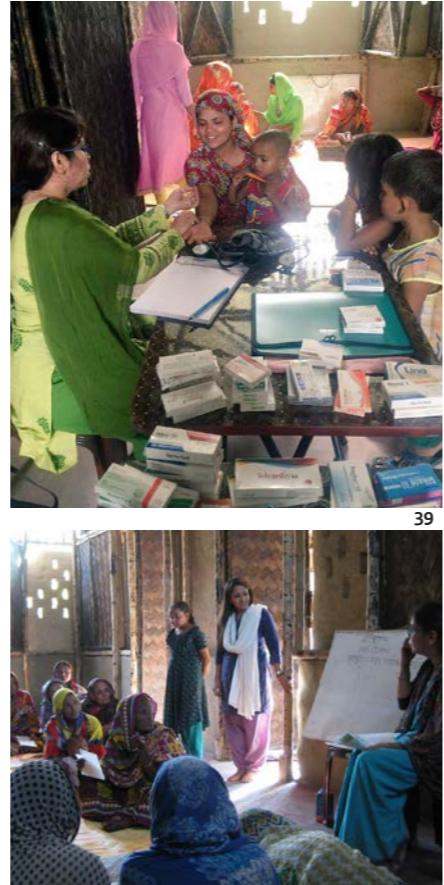


Fig. 42
Photographs detailing the improvised design and construction of a devise for capturing moisture from the air.





Fig. 43
Post-construction drawing showing the building in cross section above the pond

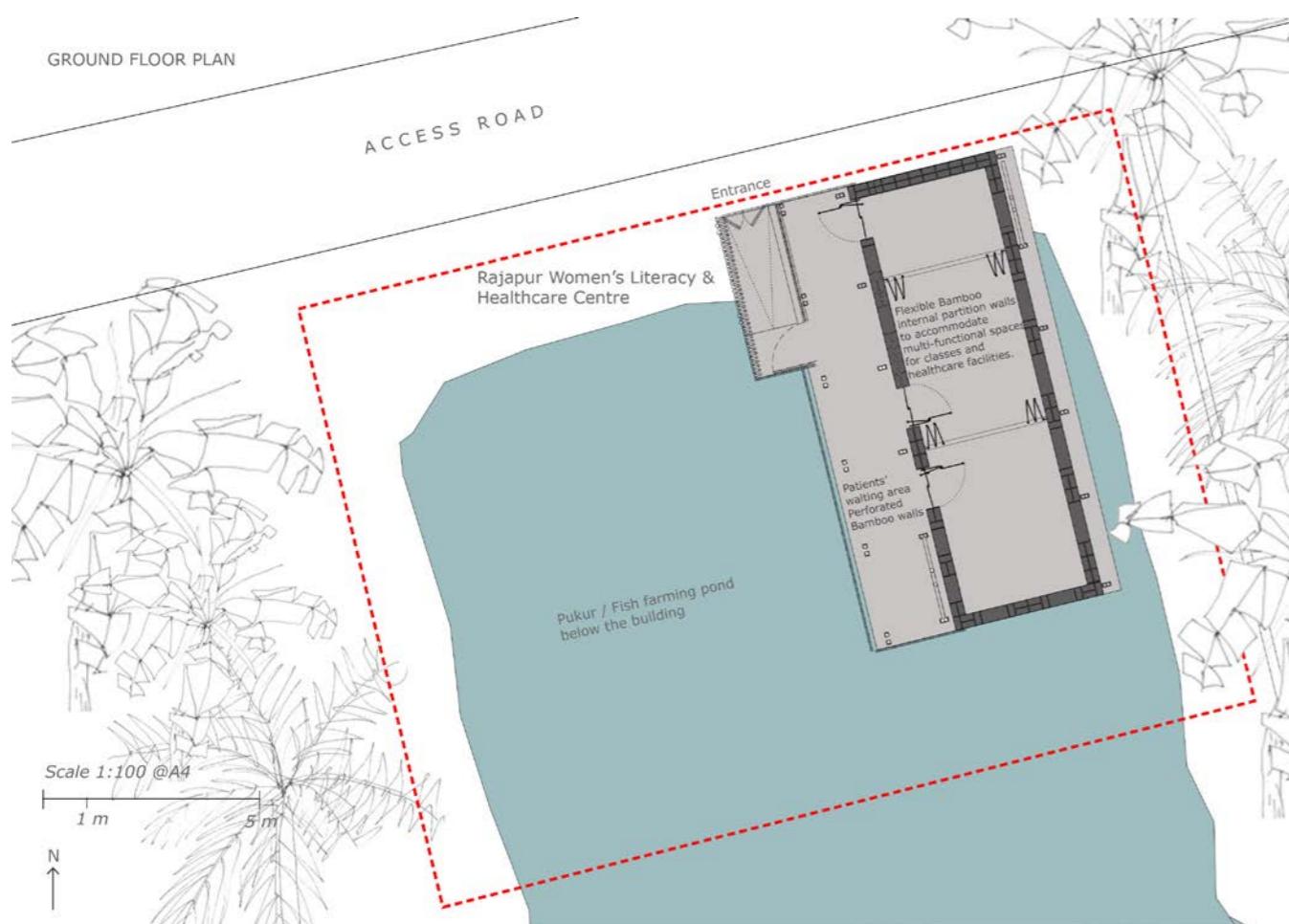


Fig. 44
Post-construction drawing showing the site plan with the building in place

