

A1 - 7.11.2012





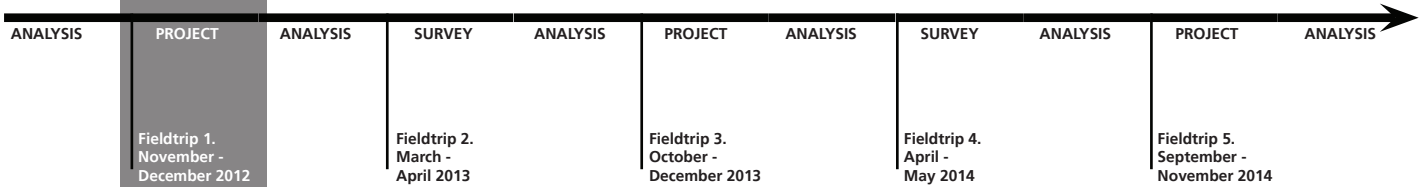
*WELL  
RESTORATION*



*STORYTELLING*



*BUKSH  
MUSEUM*







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Taj Mahal

Tajganj



Tomb of Diwani  
Begum

Mosque of Diwani  
Begum





'Regulated Zone':  
new construction  
regulated

'Prohibited Zone':  
new construction  
prohibited, repairs  
regulated

Protected Monuments:  
Tomb and Mosque of  
Diwani Begum

**The AMASR Act**

Tomb of Diwani  
Begum

Mosque of Diwani  
Begum





## Intentions for Fieldtrip 1

*These intentions were modified during each fieldtrip: refer to the front of each field trip diary to see the progression of ideas.*

**Question 1. What are the relationships between architectural remains and culture at the scale of building, neighbourhood and Tajganj? (consider construction, maintenance, use, symbolic value, archive of understanding).**

**1a. How does this build up depth in the urban order?**

***Intention formed from desktop study:***

Through conducting collaborative surveys, interviews and making exercises:

1. Record the ways that the existence of a listed 'monument' affects its surrounding area.

2. Record the ways that the existence of an unlisted 'monument' affects its surrounding area.

3. Investigate how and why specific buildings have been repaired and modified over time.

4. Find out which local buildings are important to residents.

Produce:

1. Conservation "vocabulary" - set of available materials and techniques in the area.

2. Maps of Tajganj at different scales, picking out 'historic' fragments of importance.

3. Building studies (plan, section) of listed and unlisted buildings relating to community activity.

**Question 2. Compare ASI, CURE/RAY, local opinions about important culture and the architecture underpinning it, or vice versa.**

***Intention formed from desktop study:***

Through conducting collaborative surveys, interviews and making exercises:

1. Investigate conflicts between the slum-upgrading programme and Agra's heritage protection programme for Tajganj.
2. Find important memories and stories of local residents and compare these to what the 'official' heritage protection policies endeavour to protect.

Produce:

1. Comparative drawings of instances where

architecture has perceived 'heritage' value at area/building scale.

2. Guidance documents for repair of unlisted sites with perceived 'heritage value'.



**Question 3. What are local/collective understandings of the conflicts between various interpretations of 'heritage value'?**

***Intention formed from desktop study:***

Through holding conservation skills workshops with residents:

Gauge understanding and develop it.

Produce:

Records of event: both material outcome of making and interviews/ discussions with participants.

## Surveys and Interviews: Actions

Sites of “monuments” and “heritage houses” as identified by CURE and talking to owners and neighbours were visited. The owners were asked for permission to survey/ photograph the structure.

as having ‘heritage value’.

The history of the building and the area was discussed in an attempt to collect local stories and values to compare to the official heritage protection strategies.

The construction of the building and the maintenance was discussed to try and establish which skills and materials were available or needed to be included in the workshops.

Wider surveys and conversations took place, regarding the surrounding area of the sites to establish commonly used construction materials and methods for work on buildings not identified



Residents showed me unprotected historical structures that were important to them

## Surveys and Interviews: Resistance and Accommodation

It is difficult to pin down the reasons why the identified sites on the heritage walk have been selected. In reality, there are very few Mughal sites. There are a large number of colonial-era houses and sites, corresponding to the areas outlined on the colonial-era maps as 'settlements'. Some of these are identified as 'heritage sites' in *'Agra: the Architectural Heritage (Peck 2011)'* and some are not. There is no obvious hierarchy.

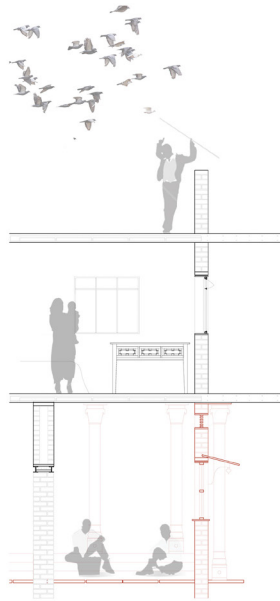
Historical information given by residents is contradictory and also patchy. It is hard to trace the specific development of buildings and sites.

Heritage values of both local residents and the ASI are much more unclear than expected, because 'heritage' protection has created many more immediate problems to deal with. The ASI are so stretched to make sure that the city's listed

monuments aren't encroached upon that basic, blanket rules are applied and enforced.