OUTPUTS AND FINDINGS

The Rajapur Centre has been used by the community since December 2017. It facilitates classes for women for literacy, health, hygiene, and income generating skills, and free health services for all in the community – men, women and children.

Building Use

Since it opened, four cohorts have graduated from the Women's Literacy and Income generation course. Skills taught at the Centre have enabled graduates to begin tailoring businesses, and empowered the local women to generate their own income and to gain financial independence, promoting self-sufficiency. The classes also include health and hygiene lessons which are potentially life-saving and which contributed to the Centre's wider healthcare programmes and free healthcare facilities, including consultations from doctors and the distribution of free medication sponsored by external pharmaceutical companies. The healthcare facilities and free health services also attract communities living in the villages surrounding Rajapur to the centre.

Project Outreach

The building has won awards and been disseminated widely; initially for its efficacy in establishing a platform for empowering communities, and increasingly for its methodologies of drawing, improvisation and communication. Fellows' research presentation at the Bengal Institute attracted academic interest from a number of architecture schools in Bangladesh, which led to several visits to the Rajapur Centre by the students and the academic staff. In the near future Fellows is planning on further collaboration to develop this network in Bangladesh. The University of Westminster Global Challenges funding has allowed further research, including visits to parallel projects and development of further contextualised comparisons.

Developing Ongoing Engagement

A key finding is an instance of the power of creative making in such contexts; while the children drew, their parents collectively improvised designs of objects for their homes using local skills. The workshops were used specifically to investigate this process of drawing out local skills that and to facilitate an inclusive team, giving voice to all.

But although the literacy and the income generating services have been successful for women, it has raised issues with men who now feel 'left behind'. During post-occupancy discussions, it was revealed that some of the unemployed youths would like similar provision to that offered to the women in the village. The youth expressed a desire for opportunities of employment in or near the village so they would not be compelled to migrate to the cities or abroad for employment. As described above, the Mannan Foundation Trust did provide workshops for the unskilled men during the construction stage of the Rajapur Centre to teach the skills of concrete, mud bricks and building with bamboo, which were very popular. The Trust proposes to arrange similar opportunities to teach construction skills in the future to address the issues facing unemployed youth in the village.

Areas for Future Research

A key finding has been the efficacy of the integrated drawing and making process as a form of education and empowerment in itself. This reflects some of the findings of the remarkable projects by AKAU in a Maori community in New Zealand, where a collaborative design education was developed *in situ* for youth empowerment. Other parallels to explore lie with the University of Westminster's Paolo Cascone, whose African Fabbers project, which suggests possibilities to extend this project through continuing participative design education.

Another key finding needing further research is the specific role of the performance of architectural design ideas, which was the most remarkable single innovation of the project. This would bear intriguing comparison with Gustav Lymer's recent research into the use of body language in architectural crits as a teaching method as part of developing an architectural language alongside drawings.

Socially-informed narratives and workshops were also essential for the design and construction to help understand how the community lives and adapts with the changing monsoonal climate and to understand the shifting seasonal labour patterns/availability.

Addressing the climate emergency has become a crucial element of daily life in such circumstances. Developing appropriately participatory and adaptive responses to the changing climate in the rural Bangladeshi context highlights the importance of active agency in such processes and how this positively affects and shapes communities. The research also provided an opportunity to understand and share these largely unspoken, undocumented and often very local methods and networks of knowledge that exist and are practiced by such communities.



Fig. 45
Earth bricks making skills being shared and demonstrated at the 'Learning Through Making' workshops hosted by the women



Fig. 46
Perforated bamboo wall veranda, where the effects of the evaporative cooling (from the pond below) is felt

CRITICAL SELF-APPRAISAL

As with all small architectural projects, a vast amount of knowledge is generated, largely through trial and error, and finding models to network, share and make accessible such information is crucial. The different phases in the development of this project – pre-design, co-design, construction, publication, critical reflection and dissemination – which too often remain tacit or otherwise unexplained, have thus become explicit, distinct parts of the design methodologies. Through this process, the importance of setting out apparently minor and contingent problems (social, cultural, practical, seasonal) and decisions have thus become iterative and sequential parts of an ongoing research initiative. This in turn feeds into a growing body of practice-based research studies concerned with explicating what architects actually do and the complex and contingent responses they devise.⁵