Due to this inflexibility in planning, local residents just try to 'get by' with ad-hoc building additions that can accommodate the growing population without drawing attention. The last thing local residents desire is any more buildings being protected under the AMASR Act. This influences the buildings they are likely to draw my attention to.

The labelling of heritage structures and non-heritage structures is considered odd behaviour by some residents who feel there are more pressing issues for someone working with an NGO to deal with. The exercise is not exposing conflicting 'heritage values' for this reason. People are not expressing strong opinions about their own idea of



Ad-hoc additions to pre-Independence structures

what is and isn't an important building (aside from the fact that religious buildings are important) and so in order to try and expose opinions and values. I have decided to approach the subject from a new angle, instead of discussing 'heritage' in any way, I discuss prominent shared spaces with residents. What they are for, what their various features are for, whether they flood - and usually from this point I am at least allowed to go and survey these places.

*Theme: Time*

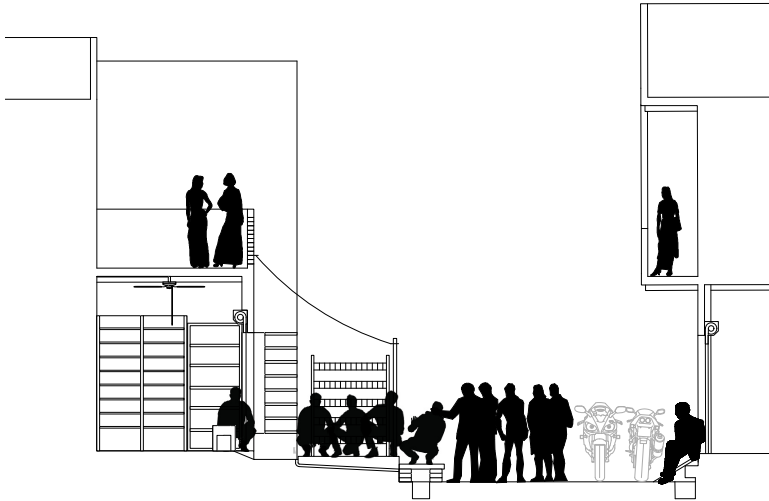
*Gaining trust, building understanding - building commitment to understanding/involvement*

### **Gaining Trust**

As an outsider, some people are suspicious of my intentions. I am given little access to houses, and I cannot measure any homes. Worries about whether the information being given to the taxation department (houses are taxed per square metre) or planning authority (because most construction is done without the required planning application approval) limits my access.

Realising that people were not ready to show me their houses, property, or allow it to be photographed or drawn. I have decided to take a new direction with interviews and surveys. It is decided to engage with families to talk about the problems faced by people who own their old buildings, as well as informal conversations about the area generally and the past. Sometimes

Section through meeting in the  
chai store



this is allowed to happen in the house itself, and sometimes the conversation takes place in the chai store on the bazaar street. From these conversations, I can get an idea of the kind of construction and problems people are finding difficulty dealing with. However, the problem is not a lack of construction knowledge but rather lack of money to use these often more expensive techniques, and lack of knowledge about/faith in the planning system. However, to explore these ideas further. I have decided to go ahead with the conservation workshop on a similarly constructed structure to the houses (masonry, lahori brick, lime mortar, sandstone).

Issues with interview - a lot of the time, the job of answering questions is either taken or given over to one or two people, often the men in the family. Some people are not confident to speak, write or

communicate via drawings.

A longer timeframe has been put on this survey and information-gathering phase of the project because it has been so hard to get adequate information. The field trip could not be lengthened, and it has been recognised this phase will extend across the next field trip, and therefore run alongside the conservation workshop instead of lead up to it.





Well structure chosen for conservation repair workshop

## Surveys and Interviews: Reflection on Method

*Theme: 'heritage value' is a difficult subject to discuss*

There was not much overlap in the way history was thought of/ remembered between residents and ASI or Intach. If each could understand the other's point of view, would this foster understanding at city scale?

*Theme: Time and Iteration*

*Gaining trust, fostering understanding - building commitment to understanding/ involvement*

Cyclical time - the day/week/year has proven an important aspect of neighbourhood to understand. 'Use' mapping of the area looking at exactly who and how this relates to commitment (or confusion of ownership) has also proven to be important.

After carrying out informal interviews around the wells, I have decided to spend much more time in places, talking, surveying, building trust, before any further live projects.

*“The rules are so strict because the ASI do not trust citizens to treat protected buildings responsibly. The rules are being broken because the value of monuments to citizens appears to be quite low. The rules are hard to enforce because there is not a community interest in significant buildings”.*

- interview with a member of staff at INTACH (Indian National Trust for Arts and Cultural Heritage)

## Surveys and Interviews: Drawings and Photographs

Visit to the ASI and UNESCO protected Red Fort in Agra: mixture of preservation and reconstruction techniques have been used. Curatorial decisions have also been made, such as the bollard shown far right: a rough edge has been carved on the side facing a preserved part of the fort, while on the side facing a reconstructed part of the structure, Mughal motifs have been used.





Visit to ASI protected Humayan's Mosque in Kachhpura: palette of preservational techniques observed here is the same as those used at the Red Fort: surkhee plaster (pink coloured plaster), bare lahori bricks, new red sandstone pieces

### 1. Shiva Temple

Talk to the Baba, caretaker of the ancient temple at the start of the street, to hear the tales of the past.

Cross the courtyard to the Mughal well: the first of several that you will see on this walk, it quenched the thirst of many a traveller hundreds of years ago.

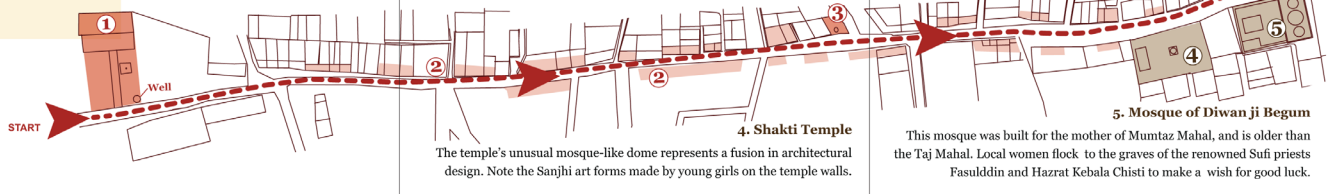


### 2. The Bazaar

Historically this market was famous for tobacco, gajak & guddani (a local sweet). It was also a wholesale cereal market, (Anaj Mandi). Look out for more Mughal wells (3).



Now enter the historic heart of Bilochpura. Experience exquisite architecture and cultural heritage...



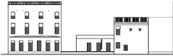
### 4. Shakti Temple

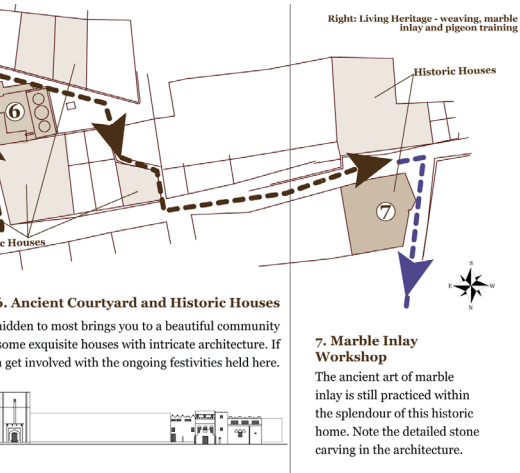
The temple's unusual mosque-like dome represents a fusion in architectural design. Note the Sanjhi art forms made by young girls on the temple walls.

### 5. Mosque of Diwan ji Begum

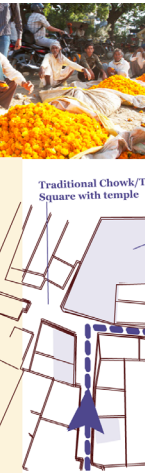
This mosque was built for the mother of Mumtaz Mahal, and is older than the Taj Mahal. Local women flock to the graves of the renowned Sufi priests Fasaluddin and Hazrat Kebala Chisti to make a wish for good luck.

This meandering street has a courtyard, mosque, and... if you are lucky, you can...

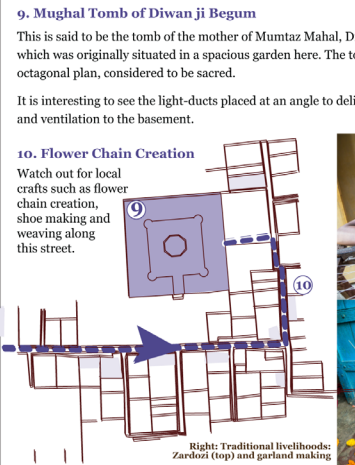




**8. Mandi Flower Market**  
 In this section of the walk, you will see and be invited to participate in Agra's traditional livelihoods, such as flower garland creation, shoe making and zarzoozi...



**8. Mandi Flower Market**  
 This flower wholesale market functions at dawn. People from nearby villages sell their flowers to people in this neighbourhood who make and sell flower garlands for temples, weddings and home decoration.





Marble workshop, Bilochpura







Weaving and flower garlanding,  
Bilochpura and Diwanji ka  
Mohalla

Map made of identified Mughal and British-colonial structures on the Taj Heritage Walk route

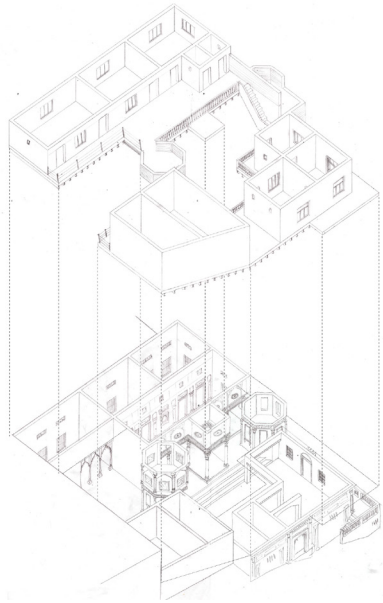




Identified British-colonial era  
houses along the Taj Heritage  
Walk route

Identified British-colonial era  
houses along the Taj Heritage  
Walk route





Identified British-colonial era houses along the Taj Heritage Walk route

ASI protected Mosque of Diwani Begum (Shahi Masjid) in Bilochpura: palette of preservational techniques is the same as observed at Red Fort and Humayan's Tomb





Mosque of Diwani Begum (Shahi Masjid)