The success of this project can be attributed to moving between fields: on the one hand, 'being in the field' where relationships with the community and their surrounding landscape were built, and, on the other, being based predominantly in London and creating ways to communicate design intentions and findings to a broad architectural and academic community. Spanning these two worlds, Fellows developed various methods of communication; firstly by speaking the local language, she learnt how to understand the cultural practices and ways of co-existing in Rajapur and, most importantly, was able to draw out the local knowledge; secondly, by developing the language of drawing through the workshops with the villagers, she created a means by which to communicate design and ideas with them all. This has in turn become the language through which her designs and methods are communicated internationally, in order to share crucial knowledge between the very different communities affected by such work.

The teaching at the primary school was an important aspect of the development of various methods of communication, firstly through the English classes Fellows gave, and then by developing architectural drawing and making classes. Importantly, her physical presence there implicitly conveyed her commitment to the community.

This kind of international project, typically requiring practitioners to travel abroad, draws out questions of environmental impact from flying and the practitioner's own contribution to CO₂ emissions. With this in mind, and considering the current Covid-19 lockdown, consideration needs to be given to how future work could be undertaken remotely and whether there are new methods and ways of engaging with communities and their surrounding context from abroad. A new phase of work, emerging from this project and begun in 2020, was reshaped by the Covid pandemic, exploring how such participatory work might be run remotely and digitally between London and Rajapur, and potentially seeking to address the currently unsurveyed arsenic poisoning issue.

DISSEMINATION, ACHIEVEMENTS, PEER REVIEW

Chapters in Books

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- Fellows, T. (2020). 'How does Monsoon Ground Shift through the Seasons in Rural Bangladesh?'. *Monsoon [+ Other] Grounds*. (London: University of Westminster), pp. 136-149.

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Lectures and Symposium

- Fellows, T. (2014). 'Rajapur Community Building for Women's Literacy and Healthcare Centre'. Allies and Morrison Architects, London, 27 August 2014.
- Fellows, T. (2014). 'Rajapur Community Building for Women's Literacy and Healthcare Centre', Buro Happold, London, 17 November 2014.
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Fellows, T. (2019). 'Improvising Architectural Responses to the Changing Climate: Making, Sharing and Communicating Design Processes', The Bengal Institute, 22 June 2019. (Information available: <https://bengal.institute/event/improvising-architectural-responses-to-the-changing-climate-making-sharing-and-communicating-design-process-a-presentation-by-tumpa-husna-yasmin-fellows/>) [Accessed: 23 March 2020]

Exhibitions

Fellows, Tumpa. (2017). 'RAJAPUR WOMEN'S LITERACY AND HEALTHCARE CENTRE IN BANGLADESH'. London Festival of Architecture, 22 June 2017.

Fellows, T. (2018). 'Women's Literacy and Healthcare Centre in Bangladesh', London Festival of Architecture, The Building Centre, 3 March - 28 April 2018, (Information available: <https://nla.london/exhibitions/womens-literacy-and-healthcare-centre-in-bangladesh>) [Accessed: 23 March 2020]

Fellows, T. (2018). 'Rajapur Women's Literacy and Healthcare Centre in Bangladesh', SEED and Pacific Rim Community Design Award Ceremony, National University of Singapore, 10-20 December 2018.

Fellows, T. (2019). 'How Does Monsoon Ground Shift Through the Seasons in Rural Bangladesh?' Monsoon (+other) Grounds Research Symposium, University of Westminster, 21-22 March 2019.

Awards

2019 Winner of RIBA President's Award for Research (commendation).

2018 Winner of SEED (Social Economic Environmental Design Award) & Pacific Rim Community Architectural Award. An award to recognise excellence in Public Interest Design.

2018 Shortlisted: Construction News Talent Award 2018, 'Inspire Me' category.

2017 Winner of RIBA Rising Stars Award: Named as No:1 of the cohort of young, pioneering member of the built environment community of 2017.

2017 Winner of Architecture Sans Frontieres Award (commendation) for Rajapur Community Building, Women's Literacy & Healthcare Centre, in Bangladesh.

FOOTNOTES

- 1 Trustees/Co-founders, supporters of Mannan Foundation: <http://www.mannanfoundationtrust.org/about-us>
- 2 Till, J., Tatjana, S., Nishat, A. (2011). Spatial agency other ways of doing architecture.
- 3 Ingold, T. 1948-author. (2015). The life of lines
- 4 The representation of the research through the animation film has been inspired by the artist William Kentridge
- 5 Schaik, Leon van. (2016). The Design Practice Research Model of ADAPT-r.
- and the work of a colleague Camilla Wilkinson (UoW) in a separate field.

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