Interviews with residents  
about Mughal and Colonial-era  
structures in the area







Interviews with residents  
about Mughal and Colonial-era  
structures in the area

During interviews with residents, I was shown this newspaper article about the repair of the Tomb of Diwani Begum, and it has photographs of the structure and surrounding area as they were in the 1980s





During interviews with residents, I was shown this newspaper article about the repair of the Tomb of Diwana Begum, and it has photographs of the structure and surrounding area as they were in the 1980s











This is the area behind the Mosque of Diwani Begum now that it has been altered by the ASI (compare to previous photographs)

Photograph of the mosque  
before the ASI altered it







The same mosque since the ASI have altered it

The street level rooms under the mosque used to contain shops that helped to pay for the mosque's upkeep: according to the ASI's AMASR Act, shops are not allowed in a Protected Monument so they have been locked up





Tomb of Diwani Begum in its Prohibited Zone in 2012

## **Well Repair Workshop: Actions**

- Site chosen
- Structure chosen
- Appropriate craftspeople found to lead the workshop
- Participants selected who own pre-independence houses and structures
- Invites given by hand
- Initial repair design drawn to be implemented in the workshop
- Advice sheets created for participants based on survey findings - handed out at workshop
- Formal meeting with repair being demonstrated afterwards



Well Restoration Workshop

## Well Repair Workshop: Notes on Resistance and Accommodation

### *Theme: Thoroughness / inclusion:*

It is very difficult to talk to people sufficiently to feel that they would be happy for a 'heritage' structure on their property to be subject to a conservation workshop. As yet, an adequate method had not been found to ensure consensus of residents around a government owned 'public' space or structure - thoroughness/ inclusion of different points of view had not been achieved.

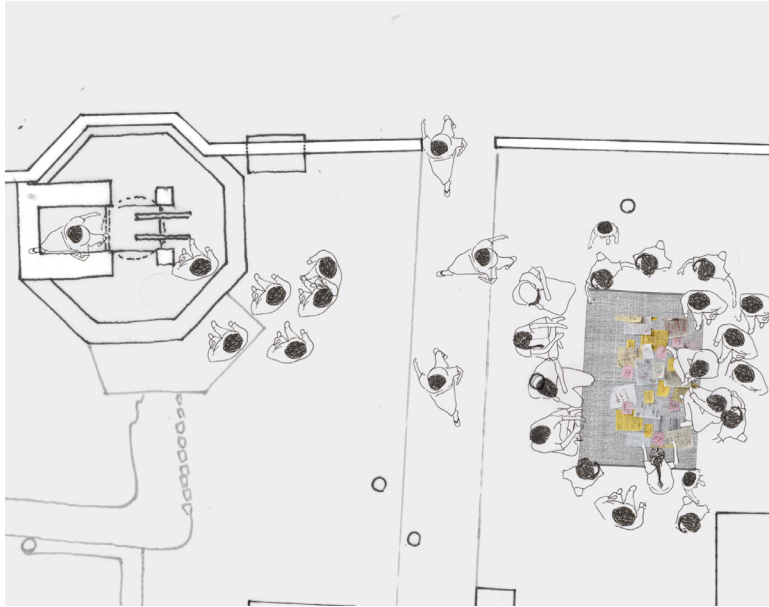
### *Theme: Heritage Value and Contentious Space*

It is decided that a Mughal or colonial well will be used for the conservation workshop because these are the oldest, most dilapidated 'heritage structures' around that are the least contentious (the other choices would be houses or religious sites). They are also constructed with the same

materials as the identified 'heritage houses' in the area. I have not gained enough trust to work on a contentious structure.

The priest of the local Shiv temple is much more trustful of CURE & myself, allowing a full survey of the temple site, and use of the site for the conservation workshop. He is not worried about tax, planning or state interference, and he is not worried about gaining the support of his temple constituency - they trust him. He sees the conservation of a heritage structure (the mughal well in the garden) as a small part of a larger landscaping programme that he would like as much help with as possible. Accepting that there is now a religious bias to the workshop, I proceed.

Wells within 300m of a listed monument need planning permission from the ASI to repair,



Plan of the Well Restoration workshop: while residents sit in a polite circle near to the well, the mistry and a handful of people interested in plastering gather at the well itself

whether publicly owned or not. Within 500m of the Taj Mahal is particularly sensitive, and directly beside the Taj Mahal I cannot even measure because permission is nearly impossible to obtain (behaviour in and around the Taj is tightly policed as there is a perceived terrorist threat). This leaves only a few wells available for the workshop.

*Theme: Active Involvement*

Participation - approx. 40 people came to the workshop (a high turnout). However, people sat in a circle formally. There was little interaction with the Raj Mistry (skilled mason), who repairs the well. It is unlikely that the participants have picked up the conservation skills to repair their houses from this workshop.

A Raj Mistry - skilled mason is found locally who

has expertise in heritage conservation skills. However, most other participants leave him to do the repair work for this reason. He doesn't teach other people, they are more interested in discussing how heritage affects their lives, rather than the details of repair.

Politeness - participants were extremely polite, and answers to questions appeared to be second-guessing the things I/CURE might wish to hear. It is likely many conflicts were not exposed.

*Theme: Time*

The only time that could be scheduled for the workshop was at the end of my study trip, because of the time of year (Diwali, Muharram). This meant that an iterative programme, or even a follow up meeting to discuss successes and failures was not possible.





The priest in charge of the Shiv temple allows the workshop to take place in the temple garden

Unfortunately there was no time to repeat and modify the workshop itself. This is a big flaw in the method at this point, especially as people were so polite, and perhaps discussions after the event with smaller groups could have exposed more.



Residents gather in a circle during the workshop

## Well Repair Workshop: Reflection on Method

### *Theme: Thoroughness / inclusion:*

The need to develop the idea of 'inclusion' from "inclusion-through-selecting-a-cross-section" to creating openness requires an investigation into different techniques for including people in interviews and meetings and also methods of identifying 'gaps' where people are being left out.

I aim to start with informal 'on-the-spot' conversations next time, before asking those people to invite others for a slightly more formal meeting at a convenient time and location (snowball sampling).

### *Theme: Conflicting Place Values*

I had to accept the idea that the project could not happen in a 'fair' or neutral space and still be a useful workshop. Places that people care about are contentious, and for better participation I need to try working with a place people care about.



A Raj Mistry repairs the well structure

*Theme: Active Involvement*

I need to find a way to make residents feel comfortable to express complaints, unhappiness and criticise my approach.

There are shades of involvement dependent on whether individuals find the method of involvement interesting. For example, only people who were interested in brick repair and plastering could be deeply involved in the well restoration workshop.

“Gathering” itself - in a way that can facilitate honest discussion between residents would be a (very difficult) goal worth aiming for, from now on.



Photos shared during the workshop

## Well Repair Workshop: Photographs

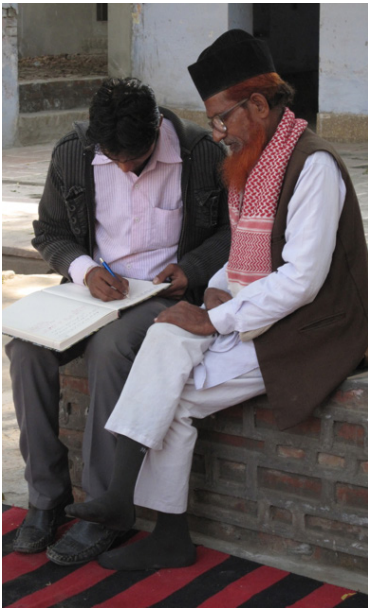
The mistry arranged for lahori bricks to be taken from an abandoned building nearby for use in the workshop (I was previously told that there was a 'supplier' for lahori bricks in the city) which means that the lahori bricks used by the ASI for their protected monuments come from other buildings (certain people's heritage priorities are being put above others)







Participants write their feedback after the workshop



## Participants' comments

*The design of old monuments should not be changed. We should not alter the original design of heritage buildings. That will be good for the society.*

-Mo. Jaheer Pahalwan (Billochpura, Tajgani)

*Every old building is very beautiful in Agra. It is our knowledge of the history.*

-Rajendra Prasad Tiwari (Paktola, Tajgani)

*We should not change the old design and old arts.*

-Sameena (Telipada)

*We want live here forever because our ancestors given us this heritage.*

-Saroj/Parveen(Telipada)

*During the meeting, we discussed about the old building. I don't have heritage house, still I like to see them.*

-Pushpa/Munni/Rajiya(Tlipada)

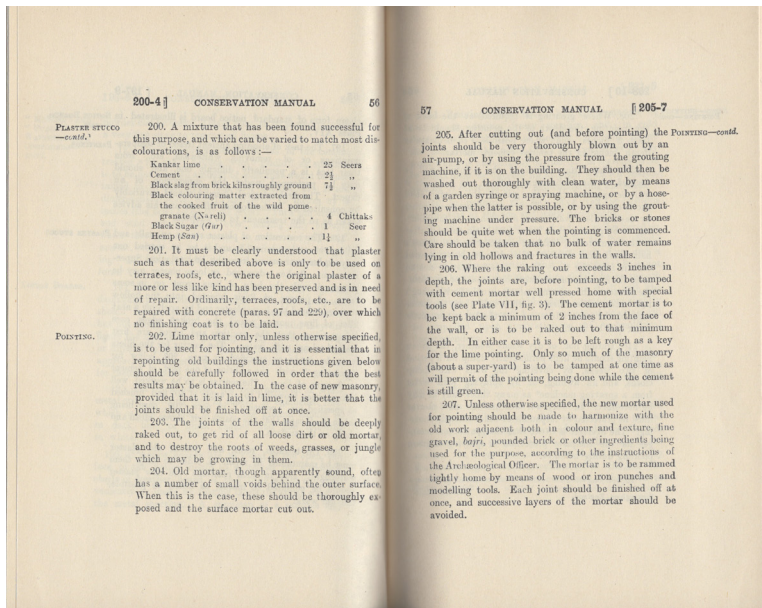
*In this meeting CURE a local NGO discuss with the people about the historical buildings. The all historic building should be renovated and we community people are with this initiative.*

-Shumayla (Billochpura)

## **Well Repair Design: Actions**

A design was created to correspond to ASI guidance for the Shiv Temple well to test whether this construction 'vocabulary' would be appropriate to apply to other 'heritage' structures in Tajganj.

The design was discussed with participants especially the Raj Mistry and altered accordingly.



PLASTER STUCCO  
—contd.

200. A mixture that has been found successful for this purpose, and which can be varied to match most discolourations, is as follows:—

Kankar lime . . . . .	25	Seers
Cement . . . . .	21	"
Blackslag from brick kiln thoroughly ground	7½	"
Black colouring matter extracted from the cooked fruit of the wild pomegranate (Nardū) . . . . .	4	Chittaks
Black Sugar (Gar) . . . . .	1	Seer
Hemp (Sax) . . . . .	1½	"

201. It must be clearly understood that plaster such as that described above is only to be used on terraces, roofs, etc., where the original plaster of a more or less like kind has been preserved and is in need of repair. Ordinarily, terraces, roofs, etc., are to be repaired with concrete (paras. 97 and 224), over which no finishing coat is to be laid.

POINTING.

202. Lime mortar only, unless otherwise specified, is to be used for pointing, and it is essential that in repointing old buildings the instructions given below should be carefully followed in order that the best results may be obtained. In the case of new masonry, provided that it is laid in lime, it is better that the joints should be finished off at once.

203. The joints of the walls should be deeply raked out, to get rid of all loose dirt or old mortar, and to destroy the roots of weeds, grasses, or jungle which may be growing in them.

204. Old mortar, though apparently sound, often has a number of small voids behind the outer surface. When this is the case, these should be thoroughly exposed and the surface mortar cut out.

205. After cutting out (and before pointing) the joints should be very thoroughly blown out by an air-pump, or by using the pressure from the grouting machine, if it is on the building. They should then be washed out thoroughly with clean water, by means of a garden syringe or spraying machine, or by a hose-pipe when the latter is possible, or by using the grouting machine under pressure. The bricks or stones should be quite wet when the pointing is commenced. Care should be taken that no bulk of water remains lying in old hollows and fractures in the walls.

206. Where the raking out exceeds 3 inches in depth, the joints are, before pointing, to be tamped with cement mortar well pressed home with special tools (see Plate VII, fig. 3). The cement mortar is to be kept back a minimum of 2 inches from the face of the wall, or is to be raked out to that minimum depth. In either case it is to be left rough as a key for the lime pointing. Only so much of the masonry (about a square-yard) is to be tamped at one time as will permit of the pointing being done while the cement is still green.

207. Unless otherwise specified, the new mortar used for pointing should be made to harmonise with the old work adjacent both in colour and texture, fine gravel, *kajri*, pounded brick or other ingredients being used for the purpose, according to the instructions of the Archaeological Officer. The mortar is to be rammed tightly home by means of wood or iron punches and modelling tools. Each joint should be finished off at once, and successive layers of the mortar should be avoided.

Advice on pointing in John Marshall's 1923 Conservation Manual used by the ASI

## **Well Repair Design: Notes on Resistance and Accommodation**

The Mistry changed the design, choosing a different lime plaster mix and decided to plaster the whole structure according to tradition and using locally grown materials such as fibres and sugar. The design changed to a full restoration, rather than repair.

Detailed drawings turn out to be useless, all instructions have to be spoken instructions before and during the process.

The Mistry is paid for the day - the work is finished shoddily, despite his talent, because there are no funds for his 'overtime' after I leave.



The Raj Mistry changes the design, adding traditional ingredients such as jaghiree to the mortar, and plastering the entire structure

## **Well Repair Design: Reflections on Method**

*Theme: Design authorship/ leadership*

When there are multiple 'clients' and values conflict - what should the architect keep control of? Which heritage values should an architect prioritise when the stakeholders are so varied?





The Raj Mistry repairs the structure with reclaimed bricks

Limited Guidance: Delhi Schedule of Rates 2012

**25.0 CONSERVATION OF HERITAGE BUILDINGS**

Code No.	Description	Unit	Rate ₹
25.1	Raking out joints of stone masonry surface to the required width and depth, with due care and precaution, by mechanical / manual means, including preparing and cleaning the surface for re-pointing/ refilling of joints, including disposal of rubbish to the dumping ground within 50 metre lead.	sqm	19.85
25.2	Providing and fixing double scaffolding system (cup lock type) on the exterior side of building/structure, upto 25 metre height, above ground level, including additional rows of scaffolding in stepped manner as per requirement of site, made with 40mm dia M.S. tube, placed 1.5 metre centre to centre, horizontal & vertical tubes joint with cup & lock system with M.S. Tubes, M.S. tube chalis, M.S. clamps and staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for execution of work of cleaning and/or pointing and/or applying chemical and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connecting with the building etc. wherever required, if feasible, for inspection of work at required locations with essential safety features for the workmen etc., complete as per directions and approval of Engineer-in-charge. <b>Note</b> - (1) The elevational area of the scaffolding shall be measured for payment purpose. (2) The payment will be made once only for execution of all items for such works.	sqm	127.10
25.3	Cleaning the sand stone surface and removing dirt, dust, bird droppings, grease, oil, algae, fungus, mormey beetle, vegetable growth etc., including providing, applying and washing the surface with liquid Ammonia Chemical of 5% solution and other chemical cleaning agent as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with the help of required scrubbers and also cleaning with machine operated water jet mixed with desired quantity of fine silica where ever required, without causing any scratching damage to the stone surface and finally washing the surface with clean water with the help of pressure jet machine, complete in all respect, including taking all precautions to safeguard ventilators, windows, doors etc. by suitable covering so as to avoid any damage to the building structure, all as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	62.70
25.4	Providing and applying antifungal wash treatment using 3% solution of sodium pentachlorophenate, of reputed brand and manufacturer, on cleaned sand stone surface at desired locations as per direction of Engineer-in-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	26.80
25.5	Ruled/ Flush pointing on Red sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 (One lime : 1.5 surkhi (50% red and 50% light yellow surkhi) :1/2 marble dust). (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	104.30

SUBHEAD -25.0 CONSERVATION OF HERITAGE BUILDINGS

386

Code No.	Description	Unit	Rate ₹
25.6	Ruled/ Flush pointing on White sand stone masonry surface with lime, surkhi and marble dust mortar in the ratio of 1:1.5:1/2 (One lime : 1.5 surkhi (15% dark red and 85% light yellow surkhi) : 1/2 marble dust). (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	104.30
25.7	Applying two or more coat of Ethyl Silicate chemical as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, with brush or spray on the existing stone masonry surface till there is no further absorption of chemical by stone surface, including protecting the applied surface from direct sunlight by suitable means during application, all complete as per direction of the Engineer-in-Charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	267.00
25.8	Applying breathable, non-reactive, antifungal, and water repellent Silanes/Siloxane chemical as approved by Archaeological Survey of India/ Engineer-in-charge, of approved brand and manufacturer, diluted with solvent mineral Turpentine oil in the ratio of 1:12 (One part of approved chemical :12 Part of Turpentine oil), on the existing sand stone masonry surface with two or more coats to give uniform application of chemical on the surface, all complete as per direction of Engineer-In-charge (The rate is inclusive of all materials & labours involved except scaffolding).	sqm	69.70

SUBHEAD -25.0 CONSERVATION OF HERITAGE BUILDINGS

387

**Well repair: materials and experts needed:**

**Brick Structure:**

*Cleaning and repointing*

Surface area plaster to remove: 8 sqm

Surface area to clean and repoint: 22 sqm

Provision of pointing in lime-surkhee mortar 1:1.1 i.e.(1Lime :1Sand: 1Surkhi)

*Brick replacement*

Number of bricks (mughal size) needed: 300 mughal sized (unless we rebuild column).

lime-surkhee mortar 1:1.1 i.e.(1Lime :1Sand: 1Surkhi)

**Stone paving**

*Cleaning and repointing*

Surface area to clean: 32 sqm

Surface area to repoint: 2 sqm (a few cracks) ASI approved stone cleaning chemical

Antifungal wash treatment (3% solution of sodium pentachlorophenate)

lime, surkhi and marble dust mortar 1: 1.5: 0.5

**Replaster a section, maybe one column?**

Surface area: 6 sqm

Provision of 5 mm thick plaster in lime-surkhee mortar 1:1.1 i.e.(1Lime :1Sand: 1Surkhi)

**Can we do something about the damp under water tank (see picture) to teach people about rainwater damage? I think preventing water damage is one of the most important things people in this settlement need to know about.**

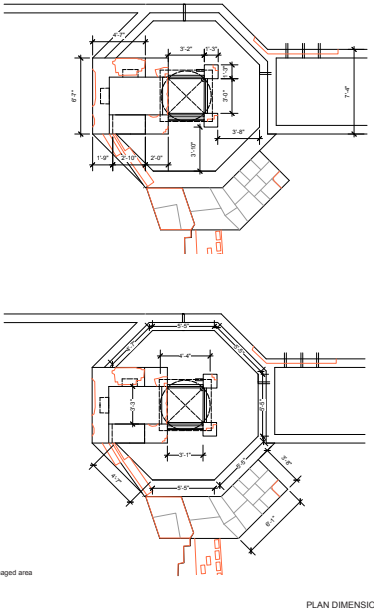
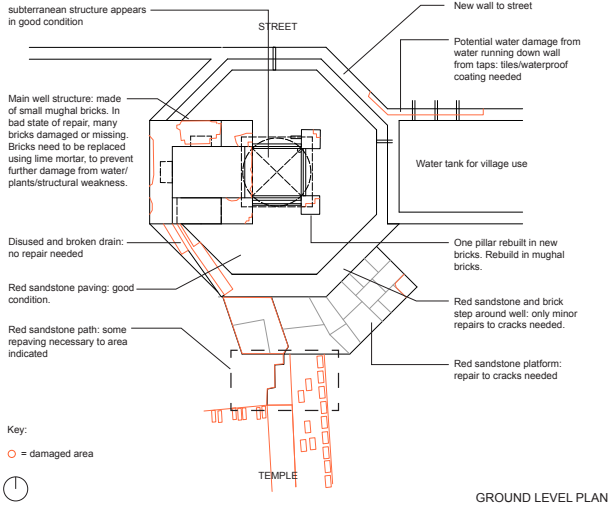
Repointing bricks 1sqm

Tiling or repainting with waterproof treatment down into drain. 1 sqm

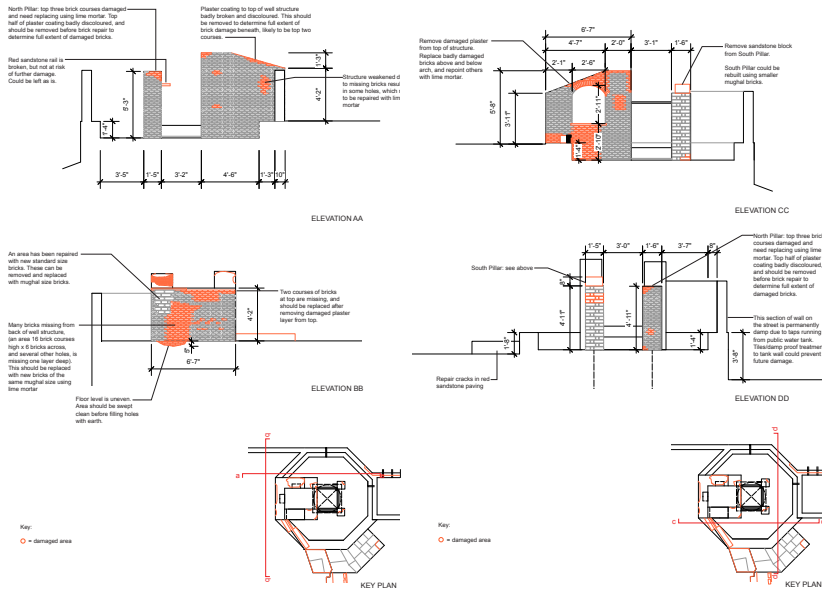
Minor drain repair?

Materials and mixes specified using the Delhi Schedule of Works (see opposite page)

# Well Repair Design: Drawings and Photographs



## Well repair design pre-construction



Well structure pre-repair





Well structure before and after repair

LIME MORTARS FOR PLASTERING:

1:2 - LIME : POZZOLANA MATERIAL

□ SAND -

COURSER VARIETY - BASE 2 LAYERS.

FINER QUALITY - FINAL LAYERS.

□ POZZOLANA MATERIAL -

BRICK POZZOLANA - SURKHI.

□ BINDING AGENT AND WORKABILITY AGENTS -

BEL FRUIT, JAGGERY, NUTMEG JUICE, METHE AND NATURAL GUMS

□ STRENGTHENING MATERIAL - URHAR & MOONG DAL (BASE LAYERS),

JUTE, SUN, ANIMAL HAIR ETC

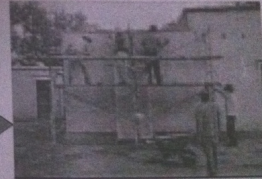
□ SMOOTH LUSTUROUS FINISH - MILK, CURD, EGG WHITE, MARBLE

POWDER, PANEER ETC



LIME POINTING  
FINELY GROUND MIX  
RICH MIX - 1:2

LIME PLASTERING  
EXTERIOR FINISH



MOONG DAL



LIME MORTARS FOR CONCRETING:

- 1:3 - LIME : POZZOLANA MATERIAL / SAND
- 1:2:3 - LIME : SAND : POZZOLANA MATERIAL

BASE MATERIAL - BRICK BATS

SOURCE: ASI

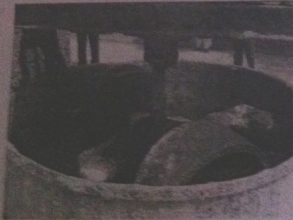
SAND - COURSER VARIETY

POZZOLANA MATERIAL -  
BRICK POZZOLANA - SURKHI.

FLY ASH

BINDING AGENT AND WORKABILITY AGENTS -  
BEL FRUIT AND METHE.

STRENGTHENING MATERIAL - URHAR & MOONG DAL (BASE LAYERS)



MORTAR MIXER- MIXING SLAKED LIME +  
SUKHI+JUTE FIBRES  
SOURCE:ASI SITE-PURANA QILA, DELHI



LIME CONCRETING

## Discoveries about the Urban Order

### Surveys and Interviews

This is a highly populated, densifying area constrained by outdated legislation and infrastructure and there is a lack of money for building other than ad-hoc. This creates a world of very good quality old buildings with very bad quality additions, and good quality old buildings being knocked down for the materials, or in order to build a structure that can take more storeys.

### Workshop

Everybody who comments on the feedback form after the workshop puts their name, and their *basti* name. The *basti* one lives in is somehow linked to identity.

There is a topography of planning regulations and 'gaps/ loopholes', regarding heritage. The neighbourhoods survive entirely in the space between what is 'allowed' in legislation, and what the majority of people enforcing these laws believe is acceptable. This is dangerous because that space shrinks. Almost everybody owned a house that they did not want to be surveyed for this reason: I therefore have to work hard to gain their trust.

There are a lot of conflicts regarding site ownership as open space dramatically reduces. There is also a huge confusion of ownership in "shared space" where government is technically in charge of its maintenance, but does not deliver. Consensus of an adequate number of residents would take more time to ascertain.



Within the Prohibited zone,  
buildings are found to often be  
in disrepair

It was found that the least of the constraint to conserving heritage in Tajganj is a lack of construction knowledge. Perceived 'tradition' is diminishing for complex reasons, and as a side effect of this, commitment to places is reducing.

#### **Restoration Design for Case Study Site**

Big differences in opinion were found as to how a 'heritage structure' should be repaired.



Diagrams made after the fieldtrip of various recommended attitudes to conservation

